

**PROJECT: BP-5500U**

**DK00101**

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**AVERY & WATAUGA COUNTY**

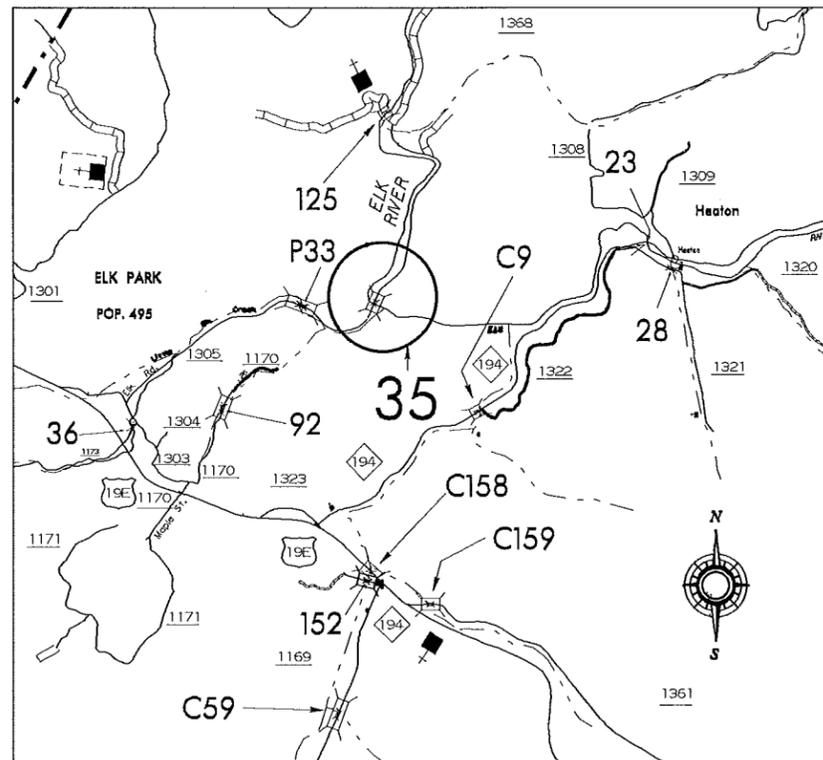
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP-5500U	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
50070.1.1		P.E.	
50070.3.FD21	BRZ-1305(11)	CONST.	



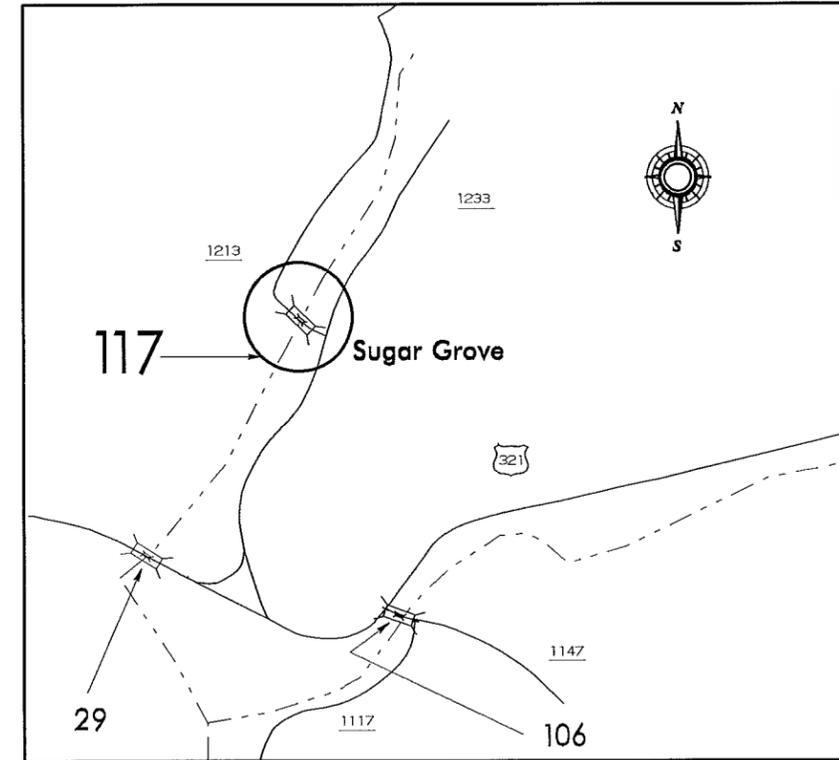
LOCATION: AVERY COUNTY:  
BRIDGE #35 ON SR 1305 OVER ELK RIVER  
WATAUGA COUNTY:  
BRIDGE #117 ON SR 1213 OVER COVE CREEK

TYPE OF WORK: BRIDGE PRESERVATION – BRIDGE PRESERVATION WITH LATEX MODIFIED CONCRETE AND JOINT REPLACEMENT.

**BRIDGE #35**



**BRIDGE #117**

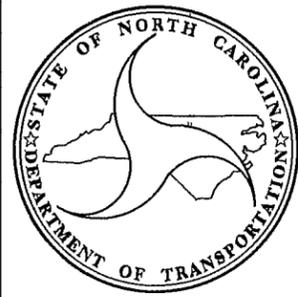


**DESIGN DATA**

AVERY  
#35 ADT 2009 = 620  
WATAUGA  
#117 ADT 2009 = 820

**PROJECT LENGTH**

BRIDGE AVERY #35 = .0323 MILE  
BRIDGE WATAUGA #117 = .0289 MILE



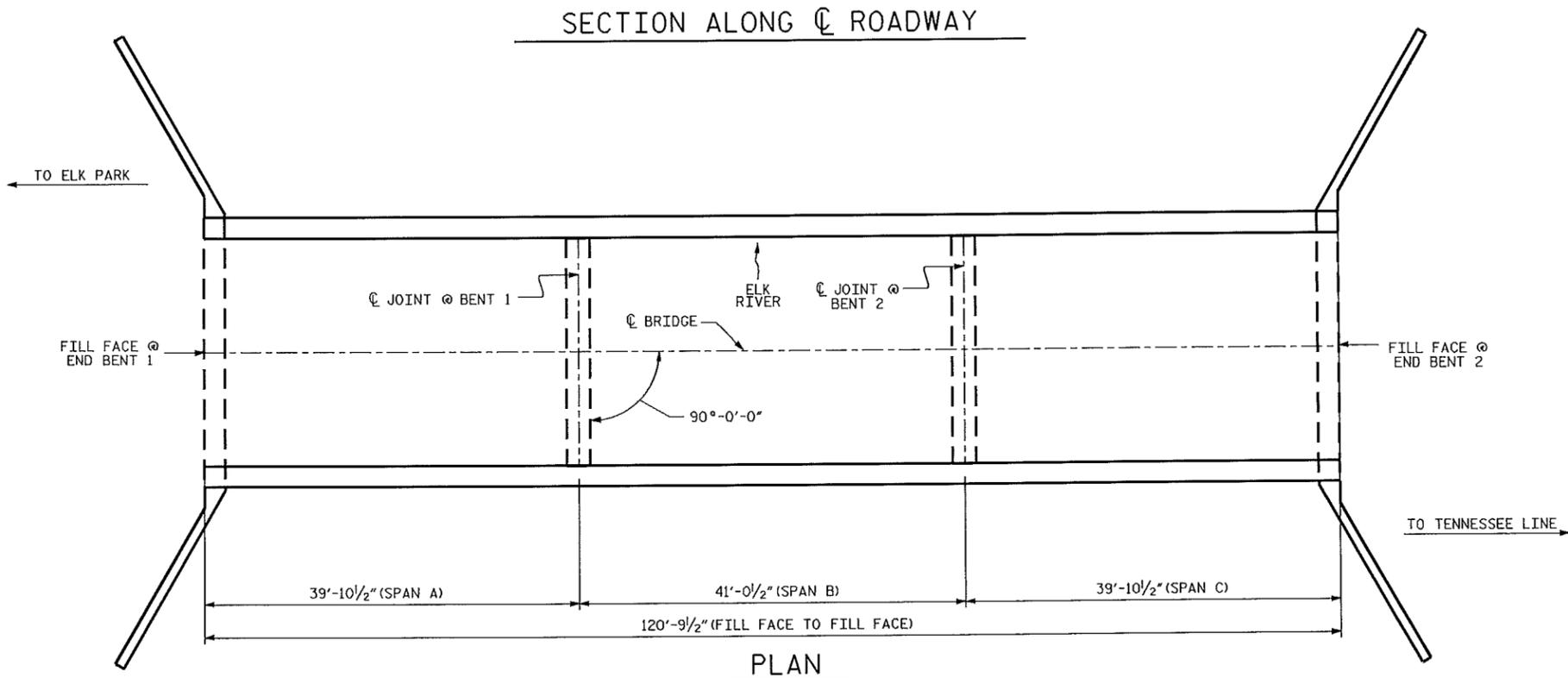
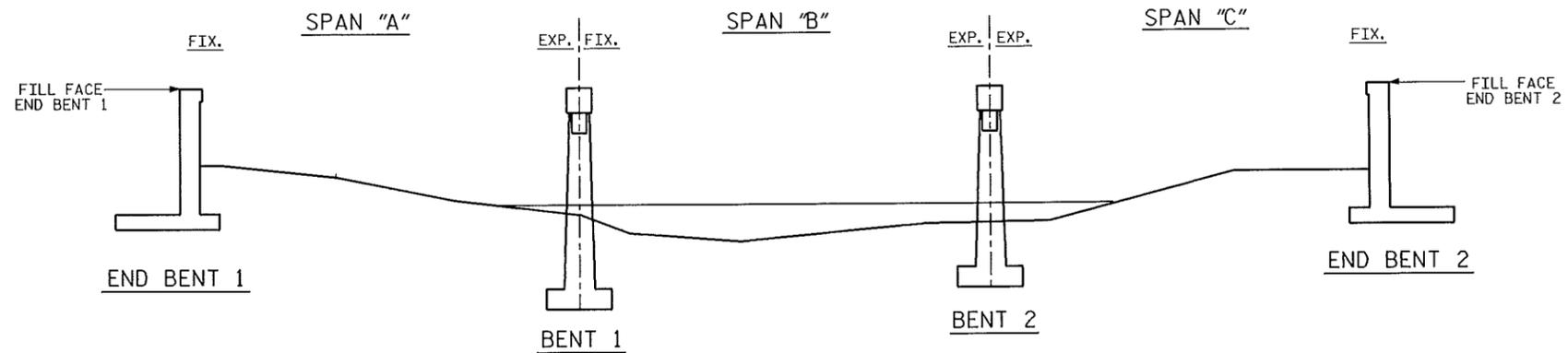
Prepared in the Office of:  
**DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF HIGHWAYS**  
STRUCTURES MANAGEMENT UNIT - PRESERVATION & REPAIR GROUP  
1800 BIRCH RIDGE DR. RALEIGH, N.C. 27610

**RICK NELSON, P.E.**  
PROJECT ENGINEER

2012 STANDARD SPECIFICATIONS

LETTING DATE:  
MARCH 20, 2014

*Timothy M. Sherrill*  
NORTH CAROLINA PROFESSIONAL ENGINEER  
SEAL 18565  
TIMOTHY M. SHERRILL  
02/10/14  
**TIMOTHY M. SHERRILL, P.E.**  
PROJECT DESIGN ENGINEER



**SCOPE OF WORK:**

- WIDEN ASPHALT ROADWAY APPROACHES
- 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

PROJECT NO. BP-5500U  
                   AVERY                    COUNTY  
 BRIDGE NO.                    35

SHEET 1 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

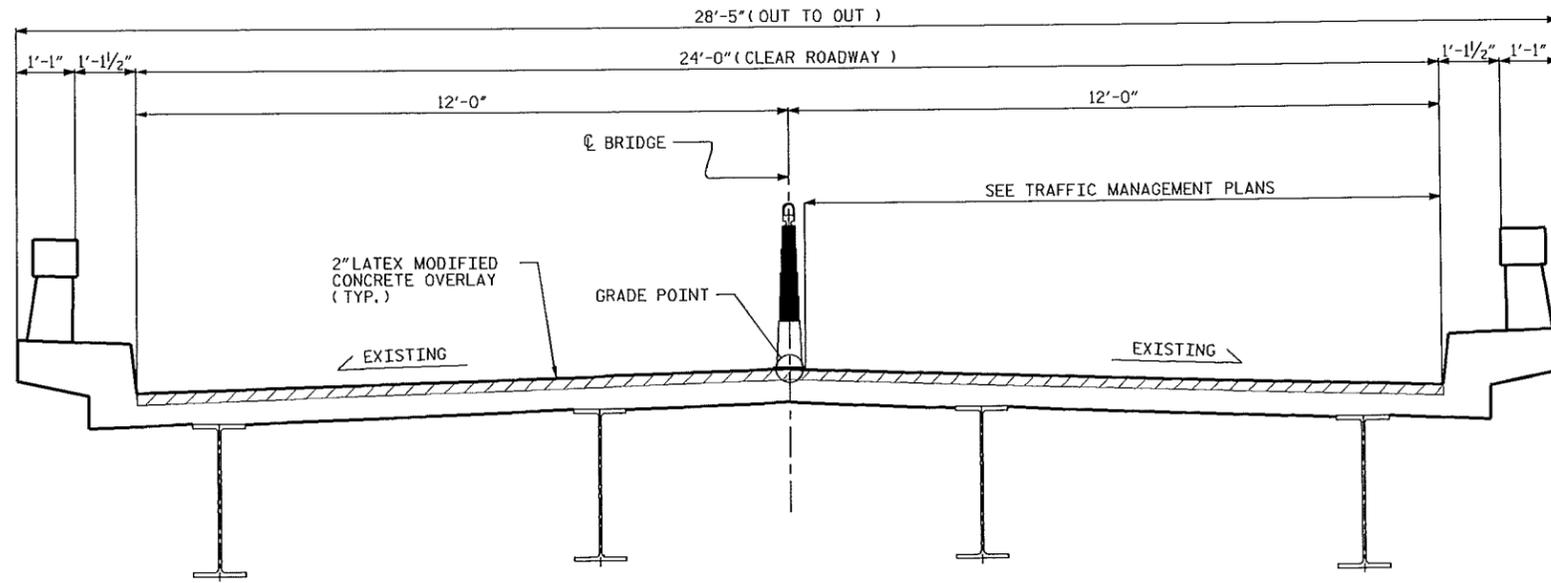
GENERAL DRAWING  
 BRIDGE 35 ON SR 1305  
 OVER THE ELK RIVER

