

10/25/2011 10:34:05 AM N:\PROJECTS\CONTRACTS\Division\Contractors\WORDPROC\NCOT 2011\BP-5300N Haywood\Map\Plane Sealed 9-15-11\01HAYWOOD_YSH.dgn

TIP PROJECT: BP-5300N

CONTRACT: C202899



PROJECT LENGTH

BRIDGE #124
LENGTH STRUCTURE PROJECT = .02 MILE

BRIDGE #142
LENGTH STRUCTURE PROJECT = .07 MILE

BRIDGE #171
LENGTH STRUCTURE PROJECT = .12 MILE

BRIDGES #205 & #208
LENGTH STRUCTURE PROJECT = .06 MILE

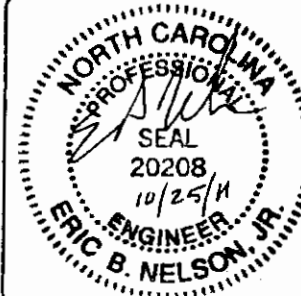
Prepared For:
DIVISION OF BRIDGE MANAGEMENT
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

LETTING DATE:
JANUARY 17, 2012

ENGINEER



MARK F. ROBBINS, P.E.
PROJECT MANAGER

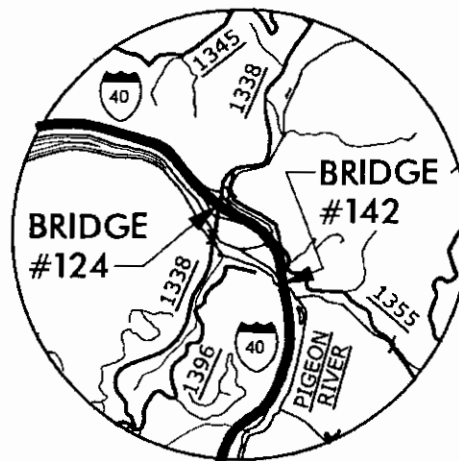
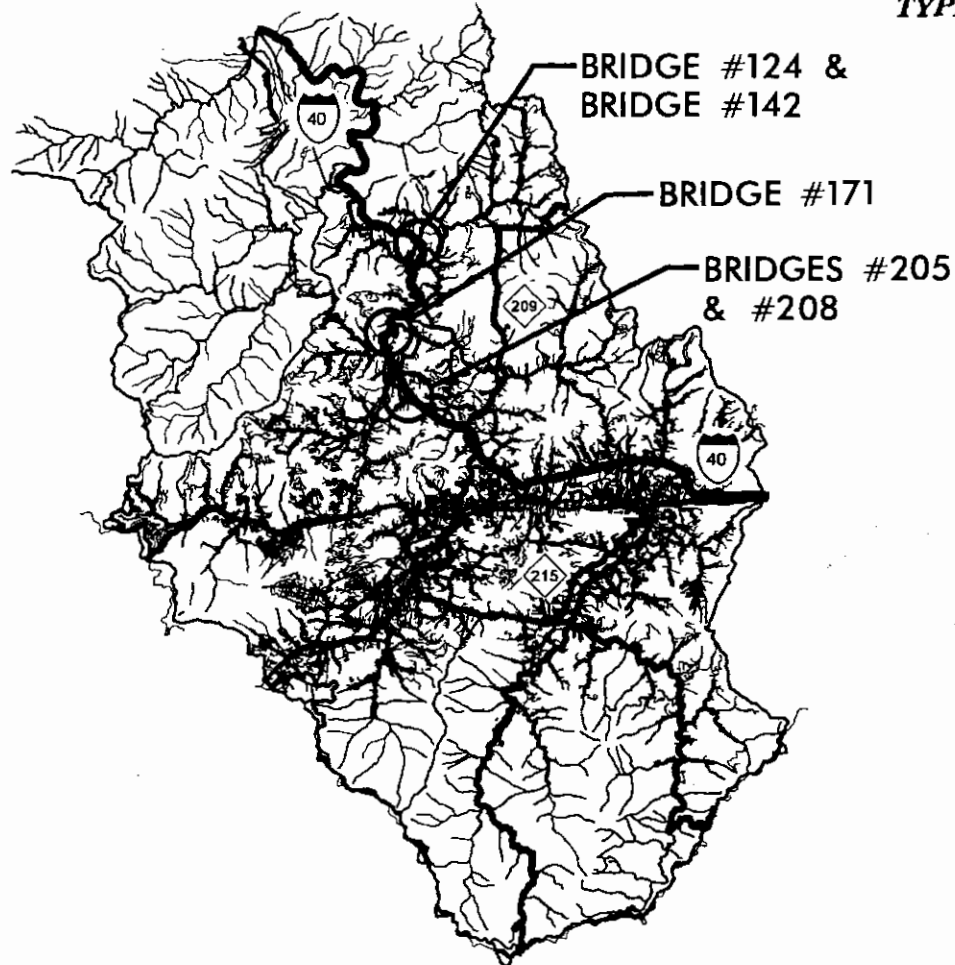


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

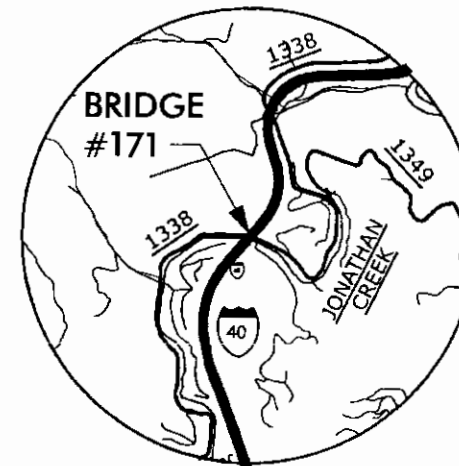
HAYWOOD COUNTY

LOCATION: BRIDGE #124 ON INTERSTATE 40 OVER S.R. 1338
BRIDGE #142 ON INTERSTATE 40 OVER PIGEON RIVER
BRIDGE #171 ON INTERSTATE 40 OVER S.R. 1338, JONATHAN CREEK
BRIDGES #205 & #208 ON INTERSTATE 40 OVER S.R. 1364

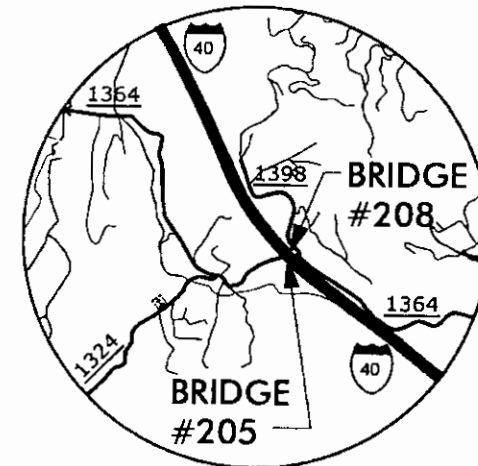
TYPE OF WORK: BRIDGE PRESERVATION: STRUCTURAL STEEL AND SUBSTRUCTURE REPAIRS



VICINITY MAP
BRIDGES #124 & #142



VICINITY MAP
BRIDGE #171



VICINITY MAP
BRIDGES #205 & #208

STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC LICENSE NO. F-0991

STATE	STATE PROJECT NUMBER NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP-5300N	1A	23
STATE FUNDING		DISCUSSION	
45438.1.1		BRIMS-040-1(227)	
45438.3.13		BRIMS-040-1(227)	
		CONSTR.	

CONTRACT:

TIP PROJECT: BP-5300N

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

HAYWOOD COUNTY

LOCATION: BRIDGE #124 ON INTERSTATE 40 OVER S.R. 1338
BRIDGE #142 ON INTERSTATE 40 OVER PIGEON RIVER
BRIDGE #171 ON INTERSTATE 40 OVER S.R. 1338, JONATHAN CREEK
BRIDGES #205 & #208 ON INTERSTATE 40 OVER S.R. 1364

TYPE OF WORK: BRIDGE PRESERVATION: STRUCTURAL STEEL AND SUBSTRUCTURE REPAIRS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP-5300N	1A	X
STATE PROJ. NO.	F. & P. PROJ. NO.	DESCRIPTION	
45438.1.1	BRIMS-040-1(227)	PE	
45438.3.13	BRIMS-040-1(227)	CONSTR.	

INDEX OF SHEETS

1	TITLE SHEET
1A	INDEX OF SHEETS
2	SUMMARY OF QUANTITIES
S1-S23	STRUCTURES
TMP-1 - TMP-4A	TRAFFIC MANAGEMENT PLANS



Prepared For:
DIVISION OF BRIDGE MANAGEMENT
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

ENGINEER

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

GENERAL NOTES

EXISTING BRIDGE AND REPAIR DETAILS INDICATED ON THE PLANS ARE FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE AND REPAIR DETAILS SHOWN ON THE PLANS AND THE ACTUAL CONDITION AT THE PROJECT SITE.

WORK ON BRIDGES SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL BELOW. THE CONTRACTOR SHALL SUBMIT PLANS FOR CONSTRUCTION ACCESS IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS AND THE PROJECT SPECIAL PROVISIONS.

IT IS THE CONTRACTORS RESPONSIBILITY TO FOLLOW ALL OSHA AND STATE SAFETY REQUIREMENTS.

DIMENSIONS IN THESE PLANS ARE BASED ON ORIGINAL PLANS. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.

ALL VISUAL AND NON-DESTRUCTIVE TESTING WILL BE PERFORMED BY NCDOT.

FOR UNDER STRUCTURE WORK PLATFORM, SEE SPECIAL PROVISIONS.

