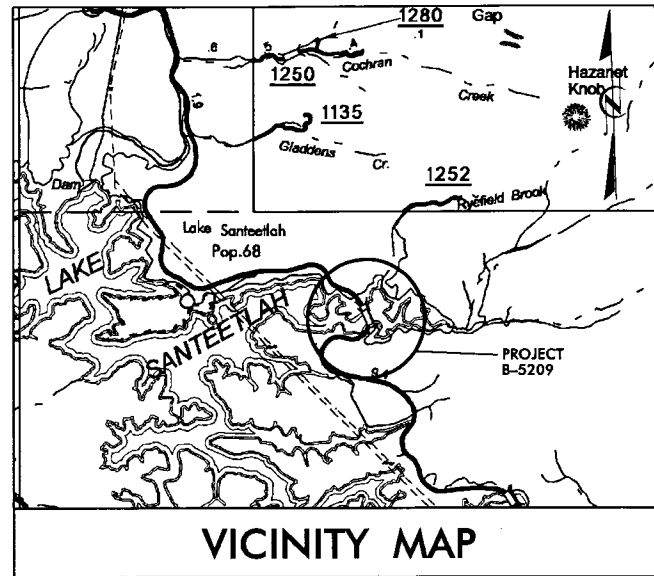


04/02/2010

**TIP PROJECT: B-5209**

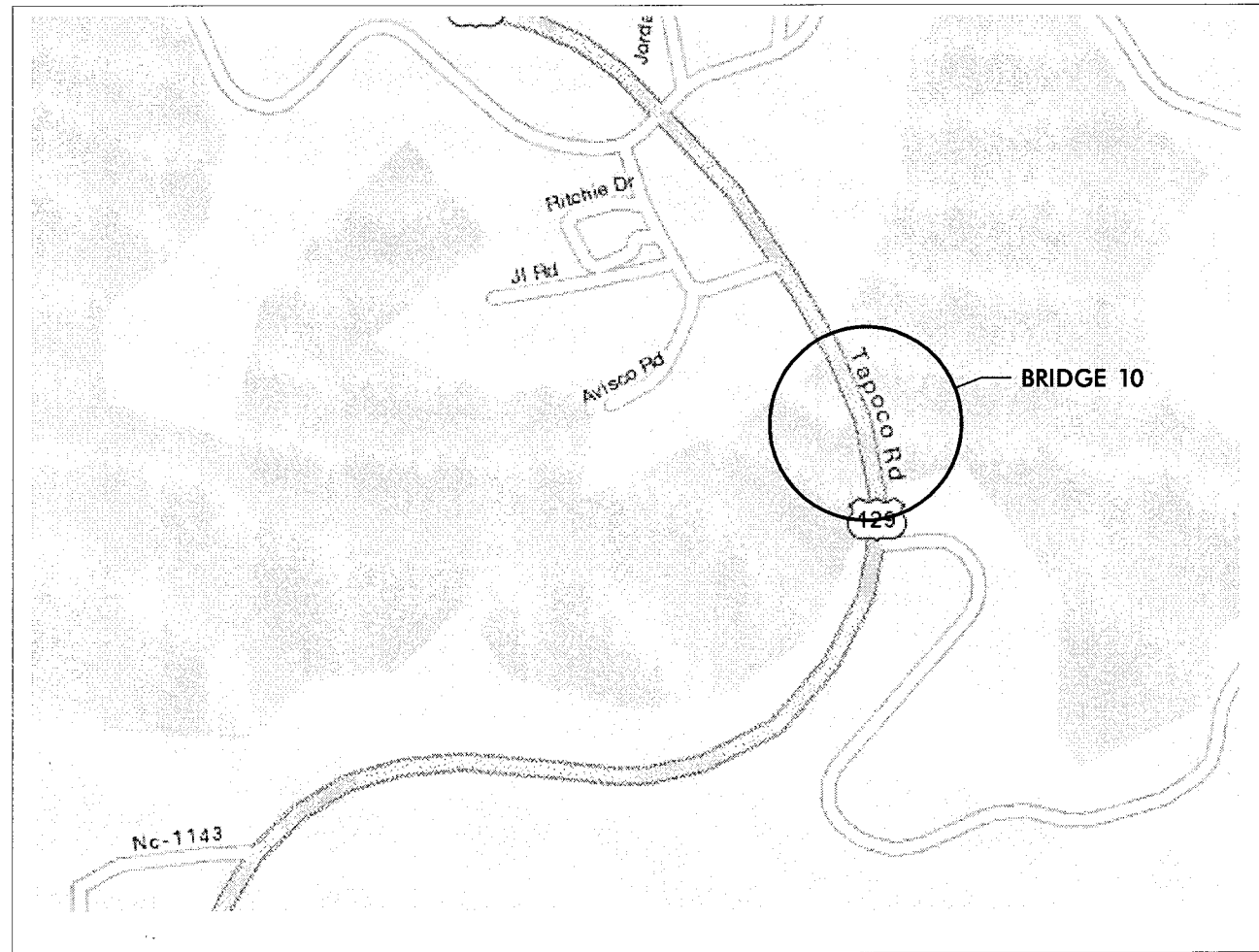
**CONTRACT: D000025**



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**GRAHAM COUNTY**

**LOCATION: BRIDGE 10, US-129 OVER LAKE SANTEETLAH, 0.05 MILES NORTH OF JUNCTION US 129 AND SR 1144**

**TYPE OF WORK: BRIDGE DECK PRESERVATION**

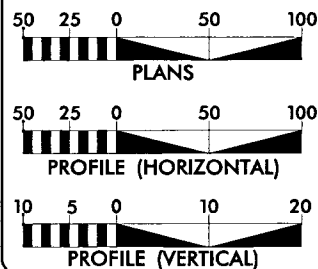


STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5209	1	
WBS NO.	F.A. PROJ. NO.	DESCRIPTION	
45307.1.STI	STM-0129(2)	PE	
45307.1.STI	STM-0129(2)	CONST.	

**TABLE OF CONTENTS**

DWG.	DESCRIPTION
S-1	PLAN OF BRIDGE
S-2	BRIDGE TYPICAL SECTION
S-3	DECK REPAIR DETAILS
S-4	DECK REPAIR DETAILS
S-5	DECK REPAIR DETAILS
S-6	DECK REPAIR DETAILS
S-7	EXPANSION JOINT REPAIR DETAILS 1
S-8	EXPANSION JOINT REPAIR DETAILS 2
S-9	EXPANSION JOINT REPAIR DETAILS 3
S-10	END BENT JOINT SEAL DETAILS
TCP1-5	TRAFFIC CONTROL PLANS
R-1	ROADWAY CONSTRUCTION
R-2	GUARDRAIL ANCHORAGE DETAILS

**GRAPHIC SCALES**



**PROJECT LENGTH**

LENGTH OF ROADWAY T.I.P. PROJECT B-5209	= 0.019 MI.
LENGTH OF STRUCTURE T.I.P. PROJECT B-5209	= 0.091 MI.
TOTAL LENGTH OF T.I.P. PROJECT B-5209	= 0.110 MI.



PREPARED IN THE OFFICE OF:

Stantec Consulting Services Inc.  
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Falls Church, VA 22043  
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Fax: (919) 881-7024  
www.stantec.com  
License No. T-0872

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

N.A.

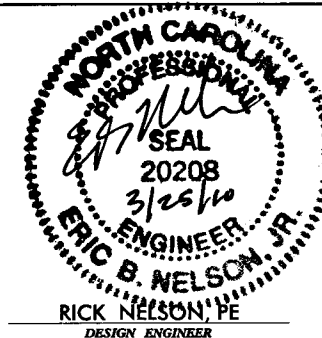
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APR. 27, 2010 >>

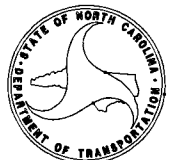
JOE KELVINGTON, PE  
PROJECT ENGINEER

NCDOT CONTACT:

MIKE SUMMERS  
BRIDGE MANAGEMENT PROJECT MANAGER

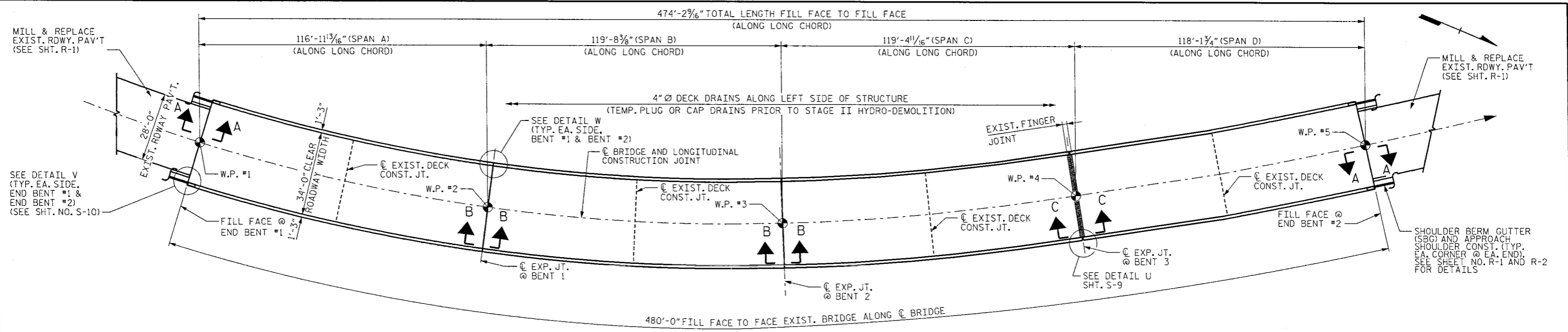


DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA



RICK NELSON, PE  
DESIGN ENGINEER

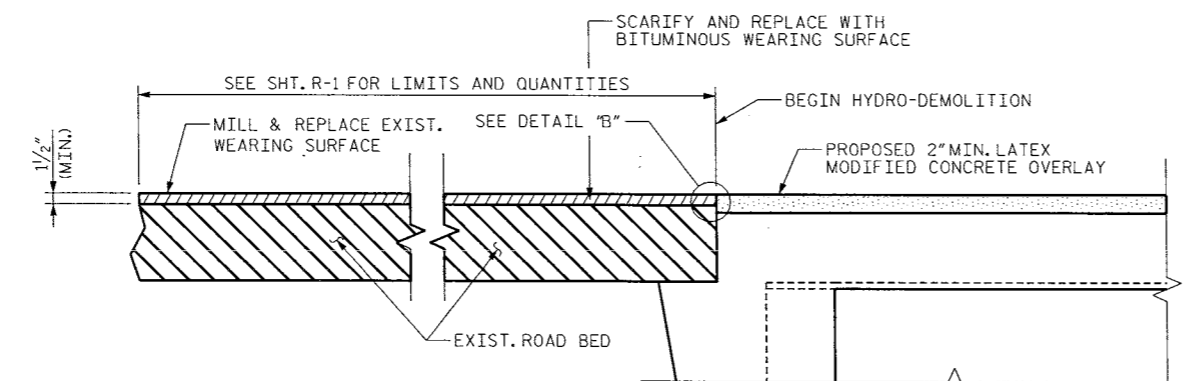
\$\$\$\$\$ SYSTEMS TIME\$\$\$\$\$  
\$\$\$\$\$ DON\$\$\$\$\$  
\$\$\$\$\$ USERNAME\$\$\$\$\$



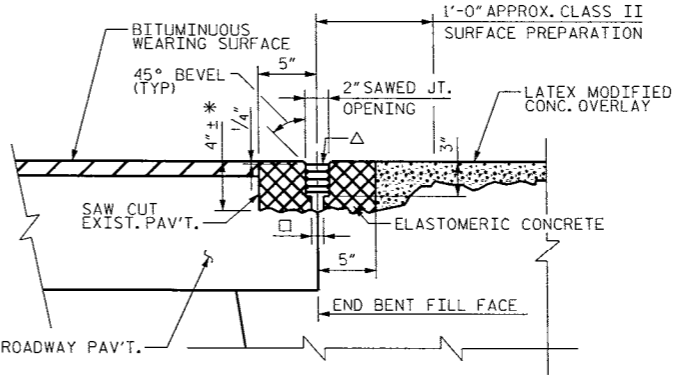
PLAN OF SPANS

NOTES:

- DECK DRAINS SHALL BE TEMPORARILY 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.
- LATEX MODIFIED CONCRETE SHALL BE LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH.
- FOR LATEX MODIFIED CONCRETE, SEE SPECIAL PROVISIONS.
- FOR EVAZOTE JOINT SEALS, SEE SPECIAL PROVISIONS.
- FOR SECTION B-B AND SECTION C-C, SEE SHT. NO. S-7.
- FOR DETAIL W, SEE SHT. NO. S-8.
- FOR END BENT JOINT SEAL DETAILS, SEE DETAIL V SHT. NO. S-10.
- THE CONSTRUCTION JOINTS IN THE DECK SHALL BE SAWED NO MORE THAN 3 HOURS AFTER THE LATEX MODIFIED CONCRETE IS CAST. THE JOINT SHALL BE CLEANED OF ALL DEBRIS BEFORE THE SEALANT IS APPLIED. THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF TYPE SL LOW MODULUS SILICONE SEALANT.
- FOR PARTIAL REMOVAL OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

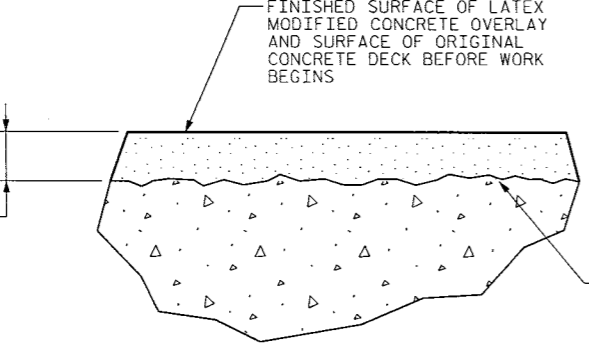


SECTION A-A

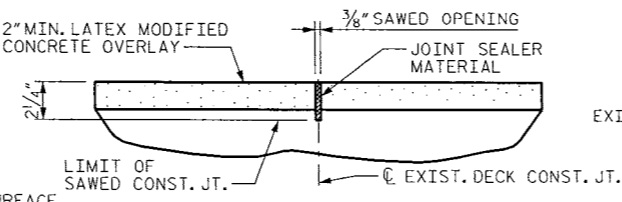


DETAIL "B"

- △ USE 2.50" X 2" UNCOMPRESSED SEAL MATERIAL
- 1" FORMED OPENING CENTERED ABOUT FILL FACE
- \* NOMINAL DIMENSION. REMOVE ALL LOOSE DETERIORATED MATERIAL, INCLUDING EXISTING SEAL DEVICES AND HARDWARE TO SOUND PAV'T OR CONCRETE. PRESERVE AND RETAIN ALL EXPOSED REINFORCING STEEL. ADJUST SAW CUT DEPTH AS REQUIRED TO PREVENT CUTS INTO EXISTING REINFORCING STEEL.



DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY



DETAIL "A"

(LOCATION OF JOINT TO MATCH EXISTING JOINT LOCATION.)

PROJECT NO. B-5209  
GRAHAM COUNTY  
 STATION: \_\_\_\_\_

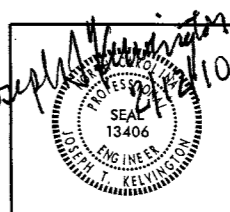
TOTAL BILL OF MATERIAL

PARTIAL REMOVAL OF STRUCTURE	REINFORCED CONCRETE DECK SLAB	DECK SCARIFICATION	CLASS I* SURFACE PREPARATION	CLASS II* SURFACE PREPARATION	CLASS III* SURFACE PREPARATION	HYDRO-DEMOLITION	* CLASS AA CONCRETE	EPOXY COATED REINF. STEEL	LATEX MODIFIED CONCRETE	PLACING & FINISHING OF LATEX MODIFIED CONCRETE	EVAZOTE JOINT SEAL	GROOVING BRIDGE FLOORS	TEMP. STEEL COVER FOR EXP. JOINT SEAL REPAIR
LUMP SUM	SO.FT.	SO.YDS.	SO.YDS.	SO.YDS.	SO.YDS.	SO.YDS.	CU.YDS.	LBS	CU.YDS.	SO.YDS.	LUMP SUM	SO.FT.	LUMP SUM
LUMP SUM	102	1814	1217	457	140	1814	13.2	348	130.4	1814	LUMP SUM	14,160	LUMP SUM

\* QUANTITIES ARE SHOWN FOR INFORMATIONAL 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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DRAWN BY: J. L. HENNEKES DATE: 02-04-10  
 CHECKED BY: J. T. KELVINGTON DATE: 02-04-10



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

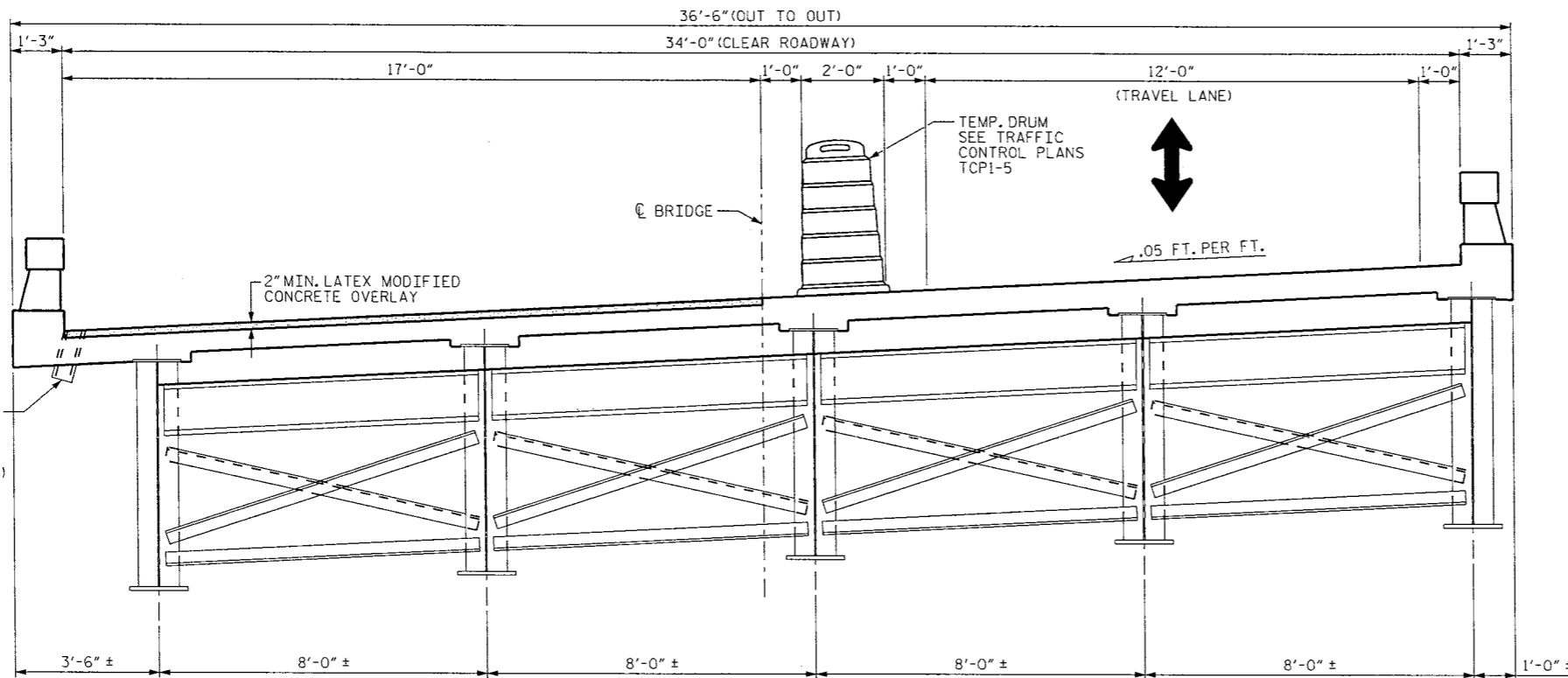
PLAN OF BRIDGE  
 FOR DECK REPAIR

DECK REHAB. FOR BRIDGE NO. 10

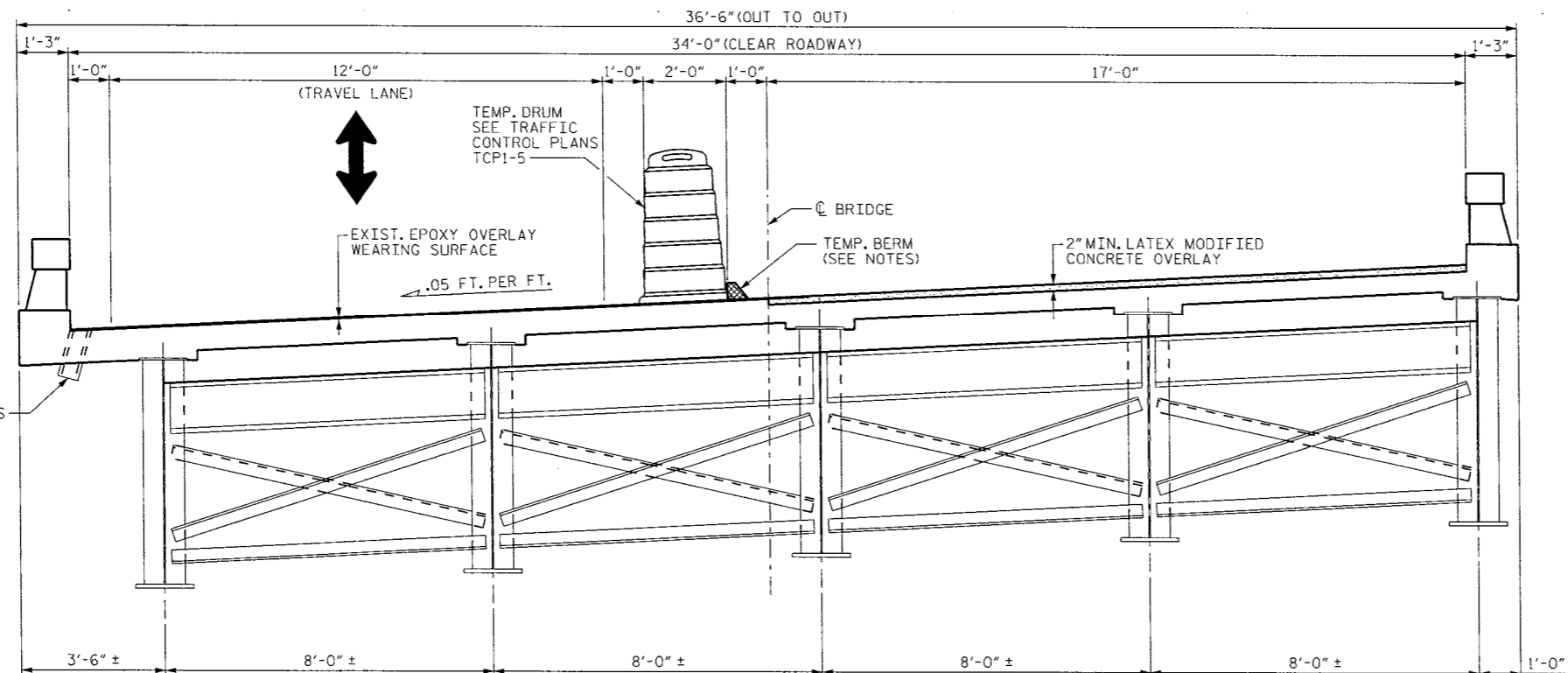
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NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
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TOTAL SHEETS 10

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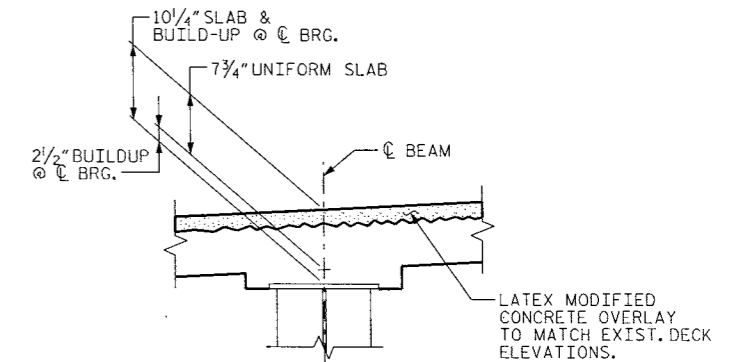


TYP. SECTION - STAGE I CONSTRUCTION  
SHOWING BENT DIAPHRAGMS



TYP. SECTION - STAGE II CONSTRUCTION  
SHOWING BENT DIAPHRAGMS

NOTES:  
WATER & CONCRETE SLURRY FROM HYDRO-DEMOLITION SHALL NOT BE ALLOWED TO DRAIN ACROSS TRAVEL LANES. CONTRACTOR SHALL PROVIDE A METHOD TO CONTROL THE WATER.  
ALL HORIZONTAL DIMENSIONS SHOWN ARE RADIAL UNLESS NOTED OTHERWISE.



