17BP.11.H.2

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

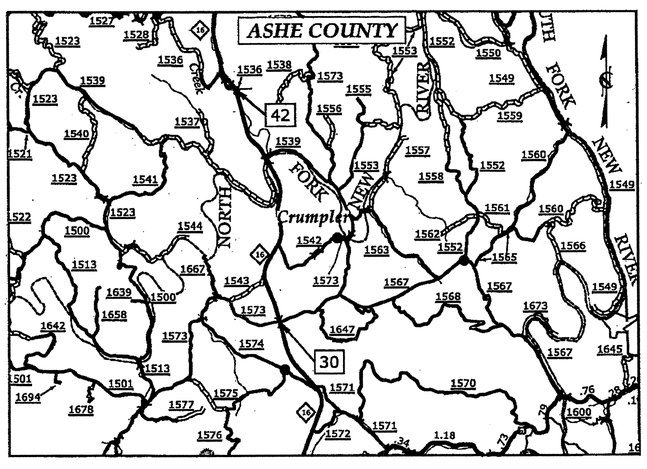
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.11.H.2	1	

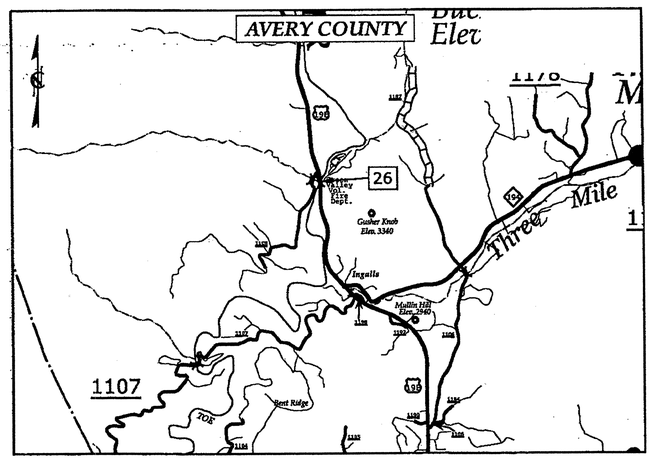
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
17BP.11.H.2		P.E.
17BP.11.H.2		CONST.

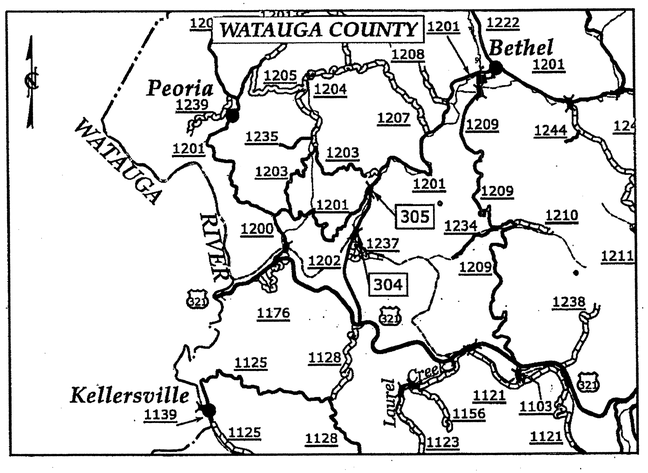
ASHE, AVERY & WATAUGA COUNTIES

LOCATION: BRIDGE NO. 30 ON NC16 OVER SR1573, BRIDGE NO. 42 ON NC16 OVER SR1536 & HELTONS CREEK, BRIDGE NO. 26 ON US19 OVER NORTH TOE RIVER, BRIDGE NO. 305 ON SR1202 OVER BEAVERDAM CREEK AND BRIDGE NO. 304 ON SR1202 OVER WATAUGA RIVER

TYPE OF WORK: BRIDGE PRESERVATION: HYDRODEMOLITION, LMC OVERLAY, DECK REPLACEMENT, CLEANING & PAINTING STRUCTURAL STEEL, CLEANING & PAINTING BEARINGS & SUBSTRUCTURE REPAIRS







STRUCTURES

DESIGN DATA

PROJECT LENGTH

LENGTH ROADWAY OF PROJECT = 0.19 MILES
LENGTH STRUCTURE OF PROJECT = 0.20 MILES
TOTAL LENGTH OF STATE PROJECT = 0.39 MILES

Prepared in the Office of:
HDR Engineering, Inc. of the Carolinas
5710 National Drive, Suite 207 Raleigh, N.C. 27612
N.C.B.E.L.S. License Number: F-0116

2012 STANDARD SPECIFICATIONS

LETTING DATE :
March 20, 2012

MATTHEW MOYER, P.E.
PROJECT ENGINEER

STRUCTURES MANAGMENT UNIT
1000 BIRCH RIDGE DR.
RALEIGH, N.C. 27610

NORTH CAROLINA PROFESSIONAL SEAL 033390 ENGINEER THEO J. BEACH
3/27/12

NORTH CAROLINA PROFESSIONAL SEAL 032129 ENGINEER MATTHEW J. MOYER
1-27-2012

P.E.
BRIDGE DESIGN ENGINEER

CONTRACT: C202964

PLOT DRIVER: NCDOT_pdf_mono_eng_50.plt PENTABLE: Division_11.tbl
USER: msells DATE: 1/27/2012 TIME: 9:56:30 AM SCALE: 1:2500
FILE: North Carolina Dept of Transportation\NCDOT_DOO_CEI_BM_LSC_MASTER\NCDOT_Division_11_Project_\V13.00.CADV17BP-11-H-2_DIVISION 11_STR_TSH.dgn

17BP.11.H.2

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.11.H.2	1A	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
17BP.11.H.2		P.E.
17BP.11.H.2		CONST.

ASHE, AVERY & WATAUGA COUNTIES

LOCATION: BRIDGE NO. 30 ON NC16 OVER SR1573, BRIDGE NO. 42 ON NC16 OVER SR1536 & HELTONS CREEK, BRIDGE NO. 26 ON US19 OVER NORTH TOE RIVER, BRIDGE NO. 305 ON SR1202 OVER BEAVERDAM CREEK AND BRIDGE NO. 304 ON SR1202 OVER WATAUGA RIVER

TYPE OF WORK: BRIDGE PRESERVATION: HYDRODEMOLITION, LMC OVERLAY, DECK REPLACEMENT, CLEANING & PAINTING STRUCTURAL STEEL, CLEANING & PAINTING BEARINGS & SUBSTRUCTURE REPAIRS

INDEX OF SHEETS

STRUCTURES

CONTRACT: C202964

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Prepared In the Office of:
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

2012 STANDARD SPECIFICATIONS

LETTING DATE :

March 20, 2012

MATTHEW MOYER, P.E.
PROJECT ENGINEER

STRUCTURES MANAGMENT UNIT
1000 BIRCH RIDGE DR.
RALEIGH, N.C. 27610

NORTH CAROLINA PROFESSIONAL SEAL 032129 ENGINEER MATTHEW J. MOYER
1-31-12

P.E.
BRIDGE DESIGN ENGINEER

PLOT DRIVER: NCDOT_pdf_mono_eng_50.plt PENTABLE: Division_11.tbl
USER: msells DATE: 1/31/2012 TIME: 8:48:31 AM SCALE: 1:2500
FILE: North Carolina.Dept_of_Transportation\NCDOT_DDO.CEI.BM_LSC_MASTER\NCDOT_Division_11_Project_1\13.00.CAD\17BP-11-H-2_DIVISION 11_STR_INDEX.dgn

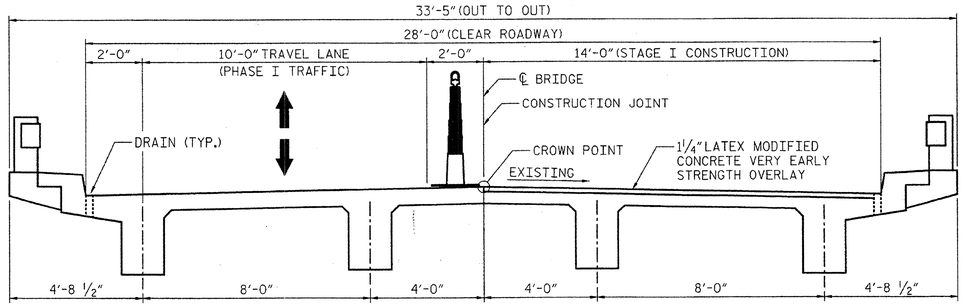
PROJECT REFERENCE NO.	SHEET NO.
17BP.11.H.2	2

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SUMMARY OF QUANTITIES

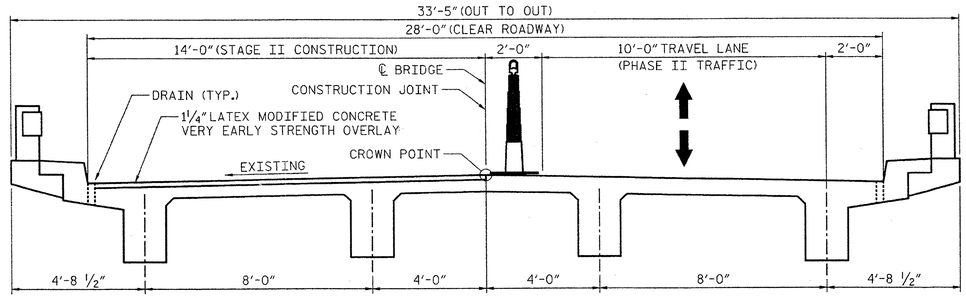
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202964

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
1330000000-E	607	2,445	SY	INCIDENTAL MILLING
1489000000-E	610	218	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1525000000-E	610	370	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A
1575000000-E	620	37	TON	ASPHALT BINDER FOR PLANT MIX
3317000000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE B-77
3360000000-E	863	40	LF	REMOVE EXISTING GUARDRAIL
4400000000-E	1110	398	SF	WORK ZONE SIGNS (STATIONARY)
4405000000-E	1110	64	SF	WORK ZONE SIGNS (PORTABLE)
4410000000-E	1110	119	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4420000000-N	1120	2	EA	PORTABLE CHANGEABLE MESSAGE SIGN
4435000000-N	1135	20	EA	CONES
4445000000-E	1145	72	LF	BARRICADES (TYPE III)
4455000000-N	1150	80	DAY	FLAGGER
4516000000-N	1180	20	EA	SKINNY DRUM
4810000000-E	1205	4,500	LF	PAINT PAVEMENT MARKING LINES (4")
4847000000-E	1205	9,000	LF	POLYUREA PAVEMENT MARKING LINES (4", **********) (HIGHLY REFLECTIVE BEADS)
4905000000-N	1253	30	EA	SNOWPLOWABLE PAVEMENT MARKERS
8154000000-E	420	7,085	SF	REINFORCED CONCRETE DECK SLAB (SAND LIGHTWEIGHT CONC)
8161000000-E	420	28,213	SF	GROOVING BRIDGE FLOORS
8175000000-E	420	9	CY	CLASS AA CONCRETE (BRIDGE)
8296000000-N	442	Lump Sum		POLLUTION CONTROL
8503000000-E	460	520	LF	CONCRETE BARRIER RAIL
8692000000-N	SP	Lump Sum		FOAM JOINT SEALS

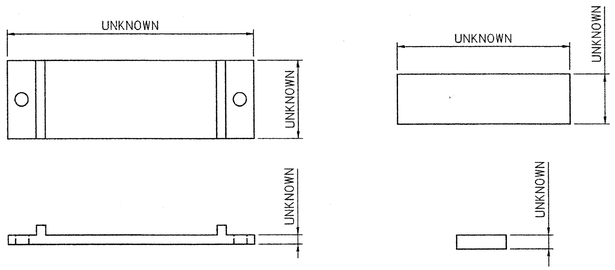
ItemNumber	Sec #	Quantity	Unit	Description
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM CLEANING & REPAINTING OF BRIDGE NO. 304
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM CLEANING & REPAINTING OF BRIDGE NO. 305
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM CLEANING AND PAINTING EXISTING BEARING PLATES
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM PARTIAL REMOVAL OF BRIDGE STRUCTURE BRIDGE NO. 304
8881000000-E	SP	132	CY	GENERIC STRUCTURE ITEM LATEX MOD CONCRETE OVERLAY VERY EARLY STRENGTH
8893000000-E	SP	2,872	SY	GENERIC STRUCTURE ITEM HYDRO-DEMOLITION OF BRIDGE DECK
8893000000-E	SP	2,872	SY	GENERIC STRUCTURE ITEM PLACING & FINISHING LATEX MOD CONCRETE OVERLAY VERY EARLY STRENGTH
8893000000-E	SP	2,872	SY	GENERIC STRUCTURE ITEM SCARIFYING BRIDGE DECK
8897000000-N	SP	4	EA	GENERIC STRUCTURE ITEM BEARING REPLACEMENT IN KIND
8897000000-N	SP	1	EA	GENERIC STRUCTURE ITEM SPAN JACKING



TYPICAL SECTION - STAGE I



TYPICAL SECTION - STAGE II



BEARING REPLACEMENT IN KIND

BEARING REPLACEMENT AT THE DIRECTION OF THE ENGINEER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR NEW BEARING DESIGN AND JACKING LOADS.

FOR SPAN JACKING, SEE SPECIAL PROVISIONS.

NOTES

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

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

THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS III SURFACE PREPARATION ARE APPROXIMATE. IF ANY CLASS III LOCATIONS ARE ENCOUNTERED PRIOR TO OR DURING HYDRO-DEMOLITION, SEE "TYPICAL "BLOW THRU" CONTAINMENT AND FORMWORK" DETAIL. THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH WORK OF THE DECK.

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 2½" AT BENTS. FOR "FOAM JOINT SEALS", SEE SPECIAL PROVISIONS.

FOR "ELASTOMERIC CONCRETE", SEE SPECIAL PROVISIONS.

LATEX MODIFIED CONCRETE SHALL BE LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH.

FOR "LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH", SEE SPECIAL PROVISIONS.

FOR GROOVING BRIDGE FLOORS INFORMATION, SEE "LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH" SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

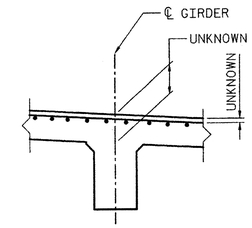
FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

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

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

FOR SCARIFYING BRIDGE DECK, SEE SPECIAL PROVISIONS.

FOR CLEANING AND PAINTING EXISTING BEARING PLATES, SEE SPECIAL PROVISIONS.



EXISTING SLAB SECTION

BOTTOM OF MAT REINFORCING
NOT SHOWN FOR CLARITY

TOTAL BILL OF MATERIAL

SCARIFYING BRIDGE DECK	✳CLASS I SURFACE PREPARATION	✳CLASS II SURFACE PREPARATION	✳CLASS III SURFACE PREPARATION	✳CLASS AA CONCRETE	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH OVERLAY	PLACING & FINISHING LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH OVERLAY	FOAM JOINT SEALS	GROOVING BRIDGE FLOORS	CLEANING AND PAINTING EXISTING BEARING PLATES	ASPHALT CONCRETE SURFACE COURSE TYPE SF 9.5A	ASPHALT CONCRETE BASE COURSE TYPE B25.0B	SPAN JACKING	BEARING REPLACEMENT IN KIND	INCIDENTAL MILLING
SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	LUMP SUM	SQ. FT.	LUMP SUM	TONS	TONS	EACH	EACH	SQ. YDS.
420	44	0	0	0	420	18	420	LUMP SUM	3292	LUMP SUM	78	51	1	4	489

✳QUANTITY SHOWN IS FOR INFORMATION ONLY.

PROJECT NO. WBS 17BP.11.H.2

ASHE COUNTY

BRIDGE NO.: 30

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION FOR BRIDGE NO. 30

(NC16 OVER SR1573)

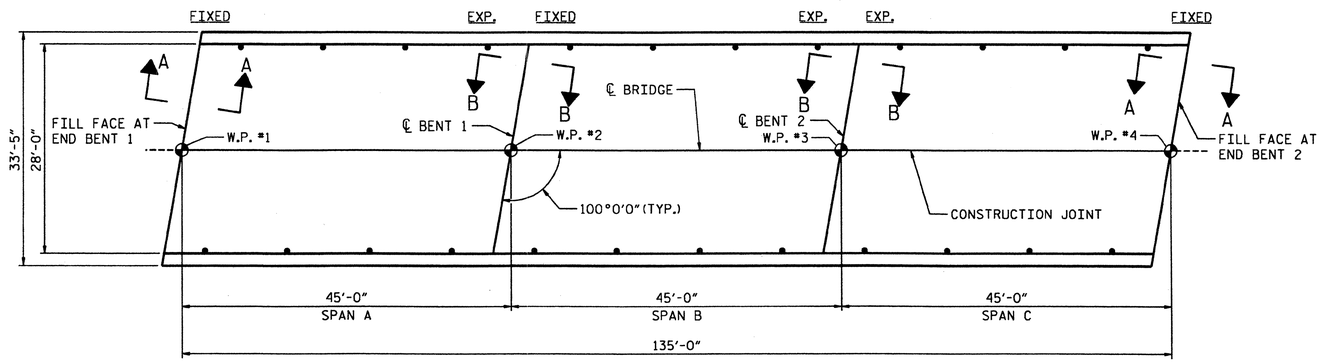
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 032129 ENGINEER MATTHEW J. MOYER

2-2-12

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

REVISIONS						SHEET NO. S-1
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 32
2			4			

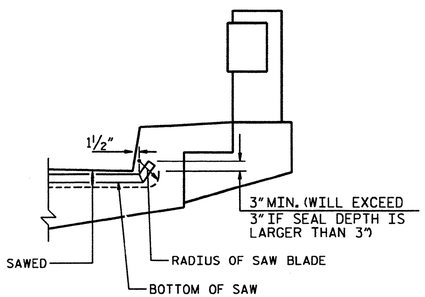
DRAWN BY : L. PATTERSON DATE : 11/2011
CHECKED BY : M. MOYER DATE : 11/2011



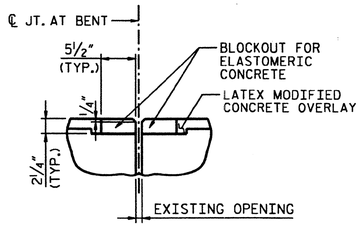
PLAN VIEW

ELASTOMERIC CONCRETE	
BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
BENT 1	4.9
BENT 2	4.9
TOTAL	9.8

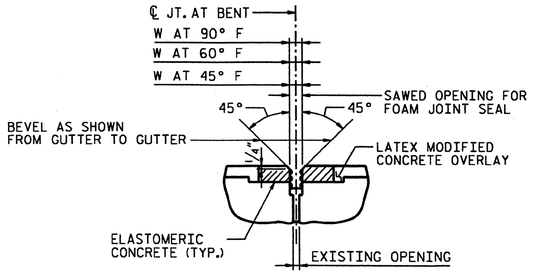
*BASED ON THE MINIMUM BLOCKOUT SHOWN



JOINT DETAIL AT RAIL

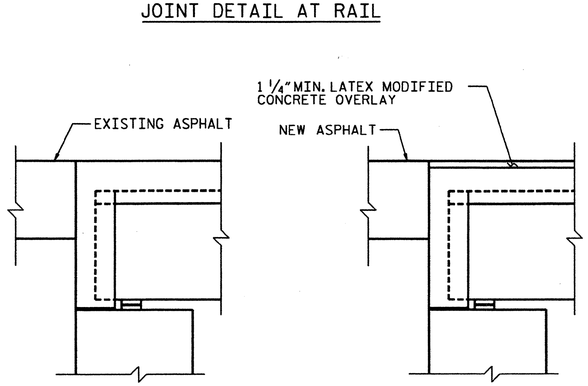


FOAM JOINT SEAL
PRE-SAWED ELASTOMERIC CONCRETE DIMENSIONS



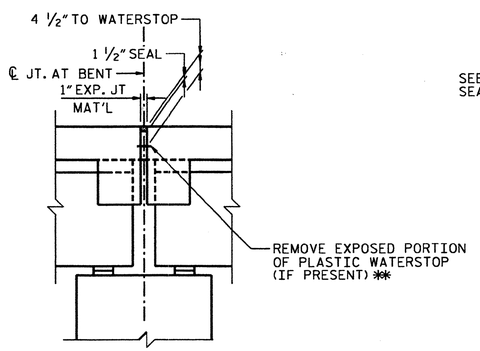
PROPOSED JOINT AT BENTS
FOAM JOINT SEAL EXPANSION

SAWED OPENING FOR FOAM JOINT			
BENT NO.	W AT 90°F	W AT 60°F	W AT 45°F
BENT 1	1⅛"	2"	2 1/16"
BENT 2	1¾"	2"	2⅛"

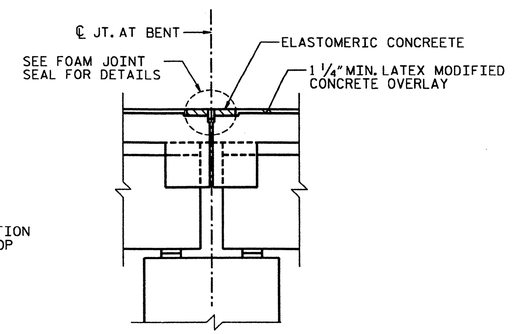


EXISTING SECTION AT END BENT PROPOSED SECTION AT END BENT

SECTION A-A



EXISTING JOINT AT BENTS



PROPOSED JOINT AT BENTS

SECTION B-B

** ALL LOOSE AND UNSOUND CONCRETE SHALL BE REMOVED. IF THE EMBEDDED PORTION OF THE EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE, THE ENTIRE WATERSTOP SHALL BE REMOVED. OTHERWISE, TRIM WATERSTOP FLUSH WITH EXISTING CONCRETE SURFACE.