CONTRACTOR SHALL COORDINATE WITH INSPECTION PERSONNEL TO CAREFULLY EXAMINE HEAVILY RUSTED AREAS, AFTER SURFACE PREPARATION, TO DETERMINE IF ANY SUBSTANTIAL SECTION LOSS HAS OCCURRED.

ALL STRUCTURAL STEEL FOR REPAIRS SHALL BE NEW AASHTO M270 GRADE 36, OR APPROVED EQUIVALENT.

ALL WELDING SHALL BE DONE IN ACCORDANCE WITH CURRENT AWS SPECIFICATIONS

FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS.

FOR MAINTENANCE AND PROTECTION OF TRAFFIC BENEATH PROPOSED STRUCTURE, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR ADHESIVELY ANCHORED DOWELS, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR STRUCTURAL STEEL REPAIRS, SEE SPECIAL PROVISIONS.

FOR DECK DRAIN MODIFICATION, SEE SPECIAL PROVISIONS.

FOR CLEANING & PAINTING BRIDGE NO. 124, 142, 171, 205 & 208, SEE STANDARD SPECIFICATIONS, SECTION 442, "PAINTING STEEL STRUCTURES".

FOR POLLUTION CONTROL, SEE STANDARD SPECIFICATIONS, SECTION 442, "PAINTING STEEL STRUCTURES".

INTERIOR BENT CAPS SHALL BE COATED WITH EPOXY PROTECTIVE COATING, SEE STANDARD SPECIFICATIONS SECTION 420-18. ALL COSTS RELATED TO EPOXY PROTECTIVE COATING SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS CONTRACT PAY ITEMS.

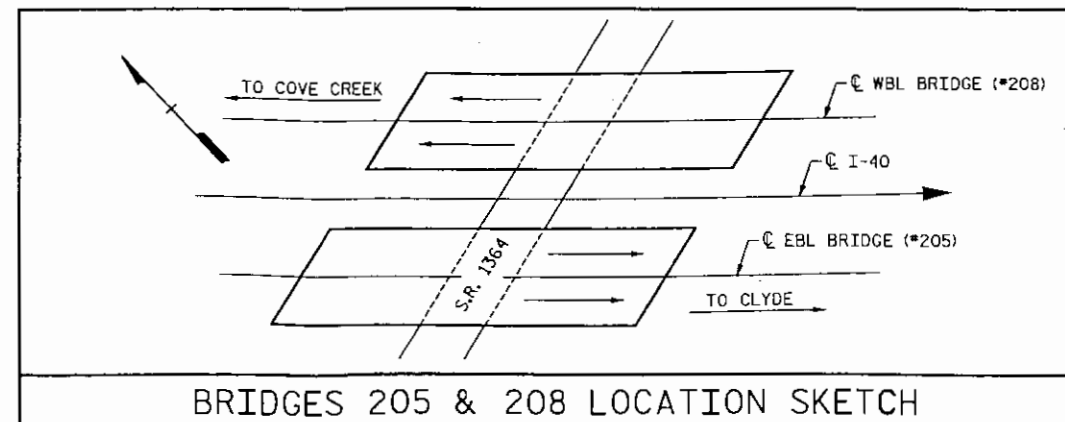
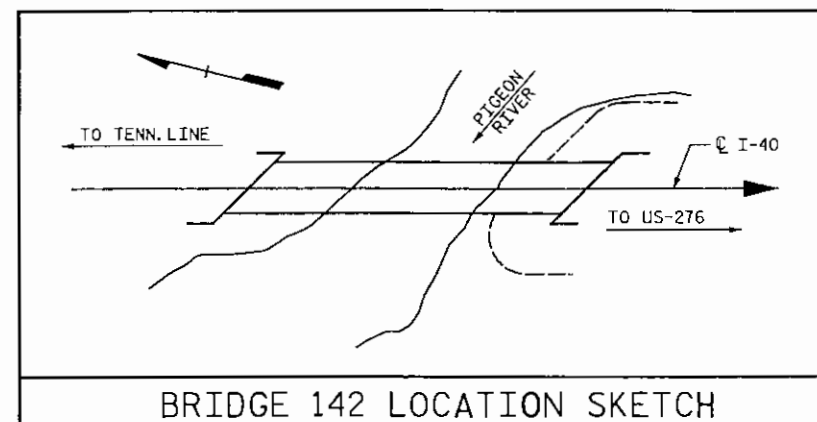
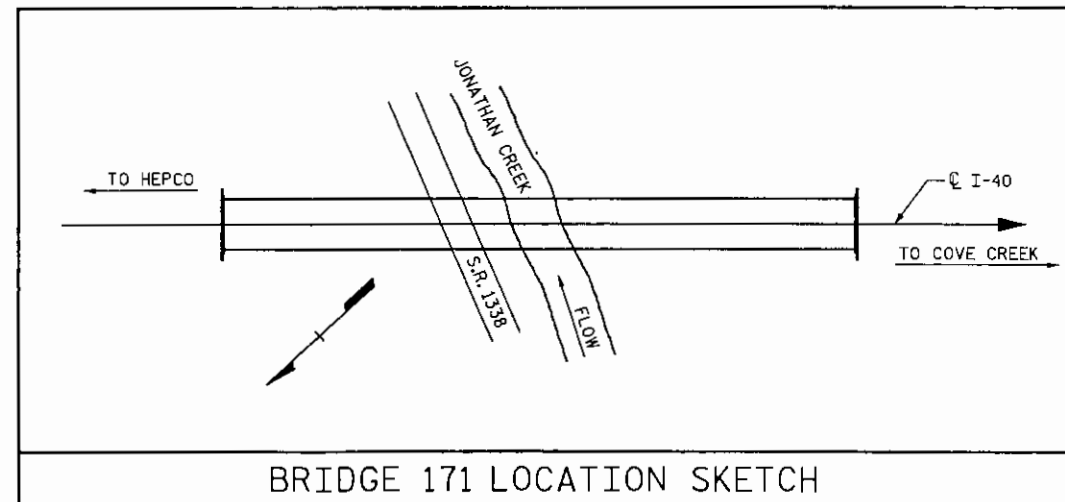
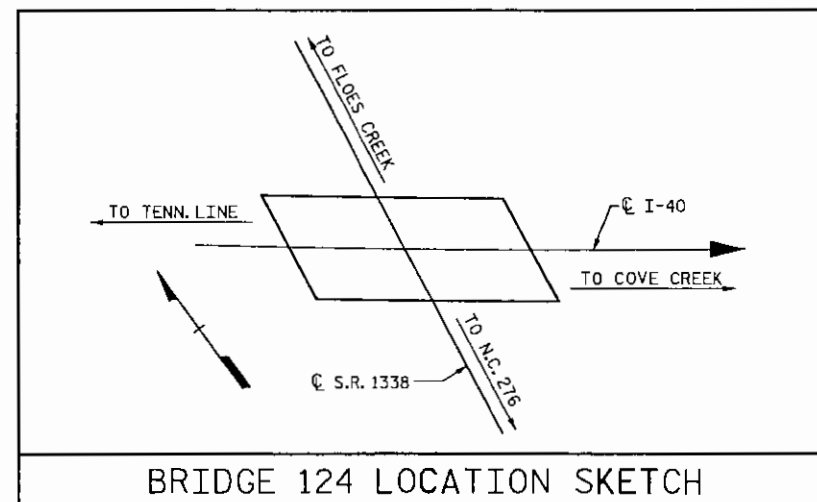
REPLACEMENT OF DAMAGED REINFORCING STEEL AND DOWELS USED IN CONCRETE REPAIR SHALL BE CONSIDERED INCIDENTAL TO CONCRETE REPAIRS. NO ADDITIONAL PAYMENT OR MEASUREMENT WILL BE MADE.

THE COST ASSOCIATED WITH PAINTING AREAS DAMAGED BY FIELD WELDING OR OTHER SHALL BE CONSIDERED INCIDENTAL IN THE BID PRICE OF "STRUCTURAL STEEL REPAIRS".

ALL THE COST ASSOCIATED WITH PREPARING ENGINEERING SUBMITTALS FOR JACKING, ANY ASSOCIATED TEMPORARY SUPPORTS, DIAPHRAGM MODIFICATIONS, EQUIPMENT AND MISCELLANEOUS COMPONENTS SHALL BE CONSIDERED INCIDENTAL TO THE PAY ITEM FOR "BRIDGE JACKING". NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.

THE COST OF LABOR, MATERIALS, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY FOR REMOVAL AND DISPOSAL OF EXISTING STRUCTURE COMPONENTS SHALL BE INCLUDED IN THE BID PRICE FOR THE VARIOUS CONTRACT PAY ITEMS.

DEBRIS SHALL BE REMOVED FROM EXISTING BENT CAPS. ALL COST ASSOCIATED WITH DEBRIS REMOVAL SHALL BE CONSIDERED INCIDENTAL TO CONCRETE REPAIR PAY ITEM.