EXIST. SLAB BUILDUP

U:\Structure\B-5209\_Graham\_ID\Drawing\B-5209\_TypSect.dgn 2/12/2010 10:41:35 AM susers

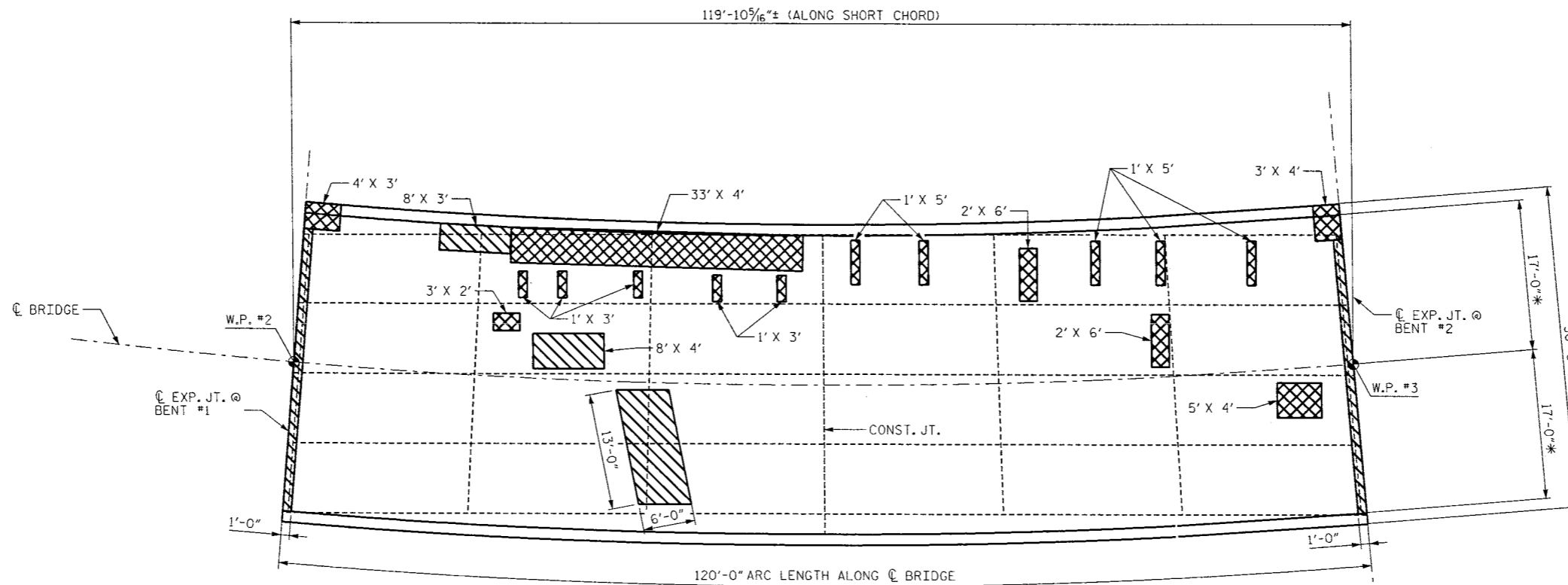
PROJECT NO. B-5209  
GRAHAM COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
TYPICAL SECTION					
DECK REHAB. FOR BRIDGE NO. 10					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-2
					TOTAL SHEETS 10

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 CHECKED BY: J. T. KELVINGTON DATE: 02-04-10

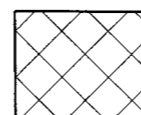




PLAN OF SPAN B - DECK REPAIRS



CLASS II SURFACE PREPARATION



CLASS III SURFACE PREPARATION

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

\* RADIAL DIMENSIONS

PROJECT NO. B-5209  
GRAHAM COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

DECK REPAIR DETAILS  
 SPAN B

DECK REHAB. FOR BRIDGE NO. 10

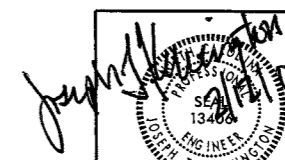
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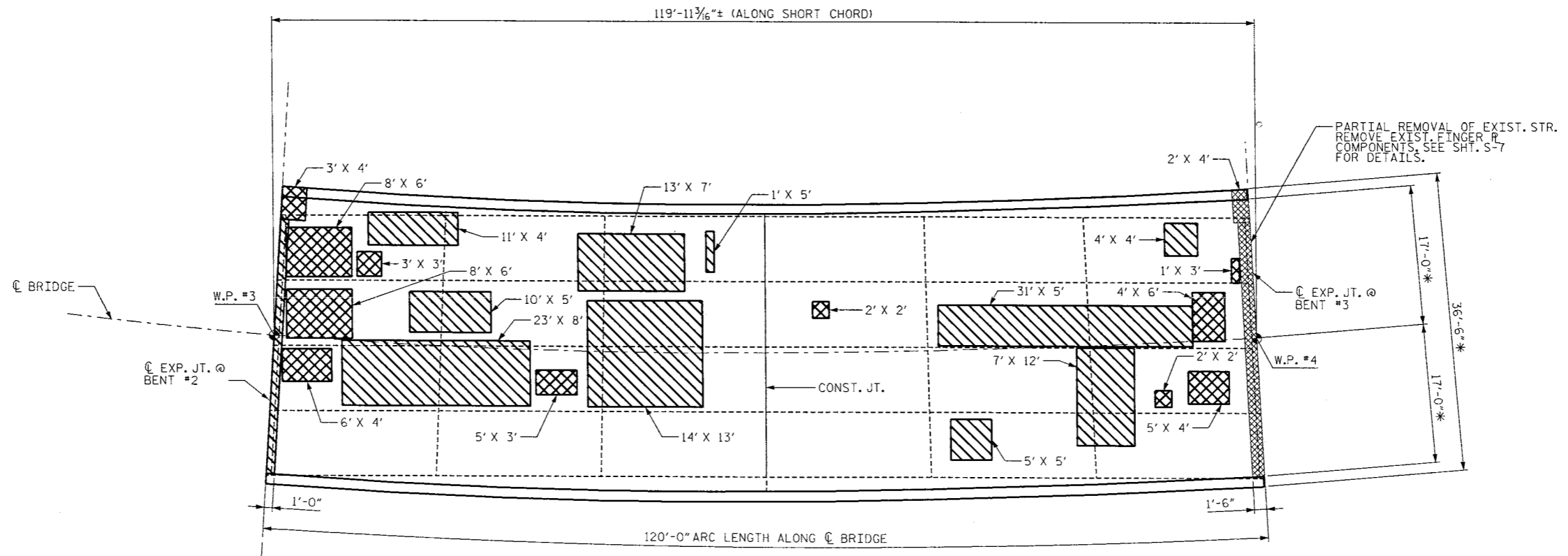


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 www.stantec.com  
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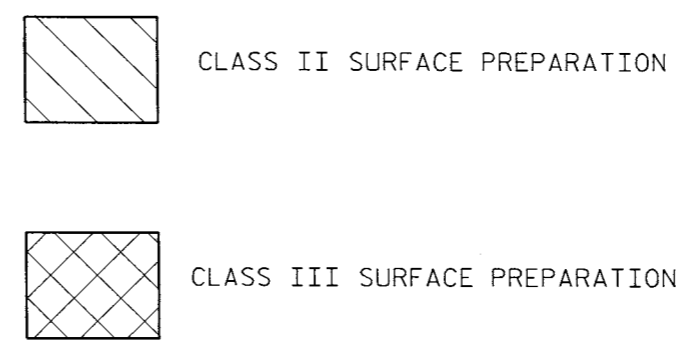
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 CHECKED BY: J. T. KELVINGTON DATE: 02-04-10



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PLAN OF SPAN C - DECK REPAIRS



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

\* RADIAL DIMENSIONS

PROJECT NO. B-5209  
 GRAHAM COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

DECK REPAIR DETAILS  
 SPAN C

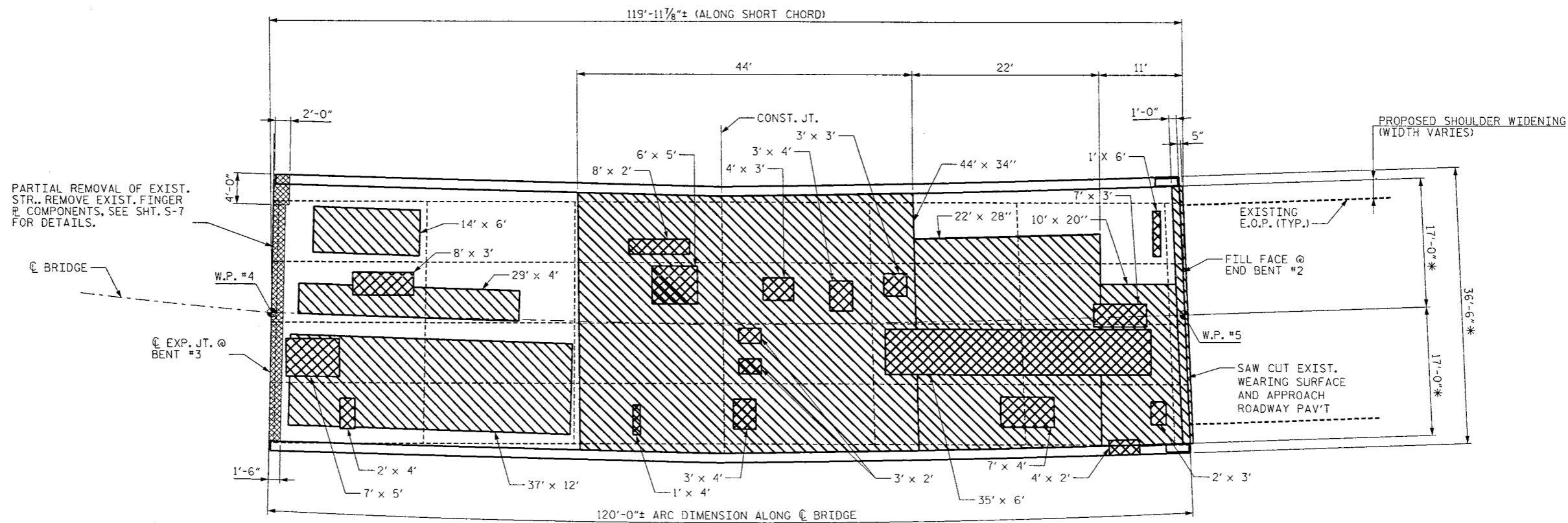
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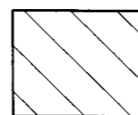
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DRAWN BY: J. L. HENNEKES DATE: 02-04-10  
 CHECKED BY: J. T. KELVINGTON DATE: 02-04-10

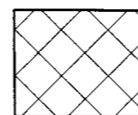
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PLAN OF SPAN D - DECK REPAIRS



CLASS II SURFACE PREPARATION



CLASS III SURFACE PREPARATION

L' X W' = LENGTH OF AREA ALONG  $\text{\textcircled{C}}$  BRIDGE X WIDTH OF AREA NORMAL TO  $\text{\textcircled{C}}$  BRIDGE ±

\* RADIAL DIMENSIONS

PROJECT NO. B-5209  
GRAHAM COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

DECK REPAIR DETAILS  
 SPAN D

DECK REHAB. FOR BRIDGE NO. 10

REVISIONS						SHEET NO.
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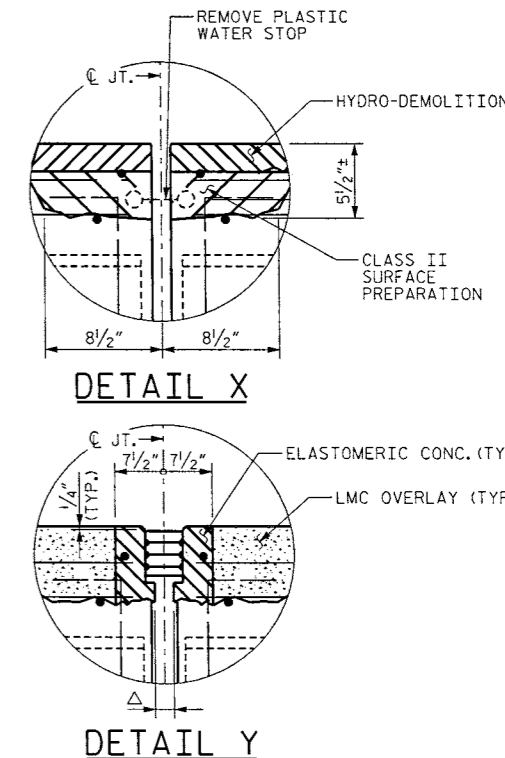
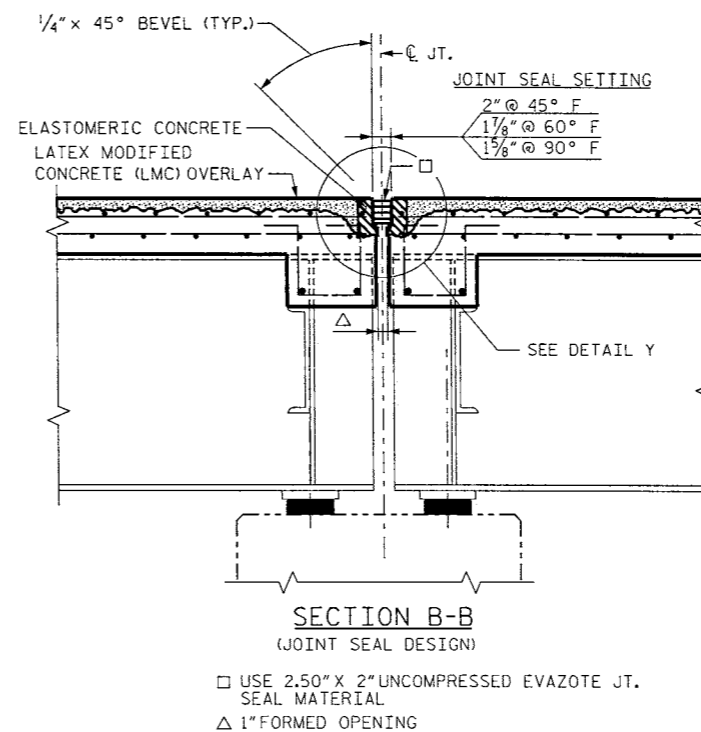
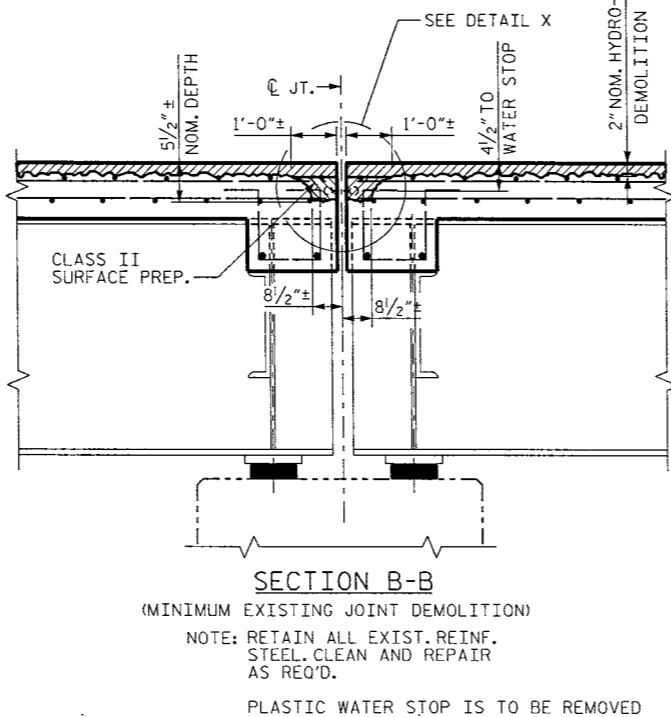
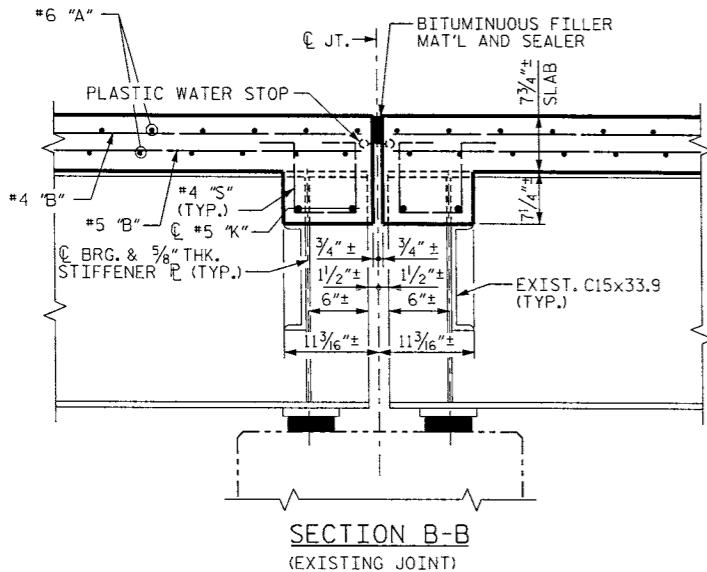
*Joseph J. Kelvington*  
 4/2/10



