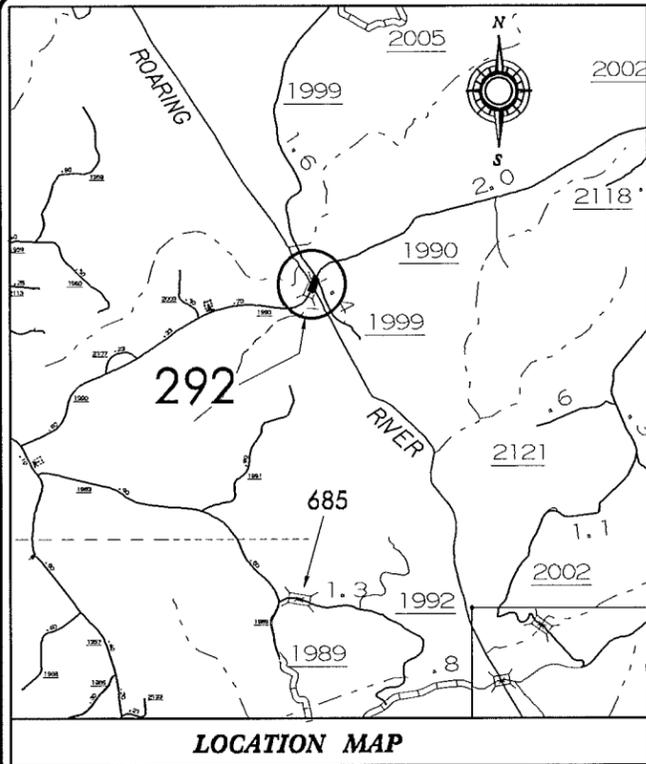


PROJECT: BP-5500V

DK00102



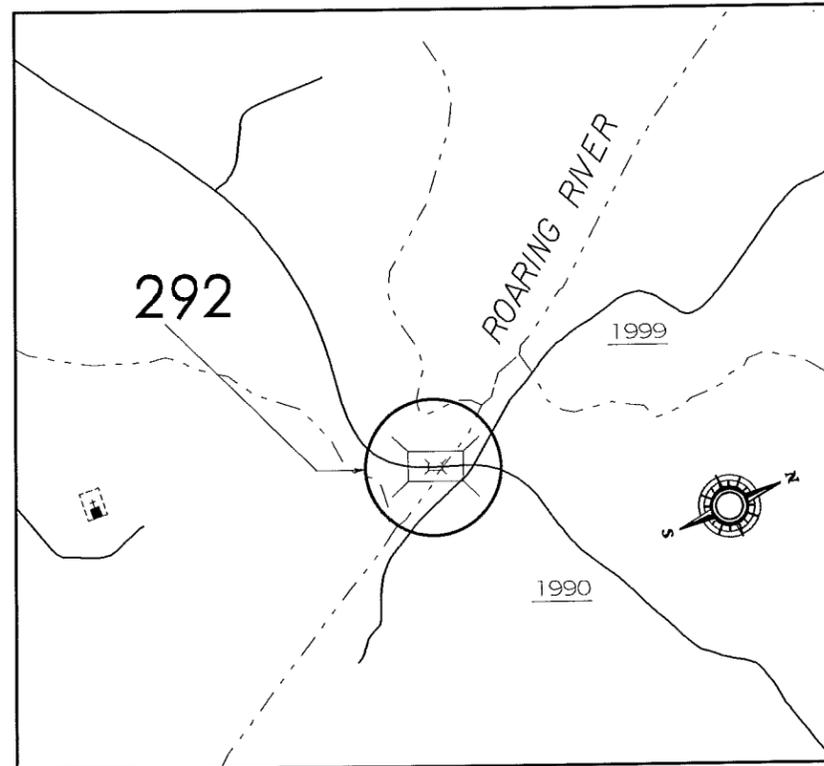
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WILKES COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP-5500V	1	
50070.1.1			P.E.
50070.3.FD22	BRZ-1990(1)		CONST.

LOCATION: WILKES COUNTY:
BRIDGE #292 ON SR 1990 OVER ROARING RIVER

TYPE OF WORK: BRIDGE PRESERVATION - BRIDGE PRESERVATION WITH LATEX MODIFIED CONCRETE OVERLAY SYSTEM, JOINT REPLACEMENT AND CLEANING AND PAINTING OF EXISTING STRUCTURE.