PROJECT NO. BP-5300N
HAYWOOD COUNTY
BRIDGE NO.: 124,142,171,205&208
REHABILITATION OF HAYWOOD CO. BRIDGES



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
GENERAL NOTES AND
LOCATION SKETCHES
BRIDGES ON I-40

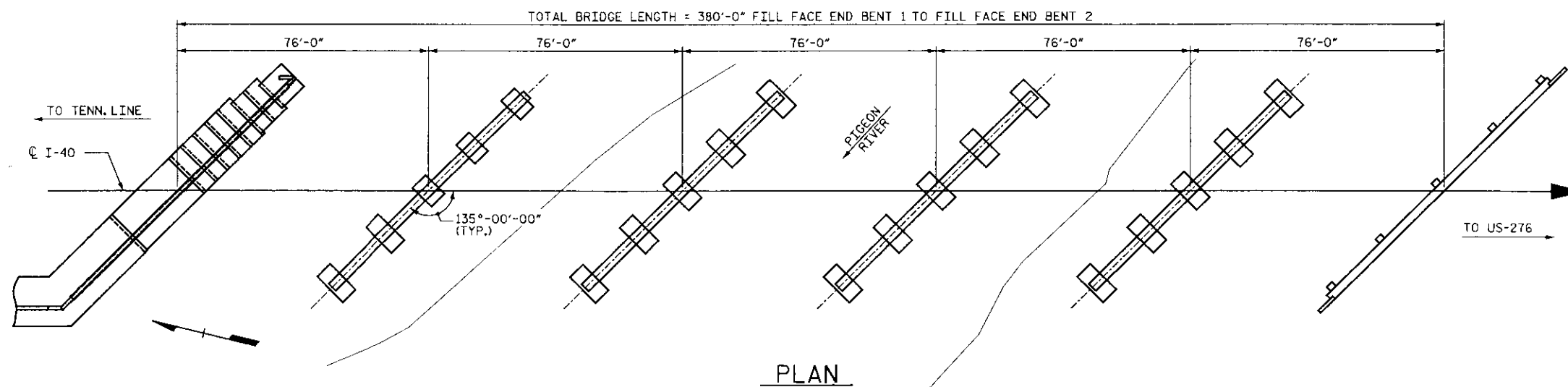
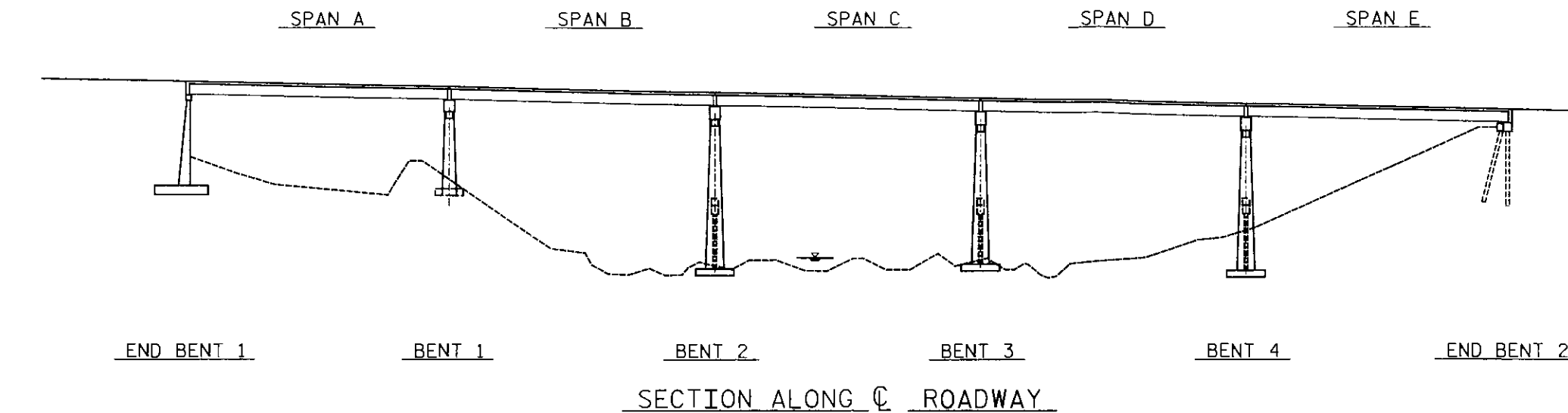
DRAWN BY : TRL DATE : 5-11
CHECKED BY : TJT DATE : 6-11

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Charlotte, NC 28208
NC License No. F-0991

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-1
2			4			TOTAL SHEETS S-23

GENERAL NOTES

SEE SHEET 2 OF 24 FOR ADDITIONAL NOTES.



BILL OF MATERIAL

	EPOXY RESIN INJECTION	UNDER STRUCTURE WORK PLATFORM	BRIDGE JACKING	CONCRETE REPAIRS	SHOTCRETE REPAIRS	CLEANING & REPAINTING BRIDGE #142	POLLUTION CONTROL
	LIN. FT.	LUMP SUM	LUMP SUM	CU. FT.	CU. FT.	LUMP SUM	LUMP SUM
ABUTMENT 1				6			
BENT 1	51			8	71		
BENT 2	41				29		
BENT 3	85				60		
BENT 4	120				28		
TOTAL	297	LUMP SUM	LUMP SUM	14	188	LUMP SUM	LUMP SUM

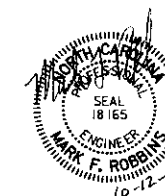
PROJECT NO. BP-5300N
HAYWOOD COUNTY

BRIDGE NO.: 142

REHAB. OF BRIDGE NO. 142 SHEET 1 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

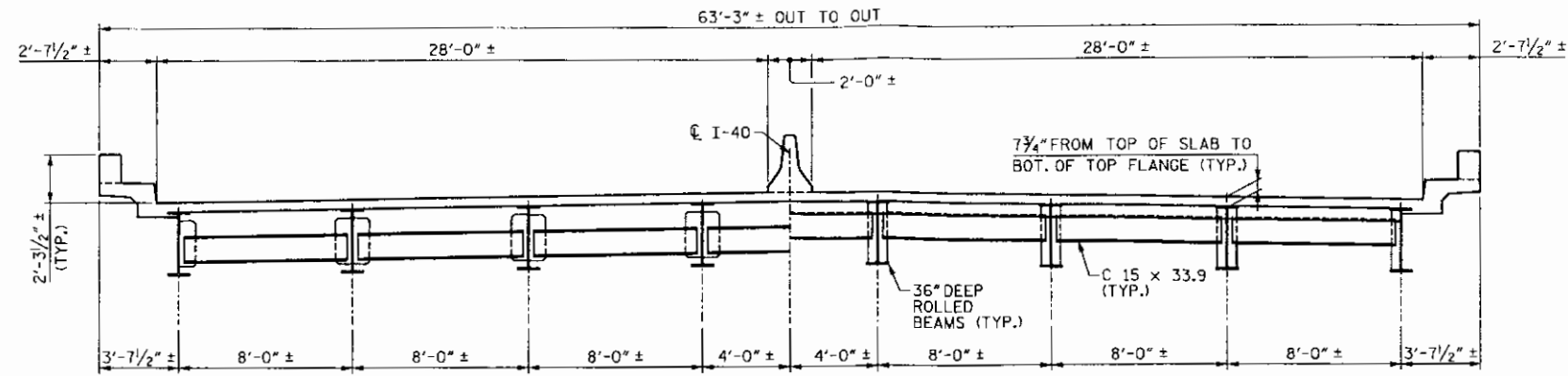
GENERAL DRAWING
BRIDGE ON I-40
OVER PIGEON RIVER



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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-6
2			4			TOTAL SHEETS S-23

DRAWN BY : PWP DATE : 6-11
CHECKED BY : AJP DATE : 6-11



NOTES:

1. FOR NOTES, SEE SHEETS 1 OF 6 AND 3 OF 6.
2. FOR TYPICAL SUBSTRUCTURE REPAIR DETAILS, SEE SHEET 3 OF 6.

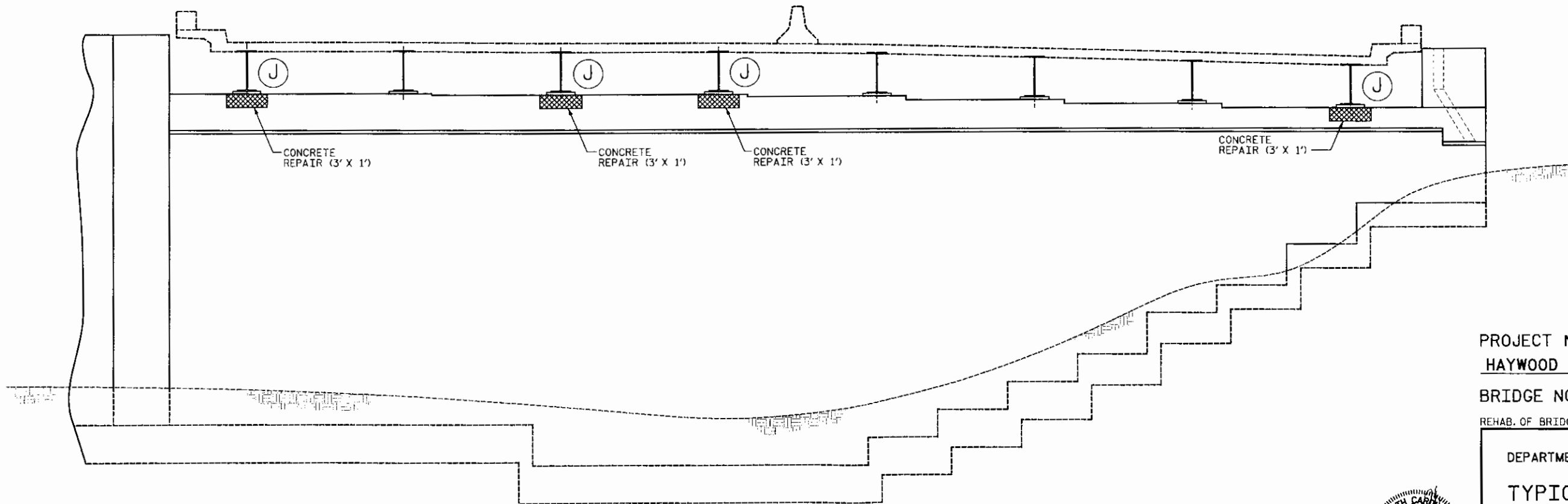
TYPICAL SECTION THROUGH SUPERSTRUCTURE

(TYPICAL SECTION DIMENSIONS ARE SHOWN FOR INFORMATION ONLY AND ARE FROM BEST AVAILABLE INFORMATION)