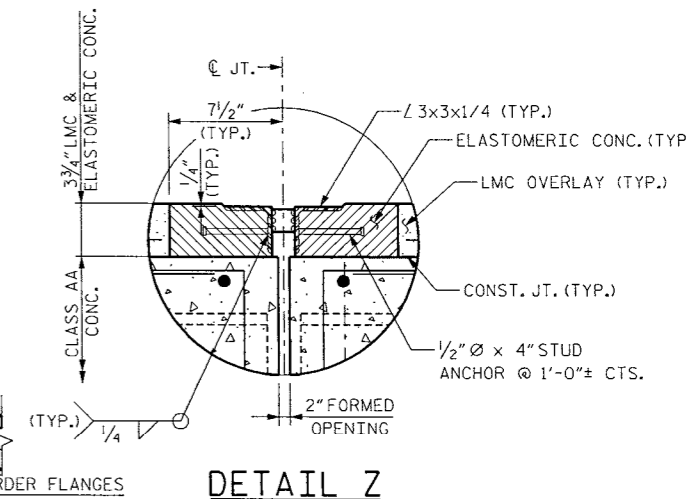
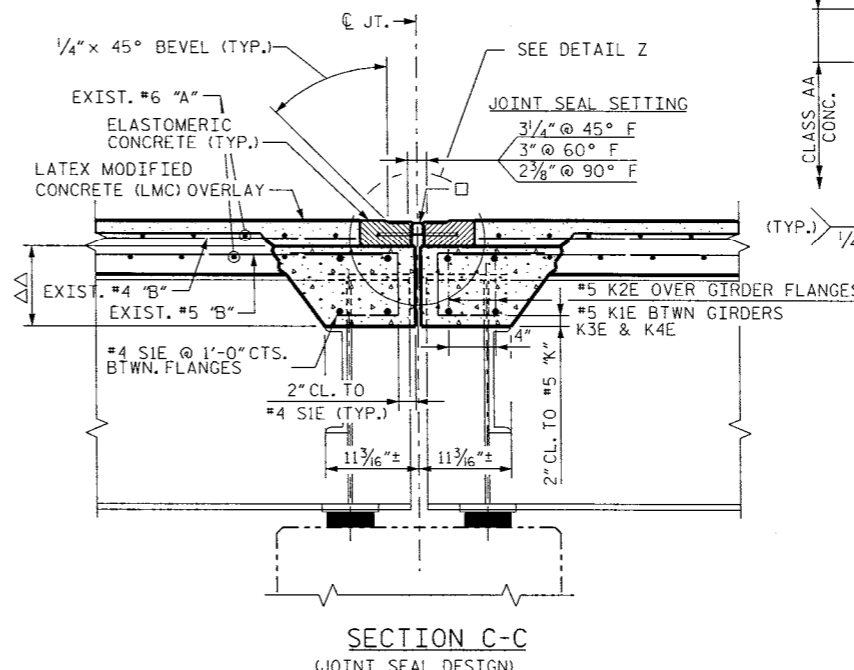
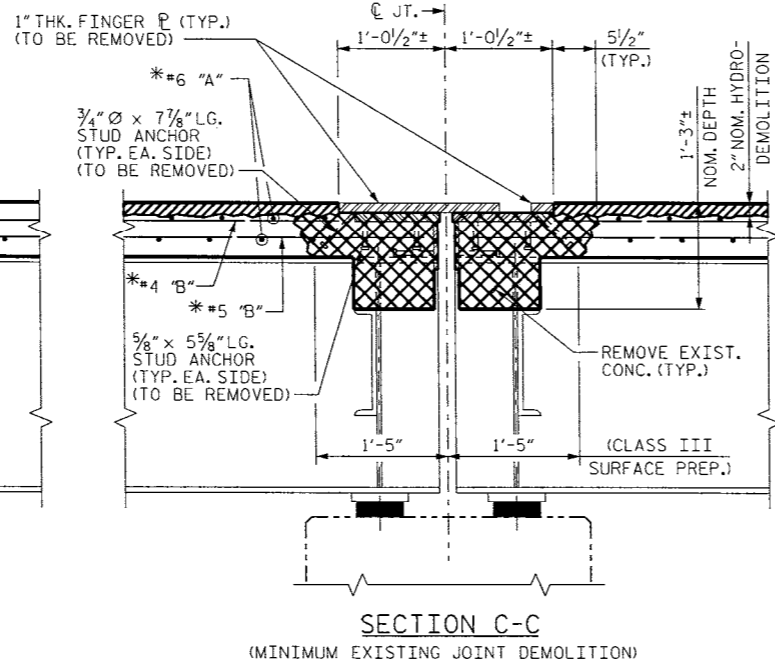
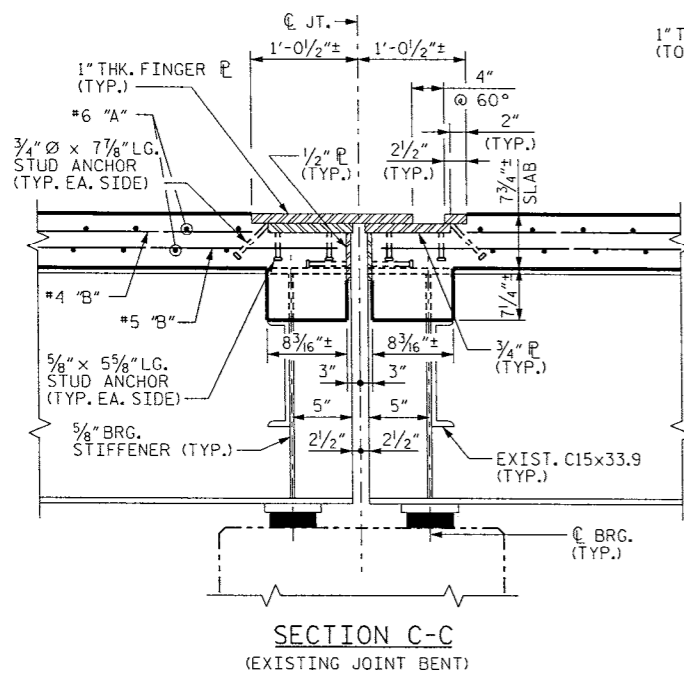
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EXPANSION JOINT DETAILS @ BENTS 1 & 2



NOTE: DIAPH. 'K' & 'S' BARS NOT SHOWN FOR CLARITY.  
DECK REINF. SHOWN IS TYP. EA. SIDE OF THE JOINT.

NOTE: DIAPH. 'K' & 'S' BARS NOT SHOWN FOR CLARITY. (TO BE REMOVED)  
\* DECK REINF. SHOWN IS TYP. EA. SIDE OF THE JOINT. (TO BE RETAINED)

□ USE 3 3/16" X 2 1/2" UNCOMPRESSED EVAZOTE JT. SEAL MATERIAL  
△△ 1 1/4" CLASS AA CONCRETE  
"E" SUFFIX DENOTES EPOXY COATED REINF. STEEL

EXPANSION JOINT DETAILS @ BENT 3

PROJECT NO. B-5209  
GRAHAM COUNTY  
STATION: \_\_\_\_\_

DRAWN BY: J. L. HENNEKES DATE: 02-04-10  
CHECKED BY: J. T. KELVINGTON DATE: 02-04-10

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

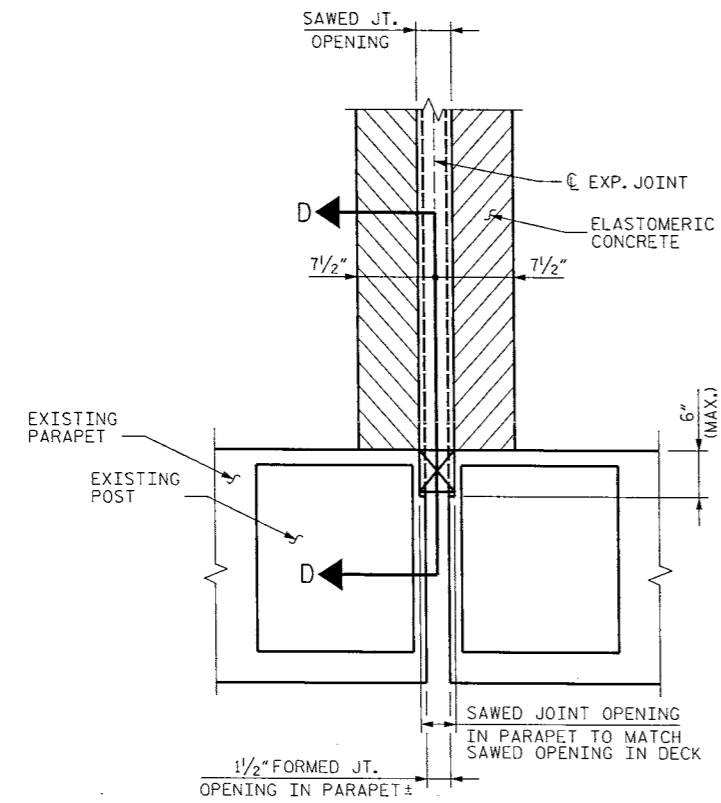
EXPANSION JOINT DETAILS 1  
DECK REHAB. FOR BRIDGE NO. 10

REVISIONS						SHEET NO. S-7
NO.	BY:	DATE:	NO.	BY:	DATE:	
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2			4			

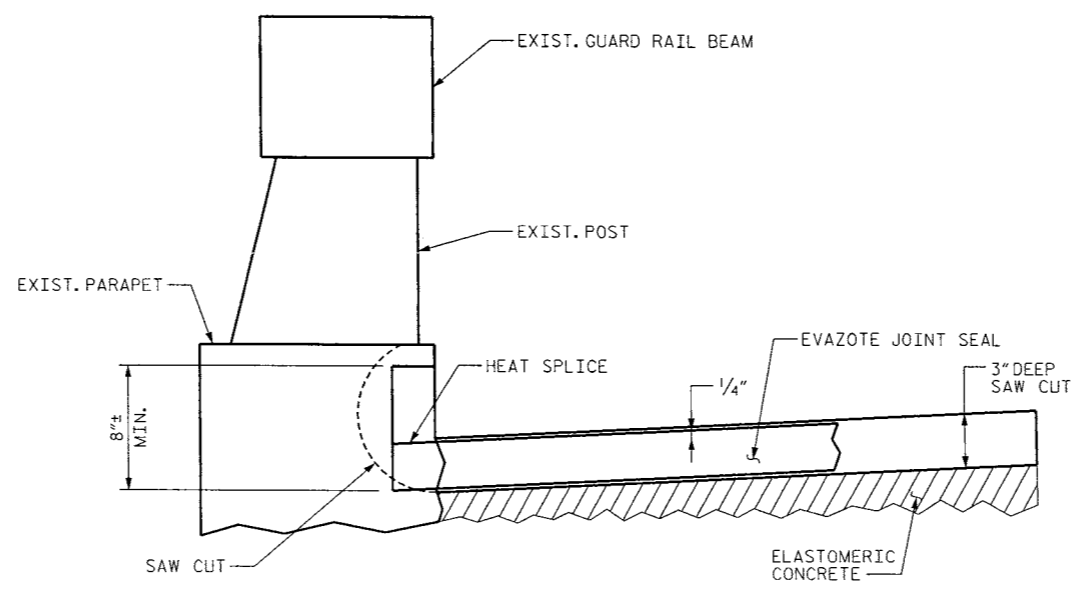
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9:25:46 AM \$USER\$  
 2/12/2010  
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**DETAIL W**  
 PARTIAL PLAN @ JOINT  
 PARAPET @ O.S. SHLDR. SHOWN.