DESIGN DATA

WILKES
#292 ADT 2011 = 750

PROJECT LENGTH

BRIDGE WILKES #292 = .0549 MILE

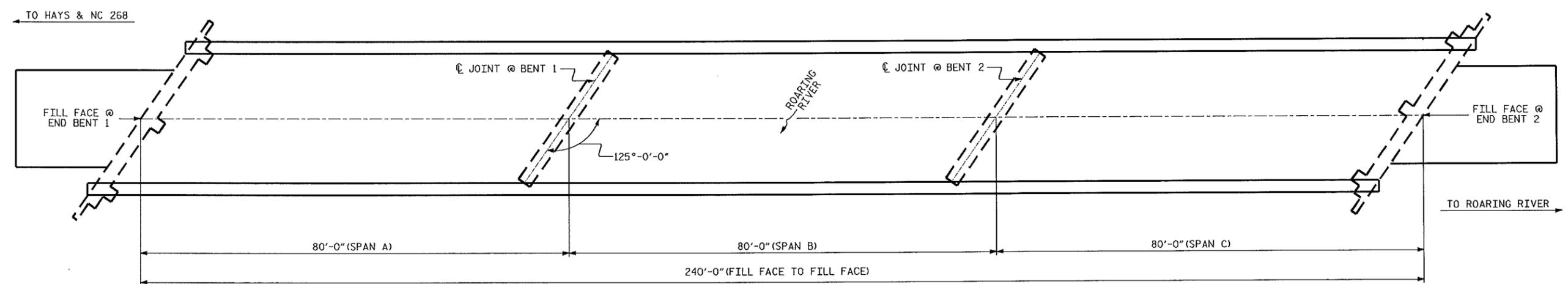
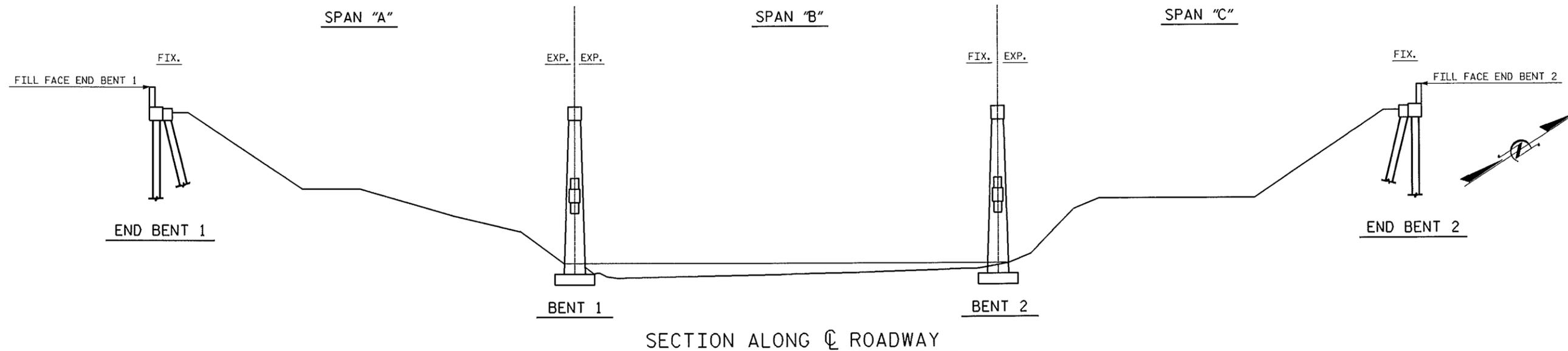
Prepared In the Office of:
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STRUCTURES MANAGEMENT UNIT - PRESERVATION & REPAIR GROUP
1000 BIRCH RIDGE DR. RALEIGH, N.C. 27610

RICK NELSON, P.E.
PROJECT ENGINEER

2012 STANDARD SPECIFICATIONS

LETTING DATE:
MARCH 20, 2014

02/16/14
TIMOTHY M. SHERRILL, P.E.
 PROJECT DESIGN ENGINEER



PLAN

SCOPE OF WORK:

- PARTIALLY REMOVE BRIDGE DECK CONCRETE, USING SCARIFICATION AND HYDRO-DEMOLITION METHODS
- OVERLAY PREPARED BRIDGE DECK WITH LATEX MODIFIED CONCRETE
- DEMOLISH EXISTING BRIDGE DECK JOINTS
- RECONSTRUCT BRIDGE DECK JOINTS AND INSTALL NEW FOAM JOINT SEALS
- MILL AND PAVE ASPHALT APPROACHES
- GROOVE CONCRETE BRIDGE DECK
- CLEAN AND PAINT THE STRUCTURAL STEEL OF THE EXISTING BRIDGE

PROJECT NO. BP-5500V
WILKES COUNTY
 BRIDGE NO. 292

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 BRIDGE 292 ON SR1990
 OVER ROARING RIVER



DRAWN BY : R. WEISZ DATE : 11/13
 CHECKED BY : T. SHERRILL DATE : 12/13
 DESIGN ENGINEER OF RECORD: DATE :

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



NOTES

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

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

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

THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH OF THE DECK,

FOR "SCARIFYING BRIDGE DECK", "HYDRO-DEMOLITION OF BRIDGE DECK", AND "CLASS II SURFACE PREPARATION" SEE "OVERLAY SURFACE PREPARATION" SPECIAL PROVISION.

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

FOR OVERLAY OF BRIDGE WITH "LATEX MODIFIED CONCRETE", SEE SPECIAL PROVISIONS.

FOR "FOAM JOINT SEALS", SEE SPECIAL PROVISIONS.

FOR "ELASTOMERIC CONCRETE", SEE SPECIAL PROVISIONS.

FOR "SUBMITTAL OF WORKING DRAWINGS", SEE SPECIAL PROVISIONS.

FOR SCARIFYING BRIDGE DECK, SEE "OVERLAY SURFACE PREPARATION" SPECIAL PROVISION.

FOR "FALSEWORK AND FORMWORK", SEE SPECIAL PROVISIONS.

FOR "CRANE SAFETY", SEE SPECIAL PROVISIONS.

FOR "GROUT FOR STRUCTURES", SEE SPECIAL PROVISIONS.

FOR "BRIDGE JOINT DEMOLITION", SEE SPECIAL PROVISIONS.

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

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

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

DURING CONSTRUCTION, BERMS OR APPROPRIATE MEASURES SHALL BE USED TO ENSURE HYDRO-DEMOLITION WATER DOES NOT FLOW OR MIGRATE INTO ACTIVE TRAVEL LANES.