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-1
1			3			TOTAL SHEETS
2			4			17



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

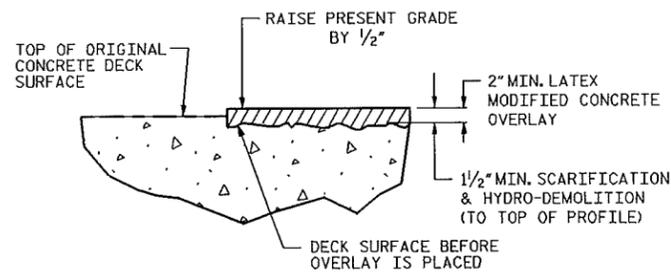




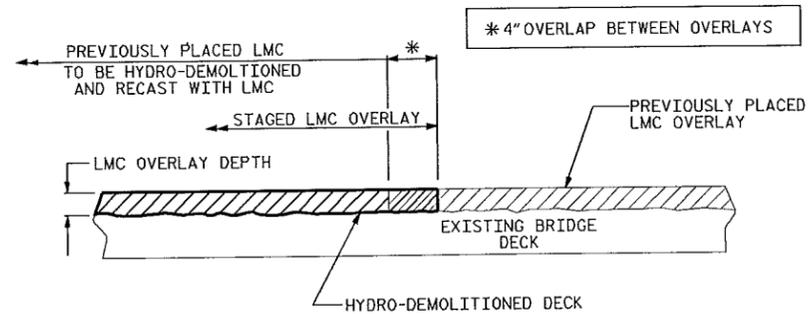
**TYPICAL SECTION**

REQUIRES STAGED CONSTRUCTION  
SEE TRAFFIC MANAGEMENT PLANS

THE LOCATION OF THE SKINNY DRUMS AND THE WIDTH OF THE TRAVEL LANES AND WORK ZONES INDICATED ON THIS PLAN SHEET ARE ONLY GENERAL REPRESENTATIONS. SEE TRAFFIC MANAGEMENT PLANS FOR SPECIFIC REQUIREMENTS FOR THE LOCATIONS OF THE SKINNY DRUMS, THE WIDTH OF THE TRAVEL LANES AND WORK ZONES AND THE STAGING SEQUENCES.



**DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY**



**SECTION THRU DECK  
STAGED LMC OVERLAY JOINTS**

PROJECT NO. BP-5500U  
                   AVERY                    COUNTY  
BRIDGE NO.                    35

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO.
TYPICAL SECTION & LATEX MODIFIED CONCRETE DETAILS						S-3
REVISIONS						TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:	17
1			3			
2			4			



DRAWN BY :                    R. WEISZ                    DATE :                    5/13  
CHECKED BY :                    T. SHERRILL                    DATE :                    2/14  
DESIGN ENGINEER OF RECORD:                    DATE :

SUMMARY OF QUANTITIES FOR SPAN "A"

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	104.9 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	104.9 SY	
CLASS II SURFACE PREPARATION	8.9 SY	
CLASS III SURFACE PREPARATION	0.0 SY	
BRIDGE JOINT DEMOLITION	11.0 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 PREPARATION" SPECIAL PROVISION.

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

BRIDGE DECK EVALUATION SAMPLES		
TEST LOCATION	REBAR COVER	CONCRETE STRENGTH
#1	2.00"	4,520 PSI
#2	1.86"	3,900 PSI
#3	1.70"	4,260 PSI

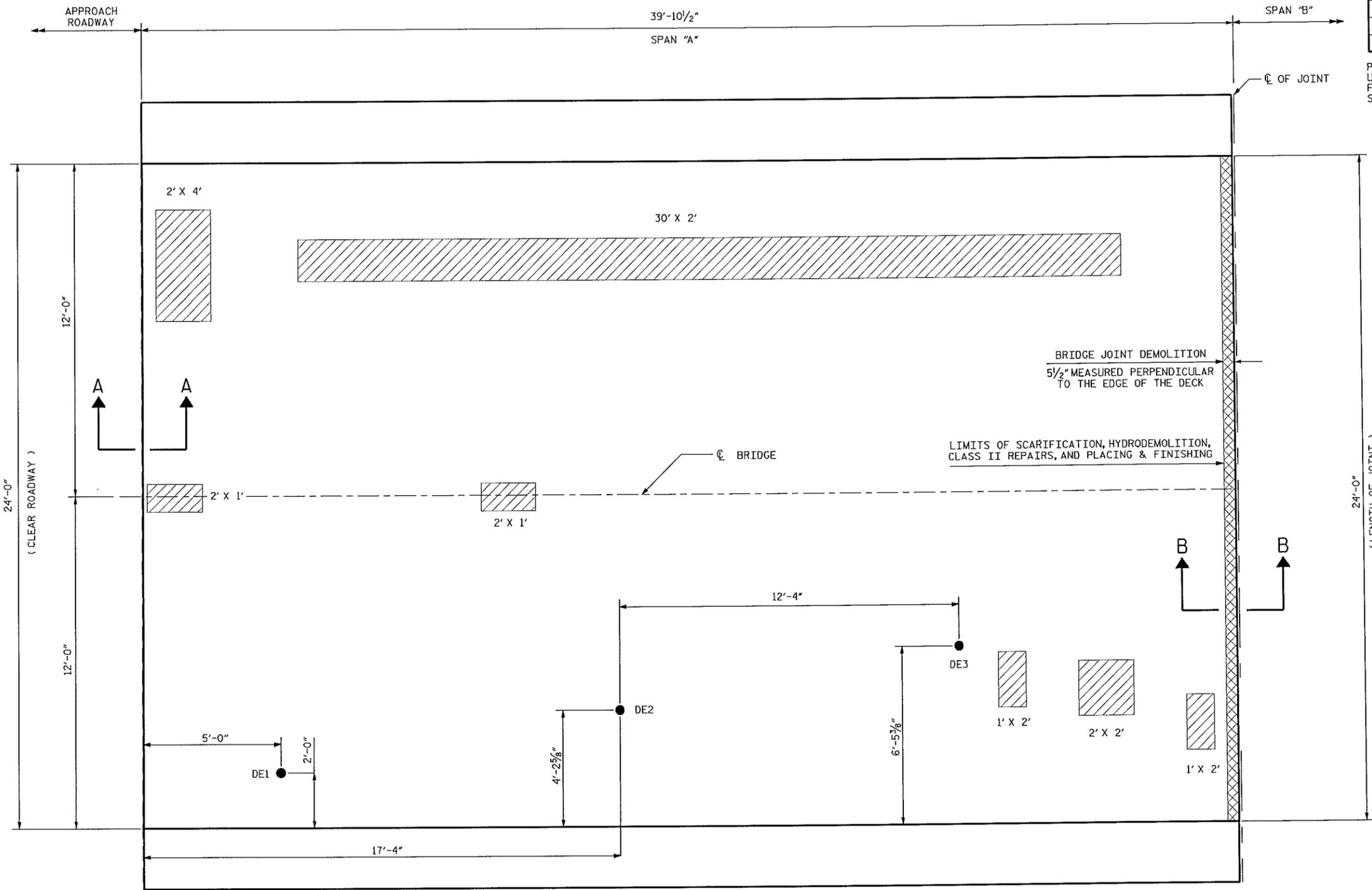
NOTE: BRIDGE DECK EVALUATION SAMPLE DATA PROVIDED BY WETHERILL ENGINEERING REPORT, DATED 10/3/2013.

PROJECT NO. BP-5500U  
                   AVERY COUNTY  
 BRIDGE NO. 35

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SURFACE PREPARATION  
 SPAN "A"

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-4
1			3			TOTAL SHEETS
2			4			17



PLAN OF SPAN "A"

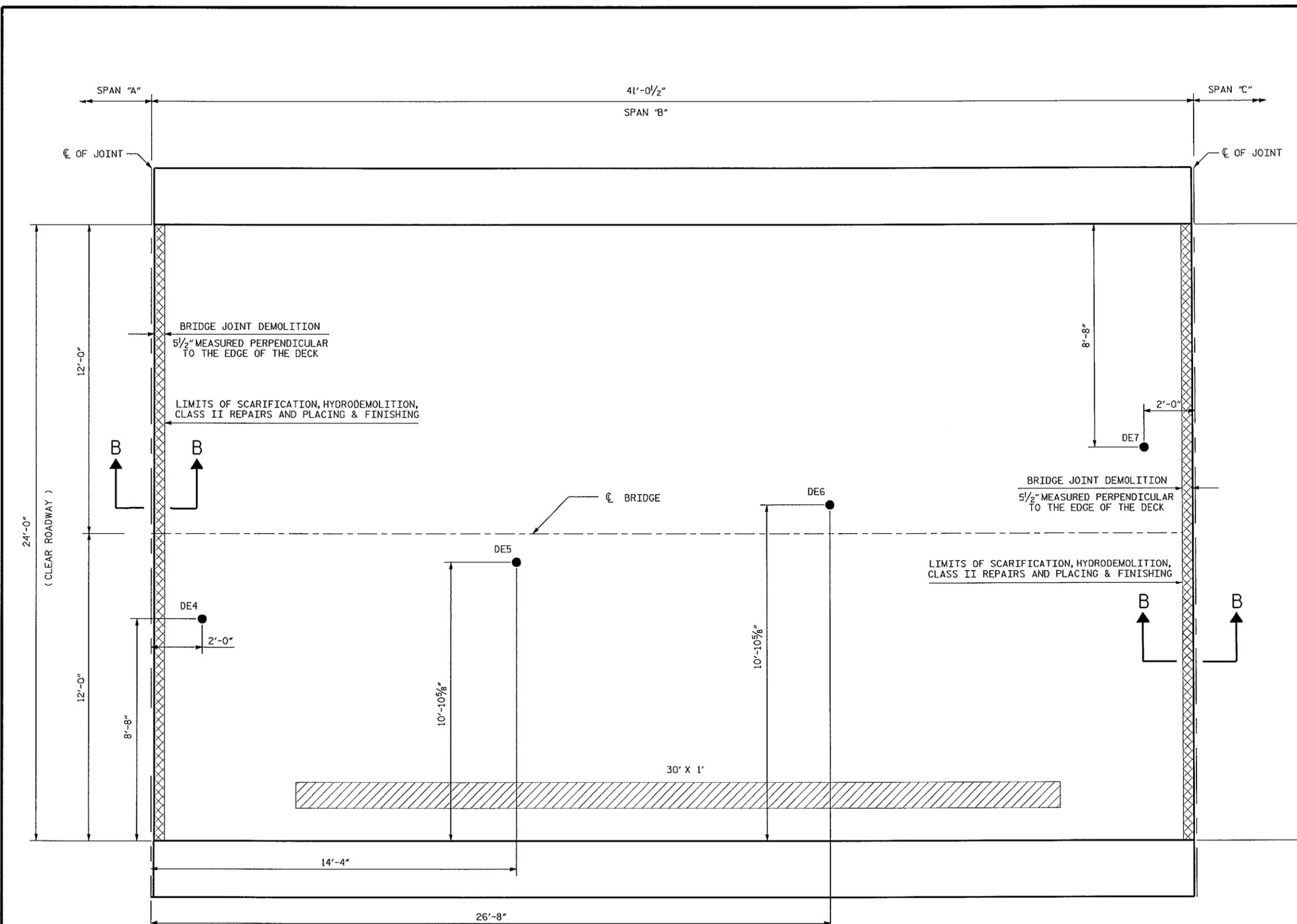
(SEE SHEET S-7 FOR SECTION A-A & B-B)

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

SUMMARY OF QUANTITIES FOR SPAN "B"

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	106.7 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	106.7 SY	
CLASS II SURFACE PREPARATION	3.3 SY	
CLASS III SURFACE PREPARATION	0.0 SY	
BRIDGE JOINT DEMOLITION	22.0 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 PREPARATION" SPECIAL PROVISION.



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

TEST LOCATION	REBAR COVER	CONCRETE STRENGTH
#4	1.46"	4,100 PSI
#5	1.80"	4,380 PSI
#6	2.02"	5,000 PSI
#7	1.76"	3,940 PSI

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

PROJECT NO. BP-5500U  
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STATE OF NORTH CAROLINA  
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SURFACE PREPARATION  
 SPAN "B"



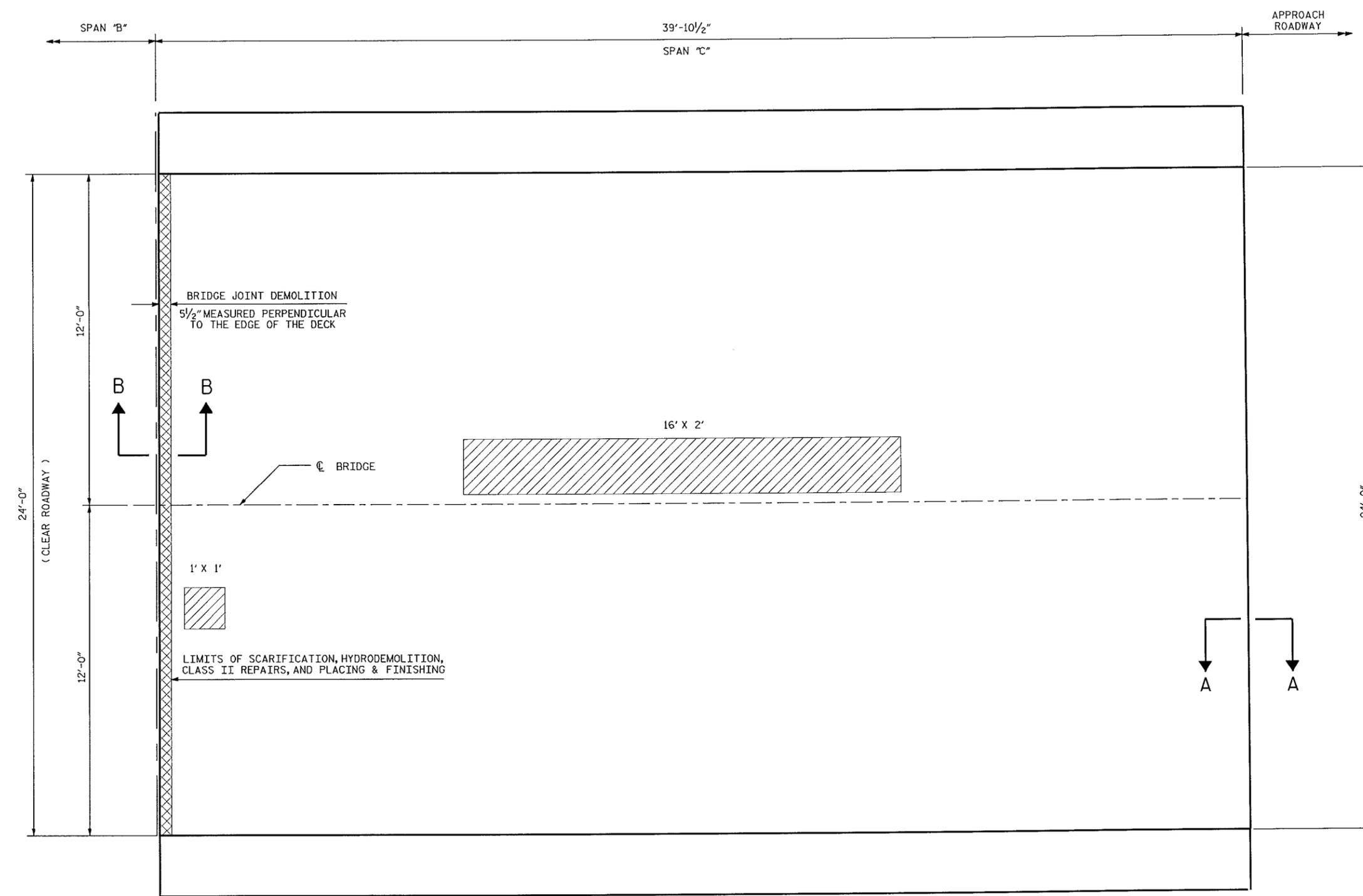
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-5
2			4			TOTAL SHEETS 17

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

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

SUMMARY OF QUANTITIES FOR SPAN "C"		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	104.9 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	104.9 SY	
CLASS II SURFACE PREPARATION	3.7 SY	
CLASS III SURFACE PREPARATION	0.0 SY	
BRIDGE JOINT DEMOLITION	11.0 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 PREPARATION" SPECIAL PROVISION.