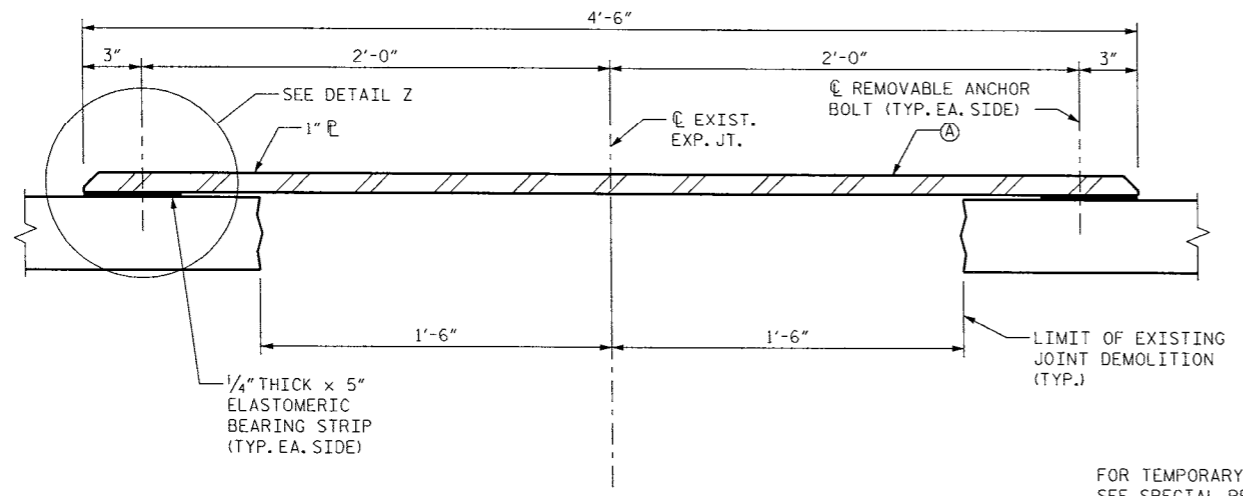


**SECTION D-D**  
 CONTRACTOR SHALL EXERCISE CARE TO AVOID CUTTING OR DAMAGING EXISTING REINF. STEEL.

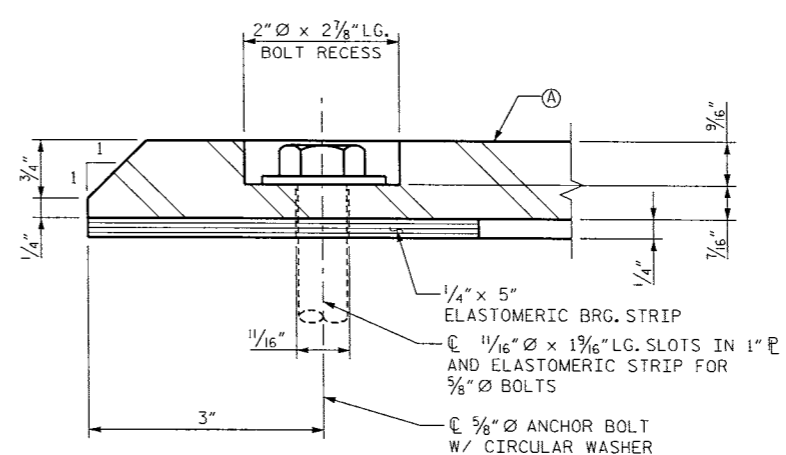
**ESTIMATED VOL. OF ELASTOMERIC CONCRETE**

BENT 1	18.2 CF
BENT 2	18.2 CF
BENTS 1-2 TOTAL ELASTOMERIC CONC. = 36.4 CF	

**JOINT SEAL REPLACEMENT @ BENT 1 AND BENT 2**



**SECTION G-G**



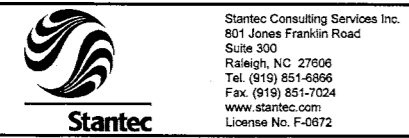
**DETAIL Z**

FOR TEMPORARY STEEL COVER  $\bar{P}$ , SEE SPECIAL PROVISIONS.  
 (A) SURFACE TREATMENT FOR SKID RESISTANCE BONDED TO  $\bar{P}$   
 REQUIRED ULTIMATE ANCHOR BOLT RESISTANCE:  
 TENSION = 10.5k  
 SHEAR = 1.0k

**TEMPORARY COVER PLATE DETAILS FOR JOINT SEAL REPLACEMENT @ BENT 3**

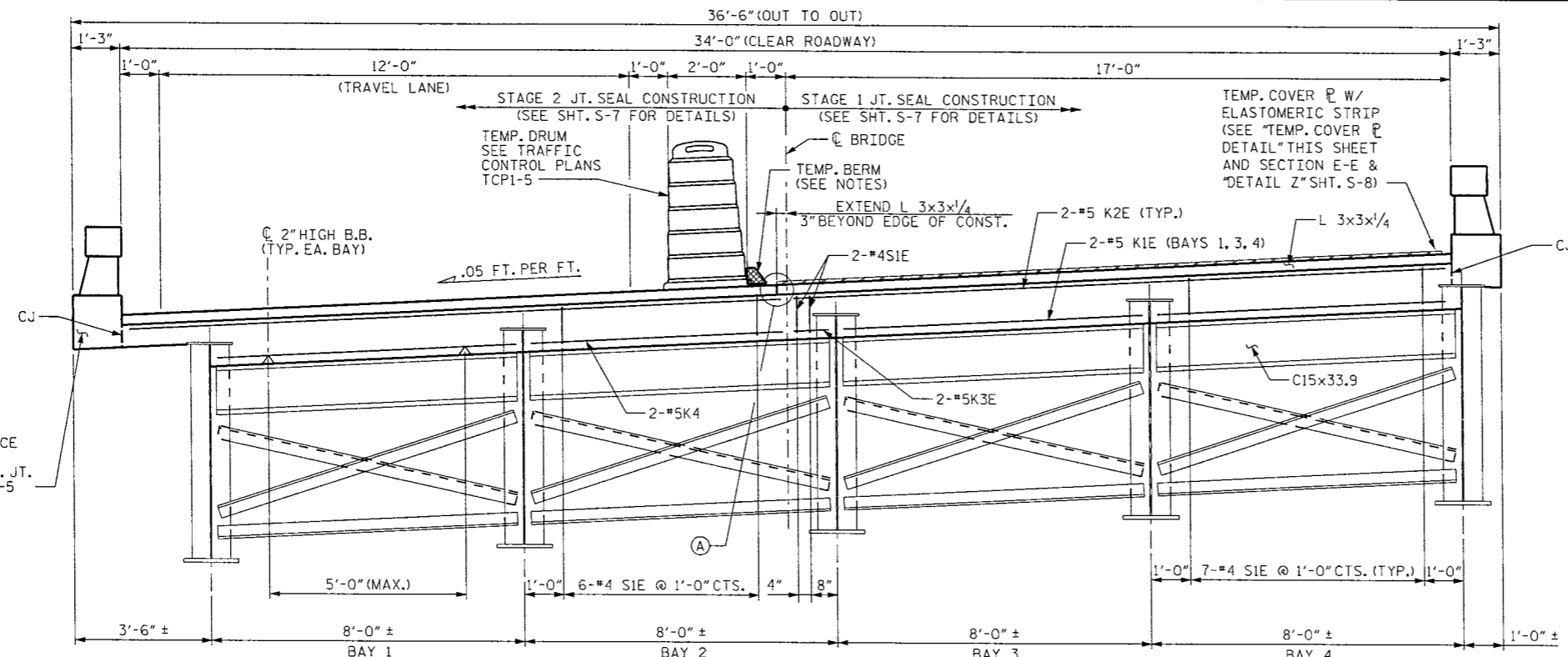
PROJECT NO. B-5209  
 GRAHAM COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
EXPANSION JOINT DETAILS 2					
DECK REHAB. FOR BRIDGE NO. 10					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S-8
TOTAL SHEETS					10



DRAWN BY: J. L. HENNEKES DATE: 02-04-10  
 CHECKED BY: J. T. KELVINGTON DATE: 02-04-10

*Joseph T. Kelvington*  
 PROFESSIONAL ENGINEER  
 NO. 13406  
 STATE OF NORTH CAROLINA

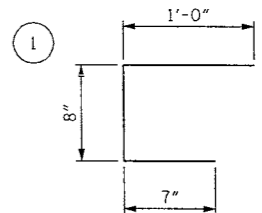


NOTE: ALL STRUCTURAL STEEL ELEMENTS SHOWN ARE EXISTING AND SHALL REMAIN IN PLACE

TYP. SECTION - BENT 3 MODIFICATION DETAILS.  
SHOWING BENT DIAPHRAGMS

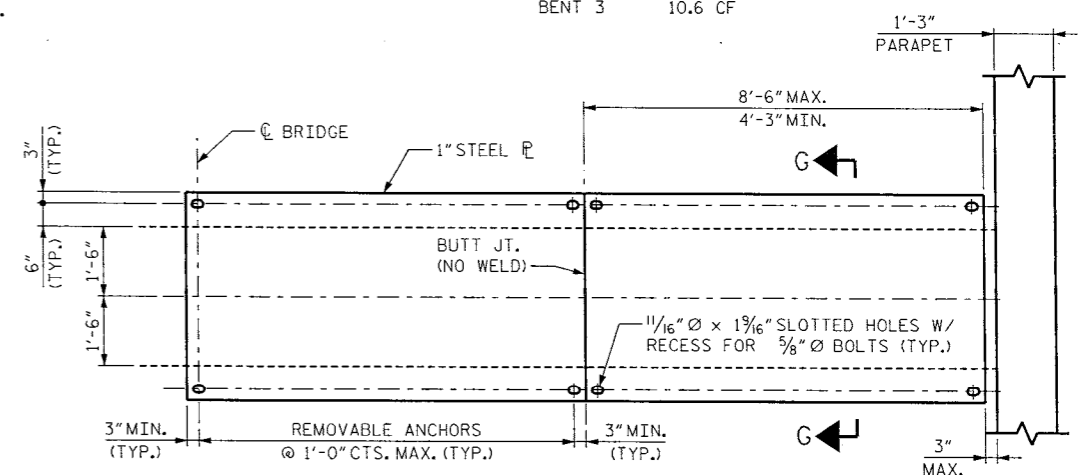
(A) BUTT JT. NO WELD.

BILL OF MATERIAL EXPANSION JOINT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* K1E	12	5	STR	7'-4"	92
* K2E	8	5	STR	16'-8"	139
* K3E	4	5	STR	10"	3
* K4E	4	5	STR	6'-5"	27
* S1E	58	4	1	2'-3"	87
* EPOXY COATED REINFORCING STEEL					LBS 348
APPROXIMATE CLASS AA CONCRETE					CY 34.4