LOCATION SKETCH

INFORMATION INDICATED ON THE LOCATION SKETCH SHALL BE CONSIDERED GENERAL INFORMATION, ONLY. CONTRACTOR SHALL CONFIRM, THROUGH OTHER SOURCES, SPECIFIC INFORMATION REGARDING THE BRIDGES, ROADWAYS, UTILITIES, THE SURROUNDING AREA, AND ANY OTHER ASPECTS THAT MAY BE NECESSARY TO PERFORM AND COMPLETE THE PROJECT.

TOTAL BILL OF MATERIAL

INCIDENTAL MILLING	ASPHALT BINDER FOR PLANT MIX	ASPHALT CONCRETE SURFACE COURSE TYPE SF9.5A	GROOVING BRIDGE FLOORS	LATEX MODIFIED CONCRETE OVERLAY	PLACING & FINISHING OF LATEX MODIFIED CONCRETE	CLASS II SURFACE PREPARATION	FOAM JOINT SEALS	BRIDGE JOINT DEMOLITION	SCARIFYING BRIDGE DECK	HYDRO-DEMOLITION OF BRIDGE DECK	CLEANING & REPAINTING OF BRIDGE #292	POLLUTION CONTROL	PAINTING CONTAINMENT FOR BRIDGE #292
SQ.YDS.	TONS	TONS	SO.FT.	C.Y.	SQ.YDS.	SQ.YDS.	LUMP SUM	SO. FT.	SO.YDS.	SO.YDS.	LUMP SUM	LUMP SUM	LUMP SUM
125.2	1	11	4962	31.4	633.1	13.1	LUMP SUM	53.6	633.1	633.1	LUMP SUM	LUMP SUM	LUMP SUM

PROJECT NO. BP-5500V
WILKES COUNTY

BRIDGE NO. 292

SHEET 2 OF 2

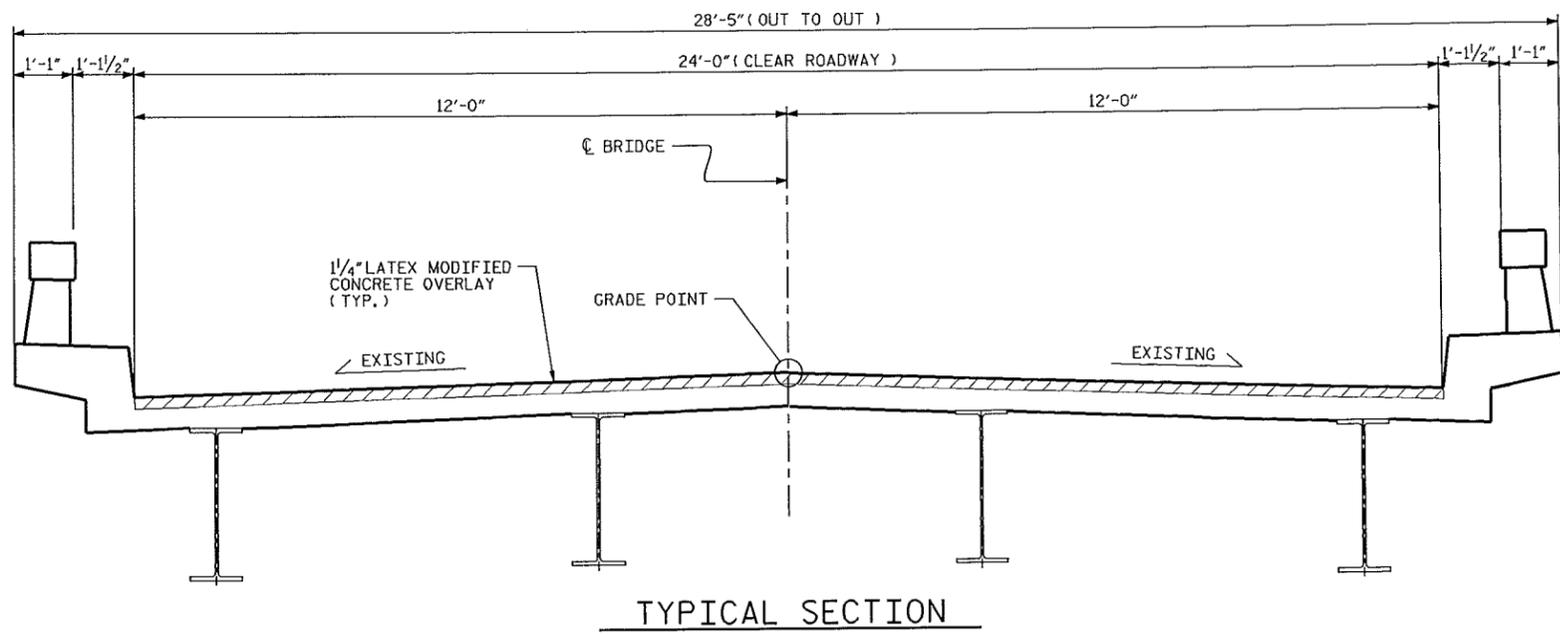
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
BRIDGE 292 ON SR1990
OVER ROARING RIVER