PROJECT NO. WBS 17BP.11.H.2

ASHE COUNTY

BRIDGE NO.: 30

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN VIEW AND JOINT DETAILS FOR BRIDGE NO. 30

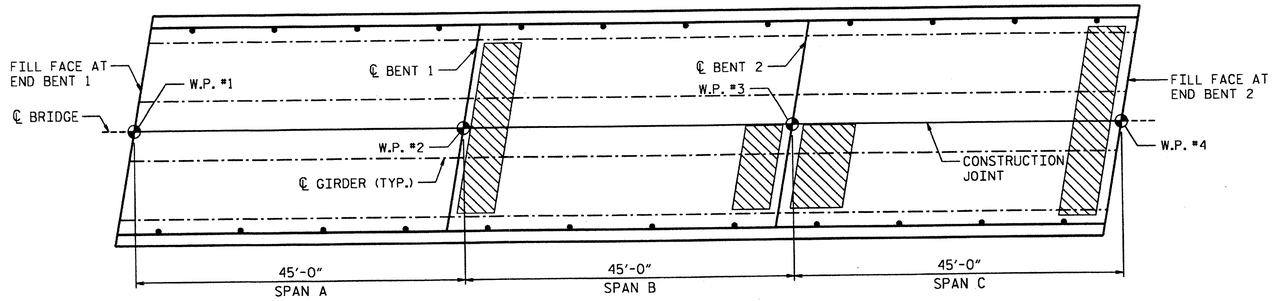
NORTH CAROLINA PROFESSIONAL SEAL 032129 ENGINEER MATTHEW J. MOYER
12-9-11

REVISIONS						SHEET NO. S-2
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 32
1			3			
2			4			

DRAWN BY : L. PATTERSON DATE : 11/2011
CHECKED BY : M. MOYER DATE : 11/2011

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

PLOT DRIVER: NCDOT_pdf_mono_eng_50.plt
USER: mseils
FILE: North Carolina_Dept_of_Transportation\NCDOT_2010BridgeInspection\SC\NCDOT_TO_7\13.00_CAD\Division 11 Project 1\Ashe 30\Drawings\DIV11_1_SD_ASHE30_02.dgn
PENTABLE: Division_11.tbl
DATE: 12/8/2011
TIME: 6:42:03 PM

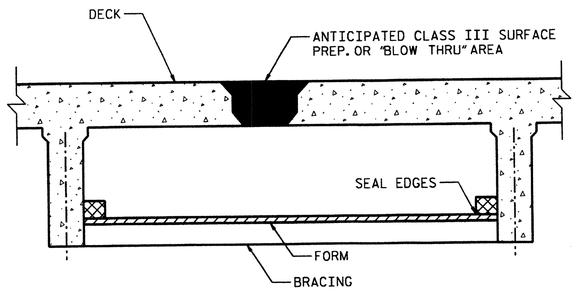


PLAN OF SPANS - DECK REPAIRS

APPROX. AREA: CLASS I REPAIR

APPROX. AREA: CLASS II REPAIR

APPROX. AREA: CLASS III REPAIR

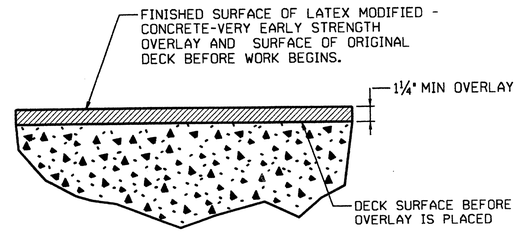


TYPICAL "BLOW THRU" CONTAINMENT AND FORMWORK

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

SUBMIT DETAILS OF PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.

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



DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY

PROJECT NO. WBS 17BP.11.H.2

ASHE COUNTY

BRIDGE NO.: 30

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 032129 MATTHEW J. MOYER

1-3-2012

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

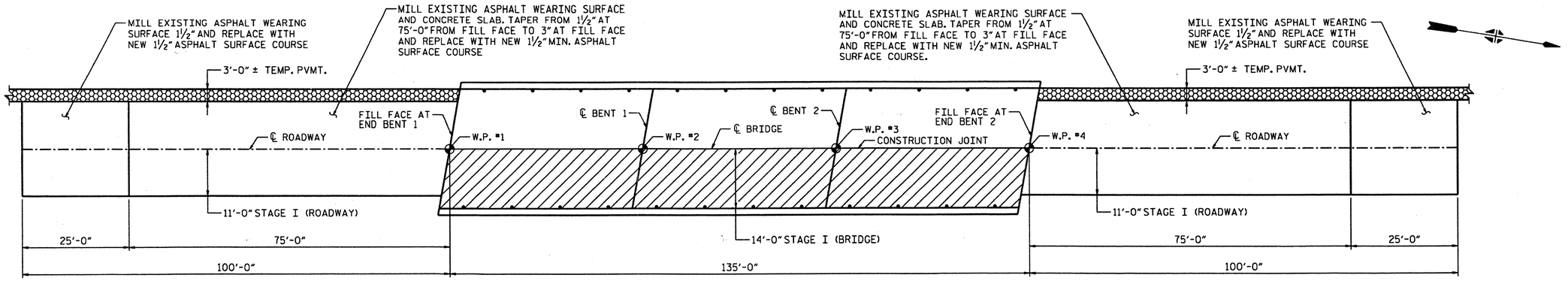
DECK REPAIR DETAILS FOR BRIDGE NO. 30

REVISIONS						SHEET NO. S-3
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 32
2			4			

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

DRAWN BY : L. PATTERSON DATE : 11/2011
CHECKED BY : M. MOYER DATE : 11/2011

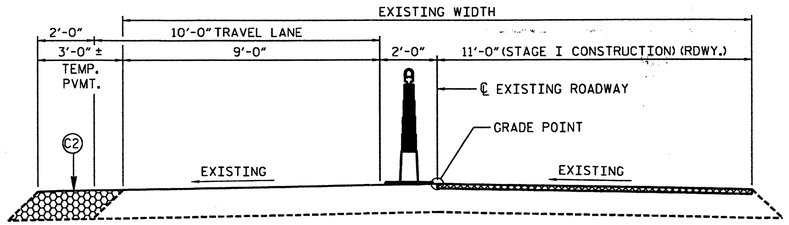
PLOT DRIVER: NCDOT.pdf_mono_eng_50.pit + PENTABLE: Division_11.tbl
USER: msells DATE: 1/3/2012 TIME: 1:24:27 PM
FILE: North Carolina.Dept_of_Transportation\NCDOT_2010Bridge Inspection_SC\NCDOT_TO_7\13.00_CAD\Division 11 Project 1\Ashe 30\Drawings\DIV11_1_SD_ASHE30_03.dgn



PLAN - STAGE I CONSTRUCTION

DECK SCARIFICATION AND HYDRO-DEMOLITION

TEMPORARY PAVEMENT, SEE TRAFFIC CONTROL PLANS

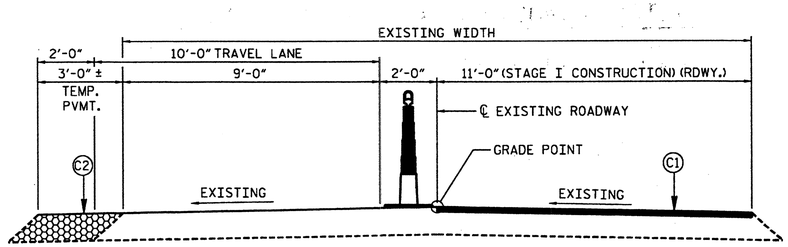


TYPICAL ROADWAY MILLING SECTION - STAGE I

(MILLING DEPTH VARIES, SEE PLAN)

ASPHALT MILLING

TEMPORARY PAVEMENT, SEE TRAFFIC CONTROL PLANS



TYPICAL ROADWAY SECTION - STAGE I

TEMPORARY PAVEMENT, SEE TRAFFIC CONTROL PLANS

C1	PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH.
C2	PROPOSED TEMPORARY PAVING 2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B

NOTES

TEMPORARY PAVEMENT SHALL REMAIN IN PLACE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

PROJECT NO. WBS 17BP.11.H.2

ASHE COUNTY

BRIDGE NO.: 30

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 032129 ENGINEER MATTHEW J. MOYER

2-17-12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

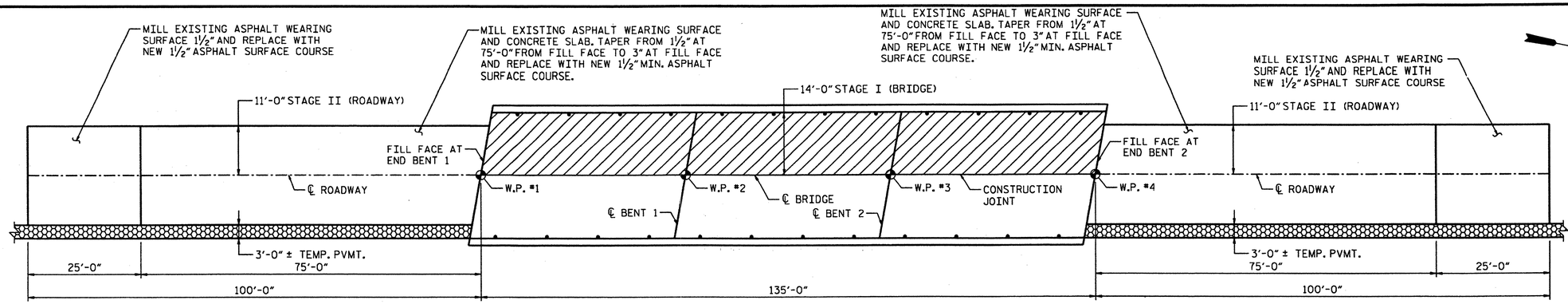
TYPICAL SECTION & MILLING DETAILS FOR BRIDGE NO. 30 (STAGE I)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : L. PATTERSON DATE : 11/2011
CHECKED BY : M. MOYER DATE : 11/2011

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

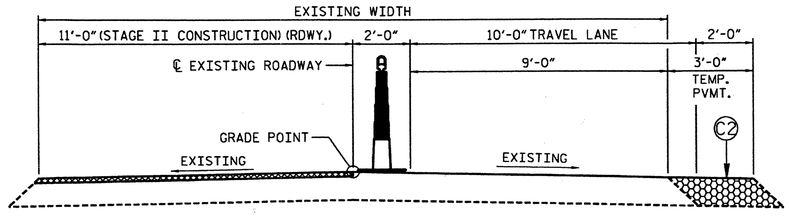
PLOT DRIVER: NCDOT_pdf_mono_eng_50.pit + PENTABLE: Division_11.tbl
USER: lpatters DATE: 2/17/2012 TIME: 9:39:29 AM
FILE: North Carolina_Dept_of_Transportation\NCDOT_DDO_CEI_BM_LSC_MASTER\NCDOT_Division_11_Project_11\13.00_CAD\Ashe 30\Drawings\DIV11_SD_ASHE30_04.dgn



PLAN - STAGE II CONSTRUCTION

DECK SCARIFICATION AND HYDRO-DEMOLITION

TEMPORARY PAVEMENT, SEE TRAFFIC CONTROL PLANS

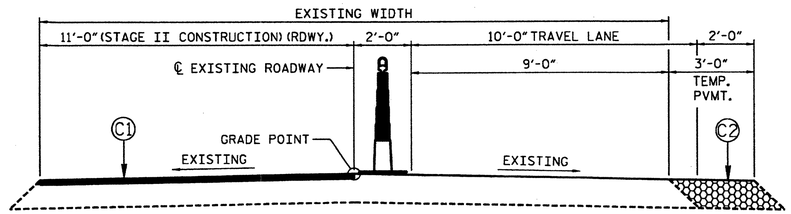


TYPICAL ROADWAY MILLING SECTION - STAGE II

(MILLING DEPTH VARIES, SEE PLAN)

ASPHALT MILLING

TEMPORARY PAVEMENT, SEE TRAFFIC CONTROL PLANS



TYPICAL ROADWAY SECTION - STAGE II

TEMPORARY PAVEMENT, SEE TRAFFIC CONTROL PLANS

C1	PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH.
C2	PROPOSED TEMPORARY PAVING 2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B

NOTES

TEMPORARY PAVEMENT SHALL REMAIN IN PLACE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

PROJECT NO. WBS 17BP.11.H.2

ASHE COUNTY

BRIDGE NO.: 30

NORTH CAROLINA PROFESSIONAL SEAL 032129 ENGINEER MATTHEW J. MOYER

2-17-12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

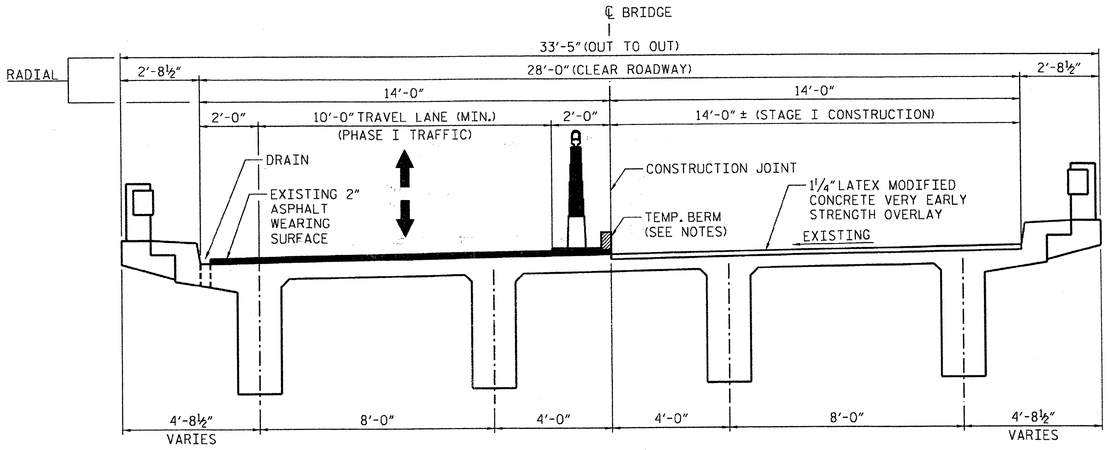
TYPICAL SECTION & MILLING DETAILS FOR BRIDGE NO. 30 (STAGE II)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			32

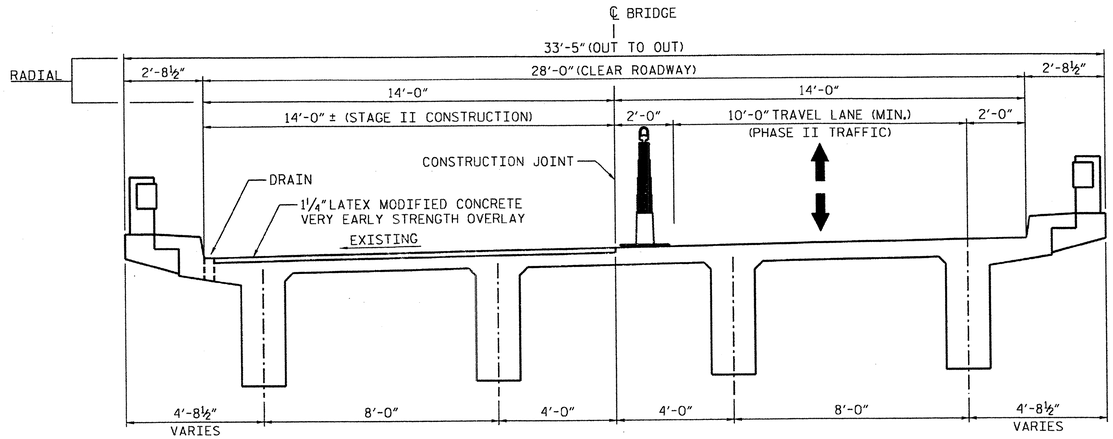
HDR Engineering, Inc. of the Carolinas
3733 National Drive, Suite 207 Raleigh, N.C. 27612
N.C.B.E.L.S. License Number: F-0116

DRAWN BY : L. PATTERSON DATE : 11/2011
CHECKED BY : M. MOYER DATE : 11/2011

PLOT DRIVER: NCDOT_pdf_mono_eng_50.plt + PENTABLE: Division_11.tbl
USER: lpatters DATE: 2/17/2012 TIME: 9:39:54 AM
FILE: North Carolina_Dept_of_Transportation\NCDOT_DDO_CEI_BM_LSC_MASTER\NCDOT_Division_11_Project_11\13.00_CAD\Ashe 30\Drawings\DIV11_1_SD_ASHE30_05.dgn



TYPICAL SECTION - STAGE I



TYPICAL SECTION - STAGE II

TOTAL BILL OF MATERIAL

SCARIFYING BRIDGE DECK	✱CLASS I SURFACE PREPARATION	✱CLASS II SURFACE PREPARATION	✱CLASS III SURFACE PREPARATION	✱CLASS AA CONCRETE	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH OVERLAY	PLACING & FINISHING LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH OVERLAY	FOAM JOINT SEALS	GROOVING BRIDGE FLOORS	ASPHALT CONCRETE SURFACE COURSE TYPE SF 9.5A	ASPHALT CONCRETE BASE COURSE TYPE B25.0B	INCIDENTAL MILLING
SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	LUMP SUM	SQ. FT.	TONS	TONS	SQ. YDS.
623	63	0	0	0	623	26	623	LUMP SUM	4881	78	51	489

✱QUANTITY SHOWN IS FOR INFORMATION ONLY.