J JACKING REQUIRED

EASTBOUND LANES

WESTBOUND LANES



** LOOKING DIRECTION
CORRESPONDS WITH
DIRECTION OF TRAVEL
ALONG INTERSTATE

PROJECT NO. BP-5300N
HAYWOOD COUNTY
BRIDGE NO.: 142
REHAB. OF BRIDGE NO. 142 SHEET 2 OF 6

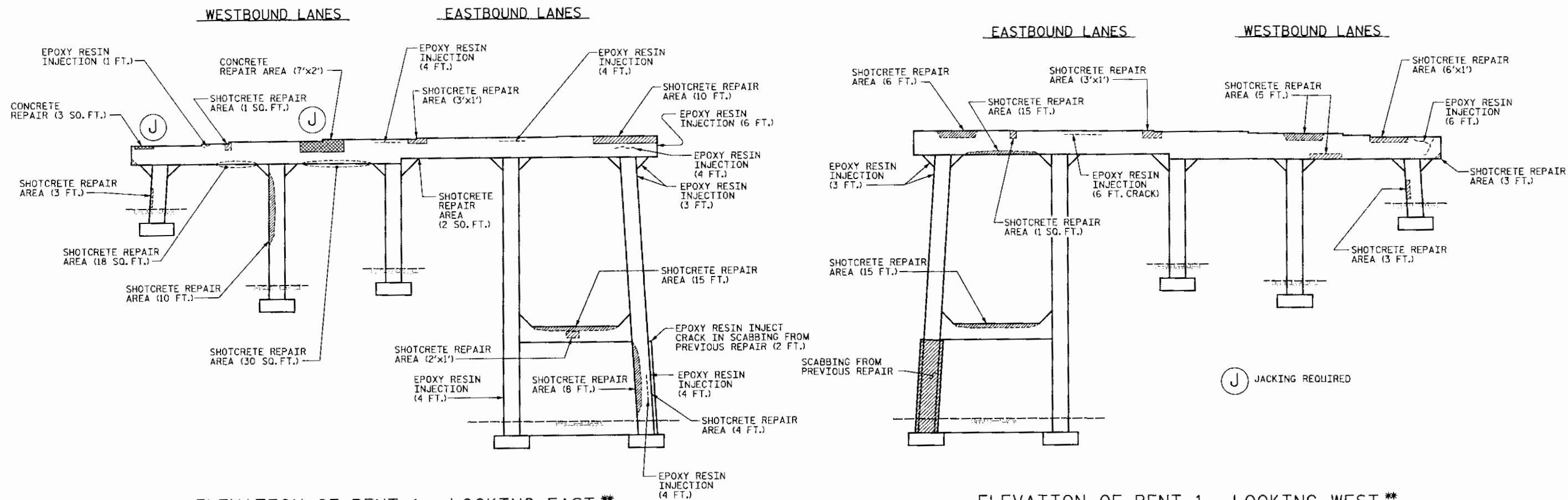
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
TYPICAL SECTION &
SUBSTRUCTURE REPAIRS
BRIDGE ON I-40
OVER PIGEON RIVER



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Charlotte, NC 28208
NC License No. F-0991

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			S-7
2			4			TOTAL SHEETS S-23

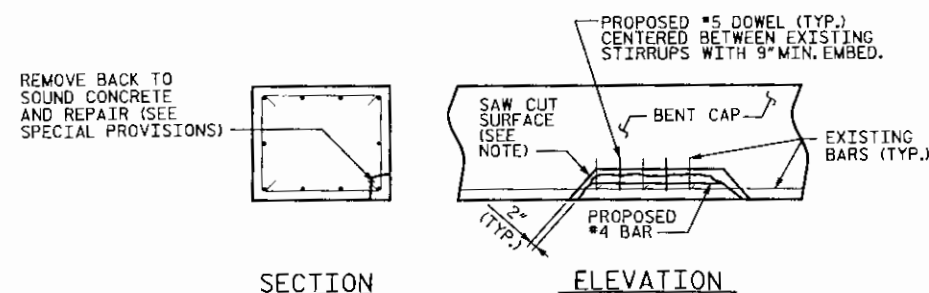
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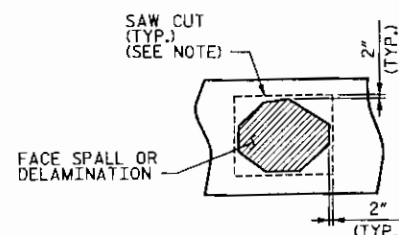
** LOOKING DIRECTION
CORRESPONDS WITH
DIRECTION OF TRAVEL
ALONG INTERSTATE.

NOTES:

1. CONCRETE SHALL BE SOUNDED TO DETERMINE THE EXTENT OF ALL CONCRETE REPAIRS.
2. FOR CRACKS REQUIRING EPOXY RESIN INJECTION, SOUNDING MAY PROVE THAT A CONCRETE REPAIR IS NECESSARY.
3. SPALL, CRACK, AND DELAMINATION DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL DETERMINE ACTUAL SPALL, CRACK, AND DELAMINATION DIMENSIONS PRIOR TO MAKING REPAIRS.
4. THE ENGINEER SHALL BE NOTIFIED OF ANY BARS DAMAGED DURING THE CONCRETE REMOVAL PROCESS. REPAIRS TO DAMAGED BARS SHALL BE DIRECTED BY THE ENGINEER AND COMPLETED AT NO ADDITIONAL COSTS.
5. DOWEL LENGTH SHALL BE BASED ON A 9" EMBEDMENT INTO EXISTING CONCRETE AND MAY BE ADJUSTED BASED ON THE MINIMUM EMBEDMENT SPECIFIED BY THE MANUFACTURER OF THE EPOXY ADHESIVE BONDING SYSTEM.
6. REINFORCING STEEL SHALL BE GRADE 60.
7. BENT CAP REPAIRS IN BEARING AREAS SHALL BE PERFORMED WITH CLASS A CONCRETE.
8. BRIDGE JACKING IS REQUIRED FOR CONCRETE REPAIRS THAT EXTEND UNDER A BEARING PLATE. FOR JACKING DETAILS AND NOTES, SEE SHEET 25 OF 25.
9. SEE SHEET 1 OF 6 FOR ADDITIONAL NOTES.
10. SUBSTRUCTURE REPAIRS SHALL PROVIDE A MINIMUM OF 2" CLEAR COVER TO REINFORCING STEEL. REPAIRED AREAS MAY BE BUILT OUT TO ACHIEVE CLEARANCE.



CORNER REPAIR



FACE REPAIR

TYPICAL SUBSTRUCTURE REPAIR DETAILS

NOTE: CONTRACTOR SHALL SAW CUT TO DEPTH OF 1". THIS DEPTH SHALL BE REDUCED TO PREVENT DAMAGE TO EXISTING REINFORCEMENT, BUT SHALL BE NO LESS THAN 1/2". CONTRACTOR SHALL REMOVE SURFACE CONCRETE TO VERIFY THAT SAWCUT WILL NOT DAMAGE EXISTING REINFORCING STEEL.



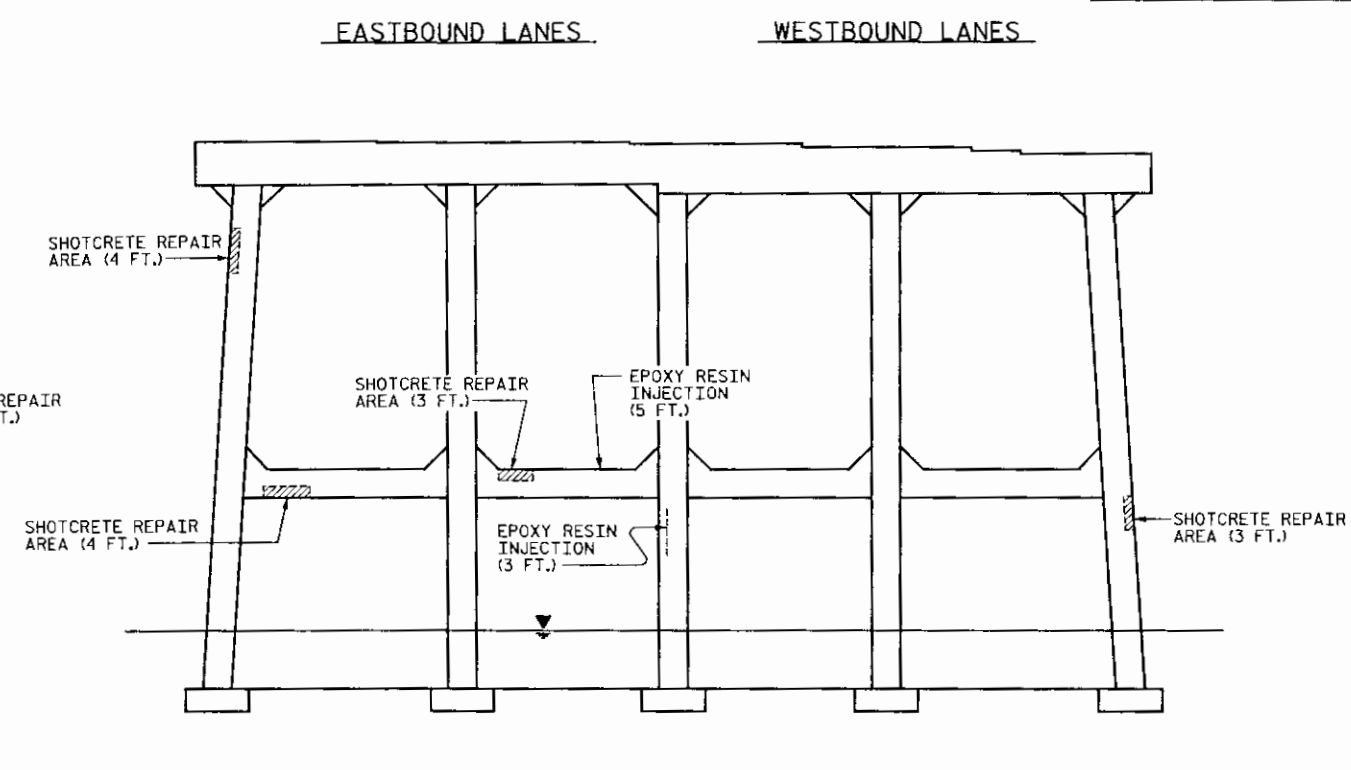
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Charlotte, NC 28208
NC License No. F-0991