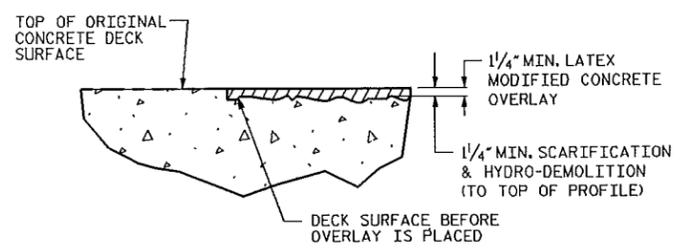


DRAWN BY : R. WEISZ DATE : 2/14
CHECKED BY : T. SHERRILL DATE : 2/14
DESIGN ENGINEER OF RECORD: _____ DATE : _____

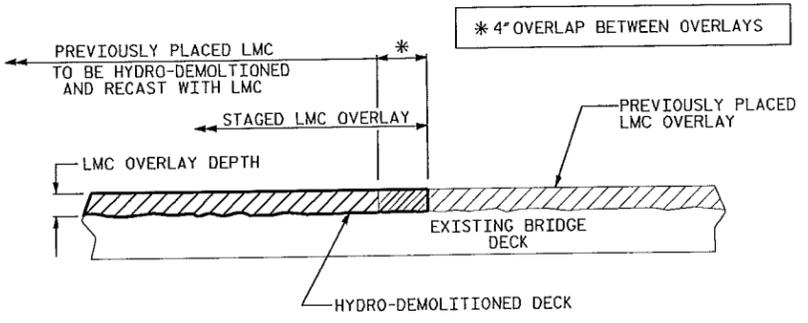
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			8



TYPICAL SECTION



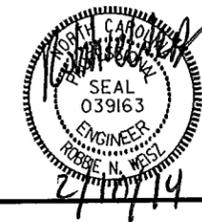
DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY



SECTION THRU DECK STAGED LMC OVERLAY JOINTS

PROJECT NO. BP-5500V
WILKES COUNTY
 BRIDGE NO. 292

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 TYPICAL SECTION &
 LATEX MODIFIED
 CONCRETE DETAILS



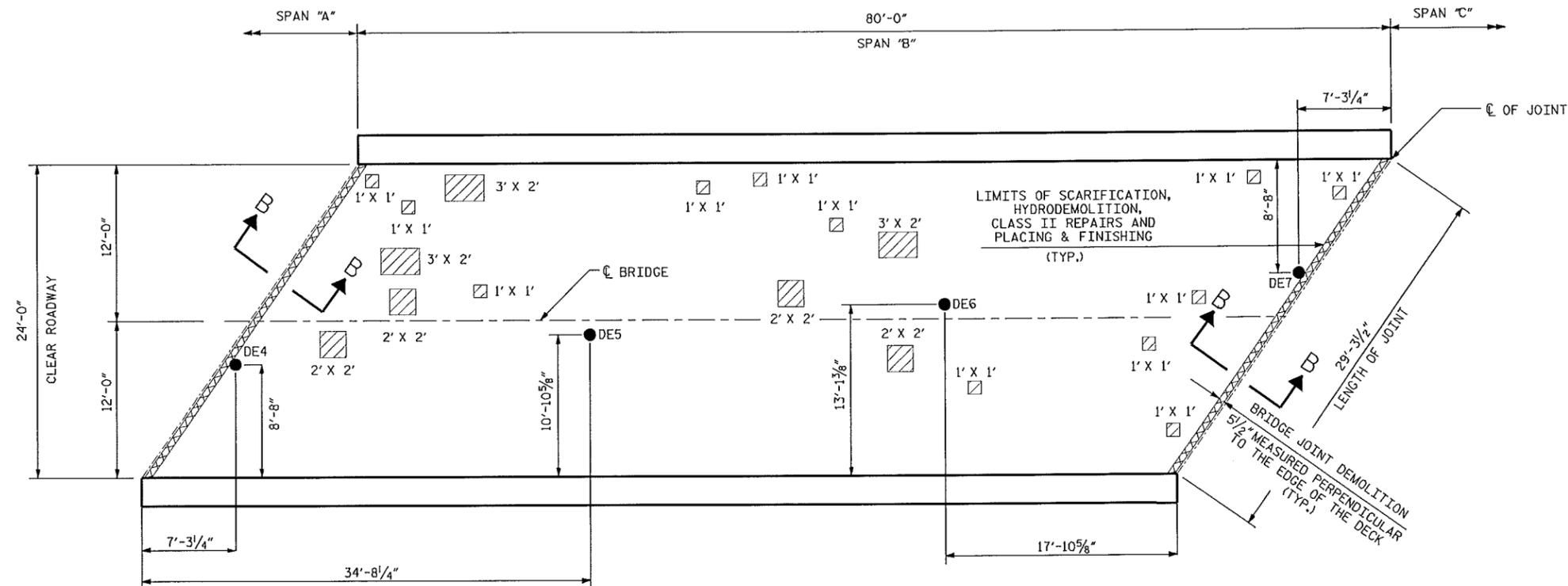
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 CHECKED BY : T.SHERRILL DATE : 12/13
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

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

SUMMARY OF QUANTITIES FOR SPAN "B"

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	209.9 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	209.9 SY	
CLASS II SURFACE PREPARATION	5.1 SY	
CLASS III SURFACE PREPARATION	0.0 SY	
BRIDGE JOINT DEMOLITION	26.8 SF	

PAYMENT FOR CLASS II AND CLASS III SURFACE PREP. BASED UPON SQUARE FEET OF ADDITIONAL DEMOLITION REQUIRED FOLLOWING HYDRO-DEMOLITION OF BRIDGE DECK, SEE "OVERLAY SURFACE PREPARATIONS" SPECIAL PROVISION.