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

BRIDGE DECK EVALUATION SAMPLES		
TEST LOCATION	REBAR COVER	CONCRETE STRENGTH
#8	1.92"	4,140 PSI
#9	1.35"	4,160 PSI
#10	1.45"	3,740 PSI

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

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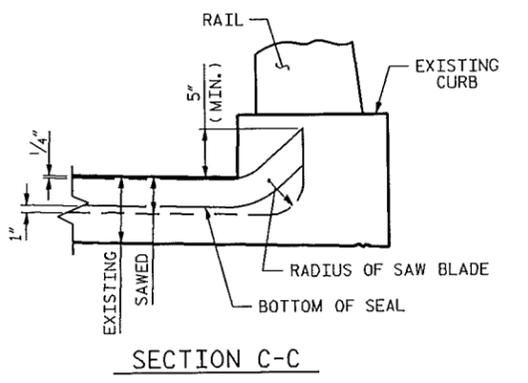
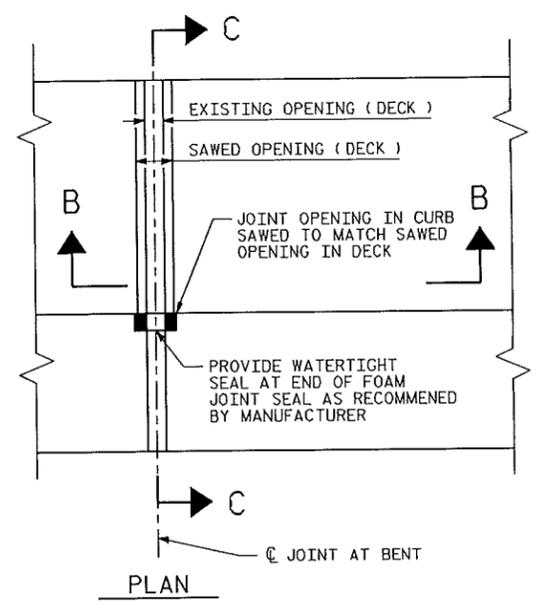
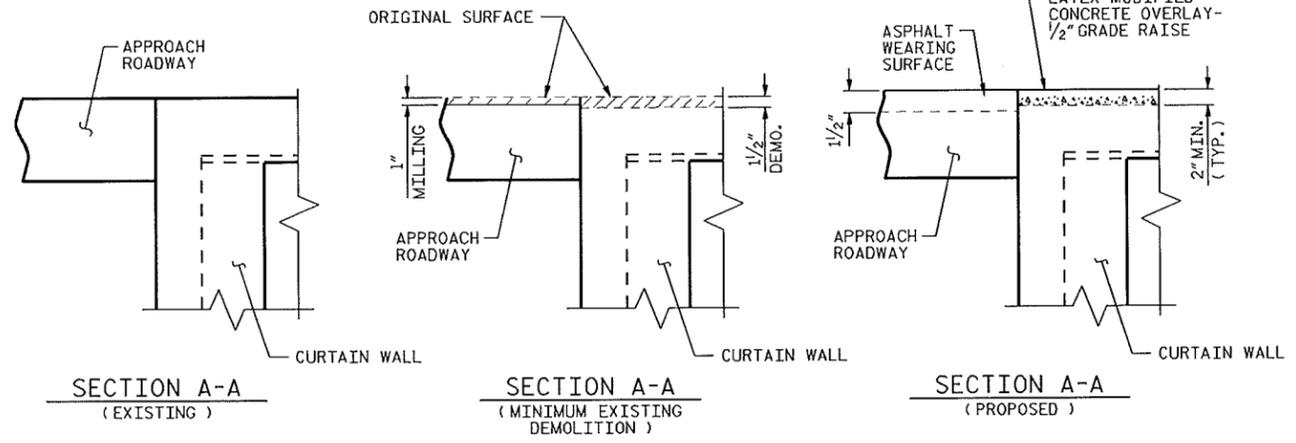
SURFACE PREPARATION  
 SPAN "C"



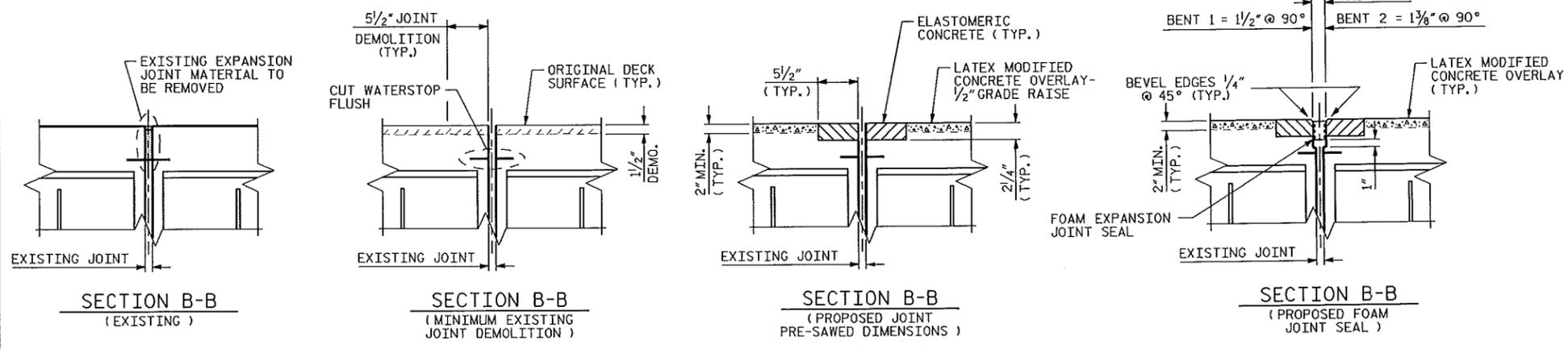
PLAN OF SPAN "C"  
 (SEE SHEET S-7 FOR SECTION A-A & B-B)

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

REVISIONS						SHEET NO.
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**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.



BENT 1 = 1 5/8" @ 45°  
 BENT 2 = 1 5/8" @ 45°  
 BENT 1 = 1 1/2" @ 90°  
 BENT 2 = 1 3/8" @ 90°

ELASTOMERIC CONCRETE	
	CU. FT.
BENT 1	4.13
BENT 2	4.13
TOTAL	8.26

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.

PROJECT NO. BP-5500U  
           AVERY            COUNTY  
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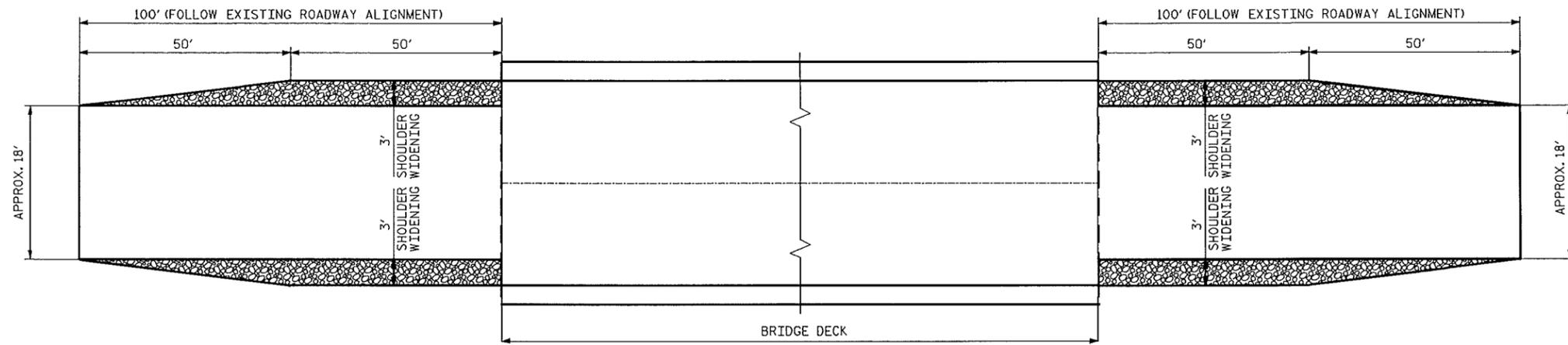
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

JOINT DETAILS

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
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2			4			

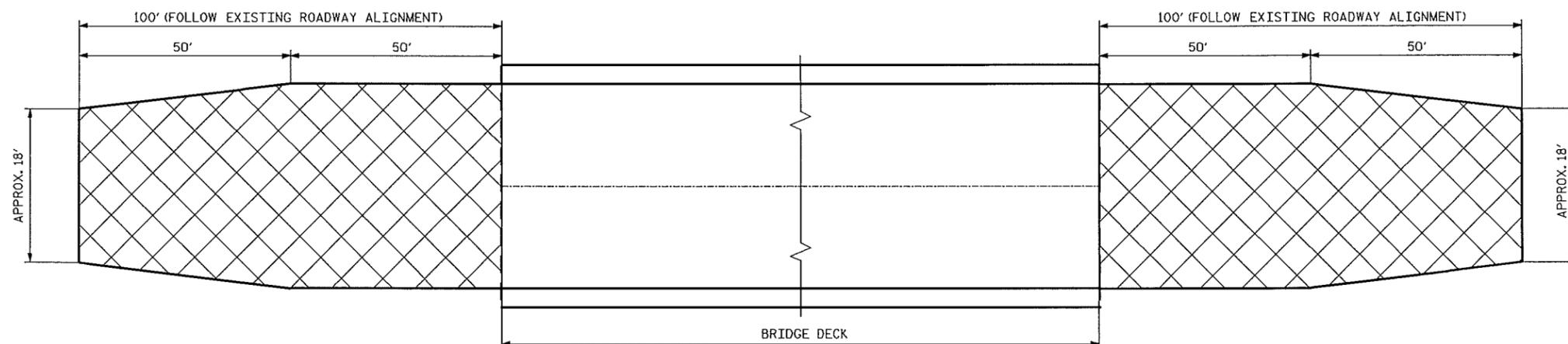


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 CHECKED BY: T. SHERRILL DATE: 2/14  
 DESIGN ENGINEER OF RECORD: \_\_\_\_\_ DATE: \_\_\_\_\_

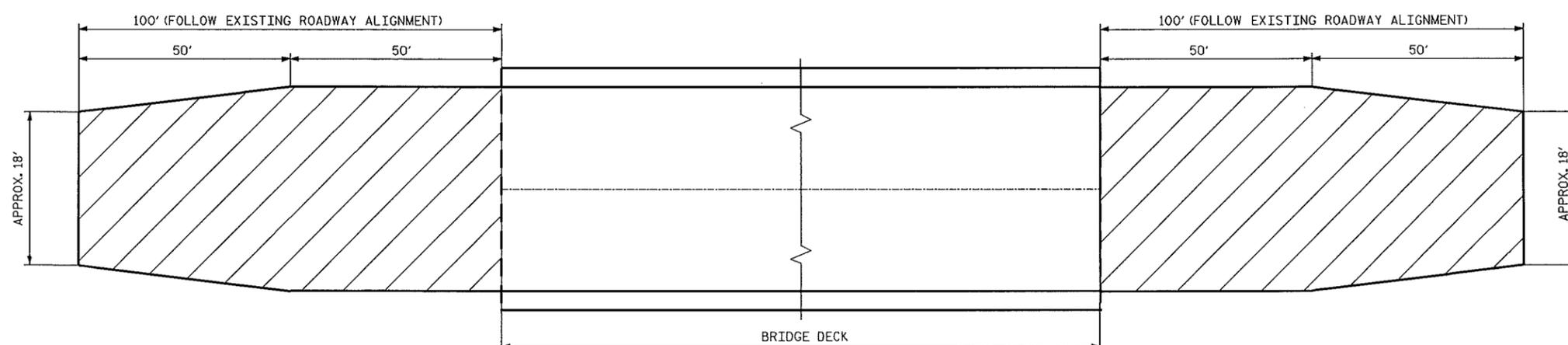


**STAGE 1 APPROACH WIDENING (COMPLETE PRIOR TO BEGINNING DECK PRESERVATION WORK)**

(PAVED SHOULDER SHALL MATCH EXISTING GRADE)



**STAGE 2 APPROACH MILLING (AFTER PLACEMENT OF DECK OVERLAY)**



**STAGE 3 APPROACH PAVING (AFTER MILLING OF APPROACH)**

(NEW PAVED SHOULDER AND APPROACH ROADWAY SHALL MATCH NEW BRIDGE DECK GRADE)

**NOTES:**

DRAWINGS DO NOT REFLECT ACTUAL ALIGNMENT OF APPROACH ROADWAY. SEE TRAFFIC MANAGEMENT PLANS.