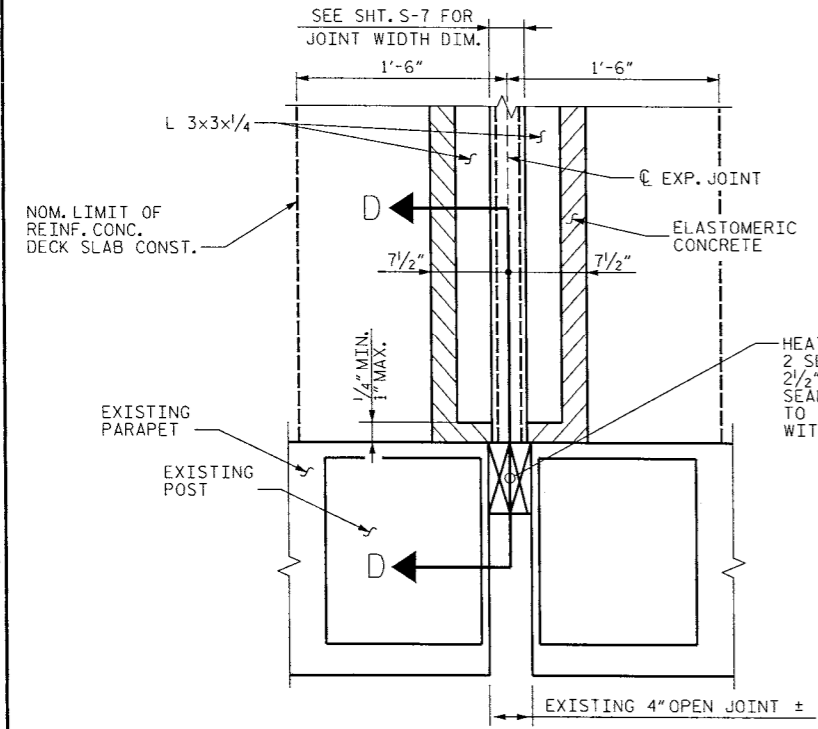
ESTIMATED VOL. OF ELASTOMERIC CONCRETE

BENT 3 10.6 CF

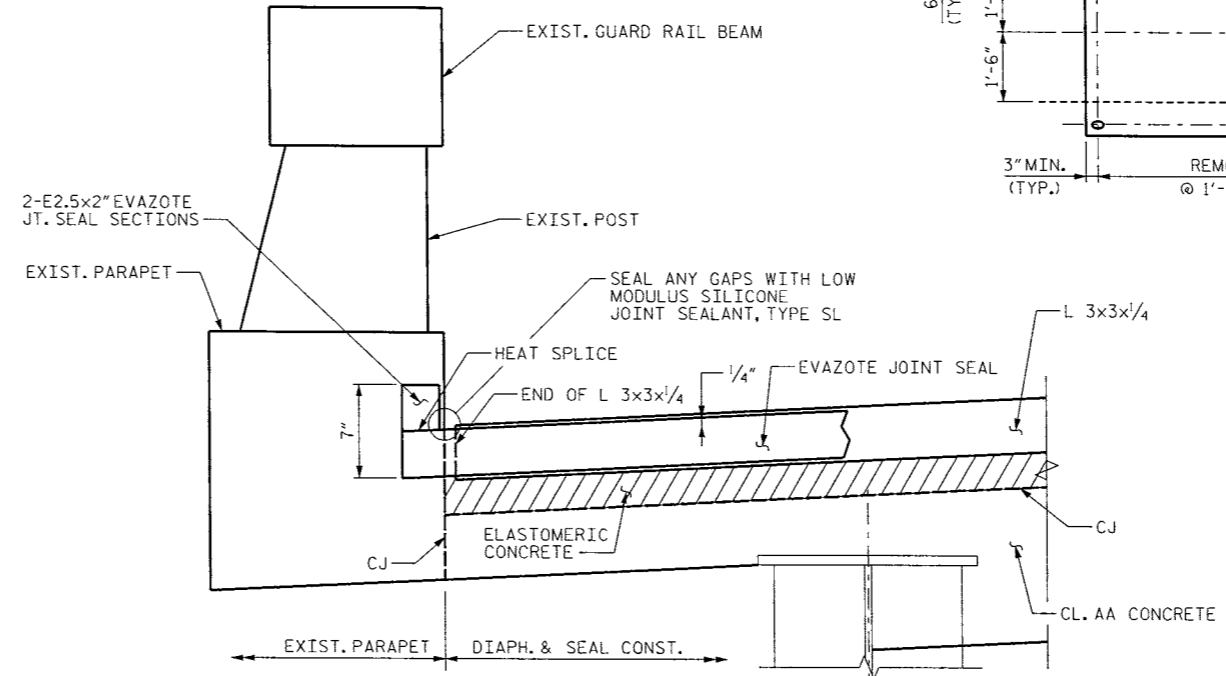


TEMP. COVER PL. DETAIL  
PLAN

PROJECT NO. B-5209  
GRAHAM COUNTY  
STATION: \_\_\_\_\_



DETAIL U  
PARTIAL PLAN @ JOINT  
PARAPET @ O.S. SHLDR. SHOWN.



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.

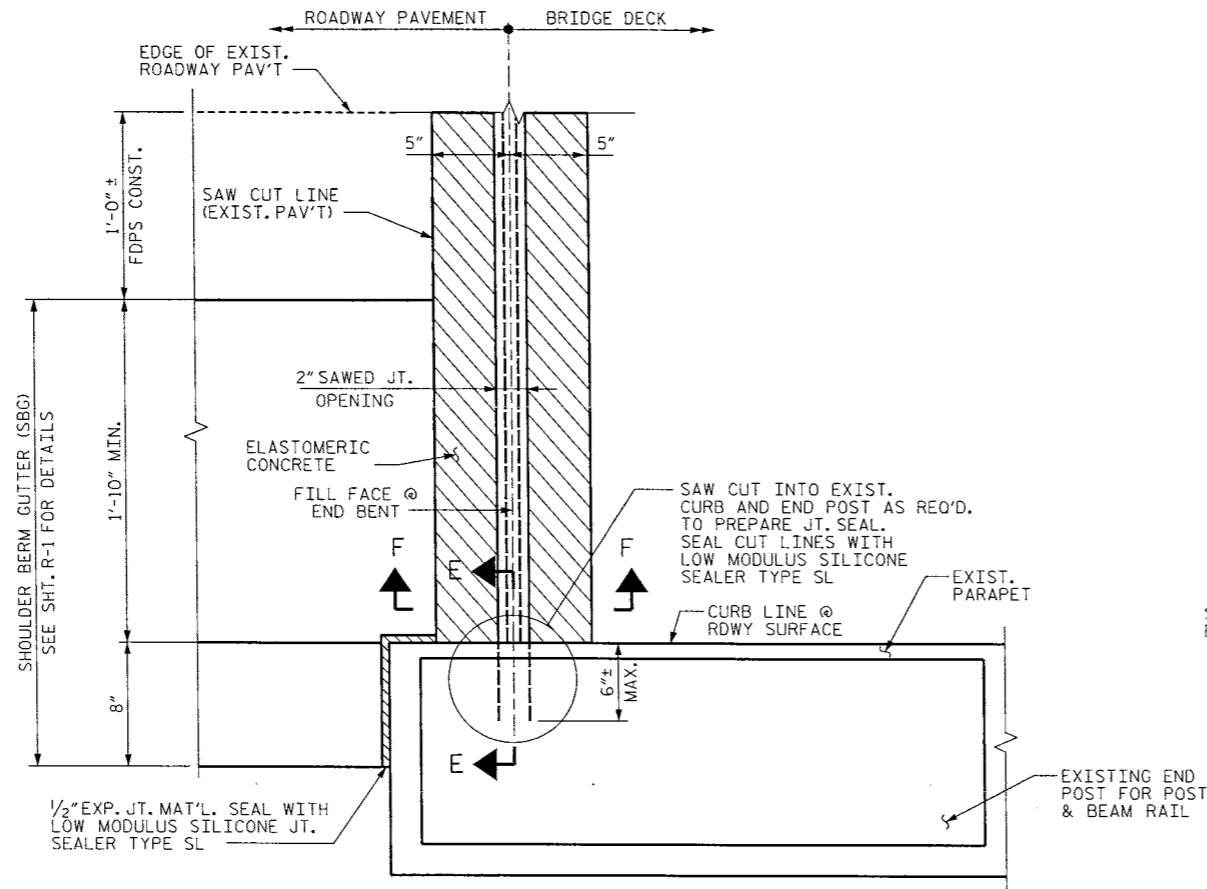
*Joseph T. Kelvington*  
Professional Engineer  
Seal 13406  
North Carolina

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
EXPANSION JOINT DETAILS 3					
DECK REHAB. FOR BRIDGE NO. 10					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					10

**Stantec**  
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

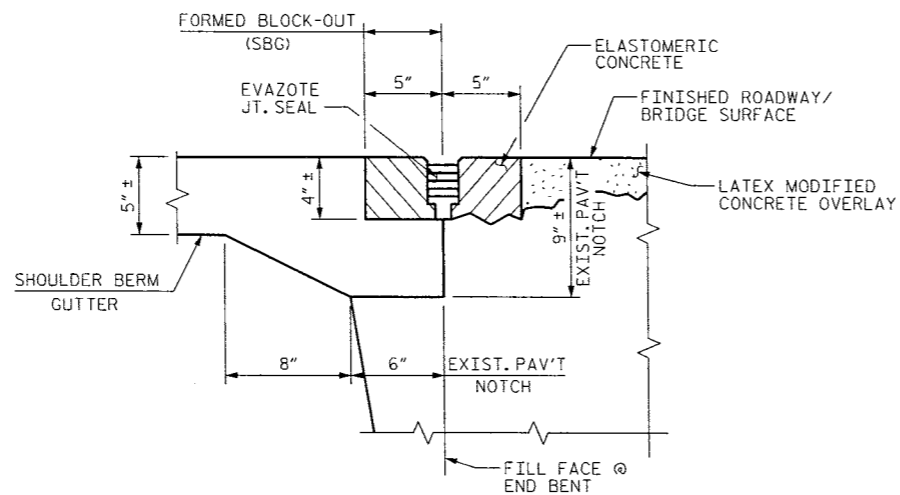
DRAWN BY: J. L. HENNEKES DATE: 02-04-10  
CHECKED BY: J. T. KELVINGTON DATE: 02-04-10

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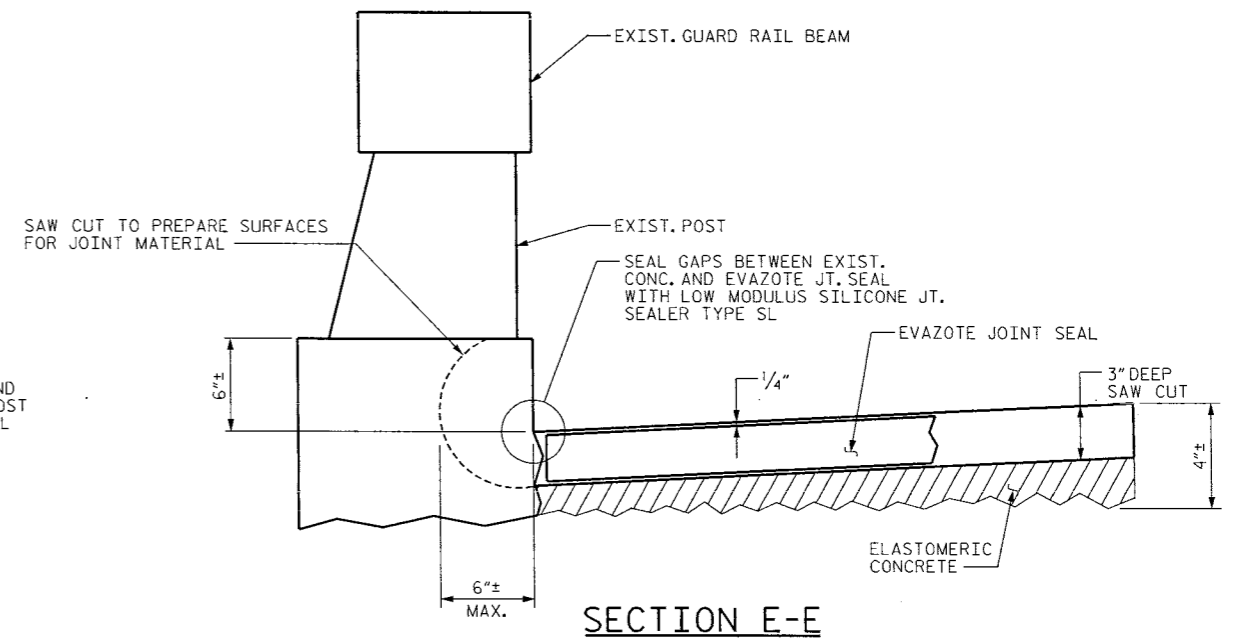
**DETAIL V**  
**PARTIAL PLAN @ END BENT #1**  
 (END BENT #2 SIMILAR)

SEE SHT. NO. S-1, DETAIL B, FOR CROSS SECTION THRU JOINT AREA



**SECTION F-F**

SEE DETAIL "B" ON SHEET S-1 FOR JOINT SEAL INFORMATION



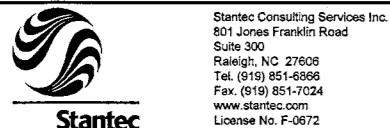
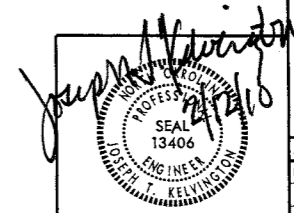
**SECTION E-E**

**ESTIMATED VOL. OF ELASTOMERIC CONCRETE**

END BENT 1	8.5 CF
END BENT 2	8.5 CF
END BENTS 1-2 TOTAL ELASTOMERIC CONC. = 17.0 CF	

PROJECT NO. B-5209  
GRAHAM COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-10
END BENT JOINT SEAL DETAILS						
DECK REHAB. FOR BRIDGE NO. 10						TOTAL SHEETS 10
REVISIONS						
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			



DRAWN BY : J. L. HENNEKES DATE : 02-04-10  
 CHECKED BY : J. T. KELVINGTON DATE : 02-04-10

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2/8/2010  
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 gkarageorge

**WBS 45307.3.STI**

**TIP NO. B-5209**

STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO. <b>B-5209</b>	SHEET NO. TCP-1
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**PLAN FOR PROPOSED  
 TRAFFIC CONTROL, MARKING & DELINEATION  
 GRAHAM COUNTY**

**LOCATION: BRIDGE NO.10 US 129 TAPOCO RD. OVER SANTEETLAH LAKE**

**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
1130.01	DRUMS
1135.01	CONES
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
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	PAVEMENT MARKER SPACING
1253.01	SNOWPLOWABLE PAVEMENT MARKERS
1261.01	GUARDRAIL & BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL & BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION

**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	PROJECT PHASING
TCP-4	PHASE I DETAIL
TCP-5	PHASE II DETAIL

**LEGEND**

- GENERAL**
- DIRECTION OF TRAFFIC FLOW
  - NORTH ARROW
  - EXIST. PVMT.
  - 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
  - PORTABLE CONCRETE BARRIER
  - TEMPORARY CRASH CUSHION
  - CHANGEABLE MESSAGE SIGN
  - TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
  - LAW ENFORCEMENT
  - FLAGGER

APPROVED: DATE: <u>February 8, 2010</u>	PLAN PREPARED BY: 	Stantec Consulting Services Inc. Suite 300, 801 Jones Franklin Road Raleigh, NC 27606 Tel. 919.851.6866 Fax. 919.851.7024 www.stantec.com
	BETSY L. WATSON, PE TRAFFIC CONTROL ENGINEER	
	GEORGE KARAGEORGE TRAFFIC CONTROL DESIGNER	

## 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.

### TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES DURING BRIDGE DECK PRESERVATION OPERATIONS AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
ALL ROADS	7:00 A.M.-6:00 P.M. MONDAY THRU FRIDAY (DAILY) 7:00 A.M. SATURDAY-6:00 P.M. SUNDAY

EXCEPTION IN THE LANE CLOSURE HOUR RESTRICTIONS WILL BE MADE FOR POURING AND PARTIAL CURING OF CLASS AA AND ELASTOMERIC CONCRETE DURING REPLACEMENT OF THE EXISTING FINGER JOINT WITH THE NEW ARMORED EVAZOTE JOINT SEAL. THIS EXCEPTION WILL BE MADE FOR FOUR (4) - 24 HOUR PERIODS WHERE LANE CLOSURES WILL BE ALLOWED TO BE IN PLACE CONTINUOUSLY IN ORDER FOR THE CONCRETE MATERIALS TO PARTIALLY CURE. STEEL PLATES WILL BE USED TO COVER JOINT WHEN TRAFFIC IS ALLOWED TO PROCEED.