DRAWN BY : L. PATTERSON DATE : 11/2011
CHECKED BY : M. MOYER DATE : 11/2011

NOTES

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

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

THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS III SURFACE PREPARATION ARE APPROXIMATE. IF ANY CLASS III LOCATIONS ARE ENCOUNTERED PRIOR TO OR DURING HYDRO-DEMOLITION, SEE "TYPICAL "BLOW THRU" CONTAINMENT AND FORMWORK" DETAIL. THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH WORK OF THE DECK.

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 2½" AT BENTS. FOR "FOAM JOINT SEALS", SEE SPECIAL PROVISIONS.

FOR "ELASTOMERIC CONCRETE", SEE SPECIAL PROVISIONS.

LATEX MODIFIED CONCRETE SHALL BE LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH.

FOR "LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH", SEE SPECIAL PROVISIONS.

FOR GROOVING BRIDGE FLOORS INFORMATION, SEE "LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH" SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

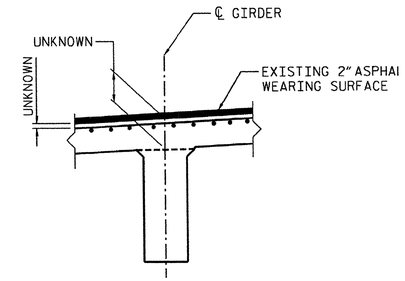
FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

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

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

FOR SCARIFYING BRIDGE DECK, SEE SPECIAL PROVISIONS.

WATER AND CONCRETE SLURRY FROM HYDRO-DEMOLITION SHALL NOT BE ALLOWED TO DRAIN ACROSS TRAVEL LANES, CONTRACTOR SHALL PROVIDE A METHOD TO CONTROL WATER.



EXISTING SLAB SECTION

BOTTOM OF MAT REINFORCING
NOT SHOWN FOR CLARITY

PROJECT NO. WBS 17BP.11.H.2
ASHE COUNTY
BRIDGE NO.: 42

NORTH CAROLINA PROFESSIONAL SEAL 032129 ENGINEER MATTHEW J. MOYER
1-19-2012

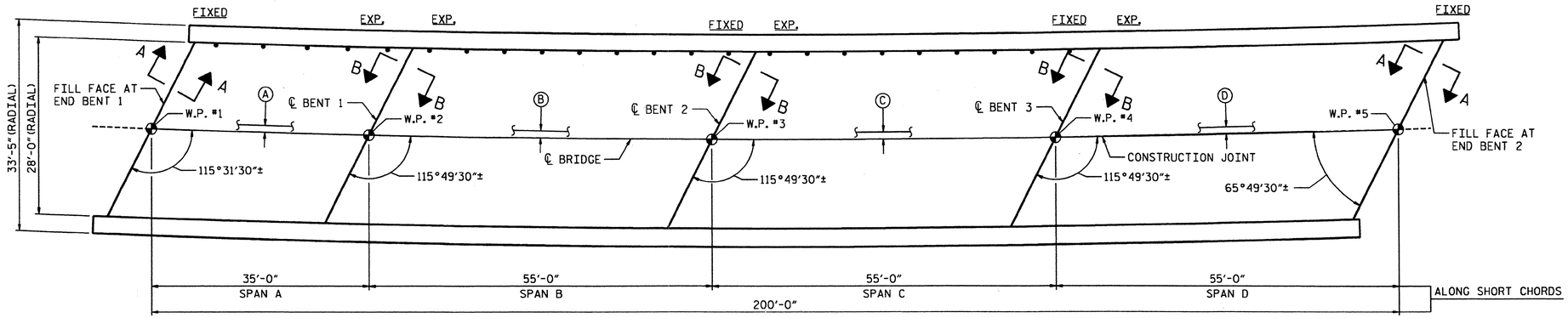
HDR Engineering, Inc. of the Carolinas
3733 National Drive, Suite 207 Raleigh, N.C. 27612
N.C.B.E.L.S. License Number: F-0116

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

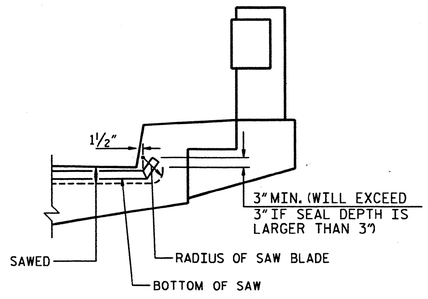
TYPICAL SECTION FOR BRIDGE NO. 42

(NC16 OVER SR1536 & HELTONS CREEK)

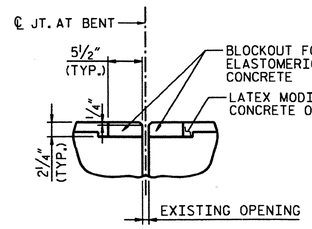
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			32



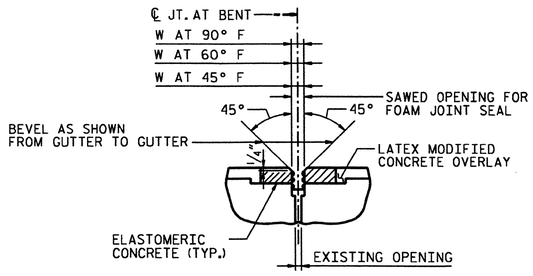
PLAN VIEW



JOINT DETAIL AT RAIL



FOAM JOINT SEAL
PRE-SAWED ELASTOMERIC CONCRETE DIMENSIONS

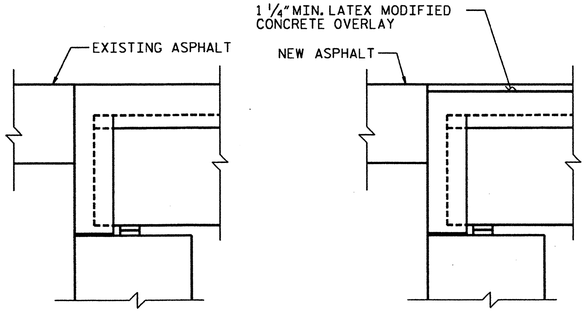


PROPOSED JOINT AT BENTS
FOAM JOINT SEAL EXPANSION

ELASTOMERIC CONCRETE	
BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
BENT 1	5.3
BENT 2	5.3
BENT 3	5.3
TOTAL	15.9

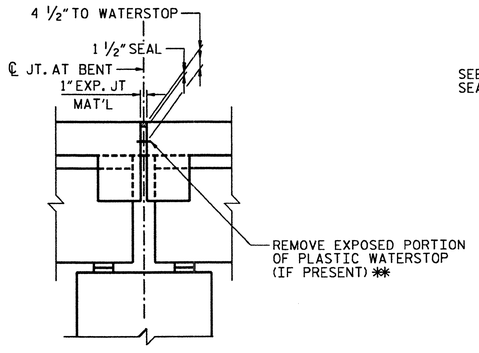
* BASED ON THE MINIMUM BLOCKOUT SHOWN

LOCATION	MIDSPAN ARC OFFSET
A	1" ±
B	2½" ±
C	2½" ±
D	2½" ±

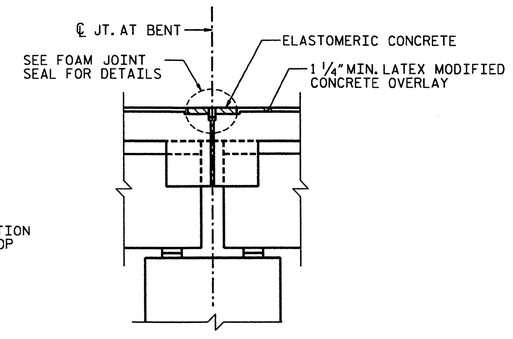


EXISTING SECTION AT END BENT PROPOSED SECTION AT END BENT

SECTION A-A



EXISTING JOINT AT BENTS



PROPOSED JOINT AT BENTS

SECTION B-B

SAWED OPENING FOR FOAM JOINT			
BENT NO.	W AT 90°F	W AT 60°F	W AT 45°F
BENT 1	1¾"	2"	2⅛"
BENT 2	1⅛"	2"	2 1/16"
BENT 3	1⅛"	2"	2 1/16"

** ALL LOOSE AND UNSOUND CONCRETE SHALL BE REMOVED. IF THE EMBEDDED PORTION OF THE EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE, THE ENTIRE WATERSTOP SHALL BE REMOVED. OTHERWISE, TRIM WATERSTOP FLUSH WITH EXISTING CONCRETE SURFACE.

PROJECT NO. WBS 17BP.11.H.2
ASHE COUNTY
BRIDGE NO.: 42

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

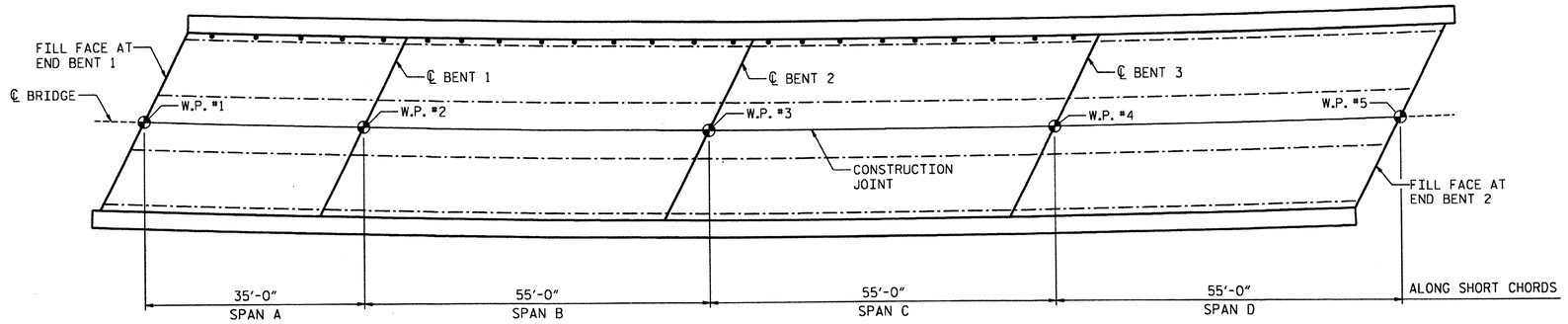
PLAN VIEW AND JOINT DETAILS FOR BRIDGE NO. 42

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : L. PATTERSON DATE : 11/2011
CHECKED BY : M. MOYER DATE : 11/2011

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

PLOT DRIVER: NCDOT_pdf_mono_eng_50.plt
USER: msells
FILE: North Carolina_Dept_of_Transportation\NCDOT_2010BridgeInspectionLSC\NCDOT_TO_7\13.00_CAD\Division 11 Project 1\Ashe 42\Drawings\DIV11.1_SD_ASHE42_02.dgn
PENTABLE: Division_11.tbl
TIME: 6:43:35 PM
DATE: 12/8/2011

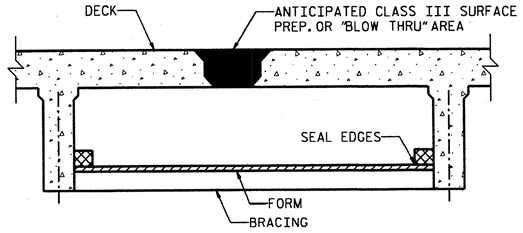


PLAN OF SPANS - DECK REPAIRS

APPROX. AREA: CLASS I REPAIR

APPROX. AREA: CLASS II REPAIR

APPROX. AREA: CLASS III REPAIR

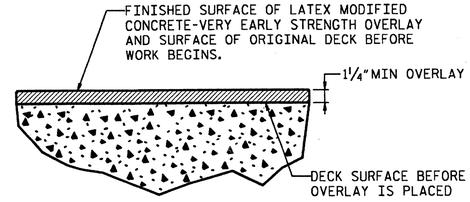


TYPICAL "BLOW THRU" CONTAINMENT AND FORMWORK

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

SUBMIT DETAILS OF PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.

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



DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY

PROJECT NO. WBS 17BP.11.H.2

ASHE COUNTY

BRIDGE NO.: 42

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DECK REPAIR DETAILS FOR BRIDGE NO. 42

NORTH CAROLINA PROFESSIONAL SEAL 032129 ENGINEER MATTHEW J. MOYER

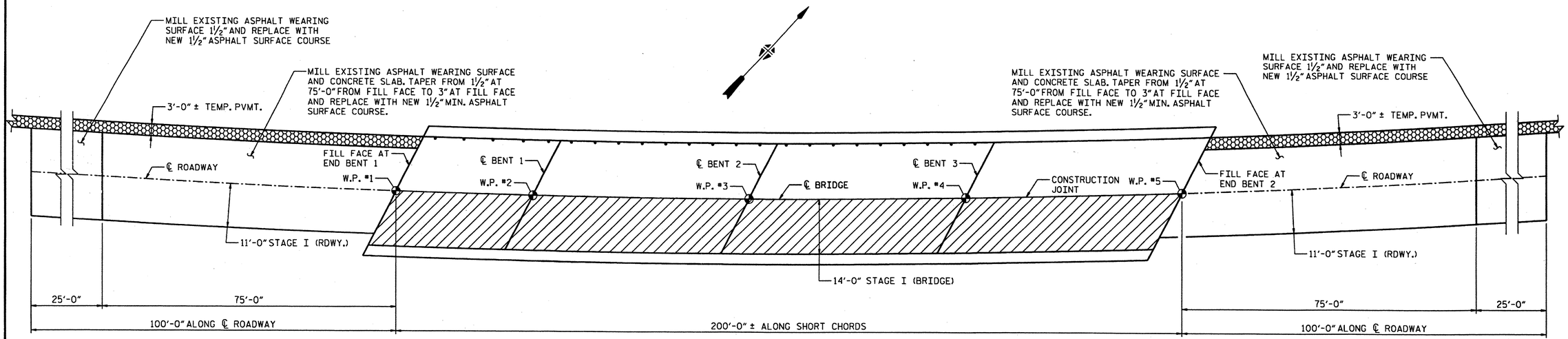
1-3-2012

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

REVISIONS						SHEET NO. S-8
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 32
2			4			

DRAWN BY : L. PATTERSON DATE : 11/2011
CHECKED BY : M. MOYER DATE : 11/2011

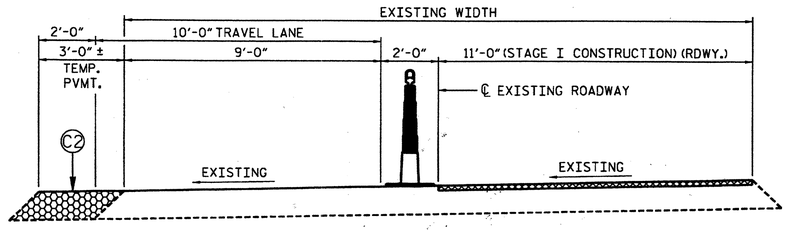
PLOT DRIVER: NCDOT_pdf_mono_eng_50.pltPENTABLE: Division_11.tbl
USER: msellsTIME: 1:26:04 PM
DATE: 1/3/2012
FILE: North Carolina_Dept_of_Transportation\NCDOT_2010BridgeInspection\SC\NCDOT_TO_7\13.00_CAD\Division 11 Project 1\Ashe 42\Drawings\DIV11_1_SD_ASHE42_03.dgn



PLAN - STAGE I CONSTRUCTION

DECK SCARIFICATION AND HYDRO-DEMOLITION

TEMPORARY PAVEMENT, SEE TRAFFIC CONTROL PLANS

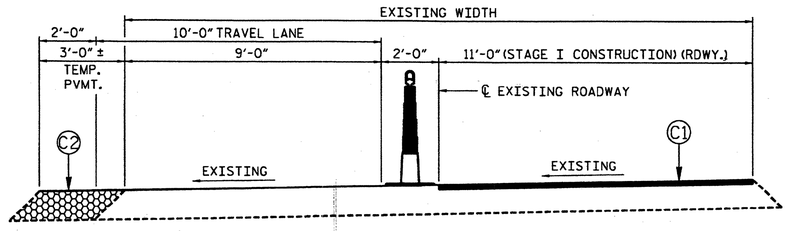


TYPICAL ROADWAY MILLING SECTION - STAGE I

(MILLING DEPTH VARIES, SEE PLAN)

ASPHALT MILLING

TEMPORARY PAVEMENT, SEE TRAFFIC CONTROL PLANS



TYPICAL ROADWAY SECTION - STAGE I

TEMPORARY PAVEMENT, SEE TRAFFIC CONTROL PLANS

C1	PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH.
C2	PROPOSED TEMPORARY PAVING 2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B

NOTES

TEMPORARY PAVEMENT SHALL REMAIN IN PLACE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

PROJECT NO. WBS 17BP.11.H.2

ASHE COUNTY

BRIDGE NO.: 42

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 032129 MATTHEW J. MOYER

2-17-12

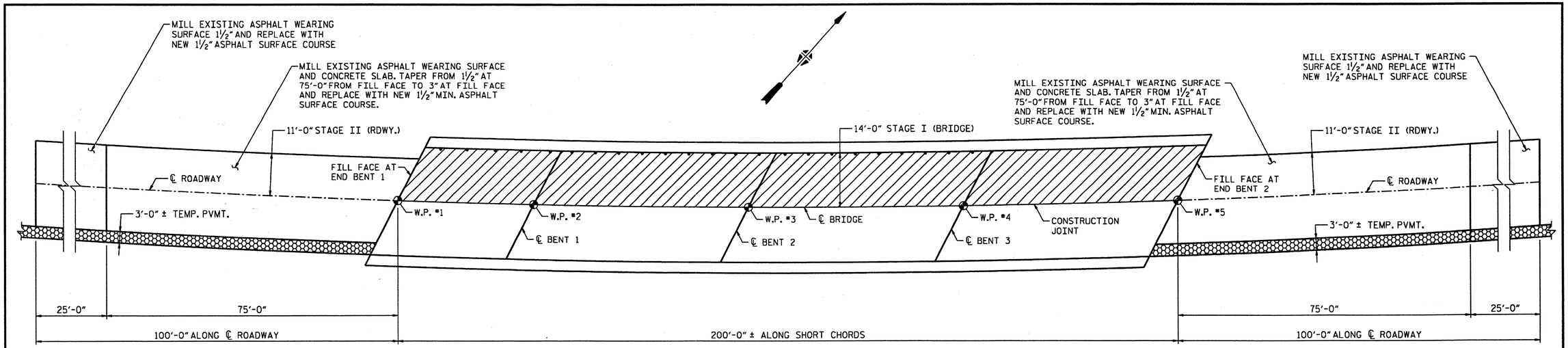
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION & MILLING DETAILS FOR BRIDGE NO. 42 (STAGE I)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			32