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

-  ASPHALT WIDENING
-  INCIDENTAL MILLING ASPHALT PAVEMENT
-  FINAL ASPHALT PAVING

PROJECT NO. BP-5500U  
AVERY COUNTY  
 BRIDGE NO. 35

STATE OF NORTH CAROLINA  
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**APPROACH PAVEMENT STAGING**



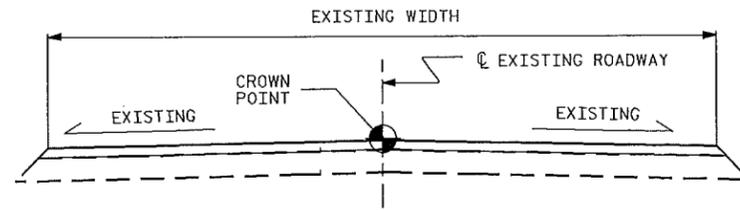
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 CHECKED BY : T. SHERRILL DATE : 2/14  
 DESIGN ENGINEER OF RECORD: \_\_\_\_\_ DATE : \_\_\_\_\_

07-FEB-2014 09:03  
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 rtwelisz

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			17

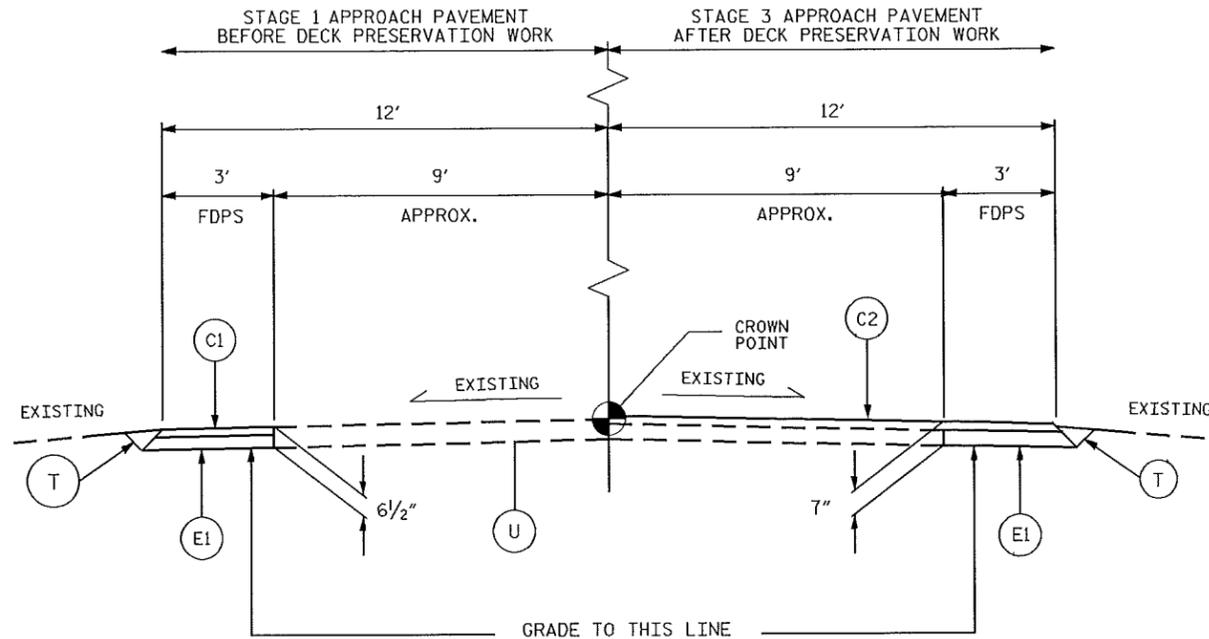
**NOTES:**

THE PROPOSED ROADWAY CENTERLINE GRADE AT APPROACHES SHALL BE TO THE LIMITS SHOWN. THE GRADE SHALL BE ESTABLISHED BY A LINE CONNECTING THE CENTER LINE POINT OF THE BRIDGE AND THE ROADWAY CROWN POINT, 50' FROM THE BRIDGE AT EACH APPROACH OR AS DIRECTED BY THE ENGINEER.



**TYPICAL ROADWAY MILLING SECTION**

(MILL TO APPROX. 1" DEPTH - SEE SECTION A-A SHEET S-7)

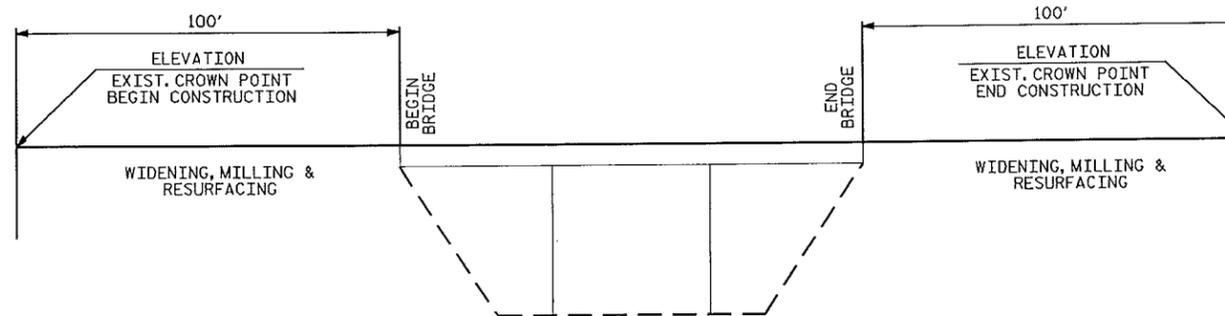


**TYPICAL PROPOSED ROADWAY SECTION**

(C1 & E1 ASPHALT IS TO BE PLACED, INITIALLY FOR WIDENING OF APPROACHES, PRIOR TO DECK PRESERVATION WORK. AFTER COMPLETION OF DECK OVERLAY, THE C1 ASPHALT AND EXISTING ROADWAY WILL BE MILLED AS NOTED IN PLANS, PRIOR TO FINAL PLACEMENT OF C2 ASPHALT)

PAVEMENT SCHEDULE	
C1	PROPOSED APPROX. 2 1/2" 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 1/2" IN DEPTH OR GREATER THAN 2" IN DEPTH.
C2	PROPOSED APPROX. 1 1/2" 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 1/2" IN DEPTH OR GREATER THAN 2" IN DEPTH.
E1	PROPOSED APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
T	EARTH MATERIAL
U	EXISTING PAVEMENT

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE



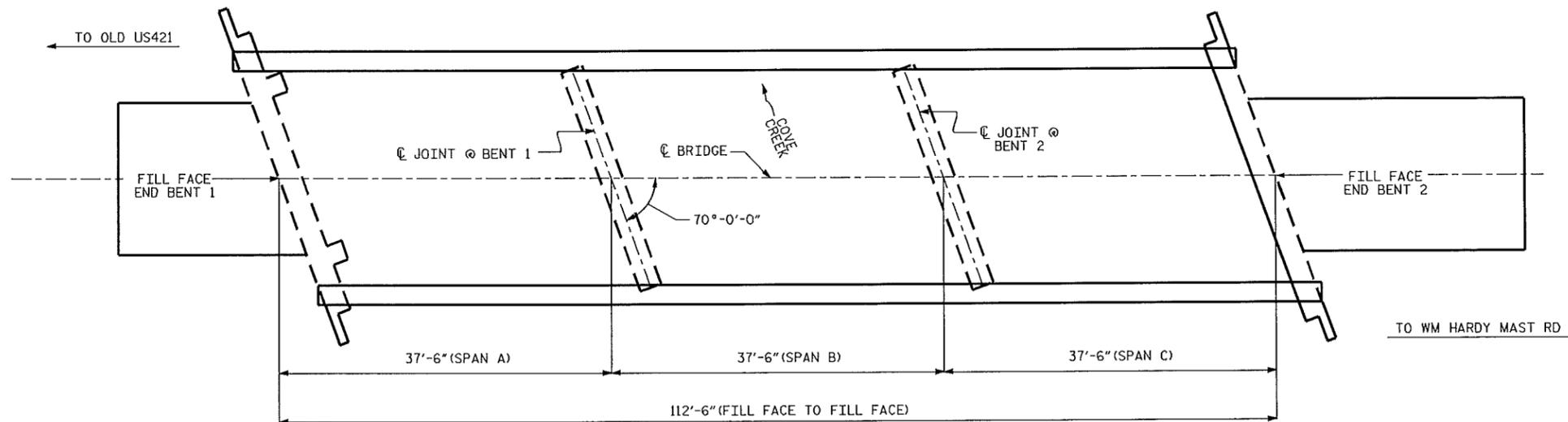
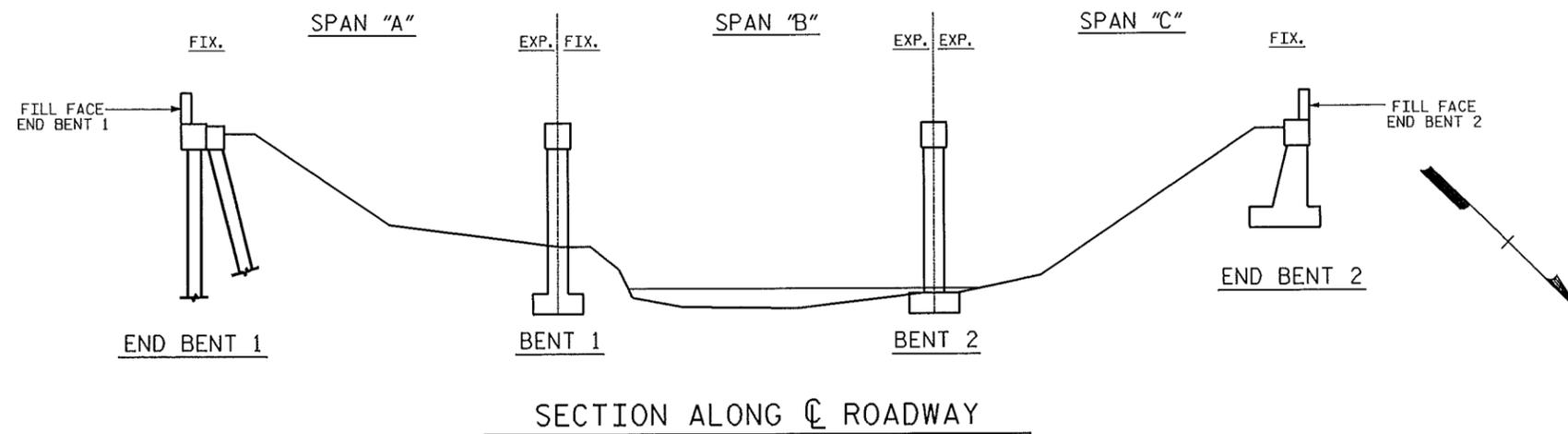
**PROFILE VIEW ROADWAY SECTION**

PROJECT NO. BP-5500U  
AVERY COUNTY  
BRIDGE NO. 35

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO.
APPROACH PAVEMENT TYPICAL SECTION AND PROFILE						S-9
REVISIONS						TOTAL SHEETS
NO.	BY	DATE	NO.	BY	DATE	17
1			3			
2			4			



DRAWN BY : R. WEISZ DATE : 12/13  
CHECKED BY : T. SHERRILL DATE : 2/14  
DESIGN ENGINEER OF RECORD: \_\_\_\_\_ DATE : \_\_\_\_\_



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

PROJECT NO. BP-5500U  
WATAUGA COUNTY  
 BRIDGE NO. 117

SHEET 1 OF 2

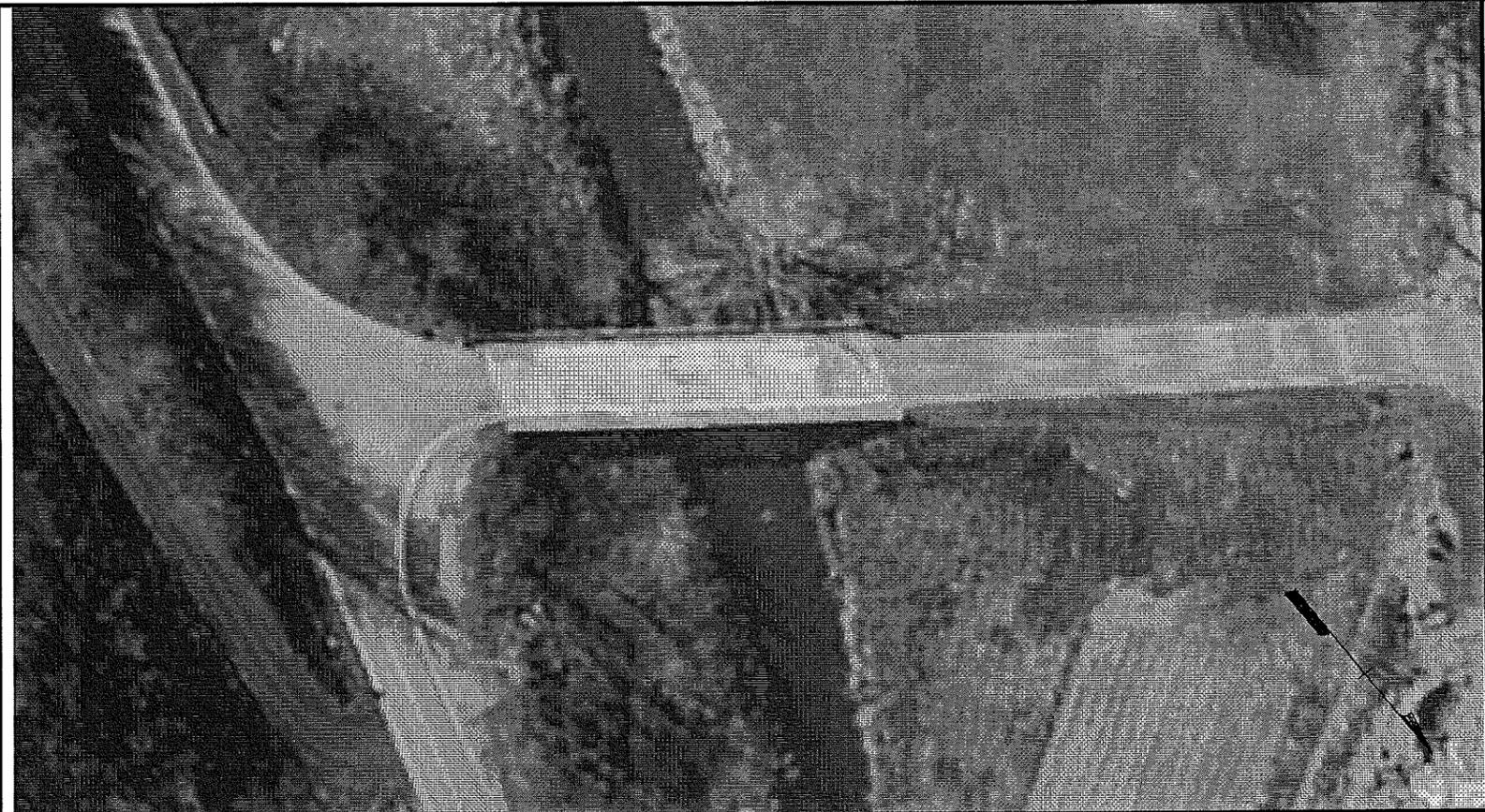
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