PROJECT NO. **BP-5300N**
HAYWOOD COUNTY
BRIDGE NO.: **142**
REHAB. OF BRIDGE NO. 142 SHEET 3 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
BENT 1
SUBSTRUCTURE REPAIR
BRIDGE ON I-40
OVER SR 1338

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-8
2			4			TOTAL SHEETS S-23

DRAWN BY: **TRL** DATE: **6-11**
CHECKED BY: **PWP** DATE: **6-11**



END VIEW A-A

LOOKING DIRECTION
CORRESPONDS WITH
DIRECTION OF TRAVEL
ALONG INTERSTATE.

(FOR CAP BOTTOM AND COLUMN SIDE REPAIRS,
SEE "ELEVATION OF BENT 2 - LOOKING EAST")

1. FOR NOTES AND TYPICAL SUBSTRUCTURE REPAIR DETAILS
SEE SHEET 3 OF 6.

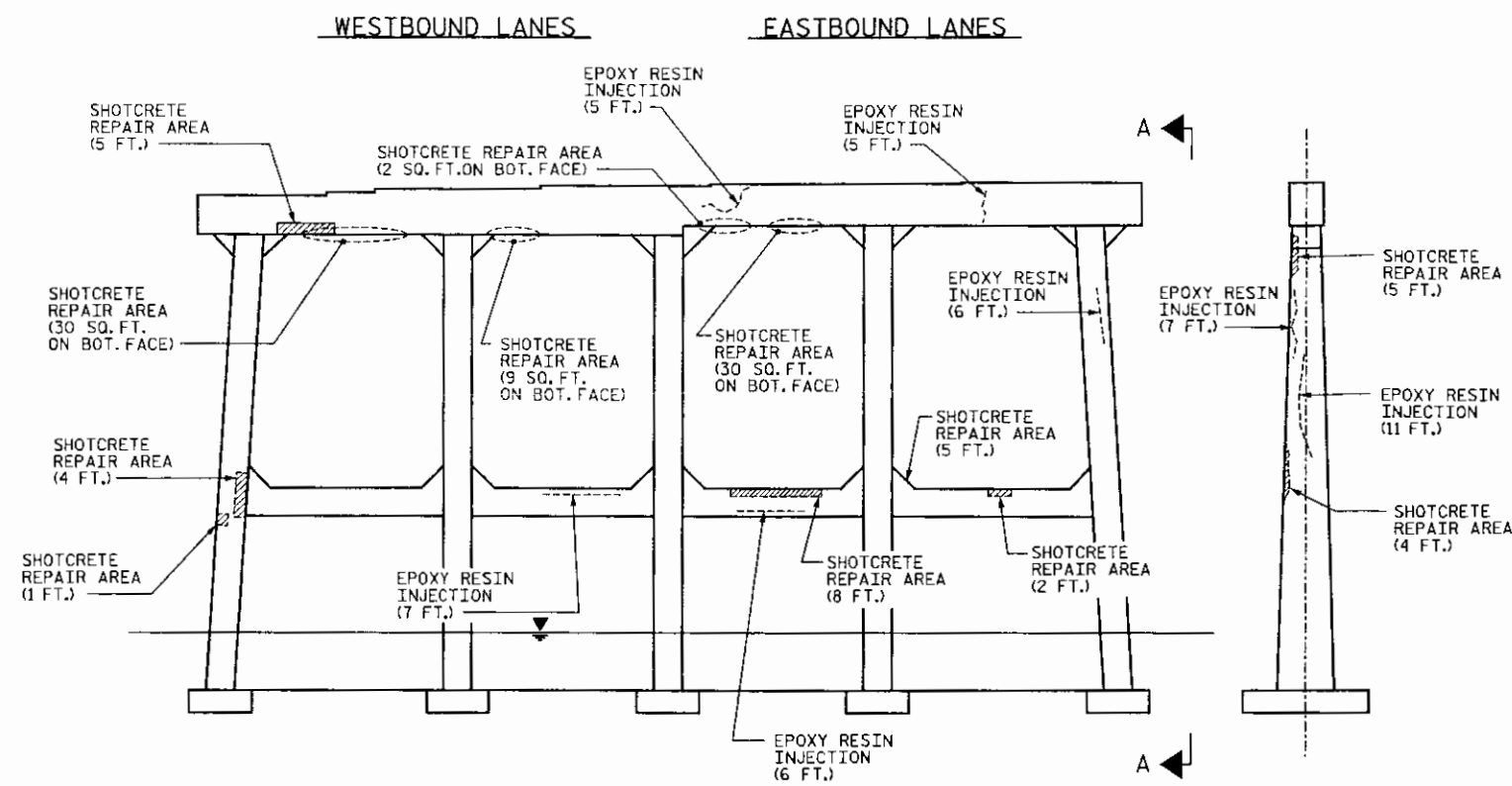
REHAB. OF BRIDGE NO. 142 SHEET 4 OF 6

BRIDGE ON I-40
OVER PIGEON RIVER



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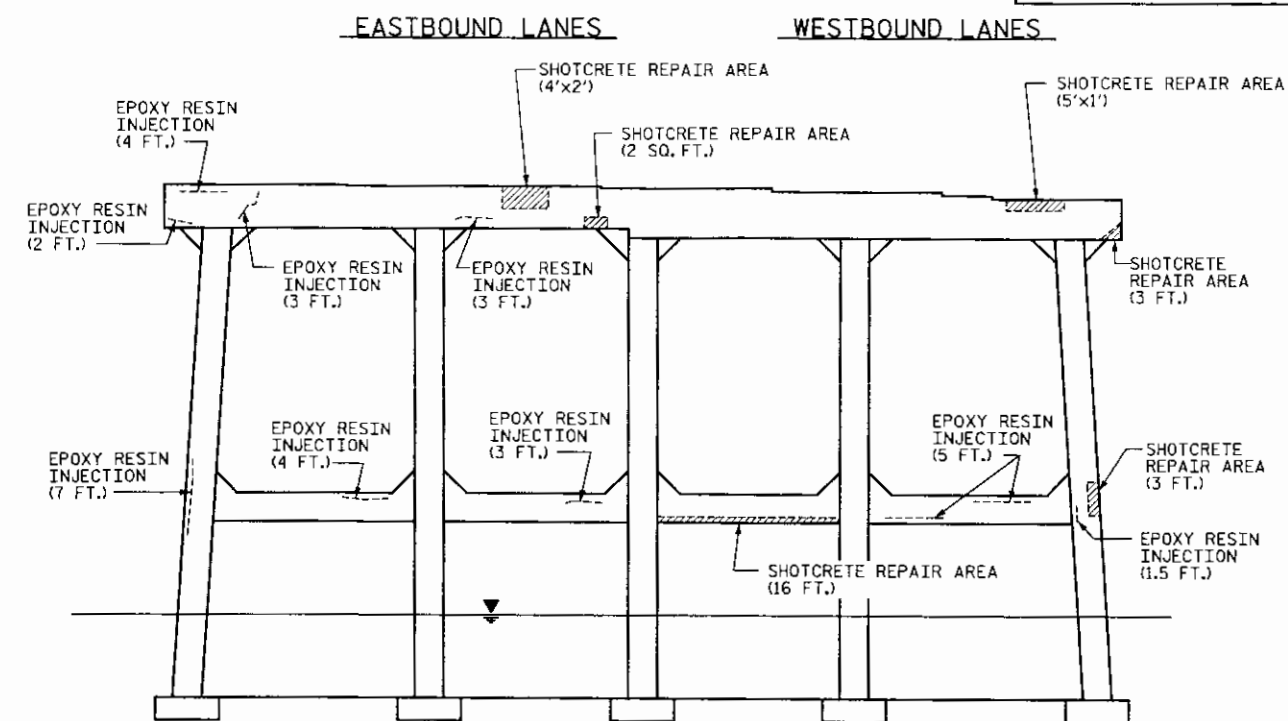
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			S-23



ELEVATION OF BENT 3 - LOOKING EAST**

END VIEW A-A

** LOOKING DIRECTION
CORRESPONDS WITH
DIRECTION OF TRAVEL
ALONG INTERSTATE.



ELEVATION OF BENT 3 - LOOKING WEST**

(FOR CAP BOTTOM AND COLUMN SIDE REPAIRS,
SEE ELEVATION OF BENT 3 - LOOKING EAST)