- SCARIFYING BRIDGE DECK
- APPROX. AREA CLASS II SURFACE PREPARATION
- BRIDGE JOINT DEMOLITION

TEST LOCATION	REBAR COVER	CONCRETE STRENGTH
#4	1.98"	4,040 PSI
#5	2.04"	3,860 PSI
#6	1.52"	4,080 PSI
#7	1.52"	3,960 PSI

NOTE: BRIDGE DECK EVALUATION SAMPLE DATA PROVIDED BY WETHERILL ENGINEERING REPORT, DATED 10/3/2013

PLAN OF SPAN "B"

(SEE SHEET S-7 FOR SECTION B-B)

PROJECT NO. BP-5500V
WILKES COUNTY
 BRIDGE NO. 292

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SURFACE PREPARATION
 SPAN "B"**

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

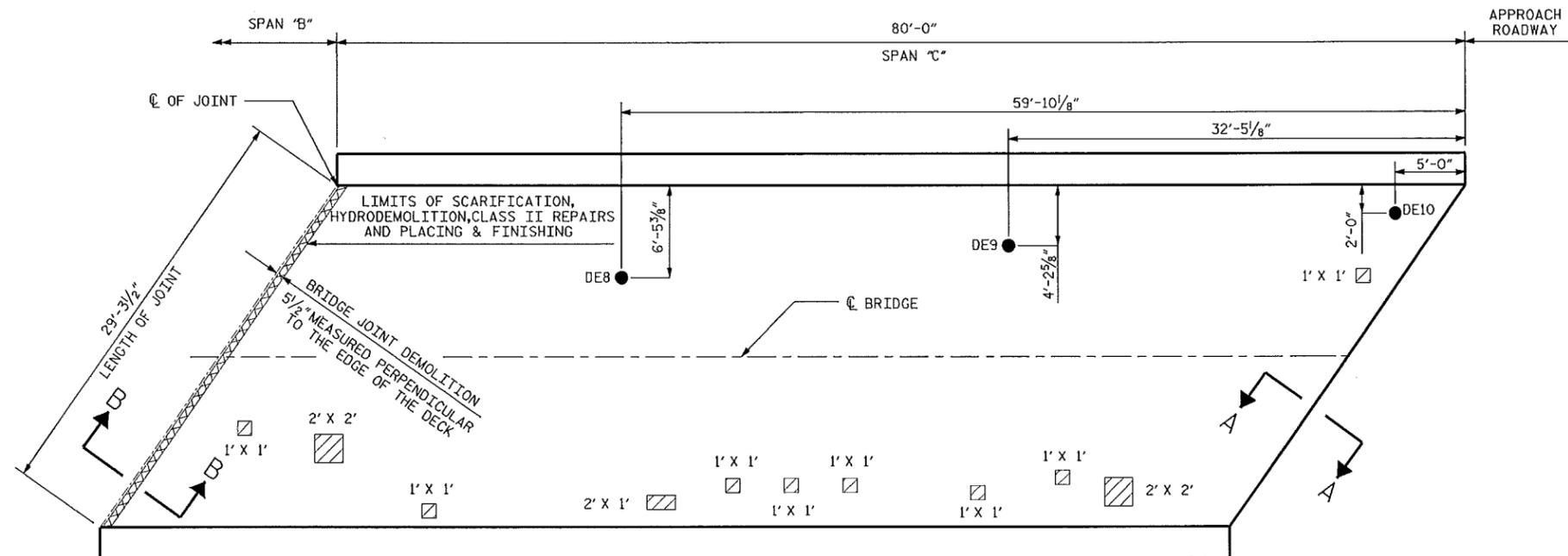


DRAWN BY: R. WEISZ DATE: 2/14
 CHECKED BY: T. SHERRILL DATE: 2/14
 DESIGN ENGINEER OF RECORD: - DATE: -

SUMMARY OF QUANTITIES FOR SPAN "C"

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	211.6 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	211.6 SY	
CLASS II SURFACE PREPARATION	2.0 SY	
CLASS III SURFACE PREPARATION	0.0 SY	
BRIDGE JOINT DEMOLITION	13.4 SF	

PAYMENT FOR CLASS II AND CLASS III SURFACE PREP. BASED UPON SQUARE FEET OF ADDITIONAL DEMOLITION REQUIRED FOLLOWING HYDRO-DEMOLITION OF BRIDGE DECK, SEE "OVERLAY SURFACE PREPARATIONS" SPECIAL PROVISION.



- SCARIFYING BRIDGE DECK
- APPROX. AREA CLASS II SURFACE PREPARATION
- BRIDGE JOINT DEMOLITION

TEST LOCATION	REBAR COVER	CONCRETE STRENGTH
#8	1.36"	4,320 PSI
#9	1.30"	4,700 PSI
#10	1.05"	4,360 PSI

NOTE: BRIDGE DECK EVALUATION SAMPLE DATA PROVIDED BY WETHERILL ENGINEERING REPORT, DATED 10/3/2013

PLAN OF SPAN "C"
(SEE SHEET S-7 FOR SECTION A-A & B-B)