GENERAL DRAWING  
 BRIDGE 117 ON SR 1213  
 OVER COVE CREEK



DRAWN BY : R. WEISZ DATE : 12/13  
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**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 FLOOR	LATEX MODIFIED CONCRETE OVERLAY	PLACING & FINISHING LATEX MODIFIED CONCRETE	CLASS II SURFACE PREPERATION	FOAM JOINT SEALS	BRIDGE JOINT DEMOLITION	SCARIFYING BRIDGE DECK	HYDRO-DEMOLITION OF BRIDGE
SQ.YDS.	TONS	TONS	SQ. FT.	C.Y.	SQ.YDS.	SQ.YDS.	LUMP SUM	SQ. FT.	SQ.YDS.	SQ.YDS.
88	1	10	2294	21.7	294	18.4	LUMP SUM	46.8	294	294

PROJECT NO. BP-5500U  
WATAUGA COUNTY  
 BRIDGE NO. 117

SHEET 2 OF 2

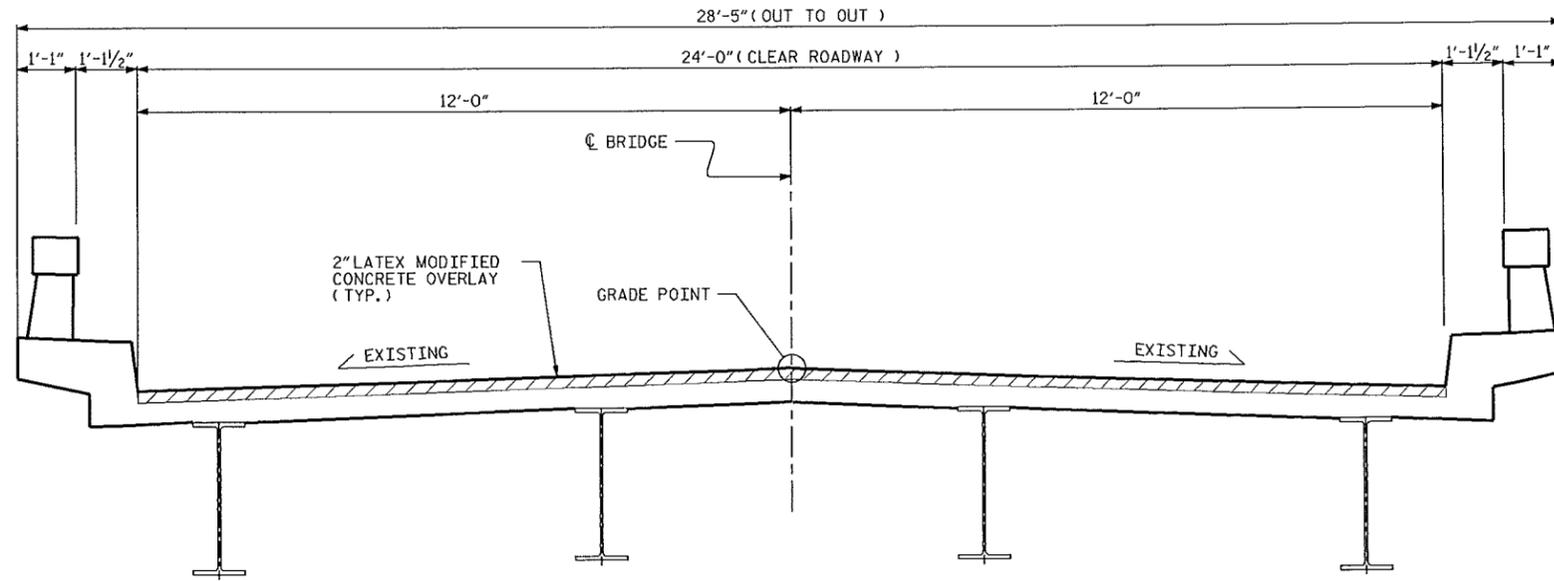
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GENERAL DRAWING**

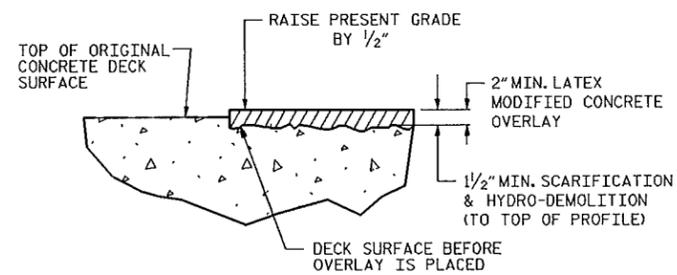


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			17

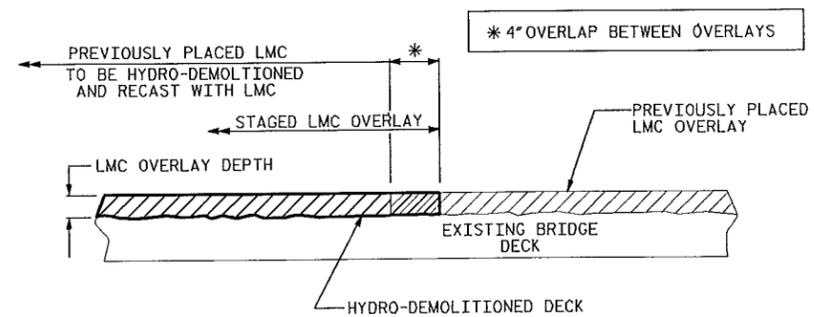
DRAWN BY : R.WEISZ DATE : 1/14  
 CHECKED BY : T.SHERILL DATE : 2/14  
 DESIGN ENGINEER OF RECORD: \_\_\_\_\_ DATE : \_\_\_\_\_



TYPICAL SECTION



DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY



SECTION THRU DECK  
STAGED LMC OVERLAY JOINTS

PROJECT NO. BP-5500U  
WATAUGA COUNTY  
 BRIDGE NO. 117

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

TYPICAL SECTION &  
 LATEX MODIFIED  
 CONCRETE DETAILS



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

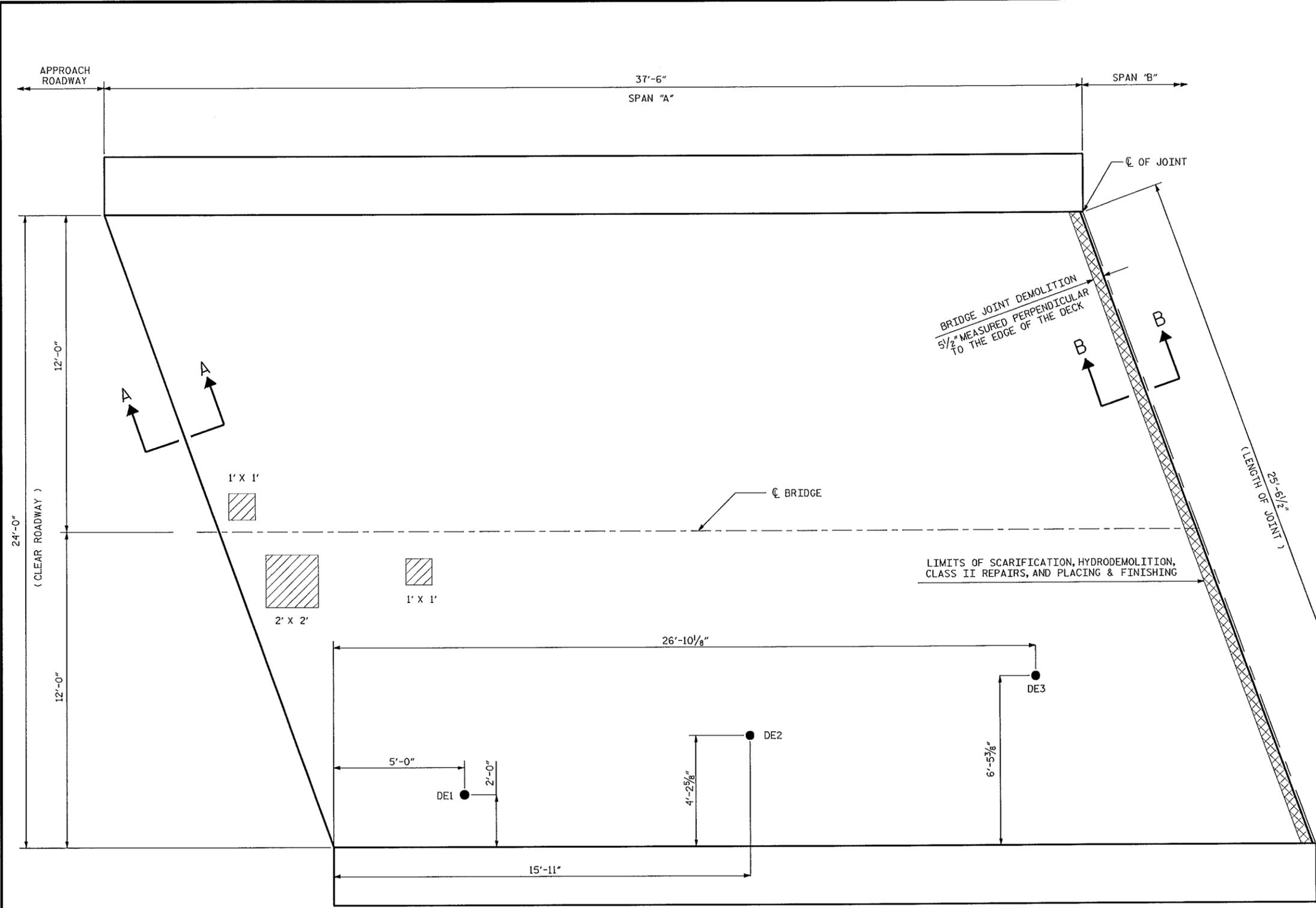
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 rrwelisz

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			17

SUMMARY OF QUANTITIES FOR SPAN "A"

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	98.5 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	98.5 SY	
CLASS II SURFACE PREPARATION	0.6 SY	
CLASS III SURFACE PREPARATION	0.0 SY	
BRIDGE JOINT DEMOLITION	11.7 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 PREPARATION" SPECIAL PROVISION.



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

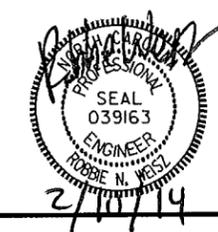
TEST LOCATION	REBAR COVER	CONCRETE STRENGTH
#1	1.60"	4,600 PSI
#2	1.50"	4,420 PSI
#3	1.60"	4,520 PSI

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

PROJECT NO. BP-5500U  
WATAUGA COUNTY  
 BRIDGE NO. 117

**PLAN OF SPAN "A"**  
 (SEE SHEET S-16 FOR SECTION A-A & B-B)

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



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

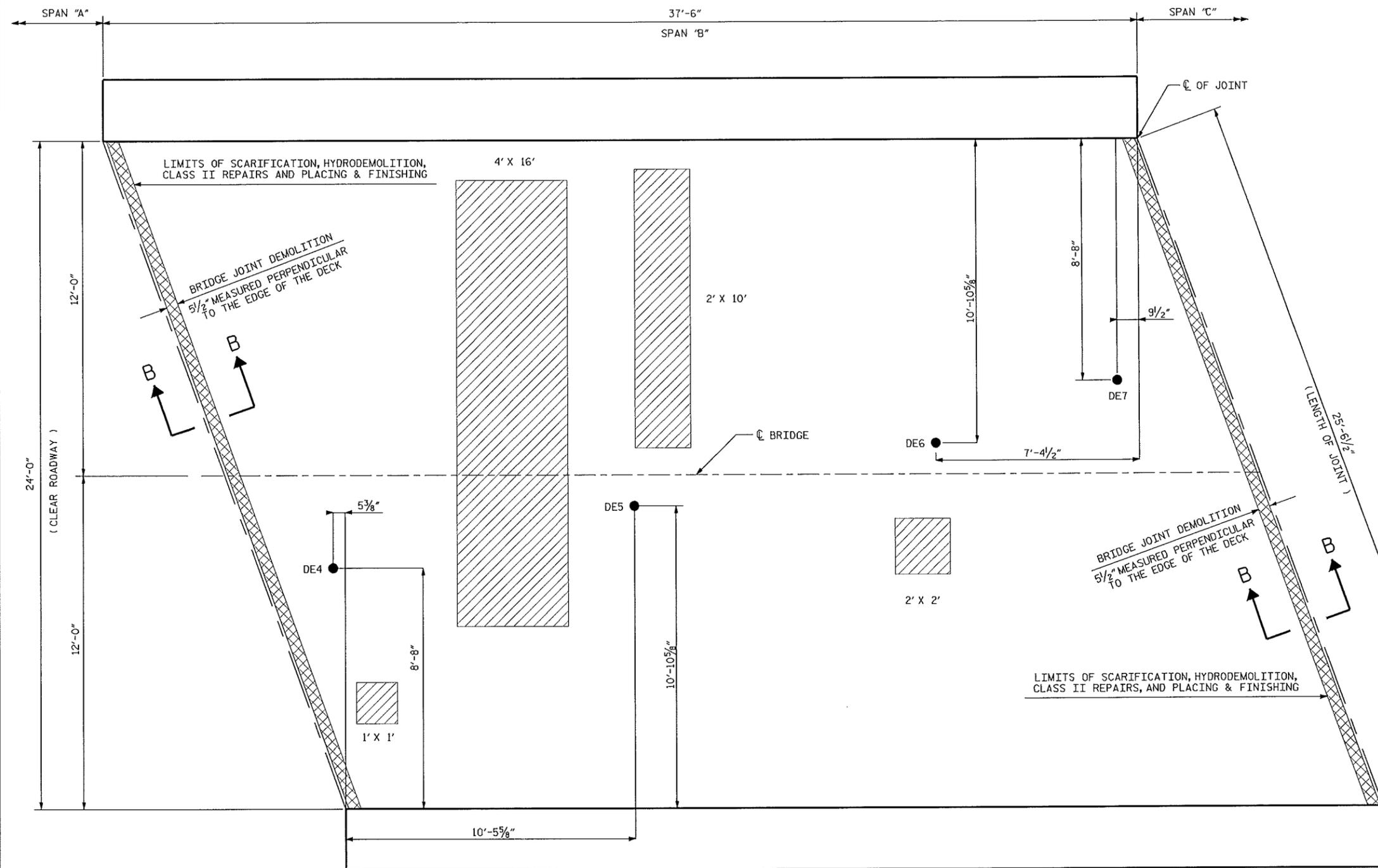
**SURFACE PREPARATION  
 SPAN "A"**

REVISIONS						SHEET NO. S-13
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 17
2			4			

SUMMARY OF QUANTITIES FOR SPAN "B"

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	97.0 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	97.0 SY	
CLASS II SURFACE PREPARATION	9.9 SY	
CLASS III SURFACE PREPARATION	0.0 SY	
JOINT DEMOLITION	23.4 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 PREPARATION" SPECIAL PROVISION.