NOTES:

1. FOR NOTES AND TYPICAL SUBSTRUCTURE REPAIR DETAILS SEE SHEET 3 OF 6.

PROJECT NO. **BP-5300N**
HAYWOOD COUNTY
 BRIDGE NO.: **142**
 REHAB. OF BRIDGE NO. 142 SHEET 5 OF 6

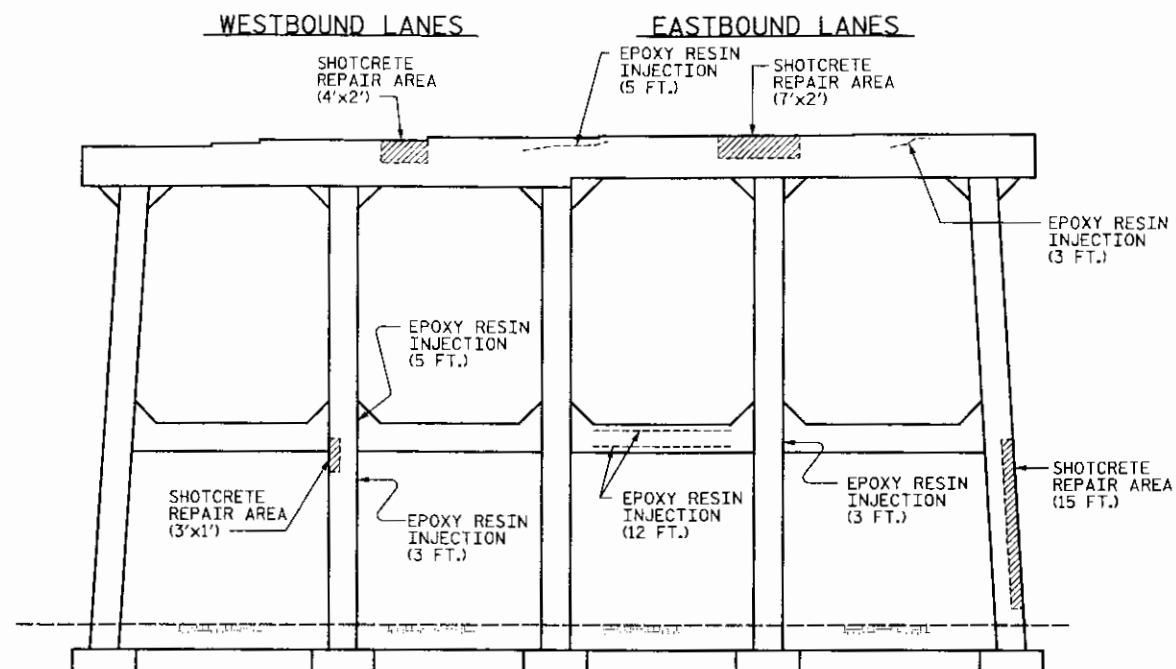
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
BENT 3
SUBSTRUCTURE REPAIR
 BRIDGE ON I-40
 OVER PIGEON RIVER



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 NC License No. F-09981

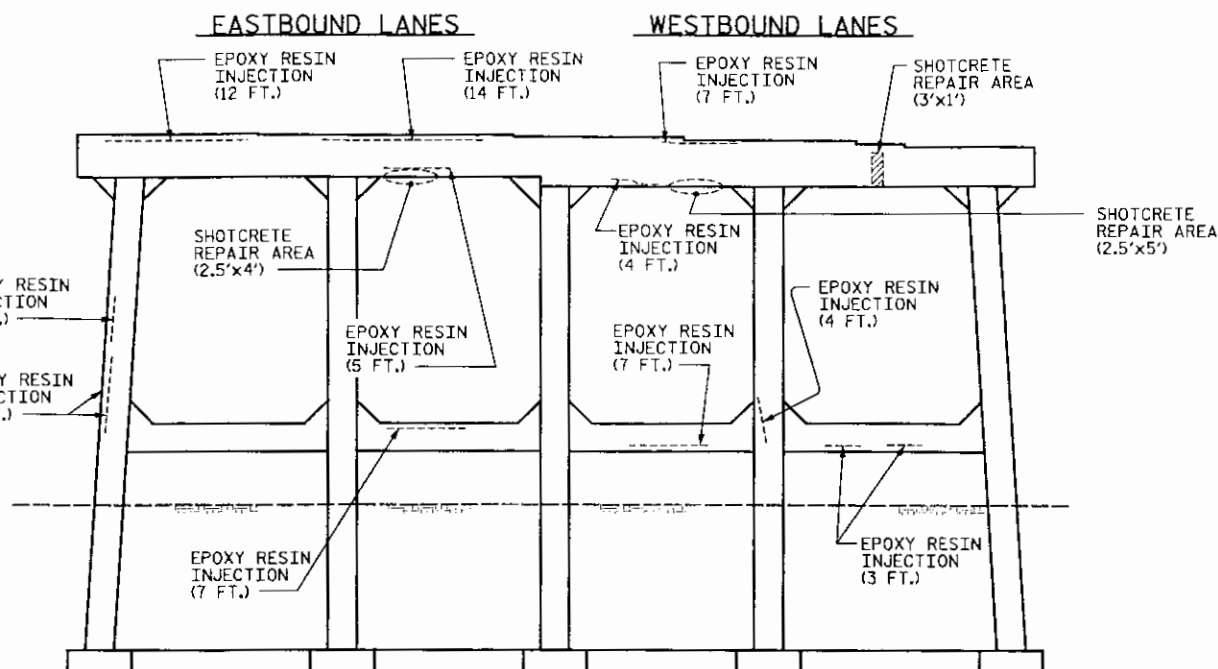
REVISIONS				SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
				S-10	TOTAL SHEETS
				S-23	

DRAWN BY: **TRL** DATE: **6-11**
 CHECKED BY: **PWP** DATE: **6-11**



ELEVATION OF BENT 4 - LOOKING EAST**

** LOOKING DIRECTION
CORRESPONDS WITH
DIRECTION OF TRAVEL
ALONG INTERSTATE.



ELEVATION OF BENT 4 - LOOKING WEST**

(FOR CAP BOTTOM AND COLUMN SIDE REPAIRS,
SEE "ELEVATION OF BENT 4 - LOOKING EAST")

NOTES:

1. FOR NOTES AND TYPICAL SUBSTRUCTURE REPAIR DETAILS SEE SHEET 3 OF 6.

PROJECT NO. BP-5300N
HAYWOOD COUNTY
BRIDGE NO.: 142

REHAB. OF BRIDGE NO. 142 SHEET 6 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 4
SUBSTRUCTURE REPAIR

BRIDGE ON I-40
OVER PIGEON RIVER



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REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-11
1			3			TOTAL SHEETS
2			4			S-23

DRAWN BY : TRL DATE : 6-11
CHECKED BY : PWP DATE : 6-11

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

HAYWOOD COUNTY

DIVISION 14



BRIDGE PAINTING

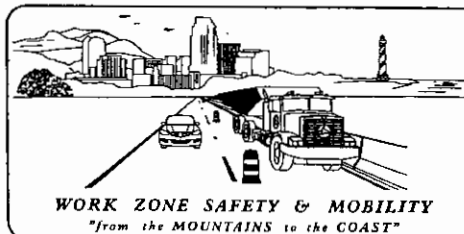
HAYWOOD CO. - #124, #142, #171, #205 AND #208

INDEX OF SHEETS

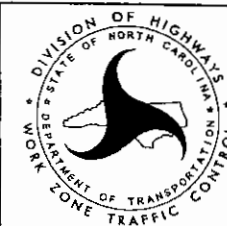
SHEET NO.	TITLE
TMP-1	TITLE SHEET, INDEX, TRAFFIC MANAGEMENT STRATEGY
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-1B	GENERAL NOTES
TMP-2	SINGLE LANE CLOSURES ON I-40
TMP-2A	DESIGN TABLES
TMP-3	TRAFFIC CONTROL PHASING
TMP-4	BRIDGE #124 FLAGGING OPERATION FOR SR 1338 (FINES CREEK RD.) NORTHBOUND
TMP-4A	BRIDGE #124 FLAGGING OPERATION FOR SR 1338 (FINES CREEK RD.) SOUTHBOUND

TRAFFIC MANAGEMENT STRATEGY

PROPOSED BRIDGE PAINTING WORK WILL BE PERFORMED USING LANE CLOSURES ON BRIDGE, AND/OR FLAGGER CONTROLLED LANE CLOSURES BELOW BRIDGE. REFER TO SHEET TMP-3 FOR TRAFFIC CONTROL PHASING.



PLAN PREPARED FOR NCDOT BRIDGE MANAGEMENT UNIT
RALEIGH, NC



PLAN PREPARED BY:
Stantec Consulting Services Inc.
801 Jones Franklin Road-Suite 300
Raleigh, NC 27608
Tel. 919.851.6866
Fax. 919.851.7024
www.stantec.com

BETSY L. WATSON, P.E.