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

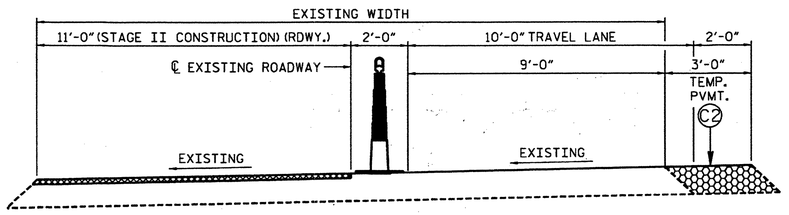
DRAWN BY : L. PATTERSON DATE : 11/2011
CHECKED BY : M. MOYER DATE : 11/2011



PLAN - STAGE II CONSTRUCTION

DECK SCARIFICATION AND HYDRO-DEMOLITION

TEMPORARY PAVEMENT, SEE TRAFFIC CONTROL PLANS

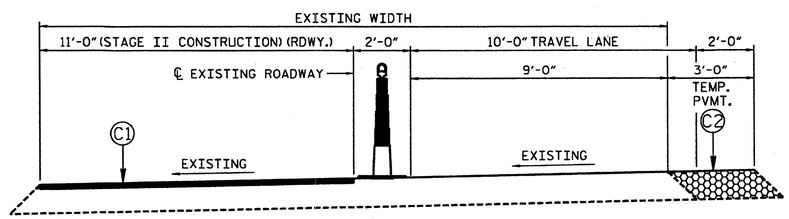


TYPICAL ROADWAY MILLING SECTION - STAGE II

(MILLING DEPTH VARIES, SEE PLAN)

ASPHALT MILLING

TEMPORARY PAVEMENT, SEE TRAFFIC CONTROL PLANS



TYPICAL ROADWAY SECTION - STAGE II

TEMPORARY PAVEMENT, SEE TRAFFIC CONTROL PLANS

C1	PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH.
C2	PROPOSED TEMPORARY PAVING 2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B

NOTES

TEMPORARY PAVEMENT SHALL REMAIN IN PLACE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

PROJECT NO. WBS 17BP.11.H.2

ASHE COUNTY

BRIDGE NO.: 42

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 032129 ENGINEER MATTHEW J. MOYER

2-17-12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

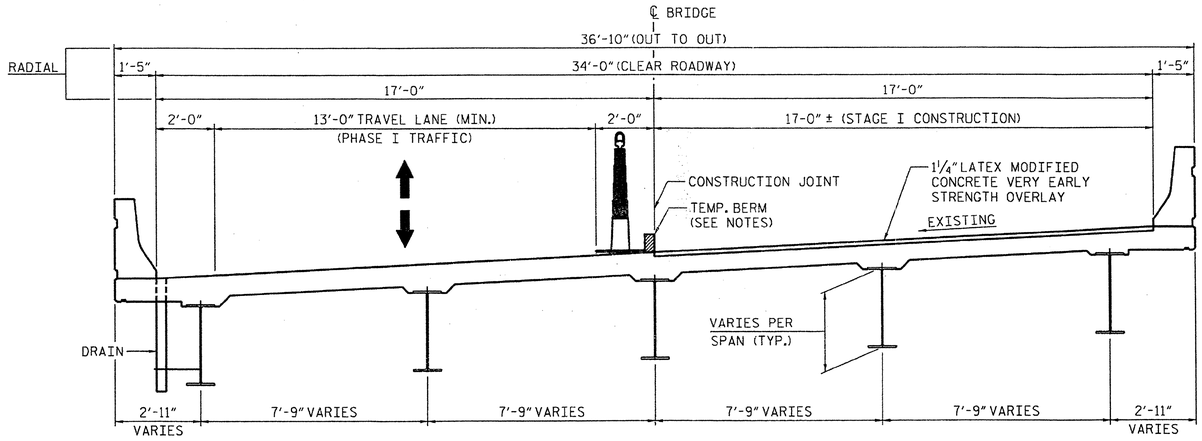
TYPICAL SECTION & MILLING DETAILS FOR BRIDGE NO. 42 (STAGE II)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			32

HDR Engineering, Inc. of the Carolinas
2733 National Drive, Suite 207 Raleigh, N.C. 27612
N.C.B.E.L.S. License Number: F-0116

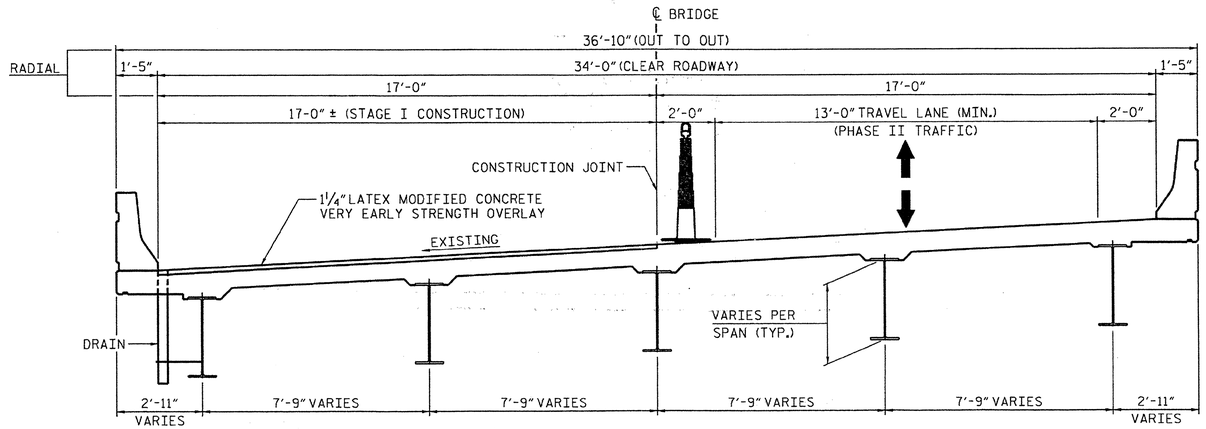
DRAWN BY : L. PATTERSON DATE : 11/2011
CHECKED BY : M. MOYER DATE : 11/2011

PLOT DRIVER: NCDOT.pdf_mono.eng.50.prt + PENTABLE: Division_11.tbl
USER: lpatters DATE: 2/17/2012 TIME: 9:40:38 AM
FILE: North Carolina_Dept_of_Transportation\NCDOT_DDO_CEI_BM_LSC_MASTER\NCDOT_Division_11_Project_1\13.00_CAD\Ashe 42\Drawings\DIV11_1_SD_ASHE42_05.dgn



TYPICAL SECTION - STAGE I

S.I.P FORMS NOT SHOWN FOR CLARITY



TYPICAL SECTION - STAGE II

S.I.P FORMS NOT SHOWN FOR CLARITY

NOTES

ALL HORIZONTAL DIMENSIONS SHOWN ARE RADIAL.

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

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

THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS III SURFACE PREPARATION ARE APPROXIMATE. IF ANY CLASS III LOCATIONS ARE ENCOUNTERED PRIOR TO OR DURING HYDRO-DEMOLITION, SEE "TYPICAL "BLOW THRU" CONTAINMENT AND FORMWORK" DETAIL. THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH WORK OF THE DECK.

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 2½" AT BENTS. FOR "FOAM JOINT SEALS", SEE SPECIAL PROVISIONS.

FOR "ELASTOMERIC CONCRETE", SEE SPECIAL PROVISIONS.

LATEX MODIFIED CONCRETE SHALL BE LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH.

FOR "LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH", SEE SPECIAL PROVISIONS.

FOR GROOVING BRIDGE FLOORS INFORMATION, SEE "LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH" SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

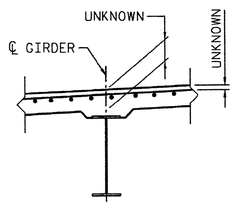
FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

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

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

FOR SCARIFYING BRIDGE DECK, SEE SPECIAL PROVISIONS.

WATER AND CONCRETE SLURRY FROM HYDRO-DEMOLITION SHALL NOT BE ALLOWED TO DRAIN ACROSS TRAVEL LANES, CONTRACTOR SHALL PROVIDE A METHOD TO CONTROL WATER.



EXISTING SLAB SECTION

BOTTOM MAT OF REINFORCING AND S.I.P FORMS NOT SHOWN FOR CLARITY

PROJECT NO. WBS 17BP.11.H.2

AVERY COUNTY

BRIDGE NO.: 26

TOTAL BILL OF MATERIAL

SCARIFYING BRIDGE DECK	✱CLASS I SURFACE PREPARATION	✱CLASS II SURFACE PREPARATION	✱CLASS III SURFACE PREPARATION	✱CLASS AA CONCRETE	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH OVERLAY	PLACING & FINISHING LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH OVERLAY	FOAM JOINT SEALS	GROOVING BRIDGE FLOOR	ASPHALT CONCRETE SURFACE COURSE TYPE SF 9.5A	ASPHALT CONCRETE BASE COURSE TYPE B25.0B	INCIDENTAL MILLING
SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	LUMP SUM	SQ. FT.	TONS	TONS	SQ. YDS.
1309	0	0	0	0	1309	55	1309	LUMP SUM	10551	98	81	533

✱QUANTITY SHOWN IS FOR INFORMATION ONLY.

DRAWN BY : W. TOWE DATE : 11/2011

CHECKED BY : M. MOYER DATE : 11/2011

NORTH CAROLINA PROFESSIONAL SEAL 032129 ENGINEER MATTHEW J. MOYER

1-19-2012

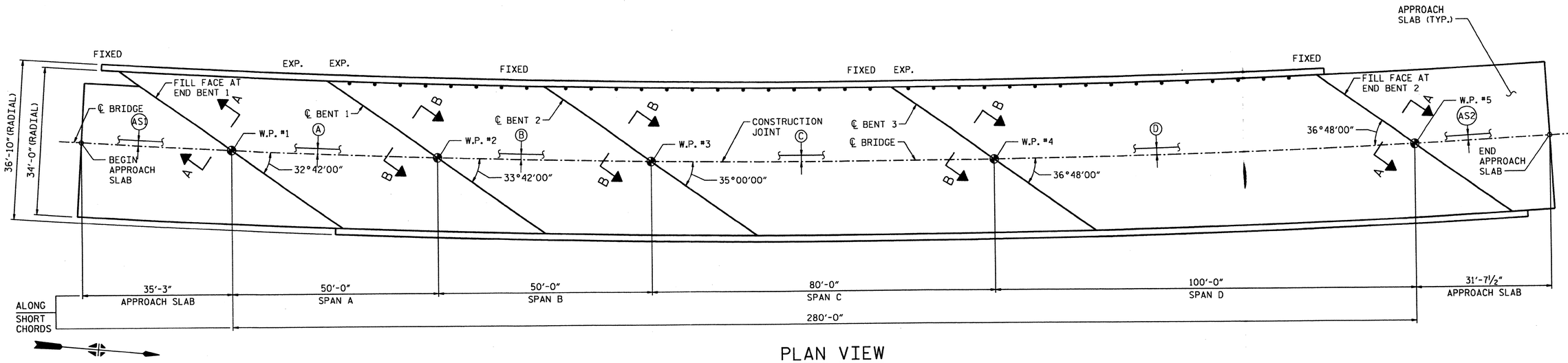
HDR Engineering, Inc. of the Carolinas
2733 National Drive, Suite 207 Raleigh, N.C. 27612
N.C.B.E.L.S. License Number: F-0116

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

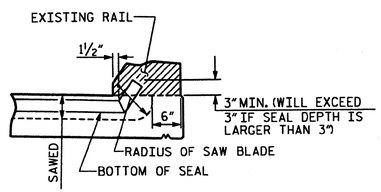
TYPICAL SECTION FOR BRIDGE NO. 26

(US19E OVER NORTH TOE RIVER)

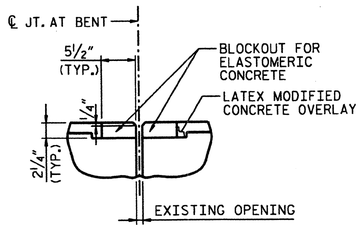
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			32



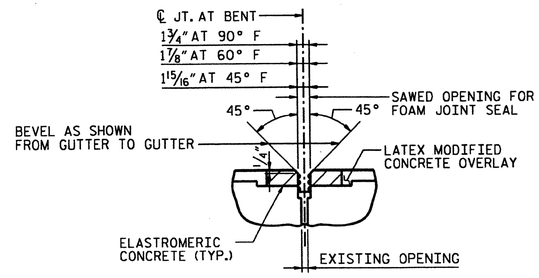
PLAN VIEW



JOINT DETAIL AT RAIL



FOAM JOINT SEAL
PRE-SAWED ELASTOMERIC CONCRETE DIMENSIONS

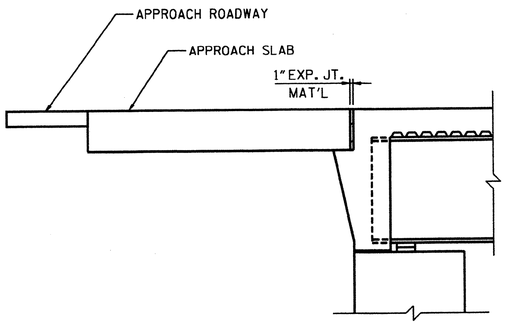


PROPOSED JOINT AT BENTS
FOAM JOINT SEAL EXPANSION

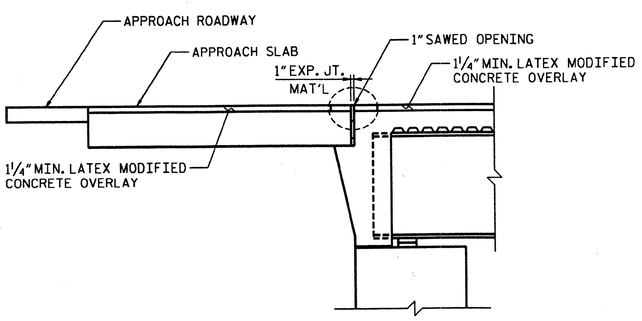
LOCATION	MIDSPAN ARC OFFSET
AS1	¾" ±
A	1¼" ±
B	1¼" ±
C	3¼" ±
D	5¼" ±
AS2	½" ±

ELASTOMERIC CONCRETE	
BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
BENT 1	10.3
BENT 2	10.3
BENT 3	10.3
TOTAL	30.9

*BASED ON THE MINIMUM BLOCKOUT SHOWN

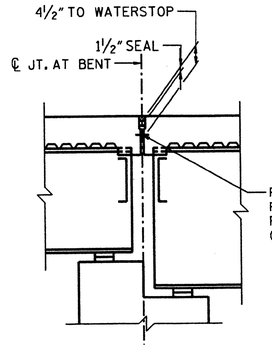


EXISTING SECTION AT END BENT

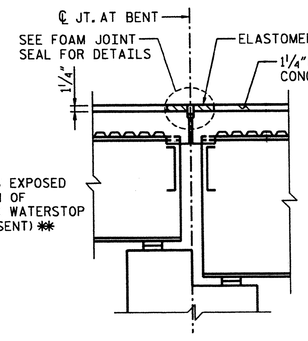


PROPOSED SECTION AT END BENT
(REPLACE 1" EXPANSION JOINT MATERIAL)

SECTION A-A



EXISTING JOINT AT BENTS
BEAM DEPTH VARIES AT BENTS



PROPOSED JOINT AT BENTS
BEAM DEPTH VARIES AT BENTS

SECTION B-B

PROJECT NO. WBS 17BP.11.H.2
AVERY COUNTY
BRIDGE NO.: 26

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN VIEW AND JOINT DETAILS FOR BRIDGE NO. 26

REVISIONS						SHEET NO. S-12
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 32
1			3			
2			4			

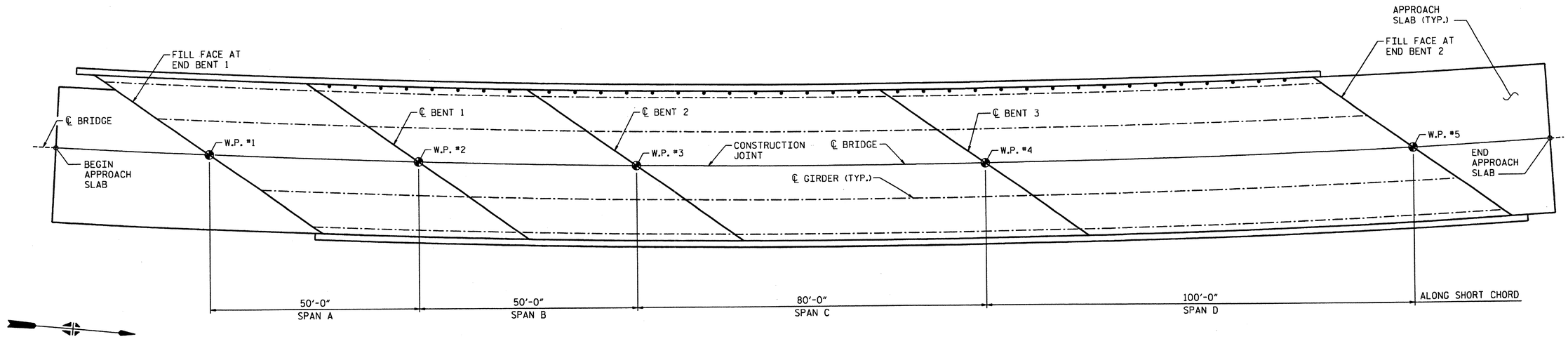
NORTH CAROLINA PROFESSIONAL SEAL 032129 ENGINEER MATTHEW J. MOYER 12-9-11

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

DRAWN BY : W. TOWE DATE : 11/2011
CHECKED BY : M. MOYER DATE : 11/2011

** ALL LOOSE AND UNSOUND CONCRETE SHALL BE REMOVED. IF THE EMBEDDED PORTION OF THE EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE, THE ENTIRE WATERSTOP SHALL BE REMOVED. OTHERWISE, TRIM WATERSTOP FLUSH WITH EXISTING CONCRETE SURFACE.