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

TEST LOCATION	REBAR COVER	CONCRETE STRENGTH
#4	1.54"	4,480 PSI
#5	1.34"	4,560 PSI
#6	1.17"	4,160 PSI
#7	1.38"	4,280 PSI

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

PROJECT NO. BP-5500U  
WATAUGA COUNTY  
 BRIDGE NO. 117

PLAN OF SPAN "B"

(SEE SHEET S-16 FOR SECTION B-B)



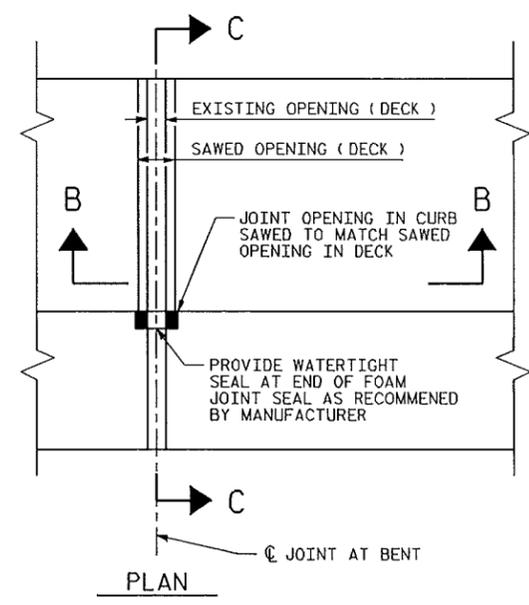
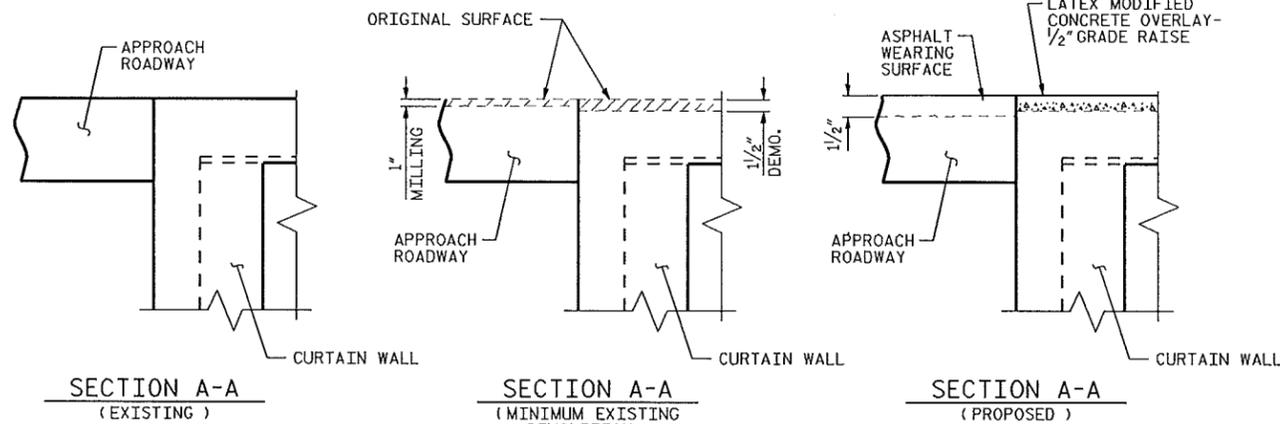
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SURFACE PREPARATION  
 SPAN "B"

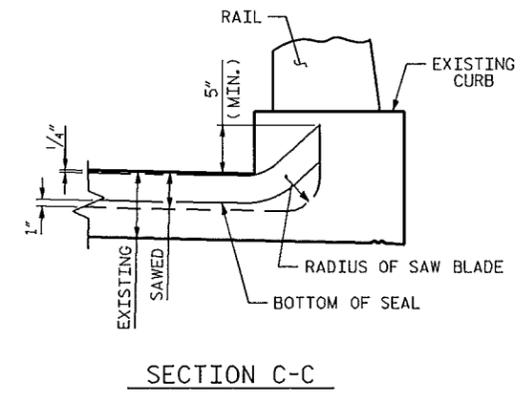
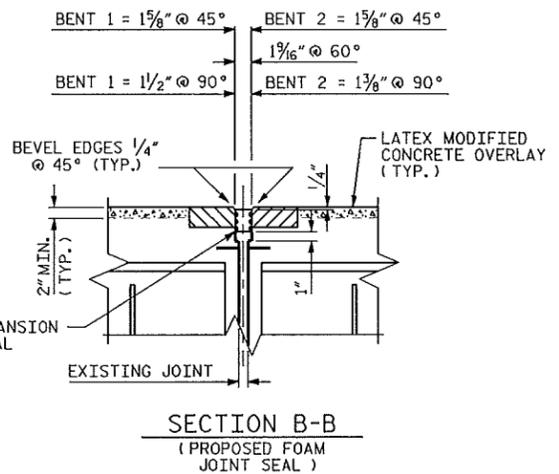
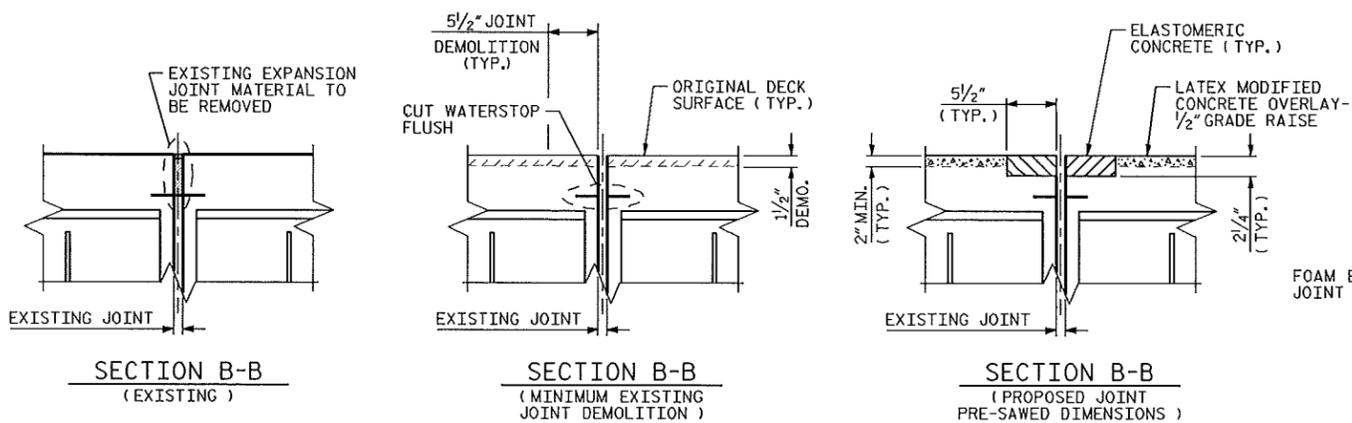
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			17
2			4			

DRAWN BY: R. WEISZ DATE: 1/14  
 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 THE 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.

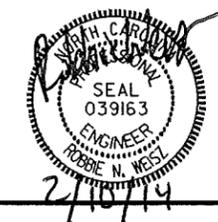
ELASTOMERIC CONCRETE	
	CU. FT.
BENT 1	4.39
BENT 2	4.39
TOTAL	8.78

PROJECT NO. BP-5500U  
WATAUGA COUNTY  
 BRIDGE NO. 117

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**JOINT DETAILS**

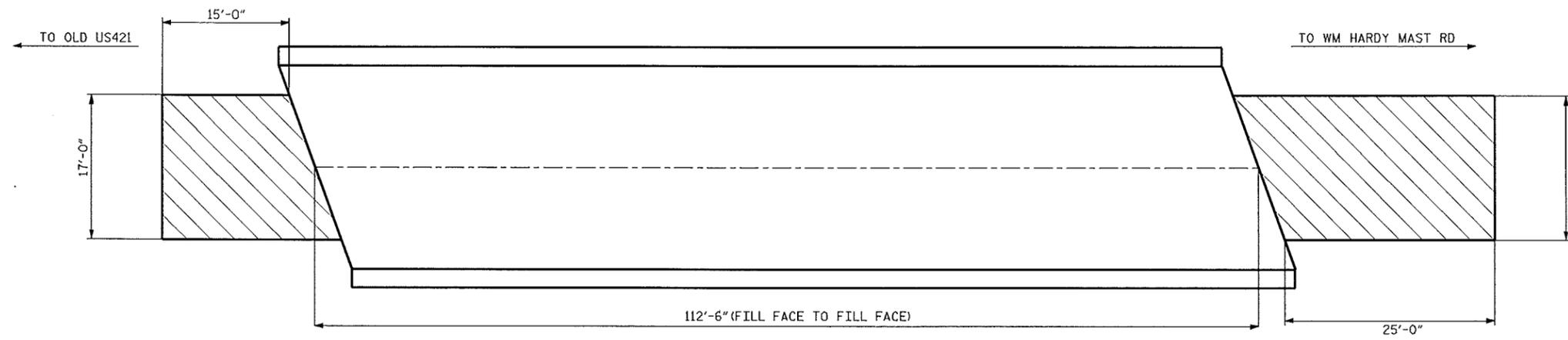
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			S-16
2			4			TOTAL SHEETS 17



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

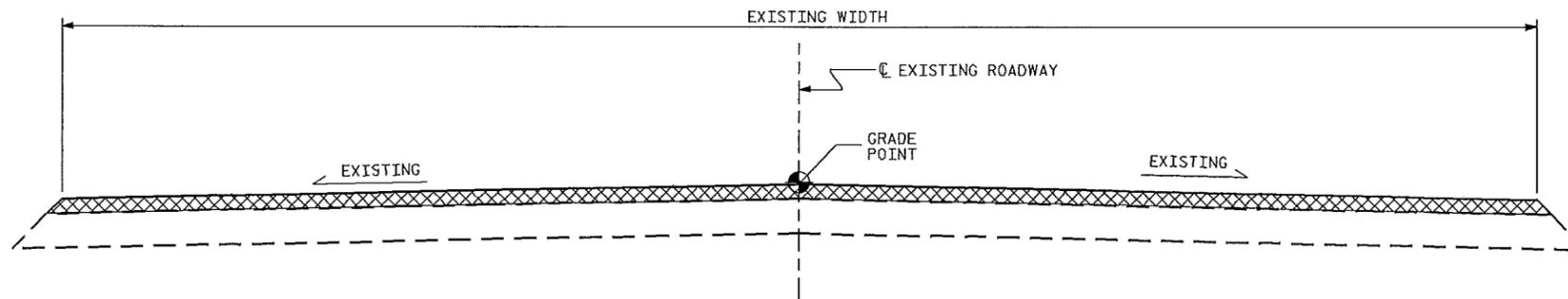
**NOTES:**

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.



**PLAN**

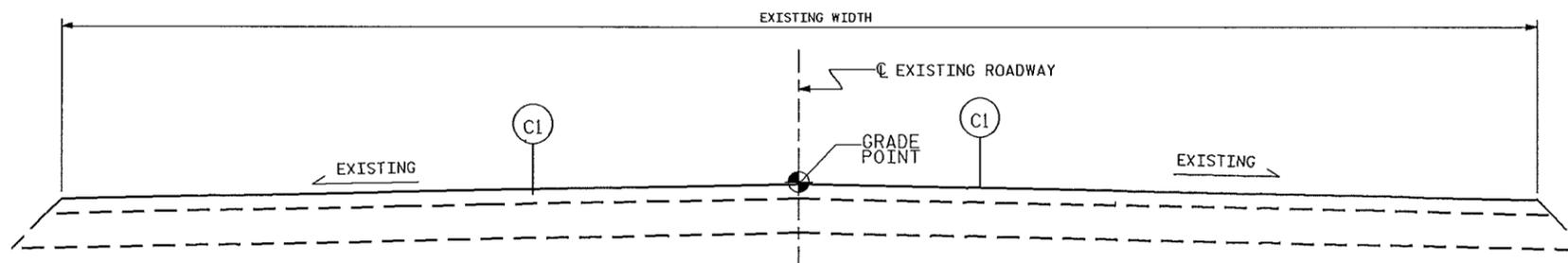
INCIDENTAL MILLING



**TYPICAL ROADWAY MILLING SECTION**

(MILL TO APPROX. 1" DEPTH - SEE SECTION A-A SHT S-16)

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.