PROJECT NO. BP-5500V
WILKES COUNTY
BRIDGE NO. 292

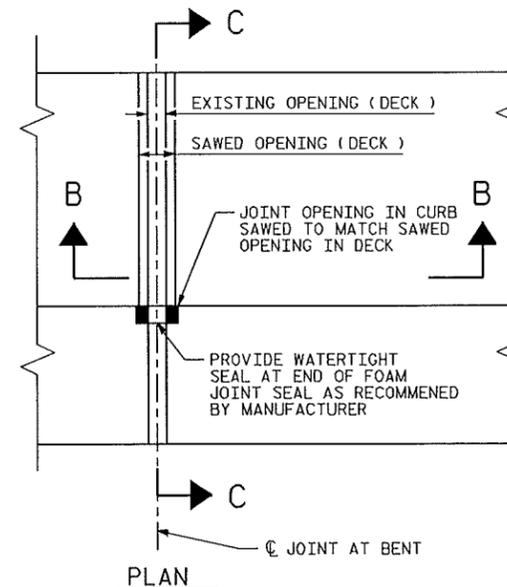
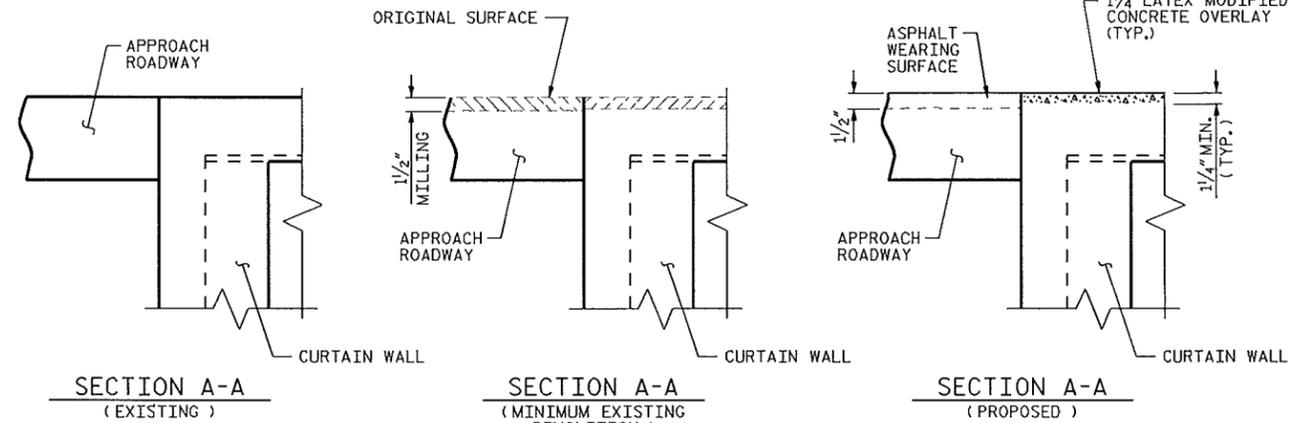
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SURFACE PREPARATION
SPAN "C"**

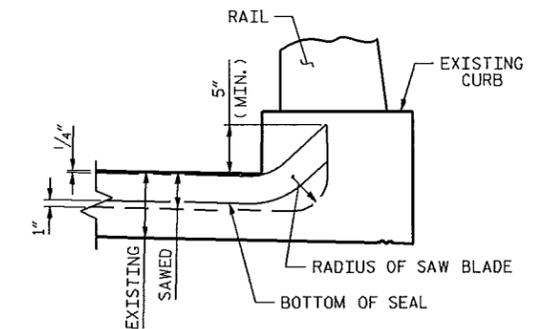
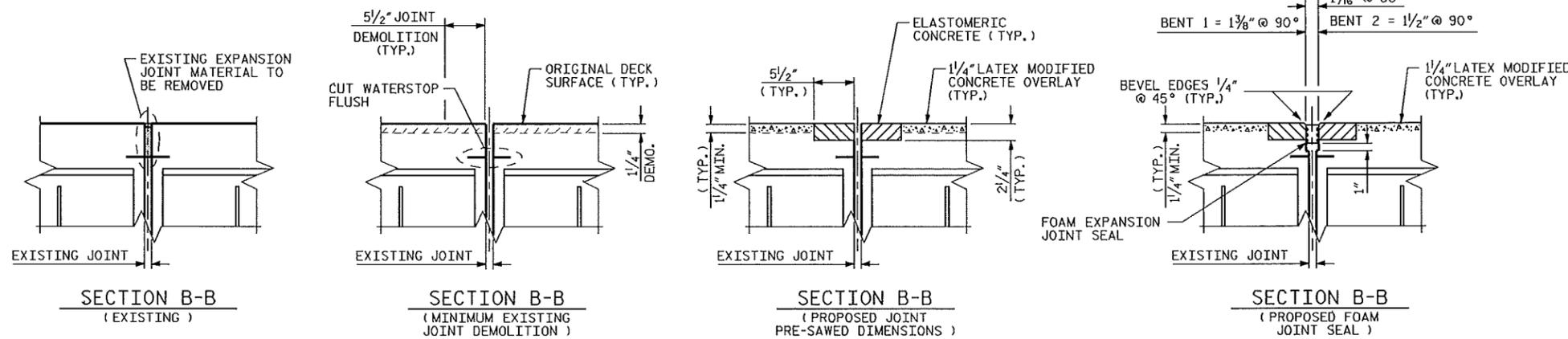


REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			8
2			4			

DRAWN BY : R. WEISZ DATE : 2/14
CHECKED BY : T. SHERRILL DATE : 2/14
DESIGN ENGINEER OF RECORD: _____ DATE : _____



NOTES:
 FOR "FOAM JOINT SEALS" SEE SPECIAL PROVISIONS.
 THE INSTALLED FOAM JOINT SEAL SHALL BE WATER TIGHT.
 NOMINAL UNCOMPRESSED SEAL WIDTH OF FOAM JOINT SEAL SHALL BE 2".
 THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS IN LIEU OF SAWING THE JOINT.