PLOT DRIVER: NCDOT_pdf_mono_eng_50.plt PENTABLE: Division_11.tbl
USER: mseils DATE: 12/9/2011 TIME: 7:45:21 AM
FILE: North Carolina_Dept_of_Transportation\NCDOT_2010BridgeInspection\SC\NCDOT_TO_T\13.00_CAD\Division 11 Project 1\Avery 26\Drawings\DIV11.1.SD_AVERY26_02.dgn

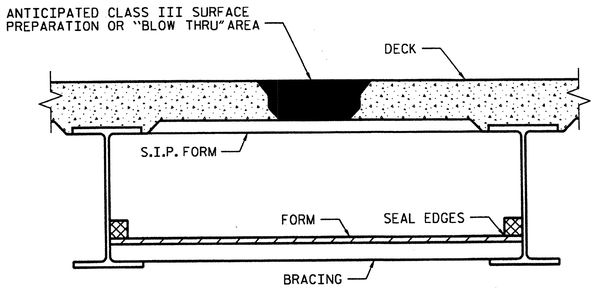


PLAN OF SPANS - DECK REPAIRS

APPROX. AREA: CLASS I REPAIR

APPROX. AREA: CLASS II REPAIR

APPROX. AREA: CLASS III REPAIR

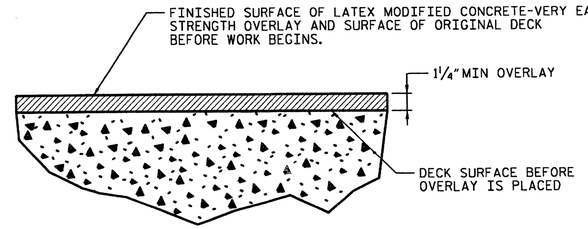


TYPICAL "BLOW THRU" CONTAINMENT AND FORMWORK

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

SUBMIT DETAILS OF PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.

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



DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY

PROJECT NO. WBS 17BP.11.H.2

AVERY COUNTY

BRIDGE NO.: 26

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DECK REPAIR DETAILS FOR BRIDGE NO. 26

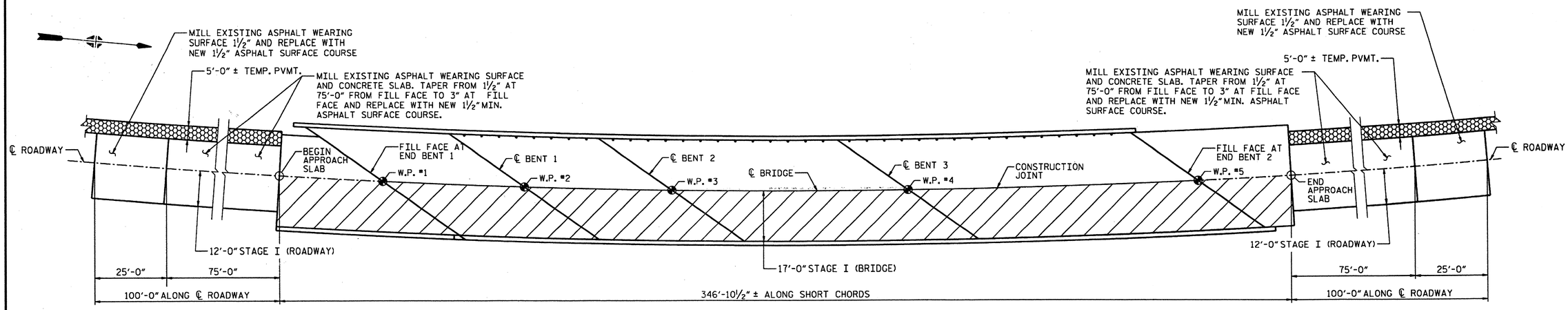
NORTH CAROLINA PROFESSIONAL SEAL 032129 ENGINEER MATTHEW J. MOYER
1-3-2012

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

REVISIONS						SHEET NO. S-13
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 32
1			3			
2			4			

DRAWN BY : W. TOWE DATE : 11/2011
CHECKED BY : M. MOYER DATE : 11/2011

PLOT DRIVER: NCDOT.pdf_mono_eng_50.pit + PENTABLE: Division_11.tbl
USER: dwagner DATE: 1/3/2012 TIME: 4:07:48 PM
FILE: North Carolina_Dept_of_Transportation\NCDOT_2010Bridgeinspection\SC\NCDOT_T0_7\13.00_CAD\Division 11 Project 1\Avery 26\Drawings\DIV11_SD_AVERY26_03.dgn



PLAN - STAGE I CONSTRUCTION)

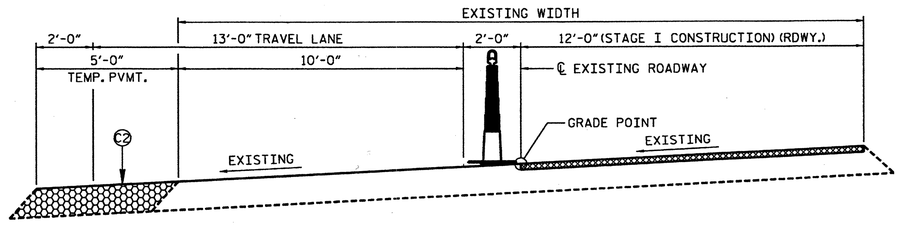
DECK SCARIFICATION AND HYDRO-DEMOLITION

TEMPORARY PAVEMENT, SEE TRAFFIC CONTROL PLANS

C1	PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH.
C2	PROPOSED TEMPORARY PAVING 2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B

NOTES

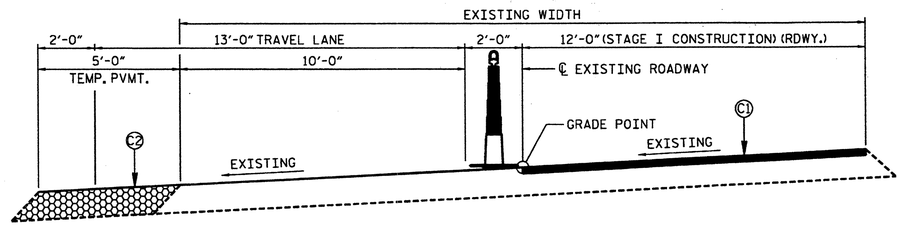
TEMPORARY PAVEMENT SHALL REMAIN IN PLACE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.



TYPICAL ROADWAY MILLING SECTION - STAGE I

(MILLING DEPTH VARIES, SEE PLAN)

ASPHALT MILLING TEMPORARY PAVEMENT, SEE TRAFFIC CONTROL PLANS



TYPICAL ROADWAY SECTION - STAGE I

TEMPORARY PAVEMENT, SEE TRAFFIC CONTROL PLANS

PROJECT NO. WBS 17BP.11.H.2

AVERY COUNTY

BRIDGE NO.: 26

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION & MILLING DETAILS FOR BRIDGE NO. 26 (STAGE I)

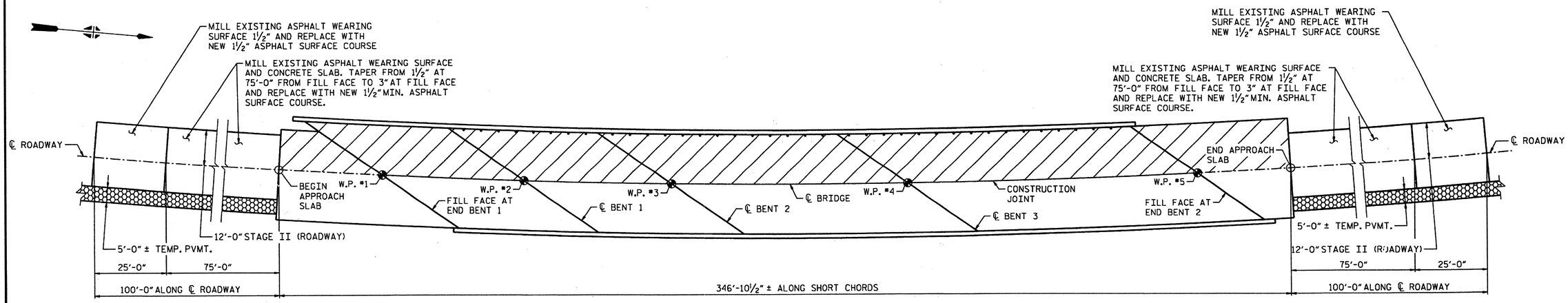
NORTH CAROLINA PROFESSIONAL SEAL 032129 ENGINEER MATTHEW J. MOYER
2-17-12

HDR Engineering, Inc. of the Carolinas
3723 National Drive, Suite 207 Raleigh, N.C. 27612
N.C.B.E.L.S. License Number: F-0116

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : W. TOWE DATE : 11/2011
CHECKED BY : M. MOYER DATE : 11/2011

PLOT DRIVER: NCDOT_pdf_mono_eng_50.pltPENTABLE: Division_11.tbl
USER: lpatters DATE: 2/17/2012 TIME: 9:41:04 AM
FILE: North Carolina_Dept_of_Transportation\NCDOT_DDO_CEI_BM_LSC_MASTER\NCDOT_Division_11_Project_1\13.00_CAD\Avery 26\Drawings\DIV11_1_SD_AVERY26_04.dgn



PLAN - STAGE II CONSTRUCTION

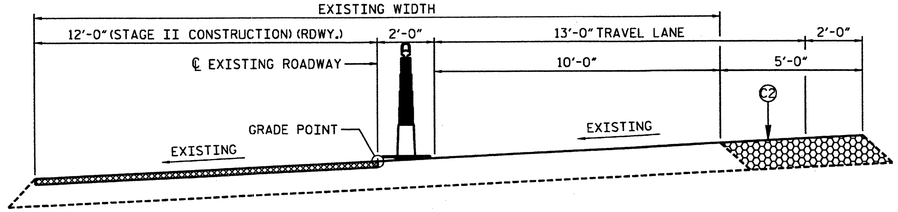
DECK SCARIFICATION AND HYDRO-DEMOLITION

TEMPORARY PAVEMENT, SEE TRAFFIC CONTROL PLANS

C1	PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH.
C2	PROPOSED TEMPORARY PAVING 2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B

NOTES

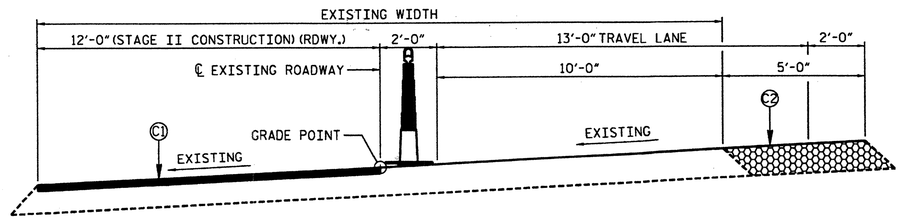
TEMPORARY PAVEMENT SHALL REMAIN IN PLACE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.



TYPICAL ROADWAY MILLING SECTION - STAGE II

(MILLING DEPTH VARIES, SEE PLAN)

ASPHALT MILLING TEMPORARY PAVEMENT, SEE TRAFFIC CONTROL PLANS



TYPICAL ROADWAY SECTION - STAGE II

TEMPORARY PAVEMENT, SEE TRAFFIC CONTROL PLANS

PROJECT NO. WBS 17BP.11.H.2

AVERY COUNTY

BRIDGE NO.: 26

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION & MILLING DETAILS FOR BRIDGE NO. 26 (STAGE II)

REVISIONS						SHEET NO. S-15
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 32
1			3			
2			4			

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 032129 MATTHEW J. MOYER
2-17-12

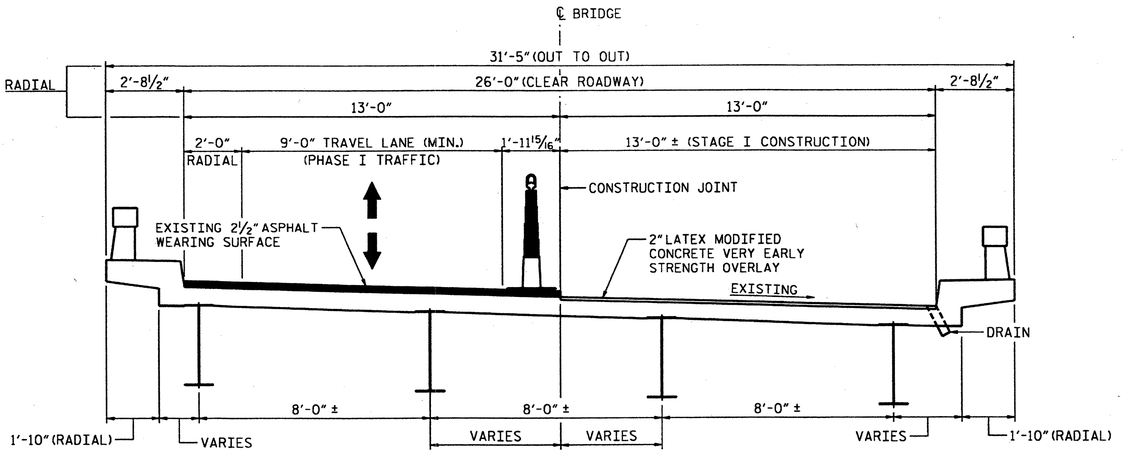
HDR Engineering, Inc. of the Carolinas
3733 National Drive, Suite 207 Raleigh, N.C. 27612
N.C.B.E.L.S. License Number: F-0116

DRAWN BY : W. TOWE DATE : 11/2011
CHECKED BY : M. MOYER DATE : 11/2011

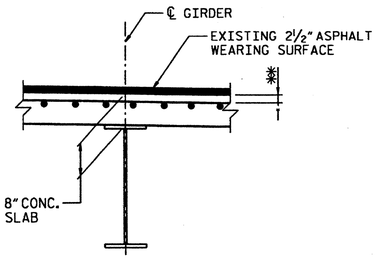
PLOT DRIVER: NCDOT.pdf.mono.eng.50.plt
USER: lpatters
FILE: North Carolina.Dept.of.Transportation\NCDOT.DDO.CEI.BM.LSC_MASTER\NCDOT.Division.11.Project.1\13.00.CAD\Avery 26\Drawings\DIV11.1.SD.AVERY26.05.dgn
PENTABLE: Division.11.tbl
DATE: 2/17/2012
TIME: 9:41:30 AM

CONSTRUCTION SEQUENCE

1. INSTALL TRAFFIC CONTROL
2. SEAL EXISTING JOINTS AND BRIDGE DECK DRAINS
3. INSTALL "BLOW-THRU" CONTAINMENT AND FORMWORK
4. INSTALL PAINT CONTAINMENT ENCLOSURE
5. PERFORM HYDRO-DEMOLITION OF BRIDGE DECK
6. PLACE AND FINISH LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH OVERLAY
7. UNSEAL EXISTING JOINTS AND BRIDGE DECK DRAINS
8. SAW JOINTS AT BENT 1 AND BENT 2
9. INSTALL FOAM SEAL AND CAST ELASTOMERIC CONCRETE AT BENT 1 AND BENT 2
10. REMOVE "BLOW-THRU" CONTAINMENT AND FORMWORK
11. CLEAN AND PAINT ALL STRUCTURAL STEEL
12. REMOVE PAINT CONTAINMENT ENCLOSURE
13. PERFORM BRIDGE DECK GROOVING
14. PERFORM APPROACH ROADWAY MILLING AND PAVING
15. REMOVE TRAFFIC CONTROL
16. OPEN BRIDGE TO TRAFFIC

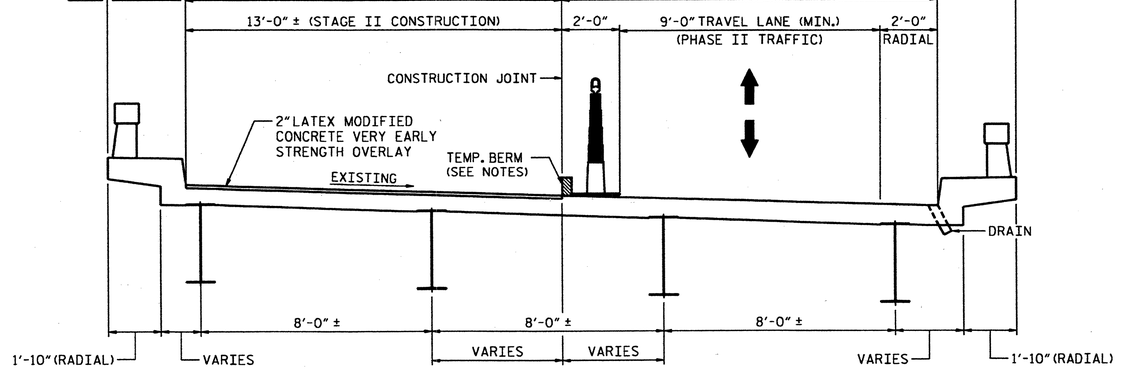


TYPICAL SECTION - STAGE I



EXISTING SLAB SECTION

BOTTOM MAT OF REINFORCING NOT SHOWN FOR CLARITY
✱✱ SEE DRAWING "BRIDGE DECK EVALUATION TEST LOCATIONS FOR BRIDGE NO. 305"



TYPICAL SECTION - STAGE II

TOTAL BILL OF MATERIAL

SCARIFYING BRIDGE DECK	✱CLASS I SURFACE PREPARATION	✱CLASS II SURFACE PREPARATION	✱CLASS III SURFACE PREPARATION	✱CLASS AA CONCRETE	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH OVERLAY	PLACING & FINISHING LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH OVERLAY	FOAM JOINT SEALS	GROOVING BRIDGE FLOOR	ASPHALT CONCRETE SURFACE COURSE TYPE SF 9.5A	ASPHALT CONCRETE BASE COURSE TYPE B25.0B	POLLUTION CONTROL	CLEANING AND REPAINTING OF BRIDGE NO. 305	INCIDENTAL MILLING
SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	LUMP SUM	SQ. FT.	TONS	TONS	LUMP SUM	LUMP SUM	SQ. YDS.
520	91	26	54	9	520	33	520	LUMP SUM	4064	70	35	LUMP SUM	LUMP SUM	489

✱ QUANTITY SHOWN IS FOR INFORMATION ONLY.

NOTES

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

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

THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS III SURFACE PREPARATION ARE APPROXIMATE. IF ANY CLASS III LOCATIONS ARE ENCOUNTERED PRIOR TO OR DURING HYDRO-DEMOLITION, SEE "TYPICAL "BLOW THRU" CONTAINMENT AND FORMWORK" DETAIL. THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH WORK OF THE DECK.

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 2½" AT BENTS. FOR "FOAM JOINT SEALS", SEE SPECIAL PROVISIONS.

FOR "ELASTOMERIC CONCRETE", SEE SPECIAL PROVISIONS.

LATEX MODIFIED CONCRETE SHALL BE LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH.

FOR "LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH", SEE SPECIAL PROVISIONS.

FOR GROOVING BRIDGE FLOORS INFORMATION, SEE "LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH" SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

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

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

FOR SCARIFYING BRIDGE DECK, SEE SPECIAL PROVISIONS.

WATER AND CONCRETE SLURRY FROM HYDRO-DEMOLITION SHALL NOT BE ALLOWED TO DRAIN ACROSS TRAVEL LANES, CONTRACTOR SHALL PROVIDE A METHOD TO CONTROL WATER.

FOR "CLEANING AND REPAINTING OF BRIDGE NO. 305", SEE SPECIAL PROVISIONS.