**TYPICAL PROPOSED ROADWAY SECTION**

PROJECT NO. BP-5500U  
WATAUGA COUNTY  
 BRIDGE NO. 117

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**APPROACH MILLING  
 AND TYPICAL ROADWAY  
 SECTIONS**



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

10-FEB-2014 09:30  
 rnweisz

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS
2			4			17

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**TRANSPORTATION MANAGEMENT PLAN**

**AVERY & WATAUGA COUNTIES**



**LOCATIONS: AVERY CO. BRIDGE 35 ON SR 1305 (ELK RIVER RD) OVER ELK RIVER**  
**WATAUGA CO. BRIDGE 117 ON SR 1213 (GEORGES GAP RD) OVER COVE CREEK**

**SEE SHEET TMP-1B FOR VICINITY MAPS**

**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-1B	VICINITY MAPS
TMP-1C	TRANSPORTATION OPERATIONS PLAN: (GENERAL NOTES)
TMP-2	SPECIAL SIGN DESIGN
TMP-3	TEMPORARY TRAFFIC CONTROL PHASING
TMP-4	BRIDGE NO. 35 - PLAN VIEW
TMP-5	BRIDGE NO. 35 - TYPICAL SECTIONS
TMP-6	BRIDGE NO. 117 - DETOUR ROUTE

PLAN PREPARED BY:

**HDR** HDR Engineering, Inc. of the Carolinas  
3733 National Drive, Suite 207 Raleigh, N.C. 27612  
N.C.B.E.L.S. License Number: F-0116

MICHELLE WARD, P.E. *TRAFFIC CONTROL PROJECT ENGINEER*  
ERSKINE BROOKS, P.E. *TRAFFIC CONTROL PROJECT DESIGN ENGINEER*  
BRANDON SCOTT *TRAFFIC CONTROL DESIGN ENGINEER*  
CHRIS HARNDEN *TRAFFIC CONTROL DESIGN ENGINEER*



**N.C.D.O.T. WORK ZONE TRAFFIC CONTROL**  
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561  
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)  
PHONE: (919) 773-2800 FAX: (919) 771-2745

J. S. BOURNE, P.E. *STATE TRAFFIC MANAGEMENT ENGINEER*  
LAWRENCE GETTIER, P.E. *TRAFFIC CONTROL PROJECT ENGINEER*  
JESSE GILSTRAP *TRAFFIC CONTROL PROJECT DESIGN ENGINEER*  
*TRAFFIC CONTROL DESIGN ENGINEER*



SEAL  
NORTH CAROLINA  
PROFESSIONAL  
ENGINEER  
033789  
MICHELLE WARD  
9/30/13

SHEET NO.  
TMP-1

**BP-5500U**

**PROJECT:**

PLOT DRIVER: NCDOT\_pdf\_color\_eng\_50.plt  
USER: charnden  
DATE: 9/30/2013  
PENTABLE: NCDOT\_top.tbl  
TIME: 11:20 PM  
FILE: p:\pmap\pmap\00166\CON079759\0000000021600\06\_00\_Project\_Design\BP-5500U\Avery & Watauga\BP-5500U\_TMP-TMP-1.dgn



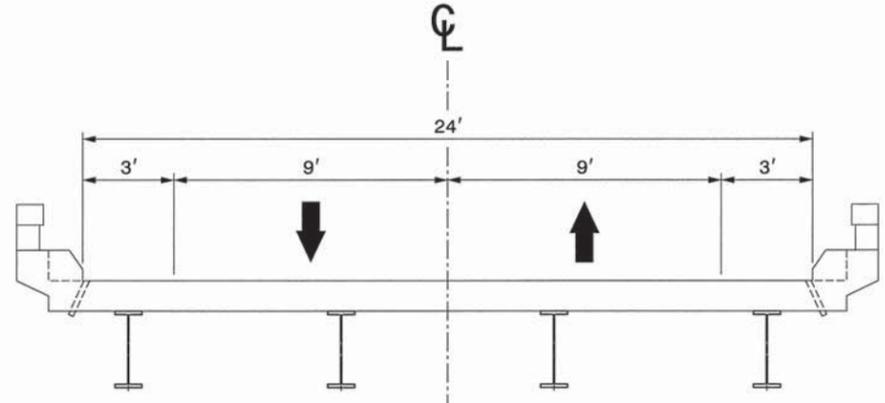




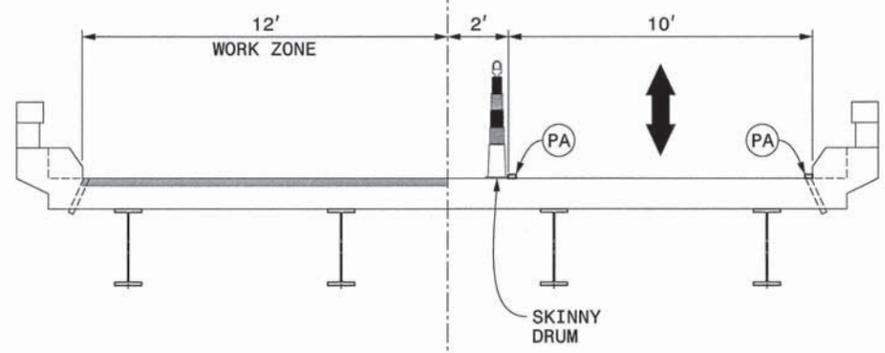




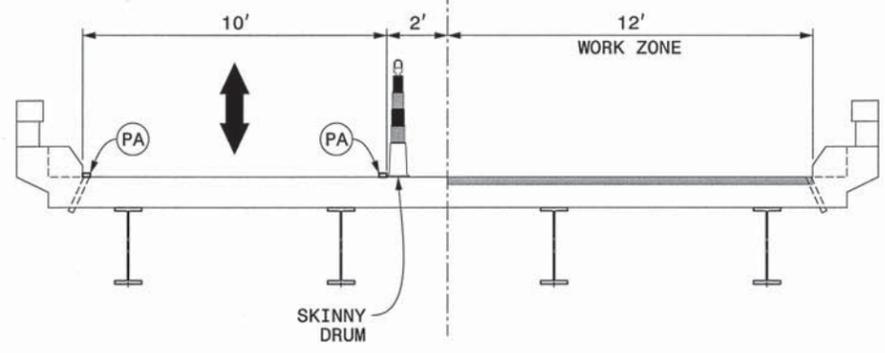




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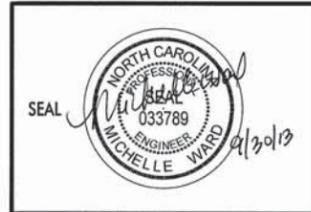


STAGE 1



STAGE 2

PLOT DRIVER: NCDOT...pdf\_color\_eng\_50.plt PENTABLE: NCDOT\_top.tbl  
 USER: charnden DATE: 9/30/2013 TIME: 11:40:03 PM  
 FILE: pwa\pwappt\PA01\SouthEast\_Temp\Documents\000166\CON0079759\000000000216007\06.00\_Project\_Design\BP-5500U\Traffic\TrafficControl\TCP\BP-5500U\_Avery & Watauga\BP-5500U\_TMP-5.dgn

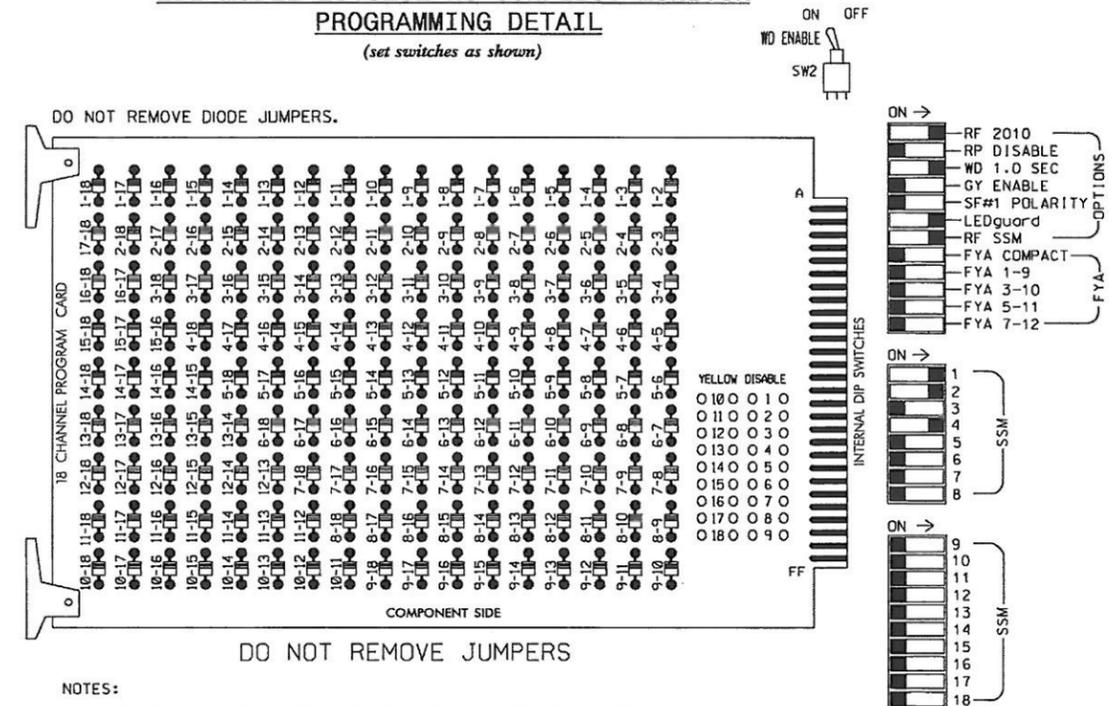


BRIDGE NO. 35  
 AVERY COUNTY  
 (SR 1305/ELK RIVER ROAD  
 OVER ELK RIVER)  
 TYPICAL SECTIONS





**EDI MODEL 2018ECL-NC CONFLICT MONITOR  
PROGRAMMING DETAIL**  
(set switches as shown)



**NOTES:**

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
3. Ensure that Red Enable is active at all times during normal operation.
4. Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.

**NOTES**

1. To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Enable Simultaneous Gap-Out for all phases.
3. Program controller to rest in red when no vehicle calls are present. (See programming note this sheet.)
4. Program controller to start up in phase 2 Red Clearance. (See programming note this sheet.)

**SIGNAL HEAD HOOK-UP CHART**

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED
SIGNAL HEAD NO.	11,12	21,22	NU	NU	41,42	NU	NU	NU	NU	NU	NU	NU
RED	125	128			101							
YELLOW	126	129			102							
GREEN	127	130			103							
RED ARROW												
YELLOW ARROW												
GREEN ARROW												

NU = Not Used

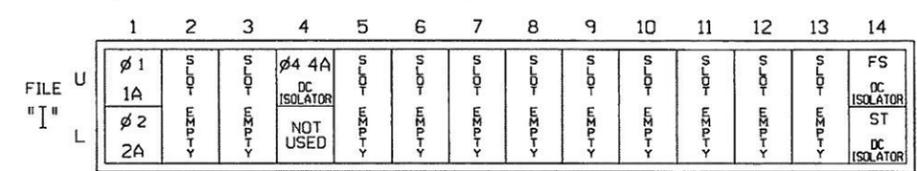
**EQUIPMENT INFORMATION**

CONTROLLER.....2070L  
 CABINET.....336  
 SOFTWARE.....ECONOLITE OASIS  
 CABINET MOUNT.....POLE  
 OUTPUT FILE POSITIONS...12  
 LOAD SWITCHES USED.....S1,S2,S5  
 PHASES USED.....1,2,4  
 OVERLAPS.....NONE

**RED CLEARANCE START-UP PROGRAMMING**

From main menu press '2' (Phase Control). Then '1' (Phase Control Functions). Scroll down on this screen to 'Startup Red Clr' and toggle phase 2 'On'. (An 'X' will appear under this phase column to indicate activation).

**INPUT FILE POSITION LAYOUT**  
(front view)



EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE  
 ST = STOP TIME

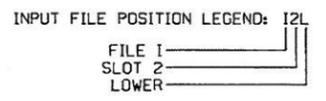
Note: Install a model 242 DC isolator in slot 14 for use with microwave detector. See the Accuwave Detector Wiring Detail on sheet 2.

**IMPORTANT:** For proper operation of the Accuwave microwave detector, remove surge protection from T21-7 and TB21-8, and from TB23-7 and TB23-8.

**INPUT FILE CONNECTION & PROGRAMMING CHART**

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A	TB21-1,2	I1U	56	18	1	1	Y	Y			
2A	TB23-1,2	I1L	47	9	22	2	Y	Y			
★ 4A	TB21-7,8	I4U	41	3	4	4	Y	Y			10

★ Microwave Detector, see 'Accuwave Detector Panel Wiring Detail' sheet 2.

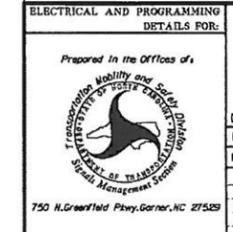


**'RED REST' OPERATION PROGRAMMING**

From main menu press '2' (Phase Control). Then '1' (Phase Control Functions). Scroll down on this screen to 'Red Rest' and toggle phases 1, 2 and 4 'On'. (An 'X' will appear under this phase column to indicate activation).