GEORGE KARAGEORGE

TRAFFIC ENGINEER

TRANSPORTATION DESIGNER

APPROVED: *Betsy L. Watson*
DATE: 16/25/11

SEAL



WBS 45438.1.1

BP-5300N

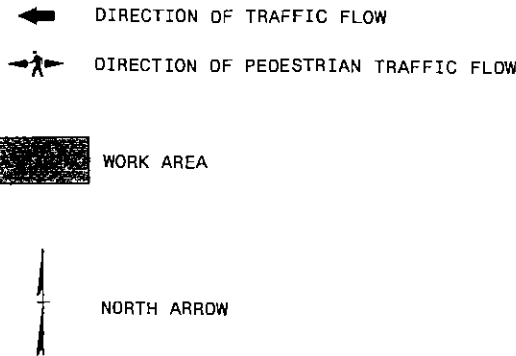
ROADWAY STANDARD DRAWINGS

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

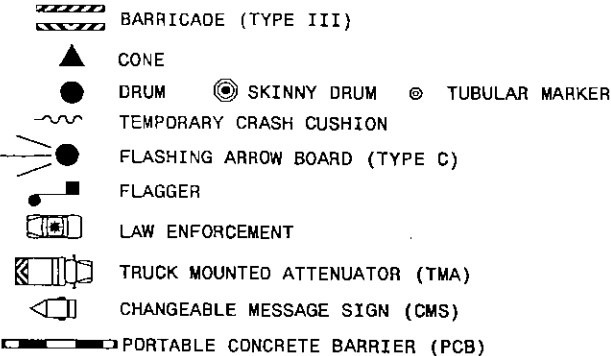
STD. NO.	TITLE
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1150.01	FLAGGING DEVICES
1180.01	SKINNY DRUMS

LEGEND

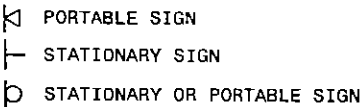
GENERAL



TRAFFIC CONTROL DEVICES



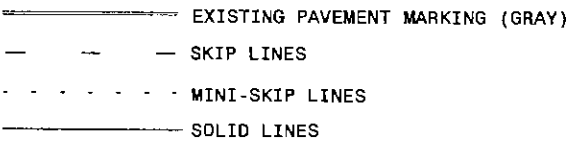
TEMPORARY SIGNING



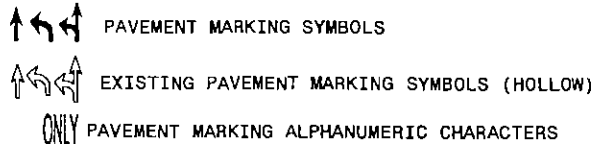
SIGNALS



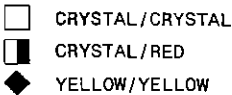
PAVEMENT MARKINGS



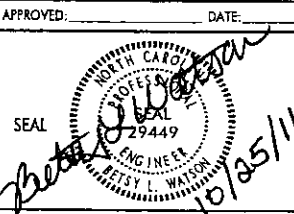
PAVEMENT MARKING SYMBOLS



PAVEMENT MARKERS



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ROADWAY STANDARD DRAWINGS
&
LEGEND

PROJ. REFERENCE NO.	SHEET NO.
BP-5300N	TMP-1B

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 UNDESIRABLE OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

C) LANE CLOSURES ARE REQUIRED WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN ANY PORTION OF A TRAVEL LANE. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

D) INSTALL ALL LANE CLOSURES ACCORDING TO THE PLANS, ROADWAY STANDARD DRAWINGS (1101.02), OR AS DIRECTED BY THE ENGINEER.

E) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

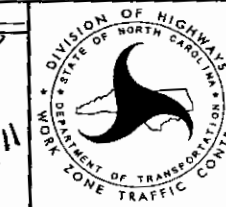
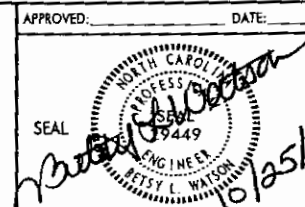
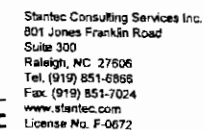
F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

G) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

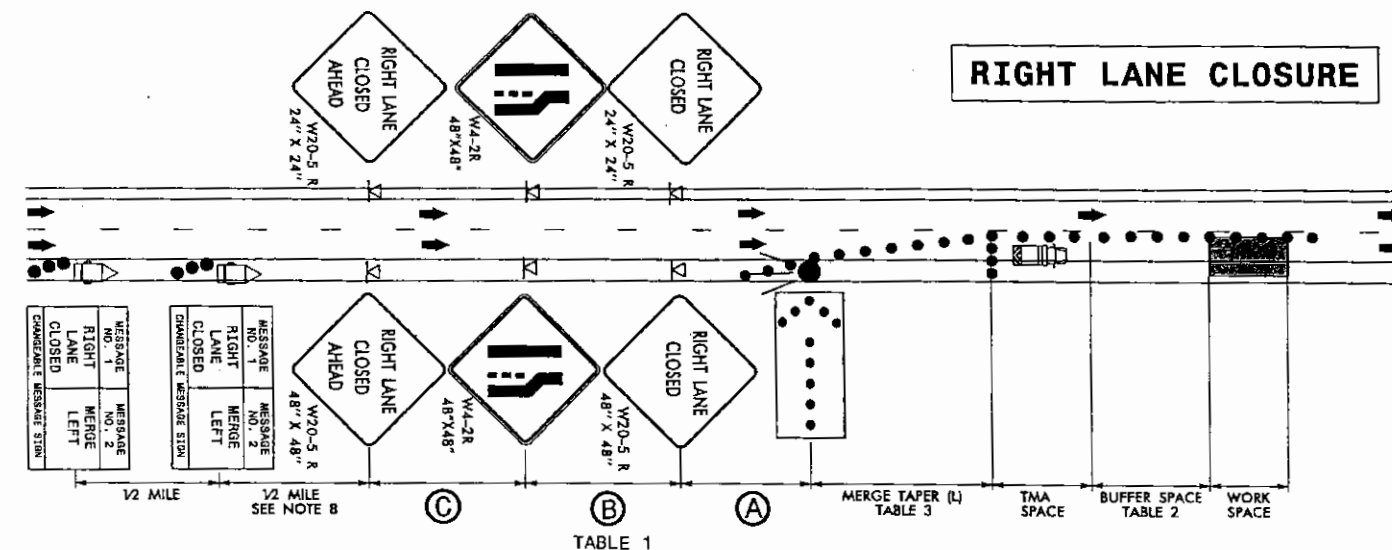
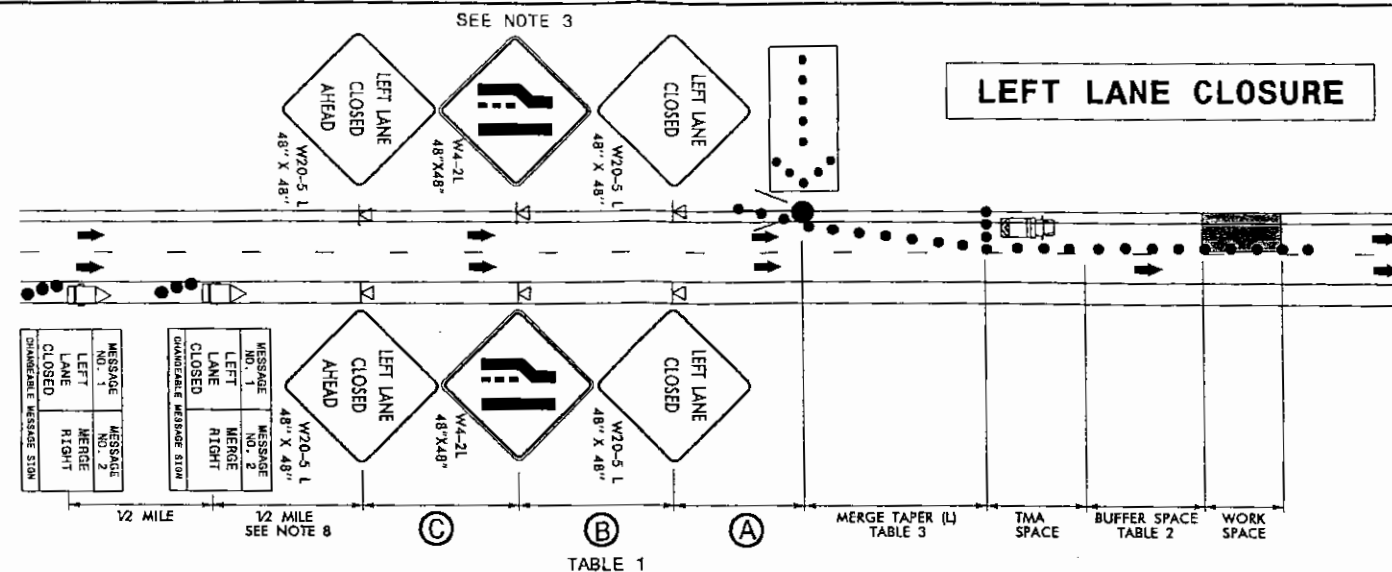
H) DO NOT INSTALL MORE THAN ONE LANE CLOSURE IN ANY ONE DIRECTION ON I-40.

- MISCELLANEOUS

- I) ALL DIMENSIONS AND STATIONS IN THE TRAFFIC MANAGEMENT PLAN AND PHASING ARE APPROXIMATE (+/-); FIELD ADJUST AS NECESSARY OR AS DIRECTED BY THE ENGINEER.
- J) MAINTAIN DRIVEWAY ACCESS AT ALL TIMES, UNLESS OTHERWISE DIRECTED BY ENGINEER.
- K) 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.
- L) PLACE ALL CHANGEABLE MESSAGE SIGNS AS NEEDED IN THE LOCATIONS AND WITH THE WORD MESSAGES AS SHOWN IN THE PLAN OR AS DIRECTED BY THE ENGINEER TO PROVIDE ADVANCE WARNING TO THE PUBLIC DURING CONSTRUCTION.
- M) ENSURE THE OVERSIZE/OVERWEIGHT PERMIT UNIT (919) 733-4740 HAS BEEN ADVISED OF THE ONGOING TRAFFIC OPERATIONS THROUGH THE DIVISION OFFICE.