PROJECT NO. WBS 17BP.11.H.2

WATAUGA COUNTY

BRIDGE NO.: 305

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION FOR BRIDGE NO. 305
(SR 1202 OVER BEAVERDAM CREEK)

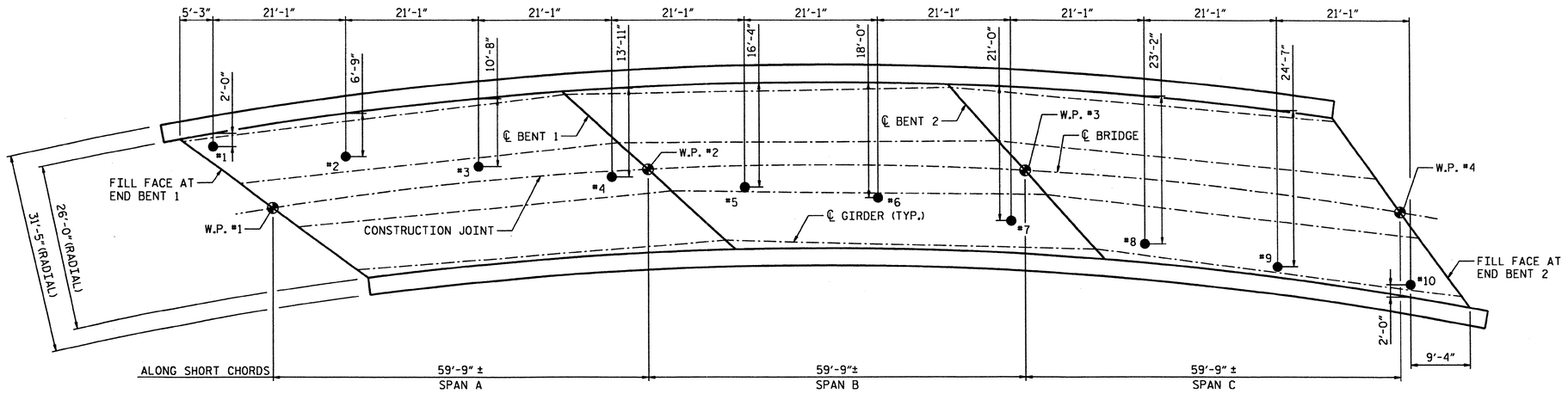
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 032129 MATTHEW J. MOYER
2-14-12

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : L. PATTERSON DATE : 11/2011
CHECKED BY : M. MOYER DATE : 11/2011

PLOT DRIVER: NCDOT_pdf_mono_eng_50.plt
USER: mseils
FILE: North Carolina_Dept_of_Transportation\NCDOT_DOO_CEI_BM_LSC_MASTER\NCDOT_Division_11_Project_1\13.00_CADD\Watauga 305\Drawings\DIV11.1_SD_WATAUGA305_01.dgn
PENTABLE: Division_11.tbl
TIME: 1:43:59 PM
DATE: 2/14/2012



PLAN VIEW - TEST LOCATIONS

CONCRETE & REINFORCING		
TEST LOCATION	TOP BAR COVER* (In)	ASPHALT THICKNESS (In)
1	2.00	0.50
2	2.10	0.60
3	2.23	0.73
4	2.28	0.78
5	2.29	0.79
6	2.15	0.65
7	2.17	0.67
8	3.70	2.20
9	2.26	0.76
10	1.98	0.48

*TOP REINFORCING BAR COVER IS FROM THE TOP OF ASPHALT

NOTES: ALL TEST LOCATIONS ARE TAKEN FROM GUTTERLINE

PROJECT NO. WBS 17BP.11.H.2

WATAUGA COUNTY

BRIDGE NO.: 305

NORTH CAROLINA PROFESSIONAL SEAL 032129 ENGINEER MATTHEW J MOYER

12-9-11

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

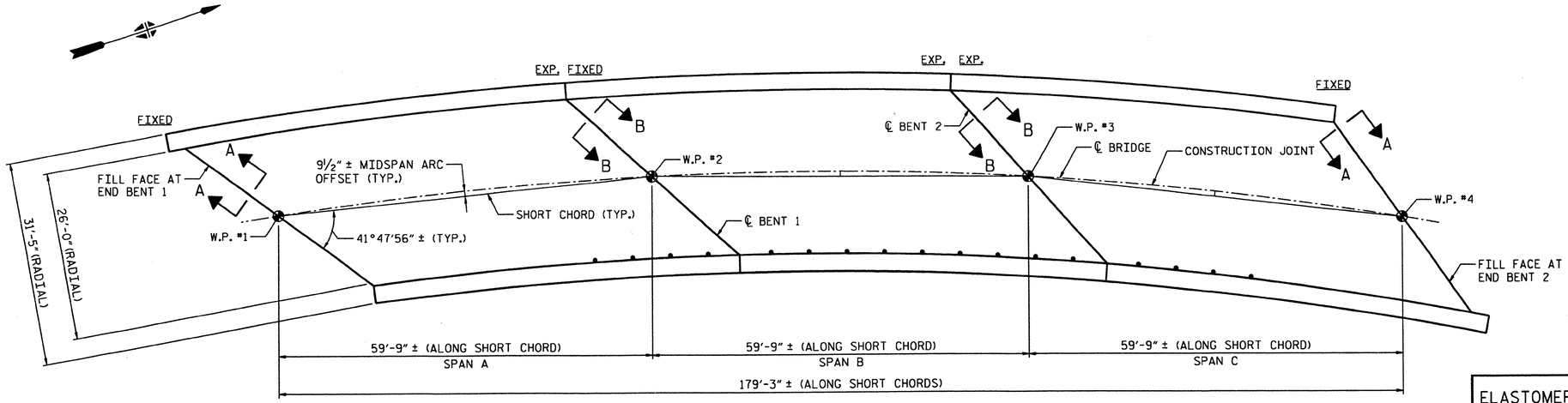
BRIDGE DECK EVALUATION TEST LOCATIONS FOR BRIDGE NO. 305

REVISIONS						SHEET NO. S-17
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 32
2			4			

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

DRAWN BY : L. PATTERSON DATE : 11/2011
CHECKED BY : M. MOYER DATE : 11/2011

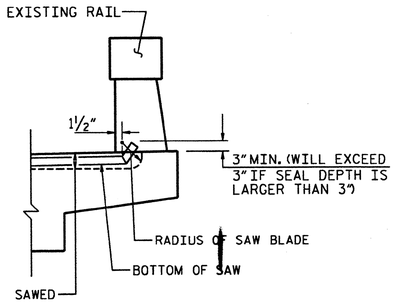
PLOT DRIVER: NCDOT_pdf_mono_eng.50.pltPENTABLE: Division.11.tbl
USER: msellsTIME: 6:46:36 PM
DATE: 12/8/2011
FILE: North Carolina_Dept_of_Transportation\NCDOT_2010BridgeInspectionLSC\NCDOT_TO_7\13.00_CAD\Division 11 Project 1\Wataug 305\Drawings\DIV11_SD_WATAUGA305_02.dgn



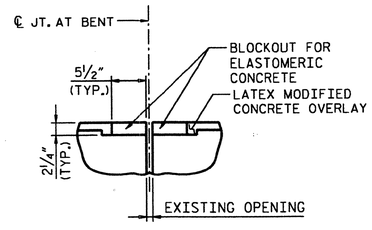
PLAN VIEW

ELASTOMERIC CONCRETE	
BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
BENT 1	6.3
BENT 2	6.3
TOTAL	12.6

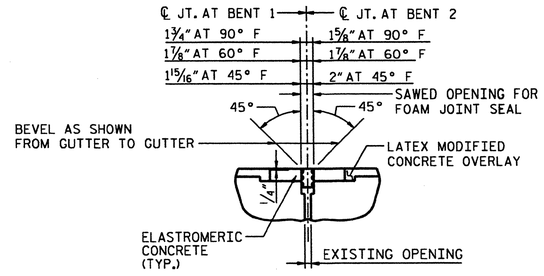
*BASED ON THE MINIMUM BLOCKOUT SHOWN



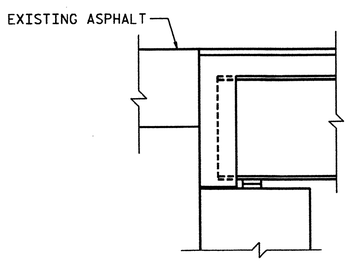
JOINT DETAIL AT RAIL



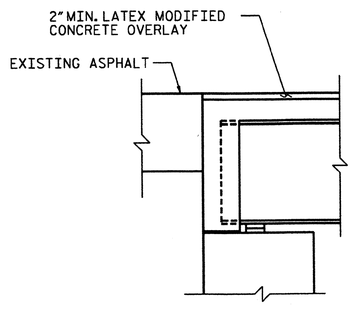
FOAM JOINT SEAL
PRE-SAWED ELASTOMERIC CONCRETE DIMENSIONS



PROPOSED JOINT AT BENTS
FOAM JOINT SEAL EXPANSION

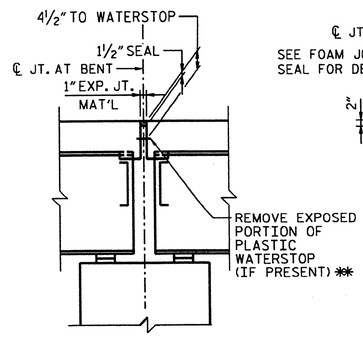


EXISTING SECTION AT END BENT

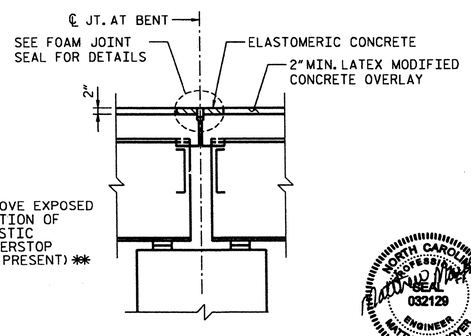


PROPOSED SECTION AT END BENT

SECTION A-A



EXISTING JOINT AT BENTS



PROPOSED JOINT AT BENTS

SECTION B-B

PROJECT NO. WBS 17BP.11.H.2

WATAUGA COUNTY

BRIDGE NO.: 305

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

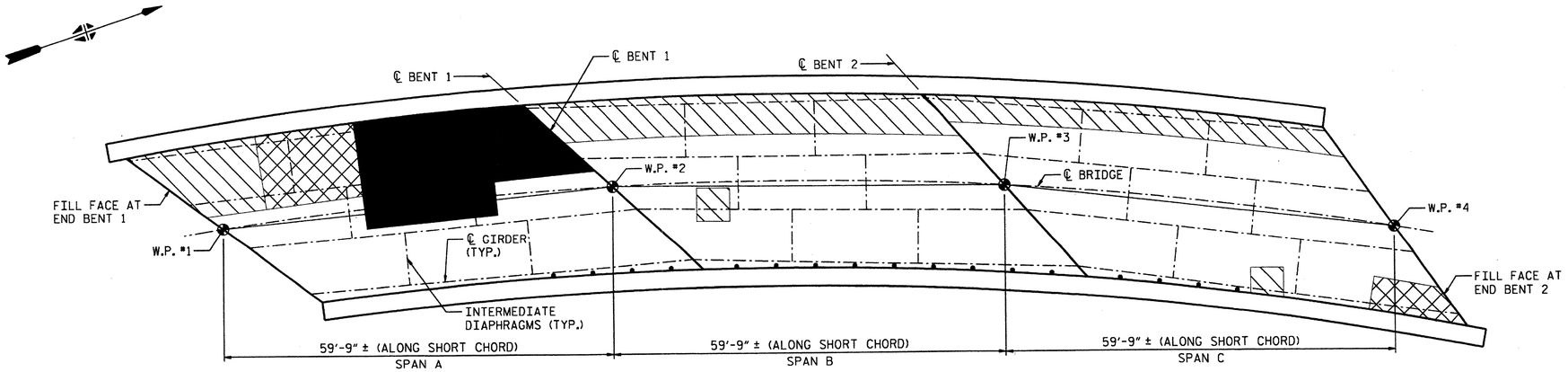
PLAN VIEW AND JOINT DETAILS FOR BRIDGE NO. 305

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-18
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : L. PATTERSON DATE : 11/2011
CHECKED BY : M. MOYER DATE : 11/2011

** ALL LOOSE AND UNSOUND CONCRETE SHALL BE REMOVED. IF THE EMBEDDED PORTION OF THE EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE, THE ENTIRE WATERSTOP SHALL BE REMOVED. OTHERWISE, TRIM WATERSTOP FLUSH WITH EXISTING CONCRETE SURFACE.

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

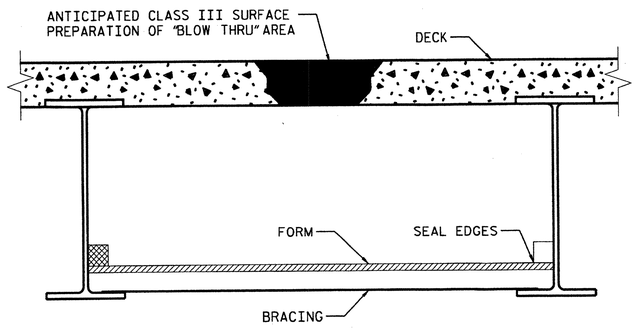


PLAN OF SPANS - DECK REPAIRS

APPROX. AREA: CLASS I REPAIR

APPROX. AREA: CLASS II REPAIR

APPROX. AREA: CLASS III REPAIR

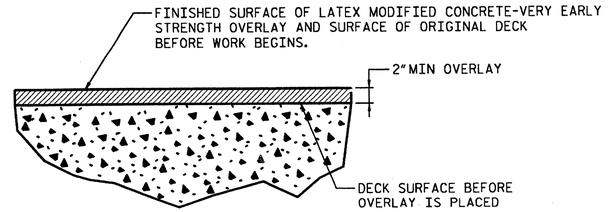


TYPICAL "BLOW THRU" CONTAINMENT AND FORMWORK

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

SUBMIT DETAILS OF PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.

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



DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY

PROJECT NO. WBS 17BP.11.H.2

WATAUGA COUNTY

BRIDGE NO.: 305

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DECK REPAIR DETAILS FOR BRIDGE NO. 305

NORTH CAROLINA PROFESSIONAL SEAL 032129 ENGINEER MATTHEW J. MOYER

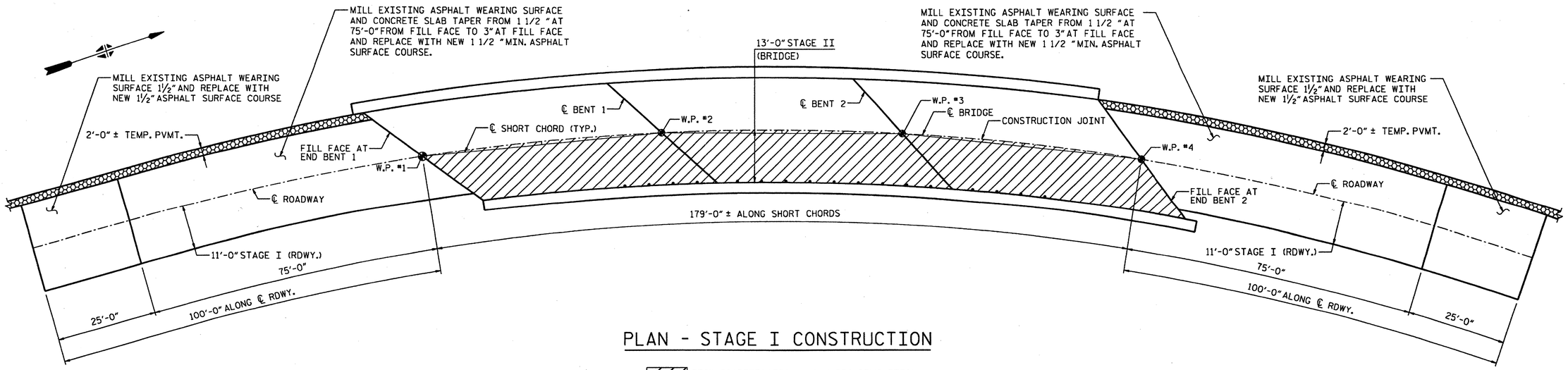
1-3-2012

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-19
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : L. PATTERSON DATE : 11/2011
CHECKED BY : M. MOYER DATE : 11/2011

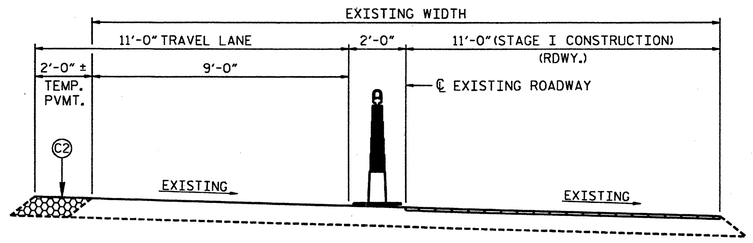
PLOT DRIVER: NCDOT_pdf_mono_eng_50.plt
USER: dwagner
FILE: North Carolina_Dept_of_Transportation\NCDOT_2010BridgeInspectionLSC\NCDOT_10.7\13.00_CAD\Division 11 Project 1\Watauga 305\Drawings\DIVI1_SD_WATAUGA305_04.dgn
PENTABLE: Division_11.tbl
TIME: 4:14:07 PM
DATE: 1/3/2012



PLAN - STAGE I CONSTRUCTION

DECK SCARIFICATION AND HYDRO-DEMOLITION

TEMPORARY PAVEMENT, SEE TRAFFIC CONTROL PLANS

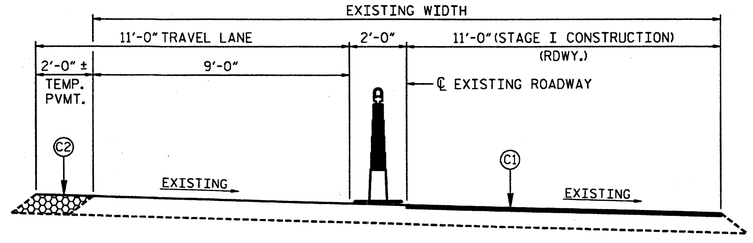


TYPICAL ROADWAY MILLING SECTION - STAGE I

(MILLING DEPTH VARIES, SEE PLAN)

ASPHALT MILLING

TEMPORARY PAVEMENT, SEE TRAFFIC CONTROL PLANS



TYPICAL ROADWAY SECTION - STAGE I

TEMPORARY PAVEMENT, SEE TRAFFIC CONTROL PLANS

C1	PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH.
C2	PROPOSED TEMPORARY PAVING 2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B

NOTES

TEMPORARY PAVEMENT SHALL REMAIN IN PLACE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