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 11-1430 T1  
 DESIGNED: August 2013  
 SEALED: 9/16/13  
 REVISED: N/A

Electrical Detail - Temp 1 - Sheet 1 of 2



SR 1305 (Elk River Road)  
 at  
 Bridge Over Elk River  
 Division 11 Avery County Elk Park  
 PLAN DATE: September 2013 REVIEWED BY: T. J. J...  
 PREPARED BY: C. Strickland REVIEWED BY:  
 REVISIONS: INIT. DATE

SEAL  
 NORTH CAROLINA  
 PROFESSIONAL ENGINEER  
 SEAL 022013  
 GEORGE C. BROWN  
 SIGNATURE DATE 9/18/13  
 SIG. INVENTORY NO. 11-1430T1

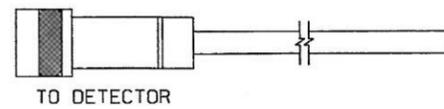
15-SEP-2013 13:15  
 Start: \\smt\st\group\15\g\_mon\5\1\1430\_sml\_elec\_xxx.dgn  
 User: cstrickland

### ACCUWAVE DETECTOR PANEL WIRING DETAIL

(wire as shown)

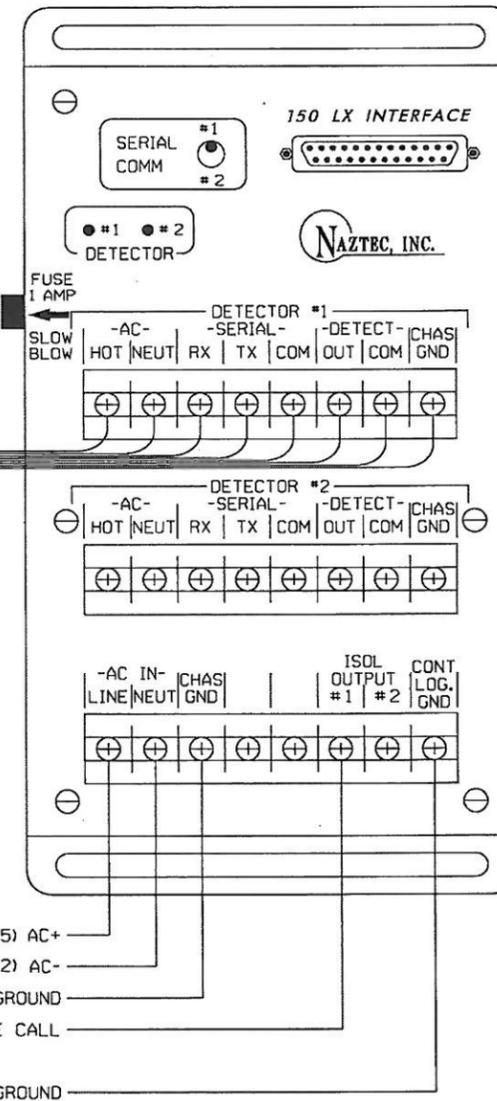
#### WIRE LIST FOR ACCUWAVE DETECTOR CABLE

COLOR	PIN#	SET #	PANEL CONNECTIONS
BLACK	A	SET 1	AC HOT
WHITE	B	SET 1	AC NEUTRAL
SILVER	C	SET 1	CHASSIS GROUND
BROWN	D	SET 4	SERIAL TX
BLACK	E	SET 2,4	SERIAL COMMON
RED	F	SET 2	SERIAL RX
SILVER	N.C.	SET 2,4	NO CONNECTION
BLUE	H	SET 3	DETECTOR COMMON
BLACK	L	SET 3	DETECTOR OUT
YELLOW	M	1/2 SET	NO CONNECTION



#### NOTES:

1. Detector is an Accuwave Model 150LX presence detector.
2. Information in the detector cable wire list chart is for cable purchased from Naztec and may vary if purchased from another source.
3. Important: for proper operation of the microwave detector, remove surge protection from TB21-7, TB21-8, TB23-7 and TB23-8 and insert 242 DC Isolator in slot I4.



(T1-5) AC+  
 (T1-2) AC-  
 (T1-1) CHASSIS GROUND  
 (TB21-7) PHASE 4 VEHICLE CALL  
 (TB21-8) LOGIC GROUND

Electrical Detail - Temp 1 - Sheet 2 of 2

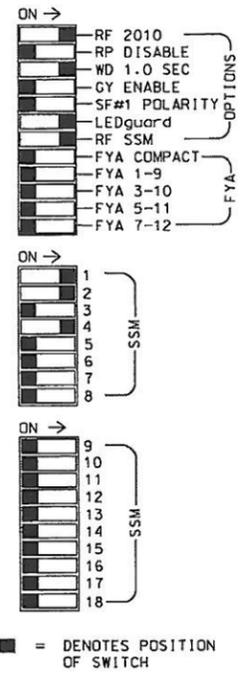
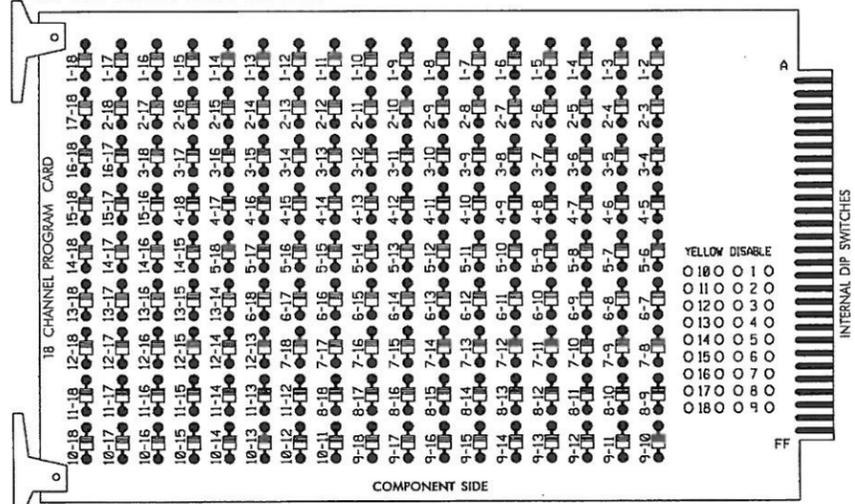
THIS ELECTRICAL DETAIL IS FOR  
 THE SIGNAL DESIGN: 11-1430 T1  
 DESIGNED: August 2013  
 SEALED: 9/16/13  
 REVISED: N/A

ELECTRICAL AND PROGRAMMING DETAILS FOR:  Prepared in the Offices of:  750 N. Greenfield Pkwy, Garner, NC 27529	<b>SR 1305 (Elk River Road)          at          Bridge Over Elk River</b>		SEAL  ENGINEER GEORGE C. BRUNNY
	Division 11 PLAN DATE: September 2013 PREPARED BY: C. Strickland	Avery County Elk Park REVIEWED BY: T. V. G.	



**EDI MODEL 2018ECL-NC CONFLICT MONITOR**  
**PROGRAMMING DETAIL**  
(set switches as shown)

DO NOT REMOVE DIODE JUMPERS.



**NOTES:**

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
3. Ensure that Red Enable is active at all times during normal operation.
4. Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.

**NOTES**

1. To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Enable Simultaneous Gap-Out for all phases.
3. Program controller to rest in red when no vehicle calls are present. (See programming note this sheet.)
4. Program controller to start up in phase 2 Red Clearance. (See programming note this sheet.)

**EQUIPMENT INFORMATION**

CONTROLLER.....2070L  
CABINET.....336  
SOFTWARE.....ECONOLITE OASIS  
CABINET MOUNT.....POLE  
OUTPUT FILE POSITIONS...12  
LOAD SWITCHES USED.....S1,S2,S5  
PHASES USED.....1,2,4  
OVERLAPS.....NONE

**SIGNAL HEAD HOOK-UP CHART**

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED
SIGNAL HEAD NO.	11,12	21,22	NU	NU	41,42	NU	NU	NU	NU	NU	NU	NU
RED	125	128			101							
YELLOW	126	129			102							
GREEN	127	130			103							
RED ARROW												
YELLOW ARROW												
GREEN ARROW												

NU = Not Used

**RED CLEARANCE START-UP PROGRAMMING**

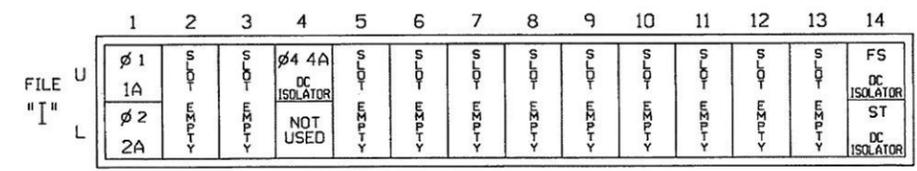
From main menu press '2' (Phase Control). Then '1' (Phase Control Functions). Scroll down on this screen to 'Startup Red Clr' and toggle phase 2 'On'. (An 'X' will appear under this phase column to indicate activation).

**'RED REST' OPERATION PROGRAMMING**

From main menu press '2' (Phase Control). Then '1' (Phase Control Functions). Scroll down on this screen to 'Red Rest' and toggle phases 1, 2 and 4 'On'. (An 'X' will appear under this phase column to indicate activation).

**INPUT FILE POSITION LAYOUT**

(front view)



EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE  
ST = STOP TIME

Note: Install a model 242 DC isolator in slot 14 for use with microwave detector. See the Accuwave Detector Wiring Detail on sheet 2.

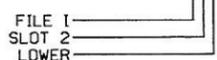
**IMPORTANT:** For proper operation of the Accuwave microwave detector, remove surge protection from T21-7 and TB21-8, and from TB23-7 and TB23-8.

**INPUT FILE CONNECTION & PROGRAMMING CHART**

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A	TB21-1,2	IJU	56	18	1	1	Y	Y			
2A	TB23-1,2	IIL	47	9	22	2	Y	Y			
★ 4A	TB21-7,8	14U	41	3	4	4	Y	Y			10

★ Microwave Detector, see 'Accuwave Detector Panel Wiring Detail' sheet 2.

**INPUT FILE POSITION LEGEND: I2L**



THIS ELECTRICAL DETAIL IS FOR  
THE SIGNAL DESIGN: 11-1430 T2  
DESIGNED: August 2013  
SEALED: 9/16/13  
REVISED: N/A

Electrical Detail - Temp 2 - Sheet 1 of 2

Electrical and Programming Details for:

SR 1305 (Elk River Road) at Bridge Over Elk River

Division 11 Avery County Elk Park

PLAN DATE: September 2013 REVIEWED BY: T. J. J.

PREPARED BY: C. Strickland REVIEWED BY:

REVISIONS: \_\_\_\_\_ DATE: \_\_\_\_\_

750 N. Greenfield Pkwy, Garner, NC 27529

SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022013 GEORGE C. BROWN

Signature: George C. Brown 9/18/13

SIG. INVENTORY NO. 11-1430T2

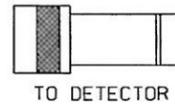
16-0512-2013 13:22  
5:41:53 AM 15 Sigma Engineering, Inc. Modified: 11/13/13 09:06:00 AM  
CONTRACT NO.

### ACCUWAVE DETECTOR PANEL WIRING DETAIL

(wire as shown)

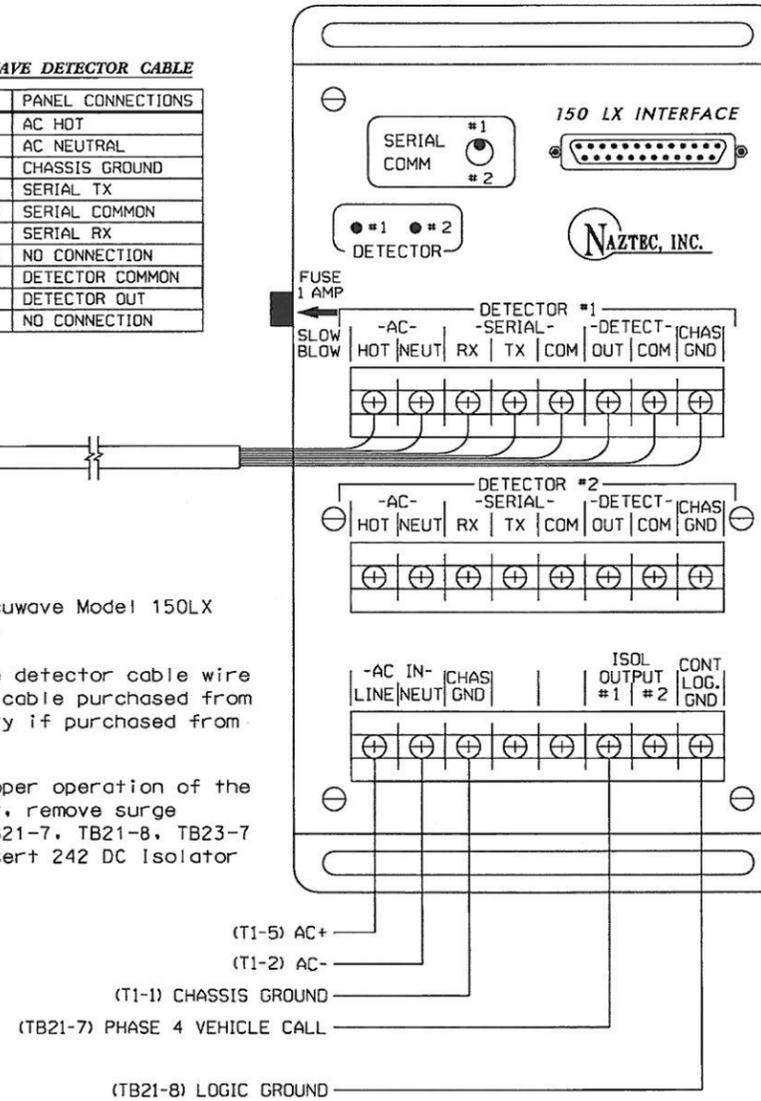
#### WIRE LIST FOR ACCUWAVE DETECTOR CABLE

COLOR	PIN#	SET #	PANEL CONNECTIONS
BLACK	A	SET 1	AC HOT
WHITE	B	SET 1	AC NEUTRAL
SILVER	C	SET 1	CHASSIS GROUND
BROWN	D	SET 4	SERIAL TX
BLACK	E	SET 2,4	SERIAL COMMON
RED	F	SET 2	SERIAL RX
SILVER	N.C.	SET 2,4	NO CONNECTION
BLUE	H	SET 3	DETECTOR COMMON
BLACK	L	SET 3	DETECTOR OUT
YELLOW	M	1/2SET	NO CONNECTION



#### NOTES:

1. Detector is an Accuwave Model 150LX presence detector.
2. Information in the detector cable wire list chart is for cable purchased from Naztec and may vary if purchased from another source.
3. Important: for proper operation of the microwave detector, remove surge protection from TB21-7, TB21-8, TB23-7 and TB23-8 and insert 242 DC Isolator in slot I4.



15-SEP-2013 13:23  
 S:\PROJECTS\Signal\Signal\Program\sig\11430.dgn  
 11430.dgn

THIS ELECTRICAL DETAIL IS FOR  
 THE SIGNAL DESIGN: 11-1430 T2  
 DESIGNED: August 2013  
 SEALED: 9/16/13  
 REVISED: N/A

Electrical Detail - Temp 2 - Sheet 2 of 2

ELECTRICAL AND PROGRAMMING DETAILS FOR: Prepared in the Offices of:  Signal Management Systems, Inc. 750 N. Greenfield Pkwy, Garner, NC 27529	SR 1305 (Elk River Road) at Bridge Over Elk River		SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022013 GEORGE C. BROWN
	Division 11 PLAN DATE: September 2013 PREPARED BY: C. Strickland	Avery County Elk Park REVIEWED BY: T. J. J.	

Signature: *George C. Brown* 9/16/13  
 Date: 9/16/13  
 Sig. Inventory No. 11-1430T2