IF THE EMBEDDED PORTION OF AN EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE OR IF UNSOUND CONCRETE IS REMOVED WITHIN 2" OF THE WATERSTOP, THE ENTIRE WATERSTOP SHALL BE REMOVED

HYDRO-DEMOLITION OR EXCAVATION OF CONCRETE AT THE EXISTING JOINT SHALL RESULT IN THE BOTTOM OF THE EXCAVATION BEING REASONABLY FLAT, TO PROVIDE SUFFICIENT SUBSTRATE FOR PLACEMENT AND SUPPORT OF REPAIR CONCRETE.

ELASTOMERIC CONCRETE	
	CU. FT.
BENT 1	5.0
BENT 2	5.0
TOTAL	10.0

PROJECT NO. BP-5500V
WILKES COUNTY
 BRIDGE NO. 292

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

JOINT DETAILS

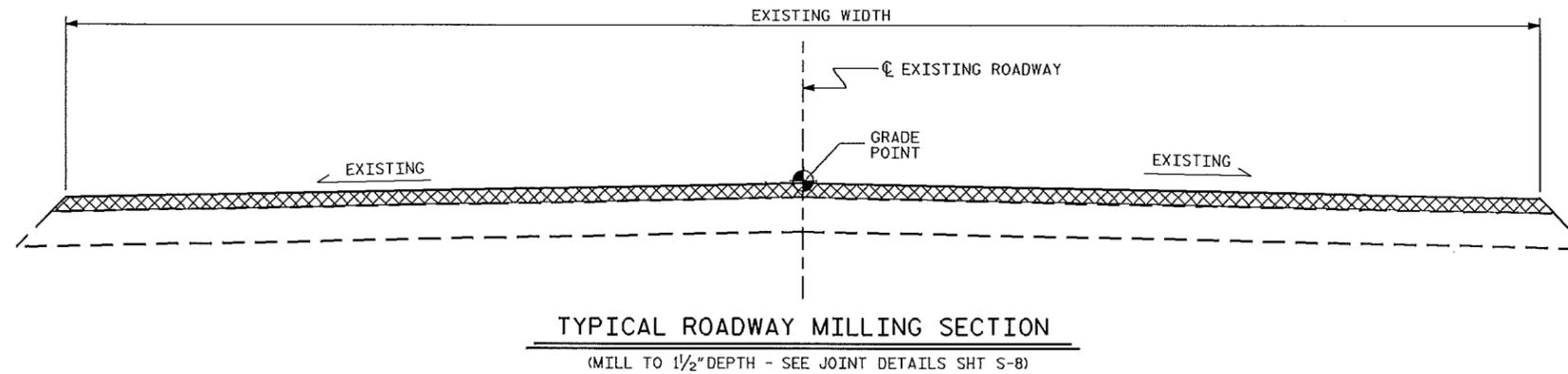
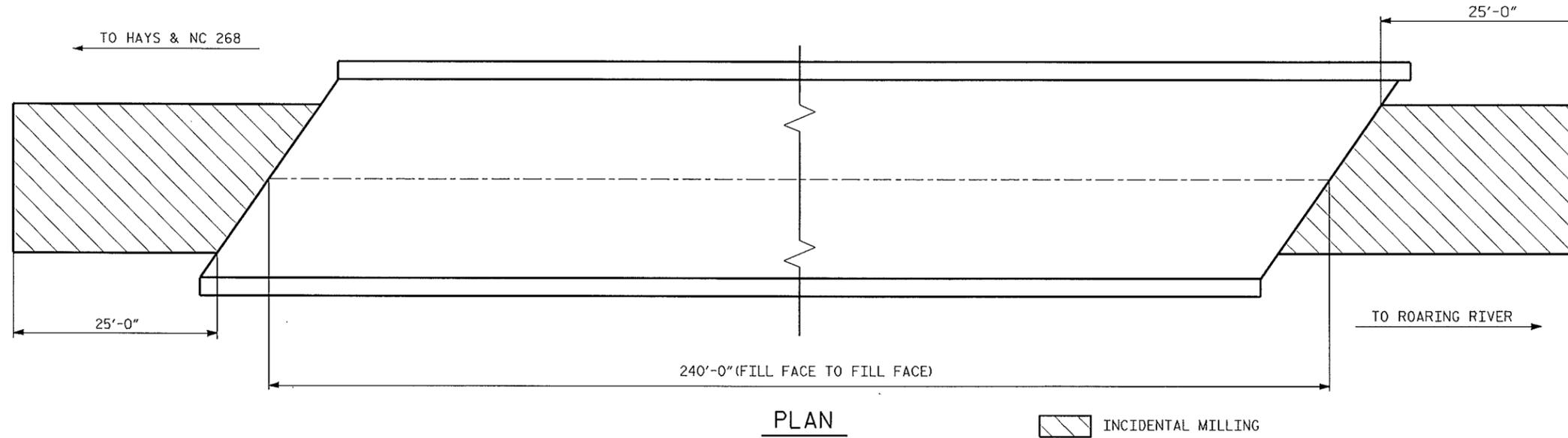
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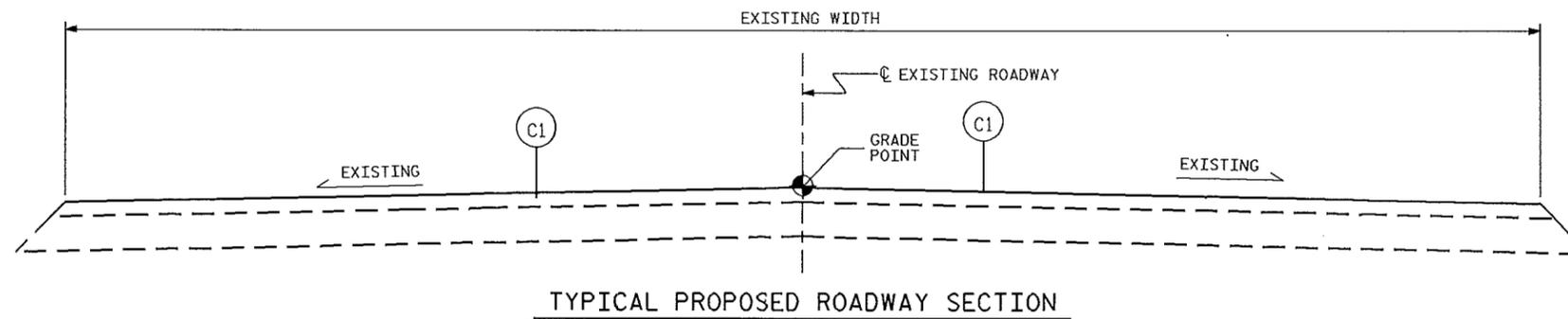
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-7
2			4			8