THERE ARE NO LANE CLOSURE HOURLY RESTRICTIONS DURING GUARDRAIL REPLACEMENT, MILLING, ASPHALT PAVING AND FINAL PAVEMENT MARKING OPERATIONS. HOWEVER, HOLIDAY RESTRICTIONS, AS LISTED BELOW, SHALL APPLY FOR ALL OPERATIONS.

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

HOLIDAY LANE CLOSURE RESTRICTIONS APPLY FOR ALL WORK OPERATIONS.

ROAD NAME
ALL ROADS

### HOLIDAY

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

IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 6:00 P.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 7:00 A.M. THE TUESDAY AFTER INDEPENDENCE DAY.

- FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 P.M. FRIDAY AND 7:00 A.M. TUESDAY.
- FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 P.M. TUESDAY TO 7:00 A.M. MONDAY.
- FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 P.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 7:00 A.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

### LANE AND SHOULDER CLOSURE REQUIREMENTS

- 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.
- 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.
- 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 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.

### PAVEMENT EDGE DROP OFF REQUIREMENTS

- BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAVE AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:
  - BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.
  - BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.
  - BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.
- DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) IN ADVANCE AND A MINIMUM OF 500 FT. EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

### MISCELLANEOUS

- LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.
- ALL DIMENSIONS AND STATIONS IN THE TRAFFIC CONTROL PLAN AND PHASING ARE APPROXIMATE; FIELD ADJUST AS NECESSARY OR AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR IS TO FURNISH, INSTALL, MAINTAIN, RELOCATE AND REMOVE CHANGEABLE MESSAGE SIGNS DURING VARIOUS STAGES OF CONSTRUCTION AT THE DISCRETION OF THE ENGINEER TO ADEQUATELY INFORM MOTORISTS OF CHANGING WORK ZONE CONDITIONS.
- ENSURE THE OVERSIZE/OVERWEIGHT PERMIT UNIT (919) 733-4740 HAS BEEN ADVISED OF THE ONGOING TRAFFIC OPERATIONS THROUGH THE DIVISION OFFICE. INFORM OF THE AREAS OF CONSTRICTED HORIZONTAL CLEARANCES AND NARROW LANES.
- COORDINATE WITH THE ENGINEER TO MAKE SURE THAT THE NECESSARY PUBLIC INFORMATION MEASURES HAVE BEEN ADDRESSED.

### TRAFFIC PATTERN ALTERATIONS

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

### TRAFFIC CONTROL DEVICES

N) SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY WHEN LANE CLOSURES ARE NOT IN EFFECT. WHEN SKINNY DRUMS ARE ALLOWED REFER TO SECTION 1180 OF STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES OR AS SHOWN IN THE PLANS.

### PAVEMENT MARKINGS AND MARKERS



- USE PAINT TO REPLACE EXISTING PAVEMENT MARKINGS THAT WERE OBLITERATED BY CONSTRUCTION OPERATIONS BEFORE LANES ARE RE-OPENED TO TRAFFIC.
- UPON COMPLETION OF ALL OTHER CONSTRUCTION OPERATIONS INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
US 129	PAINT (2 APPS.)	SNOWPLOWABLE

REPLACE ANY EXISTING SNOWPLOWABLE PAVEMENT MARKERS THAT WERE REMOVED DUE TO CONSTRUCTION OPERATIONS, AS DIRECTED BY THE ENGINEER.

Q) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

2/8/2010 10:14:10 AM SHEET15\TCP-PH\_02.dgn gherard@stantec.com

 <b>Stantec</b> Stantec Consulting Services Inc. Suite 300, 801 Jones Franklin Road Raleigh, NC 27606 Tel. 919.851.6866 Fax. 919.851.7024 www.stantec.com	SEAL  SIGNATURE: <i>L. Watson</i> DATE: 2/8/10	<h2 style="margin: 0;">GENERAL NOTES</h2>								
	SCALE: NONE DATE: FEB. 2010 DWG. BY: GK DESIGN BY: GK REVIEWED BY: BLW	<table border="1" style="width: 100%;"> <thead> <tr> <th colspan="2">REVISIONS</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	REVISIONS							
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## TRAFFIC CONTROL PHASING

FOR ALL CONSTRUCTION OPERATIONS DURING THIS PROJECT USE FLAGGER LANE CLOSURES IN ACCORDANCE WITH RDWY. STD. DWG. 1101.02, SHEET 1 OF 9.

### PHASE I (TCP-4)

- STEP 1: INSTALL CHANGEABLE MESSAGE SIGNS AND WORK ZONE ADVANCE WARNING SIGNS "ROAD WORK AHEAD" (W20-1) AND "END ROAD WORK" (G20-2) ON US 129 AND INTERSECTING ROADS AS SHOWN ON SHEET TCP-4.
- STEP 2: USING FLAGGING OPERATION LANE CLOSURES, CONSTRUCT PAVED SHOULDERS AND REPLACE EXISTING GUARDRAIL AT THE BRIDGE APPROACHES ON US 129 AS SHOWN ON SHEET TCP-4 AND IN THE ROADWAY PLAN. NOTE THAT LANE CLOSURE HOUR RESTRICTIONS DO NOT APPLY FOR GUARDRAIL AND ASPHALT PAVING OPERATIONS (SEE GENERAL NOTES).

NOTE: REPLACE SECTIONS OF GUARDRAIL IN A CONTINUOUS OPERATION. WHEN LANE CLOSURES ARE REMOVED ALL GUARDRAIL, WHETHER EXISTING OR PROPOSED MUST BE IN PLACE.

THE EXISTING OVERLOOK AREA NEAR THE SOUTH END OF THE BRIDGE MAY BE USED AS A STAGING AREA FOR CONSTRUCTION EQUIPMENT AND MATERIALS AS DIRECTED BY THE ENGINEER. CLOSE THE OVERLOOK AREA USING DRUMS AND BARRICADES TO PREVENT TRAFFIC FROM ENTERING.

### PHASE II (TCP-5)

CONSTRUCT BRIDGE DECK PRESERVATION STAGE I AND STAGE II USING FLAGGING OPERATION LANE CLOSURES, AS SHOWN ON SHEET TCP-5 AND IN THE STRUCTURES PLAN. REFER TO GENERAL NOTES FOR LANE CLOSURE TIME RESTRICTIONS.

USE STEEL PLATES AS NECESSARY TO PROTECT JOINT WORK UPON RE-OPENING LANES TO TRAFFIC.



WHEN USING STEEL PLATE ON ROADWAY MODIFY CHANGEABLE MESSAGE SIGN MESSAGE AS SHOWN ON SHEET TCP-5.

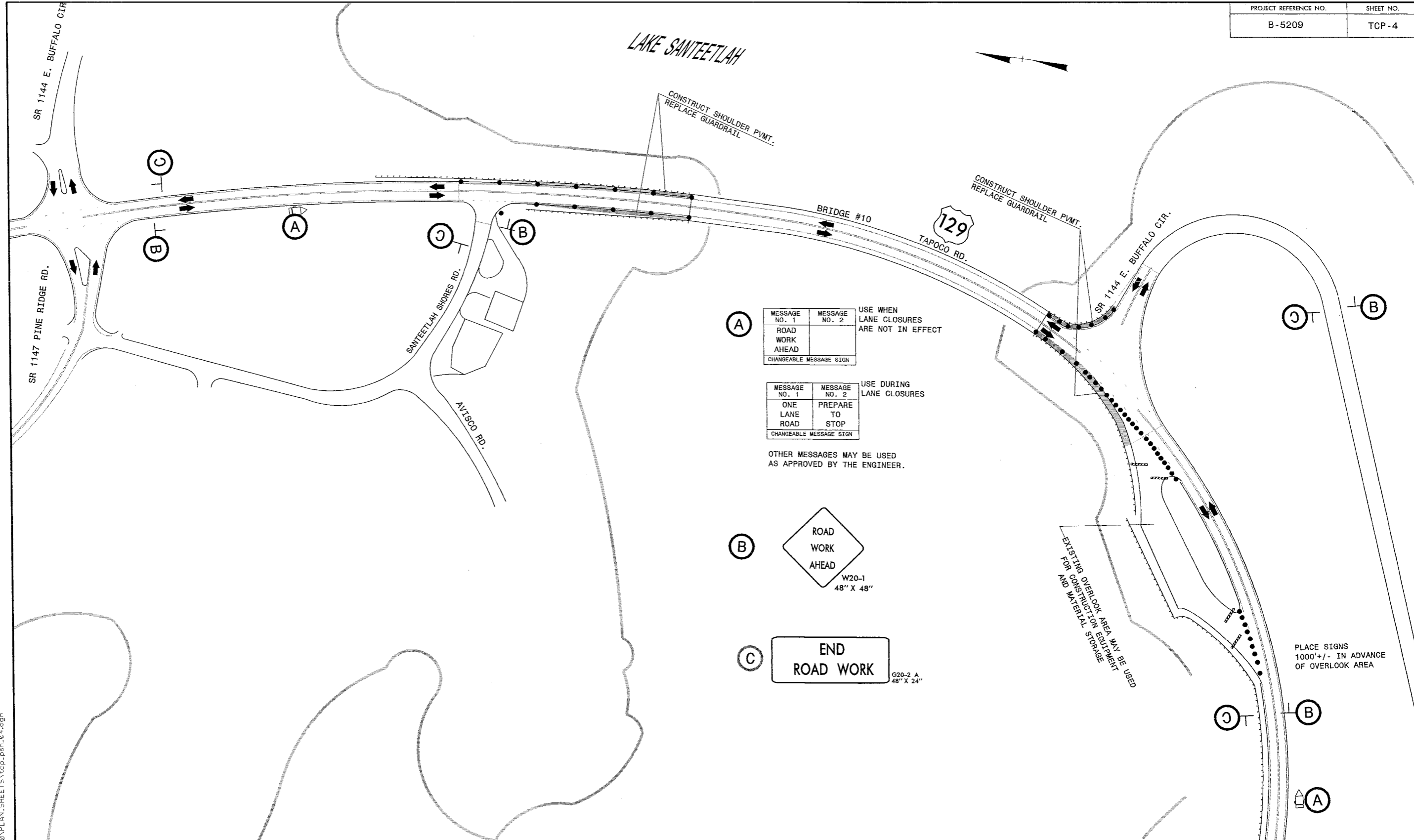
### PHASE III

PERFORM MILLING AND PAVING OPERATIONS AND PLACE FINAL PAVEMENT MARKINGS AND MARKERS USING FLAGGING OPERATION LANE CLOSURES.

NOTE THAT LANE CLOSURE HOUR RESTRICTIONS DO NOT APPLY FOR ASPHALT PAVING OPERATIONS AND PLACEMENT OF FINAL PAVEMENT MARKING (SEE GENERAL NOTES).

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 <b>Stantec</b> <small>Stantec Consulting Services Inc.          Suite 300, 801 Jones Franklin Road          Raleigh, NC          27605          Tel. 919.851.6866          Fax. 919.851.7024          www.stantec.com</small>	SEAL	 <i>L. Watson</i> 2/8/10	TRAFFIC CONTROL PHASING						
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**A**

MESSAGE NO. 1	MESSAGE NO. 2	USE WHEN LANE CLOSURES ARE NOT IN EFFECT
ROAD WORK AHEAD		

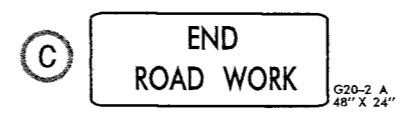
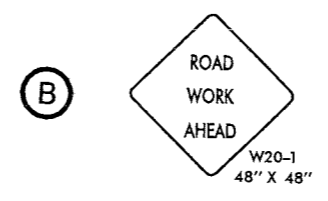
CHANGEABLE MESSAGE SIGN

**B**

MESSAGE NO. 1	MESSAGE NO. 2	USE DURING LANE CLOSURES
ONE LANE ROAD	PREPARE TO STOP	

CHANGEABLE MESSAGE SIGN

OTHER MESSAGES MAY BE USED AS APPROVED BY THE ENGINEER.