GENERAL NOTES



NOTES

- FOR BRIDGE #124 REFER TO STD. 11D1.02 SHEET 10 OF 15, FOR RIGHT LANE CLOSURE THRU EXIT RAMPS.
- INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC. REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
- STATIONARY SIGNS SHOULD BE USED IF THE LANE CLOSURE WILL BE IN PLACE FOR LONGER THAN 3 CONSECUTIVE DAYS.
- SIGNS ARE NOT REQUIRED ON THE LEFT SIDE OF THE ROADWAY WHEN THERE IS NOT ENOUGH ROOM FOR PLACEMENT. AT CONCRETE BARRIER LOCATIONS CLAMP ATTACHMENTS AND SMALLER SIGNS MAY BE USED.
- PLACE ARROW BOARDS ON THE SHOULDER. IF SHOULDERS DO NOT EXIST, PLACE ARROW BOARDS WITHIN THE MERGE TAPER BEHIND THE CHANNELIZING DEVICES OF THE LANE CLOSURE. IF NEEDED, EXTEND LANE CLOSURES TO PROVIDE STOPPING SIGHT DISTANCE TO THE ARROW BOARD (TABLE 2).
- PLACE LANE CLOSURE DRUMS IN TAPERS AT A MAXIMUM SPACING EQUAL IN FEET TO THE POSTED SPEED LIMIT (MPH). ALONG BUFFER SPACES AND WORK AREAS SPACE DRUMS AT A MAXIMUM SPACING EQUAL IN FEET TO TWICE THE POSTED SPEED LIMIT (MPH). IN ALL CASES, CHANNELIZING DEVICES ARE TO BE SPACED IN SUCH A MANNER AS TO POSITIVELY ACHIEVE THE INTENDED VISUAL CHANNELIZATION. CHANNELIZING DEVICES SHOULD BE Laterally OFFSET 3 FT INSIDE THE CLOSED LANE AS ROOM PERMITS.
- POSITION THE TMIA TO MAINTAIN A ROLL-AHEAD DISTANCE AS RECOMMENDED BY THE MANUFACTURER.
- PLACE CHANGEABLE MESSAGE SIGN (CMS) ON THE OUTSIDE OF THE TRAVELWAY OR AS DIRECTED BY THE ENGINEER. PLACE CMS APPROXIMATELY 1/2 MILE IN ADVANCE OF THE W20-5 SIGNS. IF TRAFFIC BACKS UP TO WHERE THE CMS IS INITIALLY PLACED, RELOCATE CMS 1/2 MILE FROM ANTICIPATED BACKUP. CONTINUE TO MONITOR TRAFFIC AND MOVE CMS APPROXIMATELY 1/2 MILE IN CONJUNCTION WITH ANTICIPATED BACKUP, TAKING INTO CONSIDERATION VERTICAL GRADES AND HORIZONTAL ALIGNMENT OF THE ROADWAY.
- WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER, REMOVE LANE CLOSURE DEVICES, COVER OR LAY DOWN SIGNS, AND TURN OFF ARROW BOARD AND MESSAGE SIGNS.

REFER TO SHEET TMP-2A
FOR DESIGN TABLES

Stantec Consulting Services Inc. 801 Jones Franklin Road Suite 300 Raleigh, NC 27606 Tel. (919) 851-6966 Fax. (919) 851-7024 www.stantec.com License No. F-0672	APPROVED: _____ DATE: _____ SEAL <i>Professional Engineer</i> 10/25/11	DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION TRAFFIC CONTROL	SINGLE LANE CLOSURES ON I-40
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TABLE 1 ADVANCE WARNING SIGN SPACING			
ROAD TYPE & POSTED SPEED LIMIT (MPH)	DISTANCE BETWEEN SIGNS (FEET)		
	(A)	(B)	(C)
URBAN ≤ 35	100	100	100
RURAL ≤ 35	200	200	200
40-50	350	350	350
55	500	500	500
CONTROLLED ACCESS ROADS (≥ 55)	1000	1500	2700

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

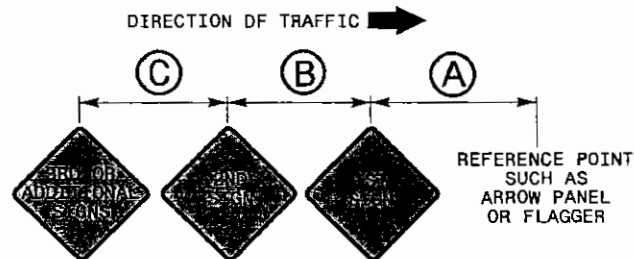


TABLE 2	
POSTED SPEED LIMIT (MPH)	LONGITUDINAL BUFFER SPACE & STOPPING SIGHT DISTANCE (FEET)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730

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

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

SPEED LIMIT (S) TAPER LENGTH (L) IN FEET

40 MPH OR LESS $L = W \times S$

45 MPH OR GREATER $L = \frac{W \times S^2}{60}$

L = TAPER LENGTH (FEET)

W = OFFSET WIDTH (FEET)

S = POSTED SPEED LIMIT, OFF-PEAK 85 PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED (MPH)

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

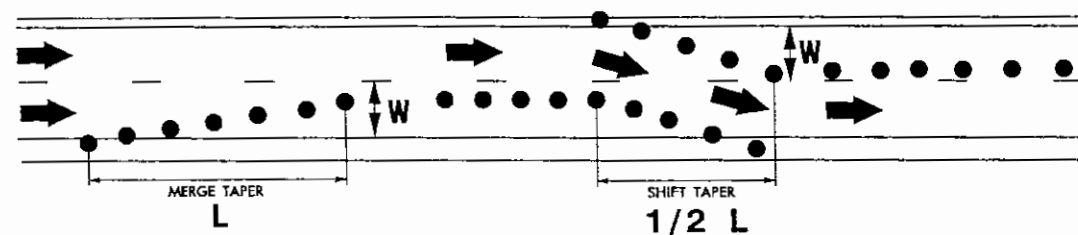
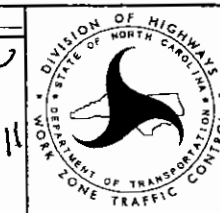
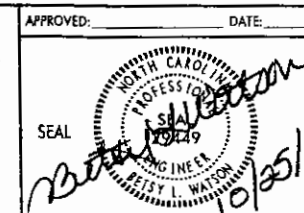


TABLE 3 TAPER (L)												
OFFSET WIDTH (FEET) W	1	2	3	4	5	6	7	8	9	10	11	12
POSTED SPEED (MPH) S	MINIMUM TAPER (L) LENGTH (FEET) L											
20	10	15	20	30	35	40	50	55	60	70	75	80
25	15	25	35	45	55	65	75	85	95	105	115	125
30	20	30	45	60	75	90	105	120	135	150	165	180
35	25	35	55	75	95	115	135	155	175	195	215	235
40	30	45	65	90	115	140	165	190	215	240	265	290
45	35	55	80	110	140	170	200	230	260	290	320	350
50	40	65	95	130	165	200	235	270	305	340	375	410
55	45	75	110	150	190	230	270	310	350	390	430	470
60	50	85	125	170	215	260	305	350	395	440	485	530
65	55	95	140	190	240	290	340	390	440	490	540	590
70	60	105	155	210	265	320	375	430	485	540	595	650



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TRAFFIC CONTROL PLAN
DESIGN TABLES

TRAFFIC CONTROL PHASING

BRIDGE #124 - I-40 OVER SR 1338 (FINES CREEK RD.)

WHEN PAINTING OVER NORTHBOUND LANE USE FLAGGING OPERATION AS SHOWN ON SHEET TCP-4.

WHEN PAINTING OVER SOUTHBOUND LANE USE FLAGGING OPERATION AS SHOWN ON SHEET TCP-4A.

BRIDGE #142 - I-40 OVER PIGEON RIVER

WHEN PAINTING OVER PIGEON RIVER USE LANE CLOSURES ALONG I-40 AS SHOWN ON SHEETS TMP-2 AND TMP-2A.

BRIDGE #171 - I-40 OVER SR 1338 (WHITE OAK RD.) AND JONATHAN CREEK

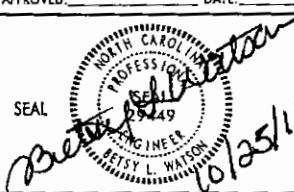
WHEN PAINTING OVER SR 1338 (WHITE OAK RD.) USE A FLAGGING OPERATION ON SR 1338 PER ROADWAY STD. 1101.02 SHEET 1 OF 15.

WHEN PAINTING OVER JONATHAN CREEK USE LANE CLOSURES ALONG I-40 AS SHOWN ON SHEETS TMP-2 AND TMP-2A.

BRIDGE #205/#208 - I-40 OVER SR 1364 (COLEMAN MOUNTAIN RD.)

WHEN PAINTING OVER SR 1364 (COLEMAN MOUNTAIN RD.) USE A FLAGGING OPERATION ON SR 1364 PER ROADWAY STD.1101.02 SHEET 1 OF 15.

10/25/2011
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 Stantec Consulting Services Inc. 801 Jones Franklin Road Suite 300 Raleigh, NC 27606 Tel: (919) 851-6868 Fax: (919) 851-7024 www.stantec.com License No. F-0672	APPROVED: _____ DATE: _____ 		TRAFFIC CONTROL PHASING
	SEAL Betsy L. Watson 10/25/11		