NOTES:

INCIDENTAL MILLING - EXISTING APPROACH ASPHALT PAVING TO BE MILLED AS NECESSARY TO ATTAIN MINIMUM 1/2" DEPTH OF NEW ASPHALT PAVING. PROVIDE NEW ASPHALT PAVING THICKNESS TO CREATE A SMOOTH TRANSITION BETWEEN THE ROADWAY AND THE BRIDGE DECK. NEW ASPHALT PAVING THICKNESS MAY EXCEED 1/2" DUE TO SETTLEMENT OF THE EXISTING APPROACH ASPHALT PAVING.



C1 PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1/2" IN DEPTH OR GREATER THAN 2" IN DEPTH.



PROJECT NO. BP-5500V
WILKES COUNTY
 BRIDGE NO. 292

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**APPROACH MILLING
 AND STAGED OVERLAY
 JOINT**

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



DRAWN BY : R. WEISZ DATE : 1/14
 CHECKED BY : T. SHERRILL DATE : 2/14
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

ROADWAY STANDARD DRAWINGS

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

STD. NO.	TITLE
1101.03	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY

LEGEND

GENERAL

-  DIRECTION OF TRAFFIC FLOW
-  DIRECTION OF PEDESTRIAN TRAFFIC FLOW
-  EXIST. PVMT.
-  NORTH ARROW
-  PROPOSED PVMT.
-  TEMP. SHORING (LOCATION PURPOSES ONLY)

 WORK AREA

 REMOVAL

SIGNALS

-  EXISTING
-  PROPOSED
-  TEMPORARY

PAVEMENT MARKINGS

-  EXISTING LINES
-  TEMPORARY LINES

TRAFFIC CONTROL DEVICES

-  BARRICADE (TYPE III)
-  CONE
-  DRUM
-  SKINNY DRUM
-  TUBULAR MARKER
-  TEMPORARY CRASH CUSHION
-  FLASHING ARROW BOARD
-  FLAGGER
-  LAW ENFORCEMENT
-  TRUCK MOUNTED ATTENUATOR (TMA)
-  CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

-  PORTABLE SIGN
-  STATIONARY SIGN
-  STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

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

PAVEMENT MARKING SYMBOLS

-  PAVEMENT MARKING SYMBOLS

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		<p>ROADWAY STANDARD DRAWINGS & LEGEND</p>
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PHASING

NOTES:

RECORD EXISTING PAVEMENT MARKING PRIOR TO BEGINNING WORK.
 MAINTAIN ACCESS TO ALL DRIVEWAYS THROUGHOUT THE LIFE OF THE PROJECT.

ONCE SR 1990 (BETHANY FORD ROAD) IS CLOSED IN STEP 1, WORK IN A CONTINUOUS MANNER TO COMPLETE THE WORK ON BRIDGE 292 AND OPEN THE ROAD BACK UP TO TRAFFIC.

STEP 1:

USING RSD 1101.03, SHEET 1 OF 9, AND SHEET TMP-4, INSTALL ROAD CLOSURE, OFF-SITE DETOUR SIGNS AND BARRICADES, AND CLOSE SR 1990 (BETHANY FORD ROAD) TO TRAFFIC.

STEP 2:

AWAY FROM TRAFFIC, COMPLETE ALL WORK ON BRIDGE NO. 292, INCLUDING PLACEMENT OF FINAL PAVEMENT MARKINGS AND MARKERS.

STEP 3:

ONCE ALL CONSTRUCTION IS COMPLETE, REMOVE ALL REMAINING SIGNS AND TRAFFIC CONTROL DEVICES AND OPEN SR 1990 (BETHANY FORD ROAD) TO THE EXISTING TWO-LANE/TWO-WAY TRAFFIC PATTERN.

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		<p>TEMPORARY TRAFFIC CONTROL PHASING</p>
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