PROJECT NO. WBS 17BP.11.H.2

WATAUGA COUNTY

BRIDGE NO.: 305

NORTH CAROLINA PROFESSIONAL SEAL 032129 ENGINEER MATTHEW J. MOYER

2-17-12

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

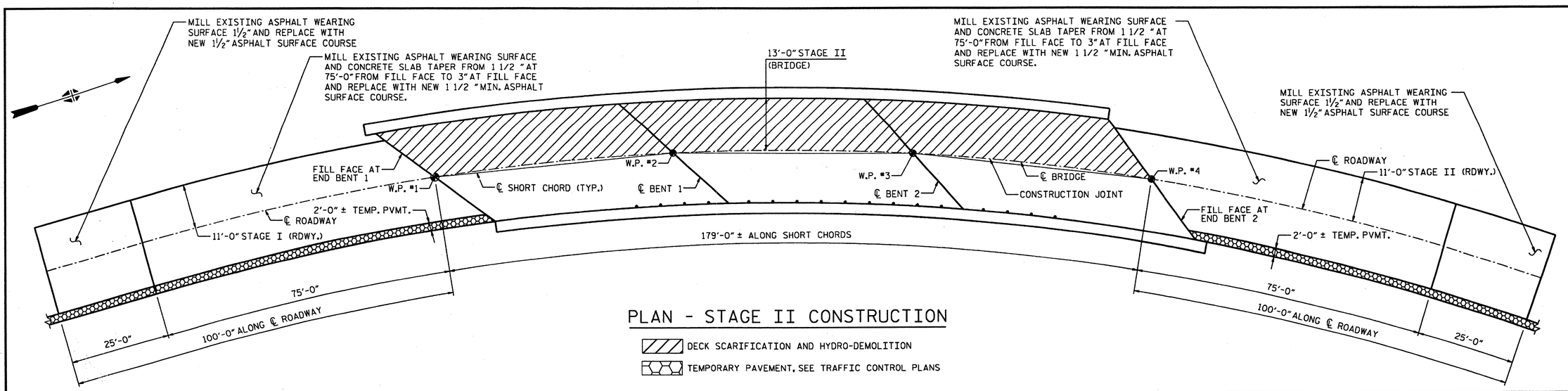
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION & MILLING DETAILS FOR BRIDGE NO. 305 (STAGE I)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-20
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : L. PATTERSON DATE : 11/2011

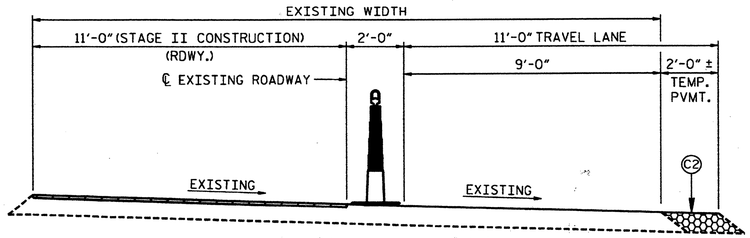
CHECKED BY : M. MOYER DATE : 11/2011



PLAN - STAGE II CONSTRUCTION

DECK SCARIFICATION AND HYDRO-DEMOLITION

TEMPORARY PAVEMENT, SEE TRAFFIC CONTROL PLANS

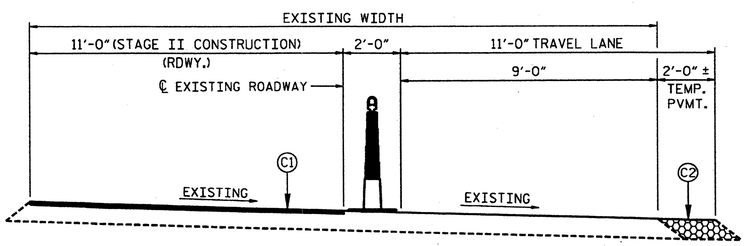


TYPICAL ROADWAY MILLING SECTION - STAGE II

(MILLING DEPTH VARIES, SEE PLAN)

ASPHALT MILLING

TEMPORARY PAVEMENT, SEE TRAFFIC CONTROL PLANS



TYPICAL ROADWAY SECTION - STAGE II

TEMPORARY PAVEMENT, SEE TRAFFIC CONTROL PLANS

C1	PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH.
C2	PROPOSED TEMPORARY PAVING 2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B

NOTES

TEMPORARY PAVEMENT SHALL REMAIN IN PLACE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

PROJECT NO. WBS 17BP.11.H.2

WATAUGA COUNTY

BRIDGE NO.: 305

NORTH CAROLINA PROFESSIONAL SEAL 032129 ENGINEER MATTHEW J. MOYER

2-17-12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

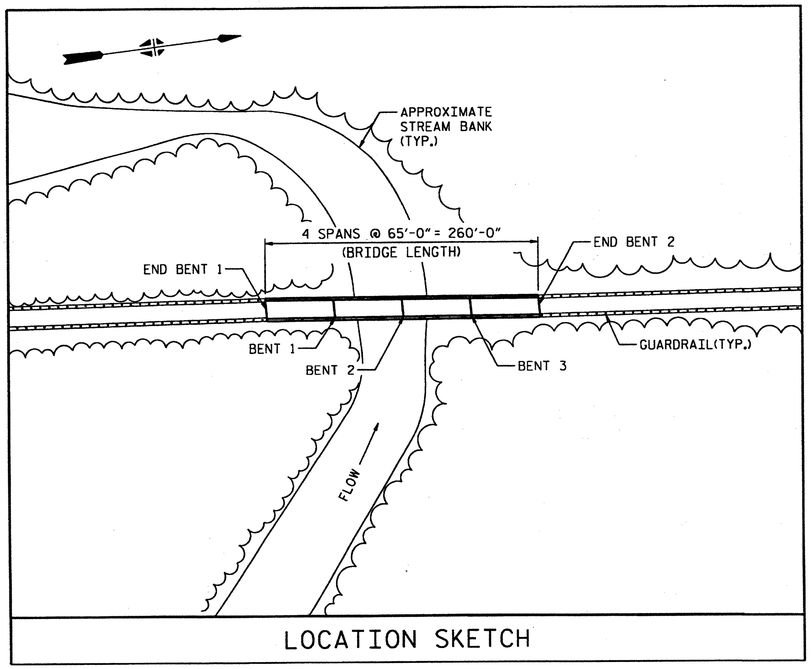
TYPICAL SECTION & MILLING DETAILS FOR BRIDGE NO. 305 (STAGE II)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-21
1			3			TOTAL SHEETS
2			4			32

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

DRAWN BY : L. PATTERSON DATE : 11/2011
CHECKED BY : M. MOYER DATE : 11/2011

PLOT DRIVER: NCDOT_pdf_mono_eng_50.pit + PENTABLE: Division_11.tbl
USER: lpatters DATE: 2/17/2012 TIME: 9:42:22 AM
FILE: North Carolina Dept_of_Transportation\NCDOT_DOO_CEI_BM_LSC_MASTER\NCDOT_Division_11_Project_1\13.00_CAD\Watauga 305\Drawings\DIV11_1_SD_WATAUGA305_06.dgn

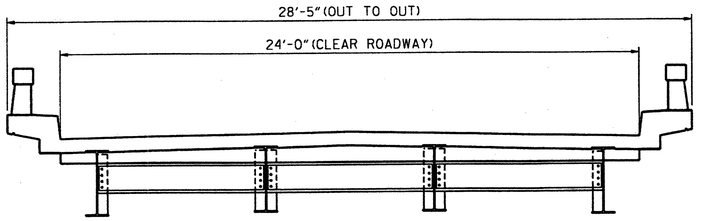


LOCATION SKETCH

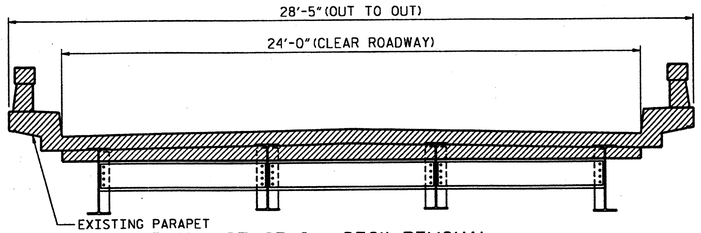
CONSTRUCTION SEQUENCE

1. INSTALL DETOUR SIGNS
2. CLOSE BRIDGE TO TRAFFIC
3. REMOVE GUARDRAIL ADJACENT TO BRIDGE AS NEEDED
4. REMOVE BRIDGE DECK
5. INSTALL NEW DECK
6. SAW JOINT OPENING
7. INSTALL CONCRETE BARRIER RAIL
8. INSTALL GUARDRAIL ANCHOR UNITS
9. INSTALL FOAM JOINT SEAL AND CAST ELASTOMERIC CONCRETE AT BENT 2
10. OPEN BRIDGE TO TRAFFIC
11. CLEAN AND PAINT ALL STRUCTURAL STEEL
12. PERFORM DECK GROOVING UNDER FLAGGING OPERATION
13. PERFORM APPROACH ROADWAY MILLING AND PAVING UNDER FLAGGING OPERATION

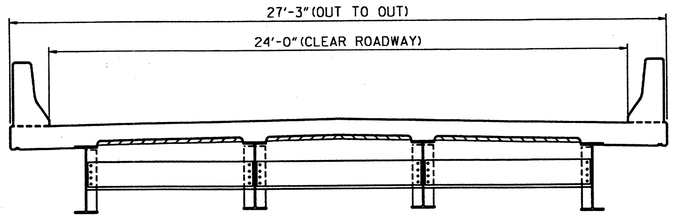
NOTE: THE CONTRACTOR HAS THE OPTION TO PROPOSE AN ALTERNATE CONSTRUCTION SEQUENCE AT THE APPROVAL OF THE ENGINEER.



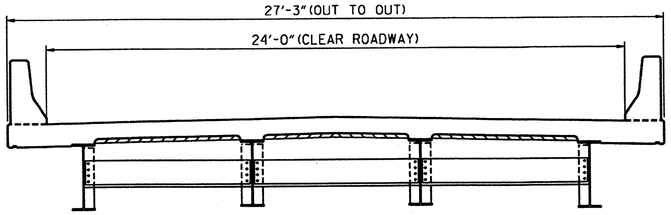
STAGE 1 - EXISTING STRUCTURE



STAGE 2 - DECK REMOVAL



STAGE 3 - CAST NEW DECK AND BARRIER



STAGE 4 - PAINT STRUCTURAL STEEL

NOTES:

ASSUMED DECK LIVE LOAD = HS20-44

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 CONDITIONS AT THE PROJECT SITE.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

ALL DIMENSIONS SHOWN ARE HORIZONTAL OR VERTICAL, UNLESS OTHERWISE NOTED.

FOR TRAFFIC CONTROL, SEE TRAFFIC CONTROL PLANS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR PARTIAL REMOVAL OF BRIDGE STRUCTURE BRIDGE NO. 304, SEE SPECIAL PROVISIONS.

FOR "CLEANING AND REPAINTING OF BRIDGE NO. 304", SEE SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL

MOBILIZATION	POLLUTION CONTROL	REINFORCED CONCRETE DECK SLAB (SAND LIGHTWEIGHT CONCRETE)	GROOVING BRIDGE FLOORS	CONCRETE BARRIER RAIL	INCIDENTAL MILLING	FOAM JOINT SEALS	GUARDRAIL ANCHOR UNITS, TYPE B-77	REMOVE EXISTING GUARDRAIL	PARTIAL REMOVAL OF BRIDGE STRUCTURE BRIDGE NO. 304	CLEANING AND REPAINTING OF BRIDGE NO. 304	ASPHALT CONCRETE SURFACE COURSE TYPE SF9.5A
LUMP SUM	LUMP SUM	SQ. FT.	SQ. FT.	LIN. FT	SQ. YDS.	LUMP SUM	EACH	LIN. FT.	LUMP SUM	LUMP SUM	TON
LUMP SUM	LUMP SUM	7085	5425	520	445	LUMP SUM	4	40.0	LUMP SUM	LUMP SUM	46

NORTH CAROLINA PROFESSIONAL ENGINEER 032129 MATTHEW J. MOYER
2-14-12

PROJECT NO. WBS 17BP.11.H.2

WATAUGA COUNTY

BRIDGE NO.: 304

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

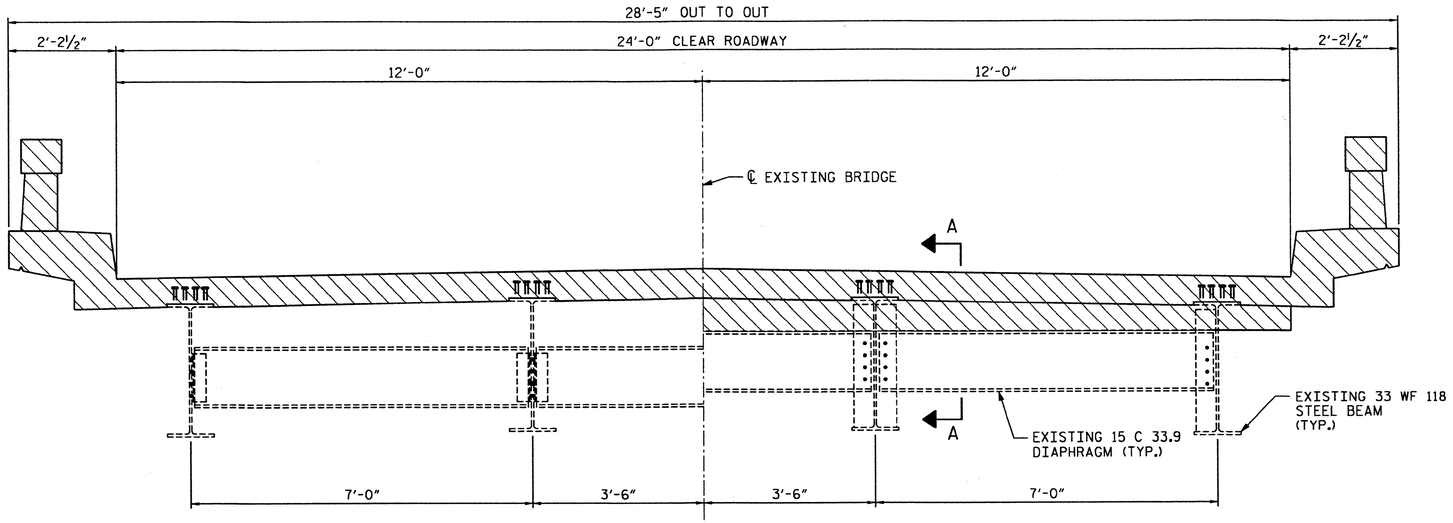
LOCATION SKETCH, TOTAL BILL OF MATERIAL, NOTES, AND CONSTRUCTION SEQUENCE FOR BRIDGE NO. 304

REVISIONS						SHEET NO. S-22
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 32
1			3			
2			4			

DRAWN BY : L. PATTERSON DATE : 11/2011
CHECKED BY : M. MOYER DATE : 11/2011

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

PLOT DRIVER: NCDOT_pdf_mono_eng_50.plt PENTABLE: Division_11.tbl
USER: msells DATE: 2/14/2012 TIME: 1:51:11 PM
FILE: North Carolina_Dept_of_Transportation\NCDOT_DDO_CEI_BM_LSC_MASTER\NCDOT_Division_11_Project_1\V13.00_CAD\Watauga 304\Drawings\Div11_1_SD_Watauga304_01.dgn



PART TYPICAL SECTION
SHOWING INTERMEDIATE DIAPHRAGMS

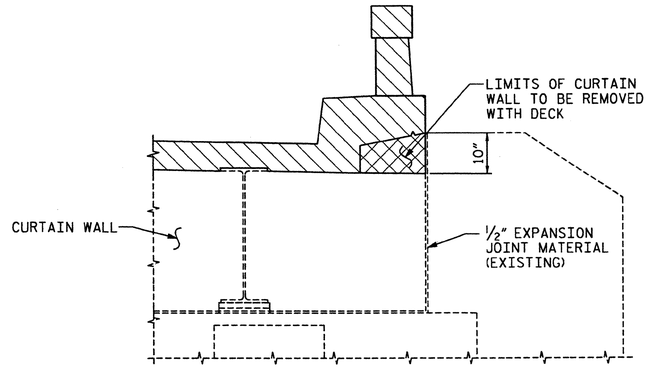
PART TYPICAL SECTION
SHOWING INTERIOR BENT DIAPHRAGMS

EXISTING TYPICAL SECTION

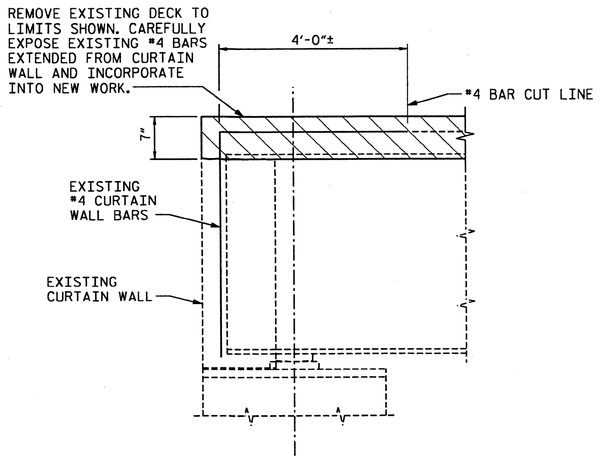
REMOVAL NOTES:

▨ DENOTES REMOVAL

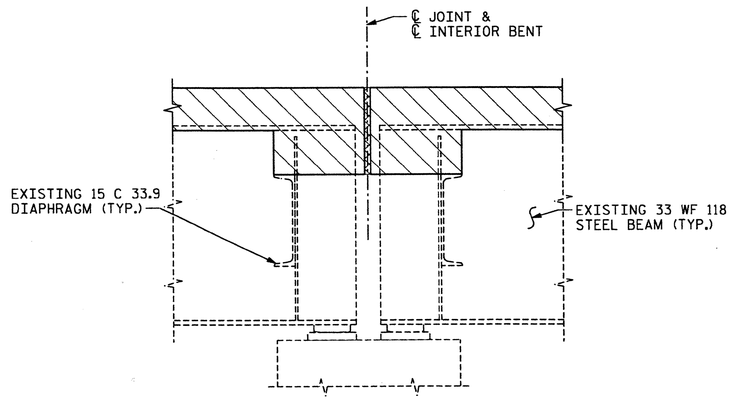
REMOVAL AND REPAIR OF THE EXISTING PORTIONS OF THE BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL SUBMIT PLANS FOR REMOVAL AND REPAIR IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.