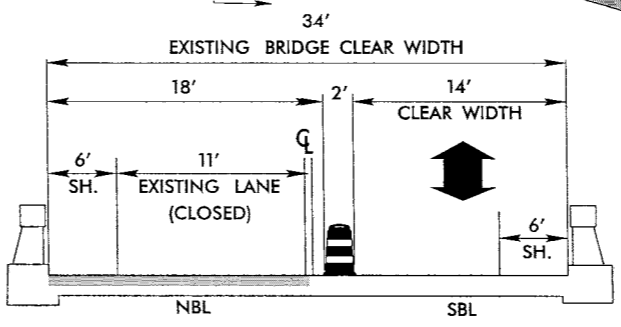
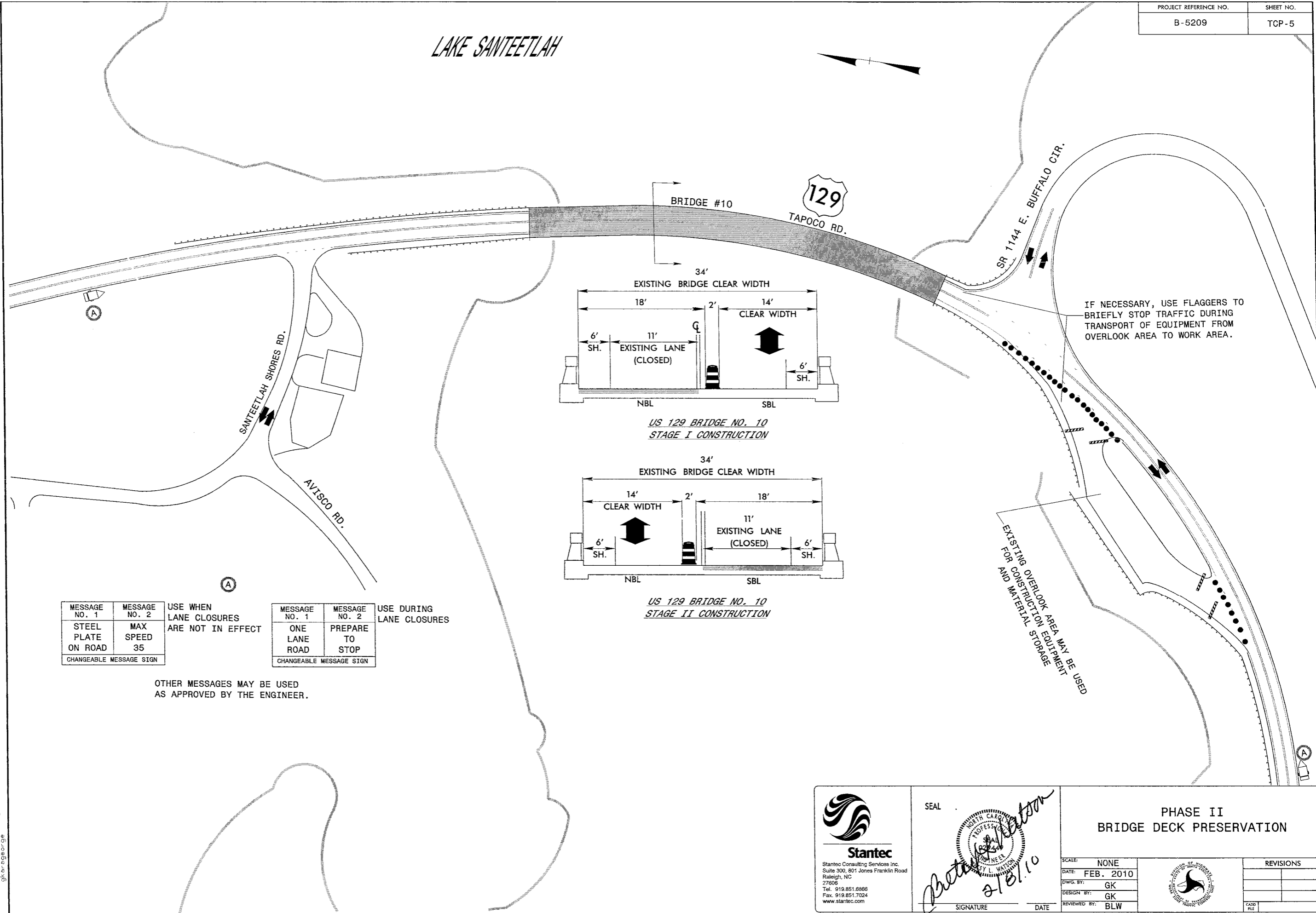
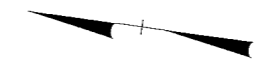
EXISTING OVERLOOK AREA MAY BE USED FOR CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE

PLACE SIGNS 1000'+/- IN ADVANCE OF OVERLOOK AREA

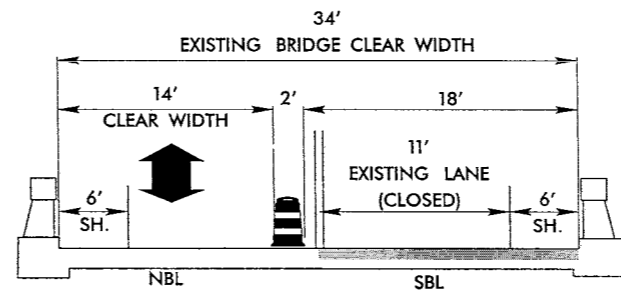
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<p><b>Stantec</b> Stantec Consulting Services Inc. Suite 300, 801 Jones Franklin Road Raleigh, NC 27606 Tel. 919.851.6886 Fax. 919.851.7024 www.stantec.com</p>	<p>SEAL</p> <p><i>Betsy L. Watson</i> 2/8/10</p>	<p><b>PHASE I</b> <b>GUARDRAIL REPLACEMENT</b> <b>SHOULDER CONSTRUCTION</b></p>									
	<p>SIGNATURE</p>	<p>DATE</p>	<p>SCALE: NONE DATE: FEB. 2010 DWG. BY: GK DESIGN BY: GK REVIEWED BY: BLW</p>	<table border="1"> <tr> <th colspan="2">REVISIONS</th> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </table>	REVISIONS						
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# LAKE SANTEETLAH



US 129 BRIDGE NO. 10  
STAGE I CONSTRUCTION



US 129 BRIDGE NO. 10  
STAGE II CONSTRUCTION

IF NECESSARY, USE FLAGGERS TO BRIEFLY STOP TRAFFIC DURING TRANSPORT OF EQUIPMENT FROM OVERLOOK AREA TO WORK AREA.

EXISTING OVERLOOK AREA MAY BE USED FOR CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE

MESSAGE NO. 1	MESSAGE NO. 2	USE WHEN LANE CLOSURES ARE NOT IN EFFECT	MESSAGE NO. 1	MESSAGE NO. 2	USE DURING LANE CLOSURES
STEEL PLATE ON ROAD	MAX SPEED 35		ONE LANE ROAD	PREPARE TO STOP	
CHANGEABLE MESSAGE SIGN			CHANGEABLE MESSAGE SIGN		

OTHER MESSAGES MAY BE USED AS APPROVED BY THE ENGINEER.

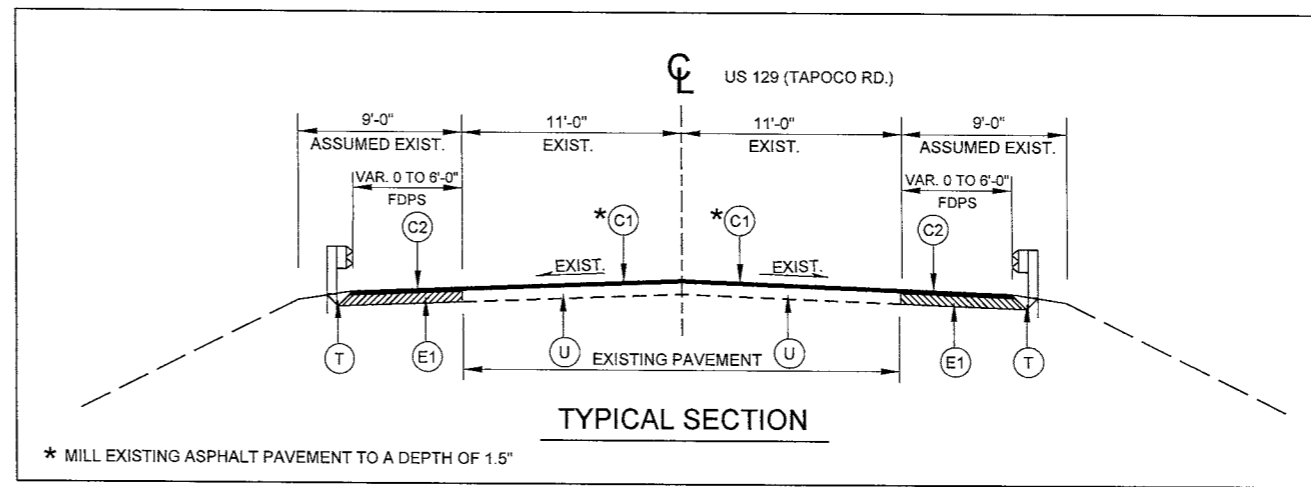
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<p><b>Stantec</b> Stantec Consulting Services Inc. Suite 300, 801 Jones Franklin Road Raleigh, NC 27606 Tel. 919.851.6866 Fax. 919.851.7024 www.stantec.com</p>	SEAL	<p><i>Gregory L. Watson</i> 2/18/10</p>	<b>PHASE II BRIDGE DECK PRESERVATION</b>										
	<p>SIGNATURE</p>		<p>DATE</p>	<p>SCALE: NONE</p> <p>DATE: FEB. 2010</p> <p>DWG. BY: GK</p> <p>DESIGN BY: GK</p> <p>REVIEWED BY: BLW</p>	<table border="1"> <tr> <th colspan="2">REVISIONS</th> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </table>	REVISIONS							
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8/17/99

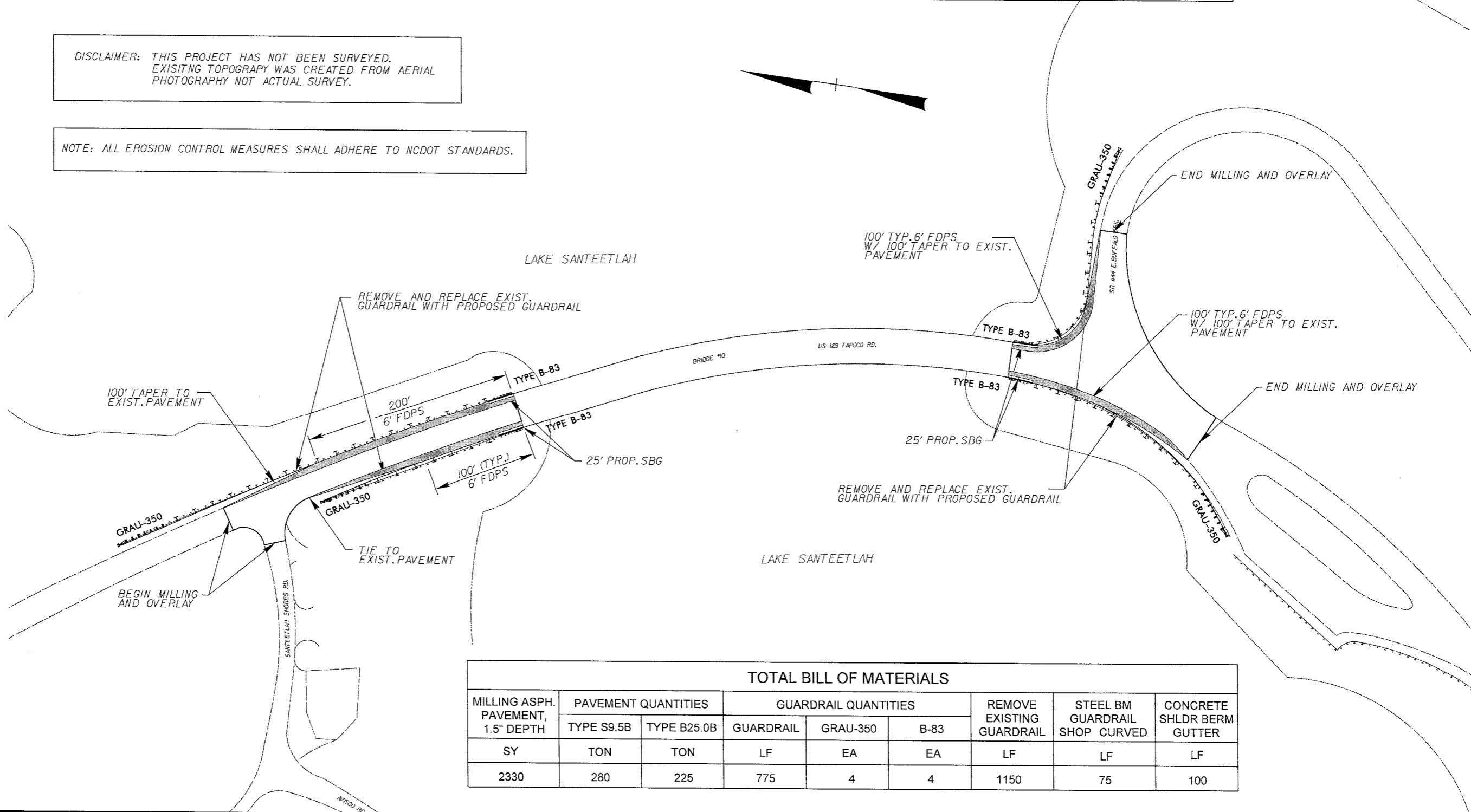
PAVEMENT SCHEDULE	
C1	PROP. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD., IN EACH OF TWO LAYERS
E1	PROP. 8" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD., IN EACH OF TWO LAYERS
T	EARTH MATERIAL
U	EXISTING ASPHALT PAVEMENT



PROJECT REFERENCE NO. B-5209	SHEET NO. R-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	

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

NOTE: ALL EROSION CONTROL MEASURES SHALL ADHERE TO NCDOT STANDARDS.



TOTAL BILL OF MATERIALS								
MILLING ASPH. PAVEMENT, 1.5" DEPTH	PAVEMENT QUANTITIES		GUARDRAIL QUANTITIES			REMOVE EXISTING GUARDRAIL	STEEL BM GUARDRAIL SHOP CURVED	CONCRETE SHLDR BERM GUTTER
	TYPE S9.5B	TYPE B25.0B	GUARDRAIL	GRAU-350	B-83			
SY	TON	TON	LF	EA	EA	LF	LF	LF
2330	280	225	775	4	4	1150	75	100

2/8/2010  
C:\Roadway\Proj\B5209\RDY\_PSH\_R1.DGN