CURTAIN WALL REMOVAL LIMITS DETAIL



PART SECTION @ END BENT



SECTION A-A

PROJECT NO. WBS 17BP.11.H.2

WATAUGA COUNTY

BRIDGE NO.: 304

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

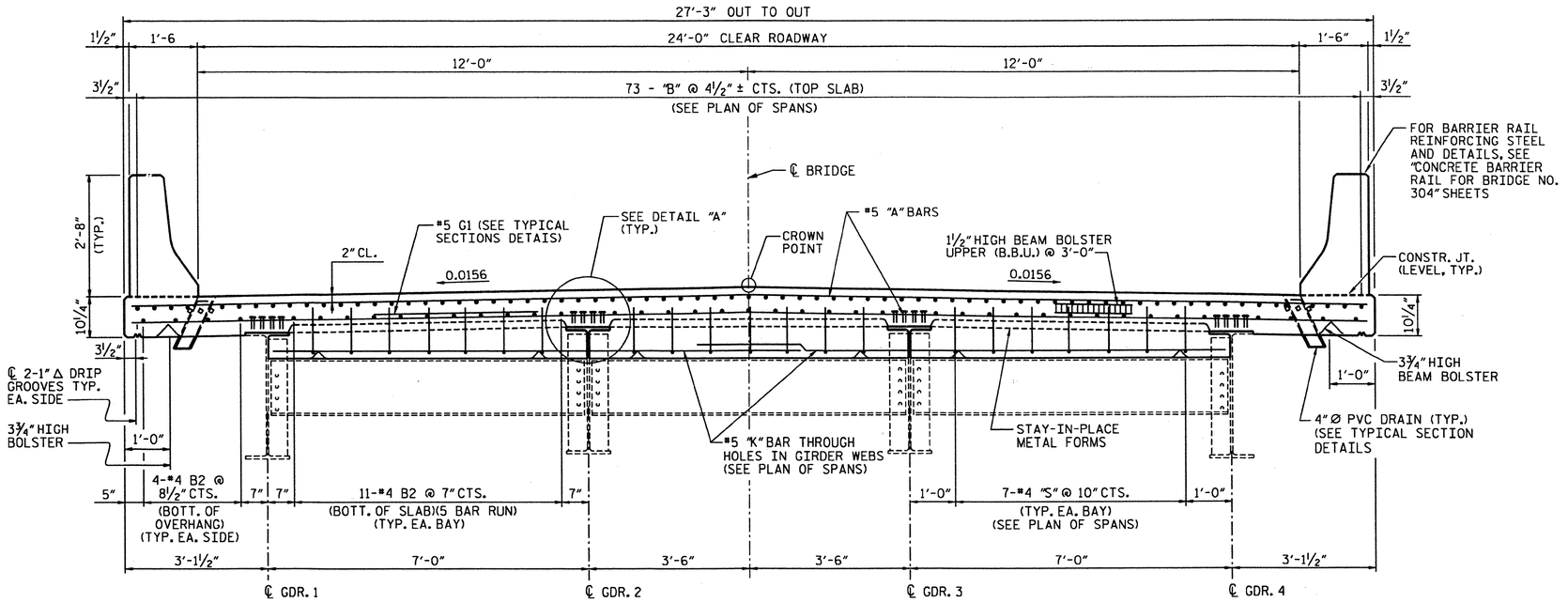
DECK REMOVAL DETAILS FOR BRIDGE NO. 304

NORTH CAROLINA PROFESSIONAL SEAL 032129 ENGINEER MATTHEW J. MOYER
12-9-11

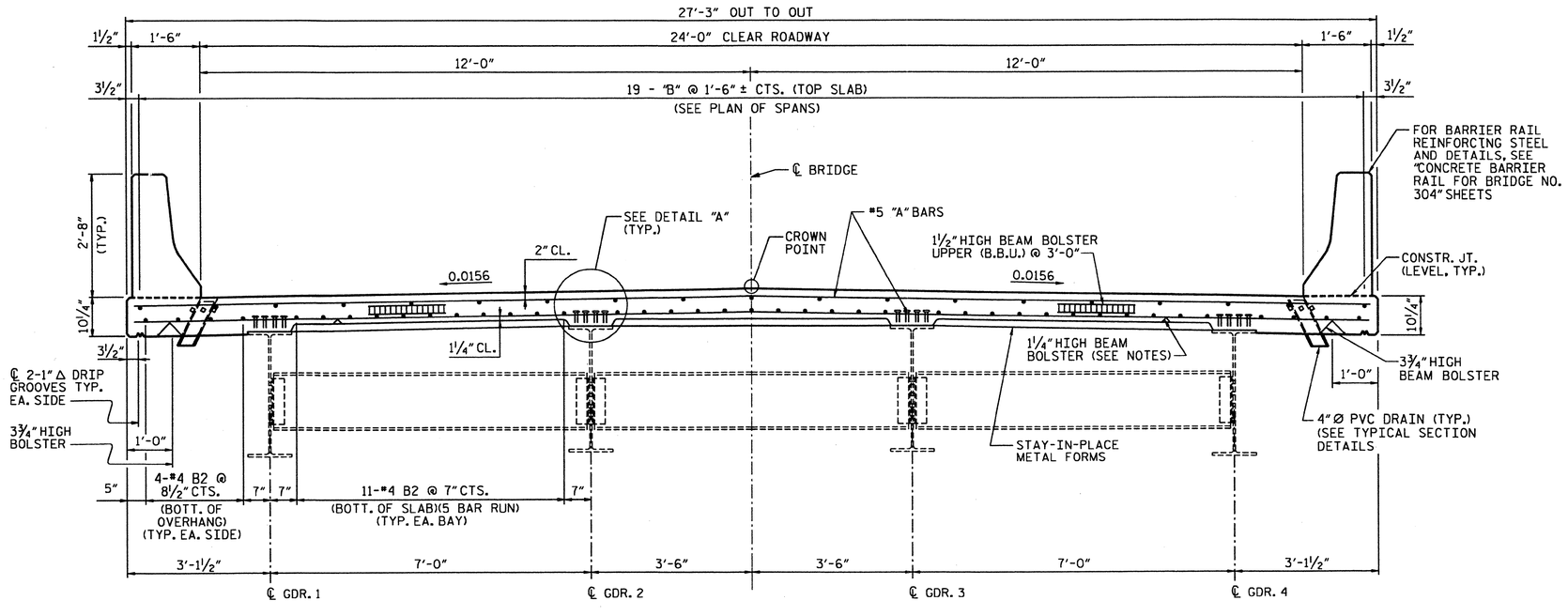
REVISIONS						SHEET NO. S-23
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 32
1			3			
2			4			

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

DRAWN BY : B. GREEN DATE : 12/2011
CHECKED BY : N. LAMPE DATE : 12/2011



TYPICAL SECTION
SHOWING INTERIOR BENT DIAPHRAGMS



TYPICAL SECTION
SHOWING INTERMEDIATE DIAPHRAGMS

NOTES

PREVIOUSLY CAST CONCRETE IN A CONTINUOUS UNIT SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN THE UNIT

PROVIDE 1¼"HIGH BEAM BOLSTERS UPPER AT 4'-0"CTS. ATOP THE METAL STAY-IN-PLACE FORMS TO SUPPORT THE BOTTOM MAT OF "A" BARS.

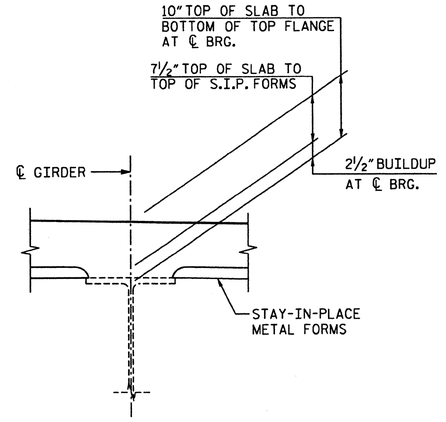
ALL DIMENSION SHOWN ARE HORIZONTAL OR VERTICAL UNLESS OTHERWISE NOTED.

NO CHAMFER IS REQUIRED ON CORNERS OF GIRDER BUILDUPS.

THE CONTRACTOR MAY, WHEN NECESSARY, PROPOSE A SCHEME FOR AVOIDING INTERFERENCE BETWEEN STAY-IN-PLACE METAL FORM SUPPORTS OR FORMS AND GIRDER STIFFENERS OR CONNECTOR PLATES. THE PROPOSAL SHALL BE INDICATED, AS APPROPRIATE, ON METAL FORM WORKING DRAWINGS.

THE CONTRACTOR WILL BE RESPONSIBLE FOR SURVEYING AS NEEDED TO ESTABLISH THE DECK CONSTRUCTION ELEVATIONS. THE CONTRACTOR SHALL SUBMIT THE CONSTRUCTION ELEVATIONS TO THE ENGINEER FOR APPROVAL.

THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL A METHOD OF ATTACHING THE STAY-IN-PLACE METAL FORMS.



DETAIL "A"

PROJECT NO. WBS 17BP.11.H.2

WATAUGA COUNTY

BRIDGE NO.: 304

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPESTRUCTURE TYPICAL SECTION FOR BRIDGE NO. 304

NORTH CAROLINA PROFESSIONAL SEAL 032129 ENGINEER MATTHEW J. MOYER
12-9-11

HDR Engineering, Inc. of the Carolinas
3733 National Drive, Suite 207 Raleigh, N.C. 27612
N.C.B.E.L.S. License Number: F-0176

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-24
1			3			TOTAL SHEETS
2			4			32

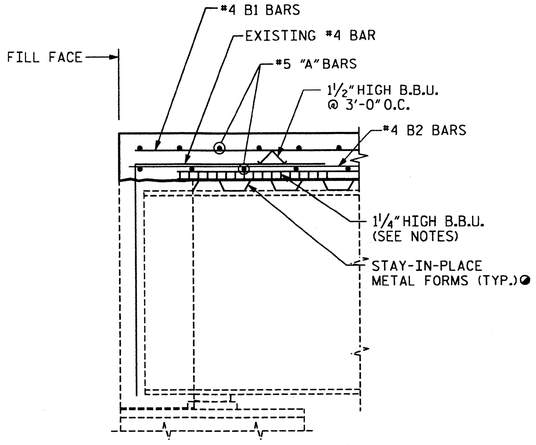
DRAWN BY : B. GREEN DATE : 12/2011
CHECKED BY : N. LAMPE DATE : 12/2011

NOTES

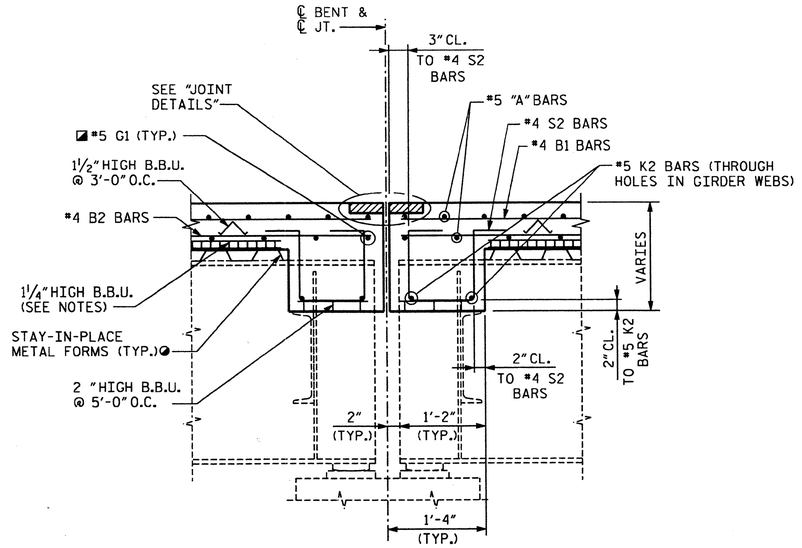
FOR LOCATION OF SECTIONS SEE "PLAN OF SPANS" SHEETS.

◪ #5 G1 BAR MAY BE SHIFTED SLIGHTLY TO CLEAR OTHER REINFORCING STEEL.

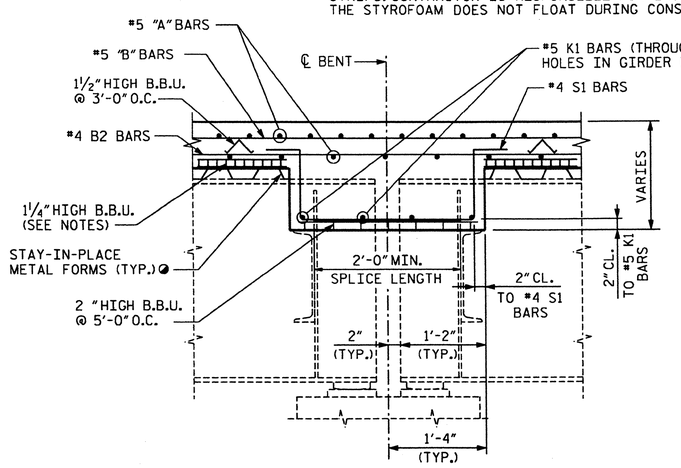
◕ CORRUGATIONS ARE TO BE BLOCKED OUT WITH STYROFOAM STRIPS. CONTRACTOR IS RESPONSIBLE FOR INSURING THAT THE STYROFOAM DOES NOT FLOAT DURING CONSTRUCTION.



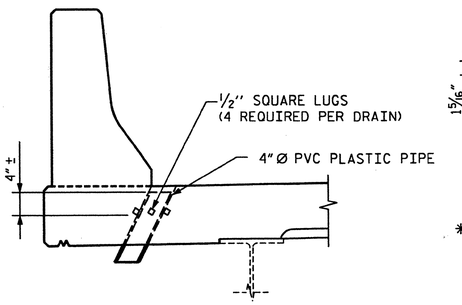
SECTION A-A
(AT END BENTS)



SECTION B-B
(AT BENT 2)



SECTION C-C
(AT BENTS 1 & 3)



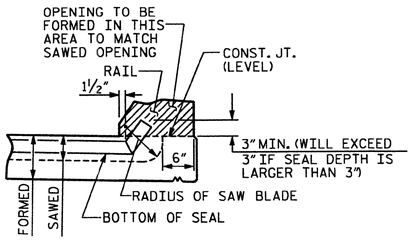
ELEVATION PIPE DETAIL

TOP OF FLOOR DRAINS TO BE SET ⅜" BELOW SURFACE OF SLAB.

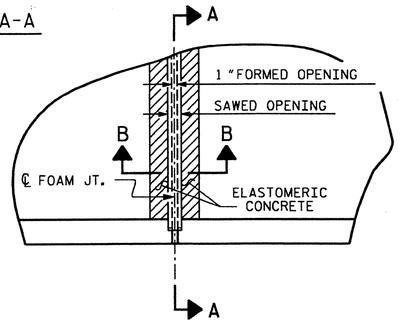
4 - ½" SQUARE LUGS TO BE GLUED TO THE P.V.C. PLASTIC PIPE AT EQUAL SPACES AROUND THE PIPE DRAIN APPROXIMATELY 4" FROM THE TOP OF THE PIPE.

THE 4" Ø PVC PLASTIC PIPE AND FITTINGS SHALL BE SCHEDULE 40 AND CONFORM TO ASTM D1785.

DRAIN DETAILS

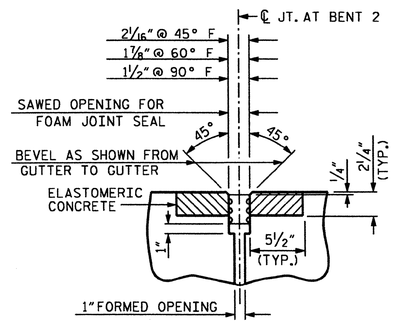


SECTION A-A



PLAN

JOINT DETAILS



SECTION B-B
FOAM JOINT SEAL
(EXPANSION)

PROJECT NO. WBS 17BP.11.H.2

WATAUGA COUNTY

BRIDGE NO.: 304

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE TYPICAL SECTION DETAILS FOR BRIDGE NO. 304

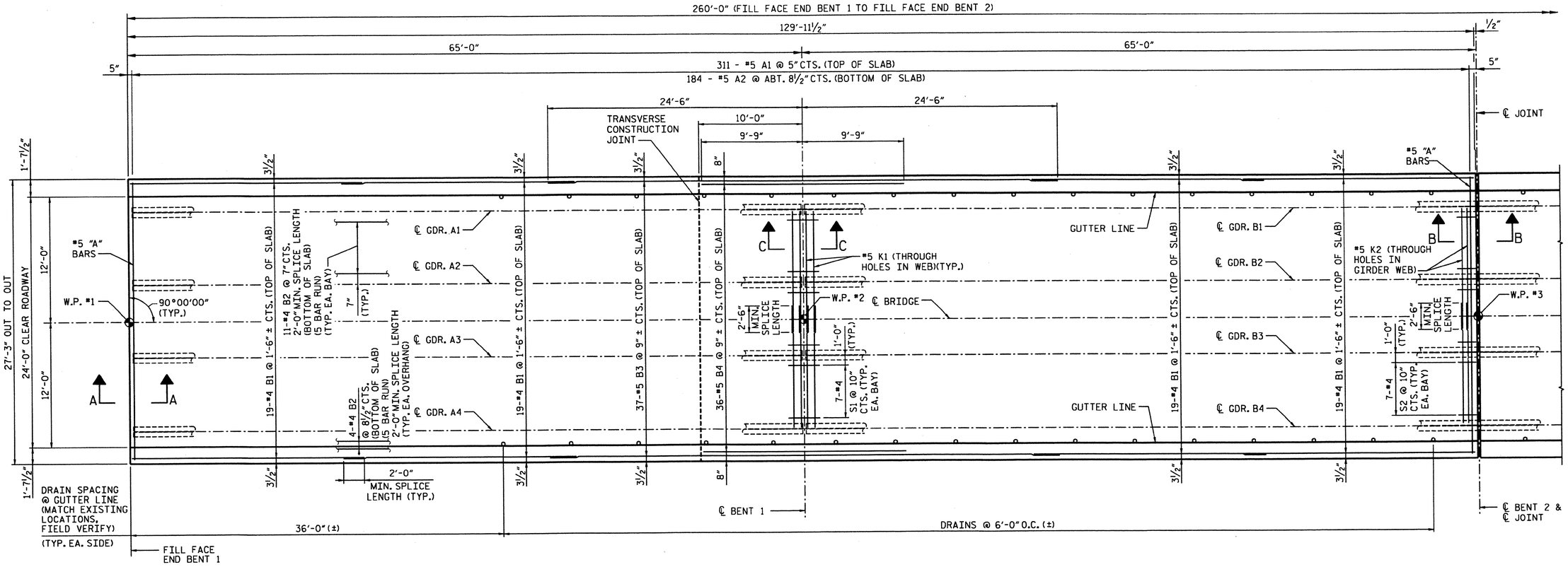
NORTH CAROLINA PROFESSIONAL SEAL 032129 ENGINEER MATTHEW J. MOYER
12-9-11

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-25
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : B. GREEN DATE : 12/2011
CHECKED BY : N. LAMPE DATE : 12/2011

PLOT DRIVER: NCDOT.pdf_mono_eng_50.pit
USER: msells
FILE: North Carolina_Dept_of_Transportation\NCDOT_2010BridgeInspectionLSC\NCDOT_TO_7\13.00_CAD\Division 11 Project 1\Watauga 304\Drawings\DIV11.1_SD_Watauga304_04.dgn
PENTABLE: Division_11.tbl
TIME: 6:48:47 PM
DATE: 12/8/2011



SPAN A

SPAN B

PROJECT NO. WBS 17BP.11.H.2

WATAUGA COUNTY

BRIDGE NO.: 304

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE PLAN OF SPANS A & B FOR BRIDGE NO. 304

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 032129 ENGINEER MATTHEW J. MOYER

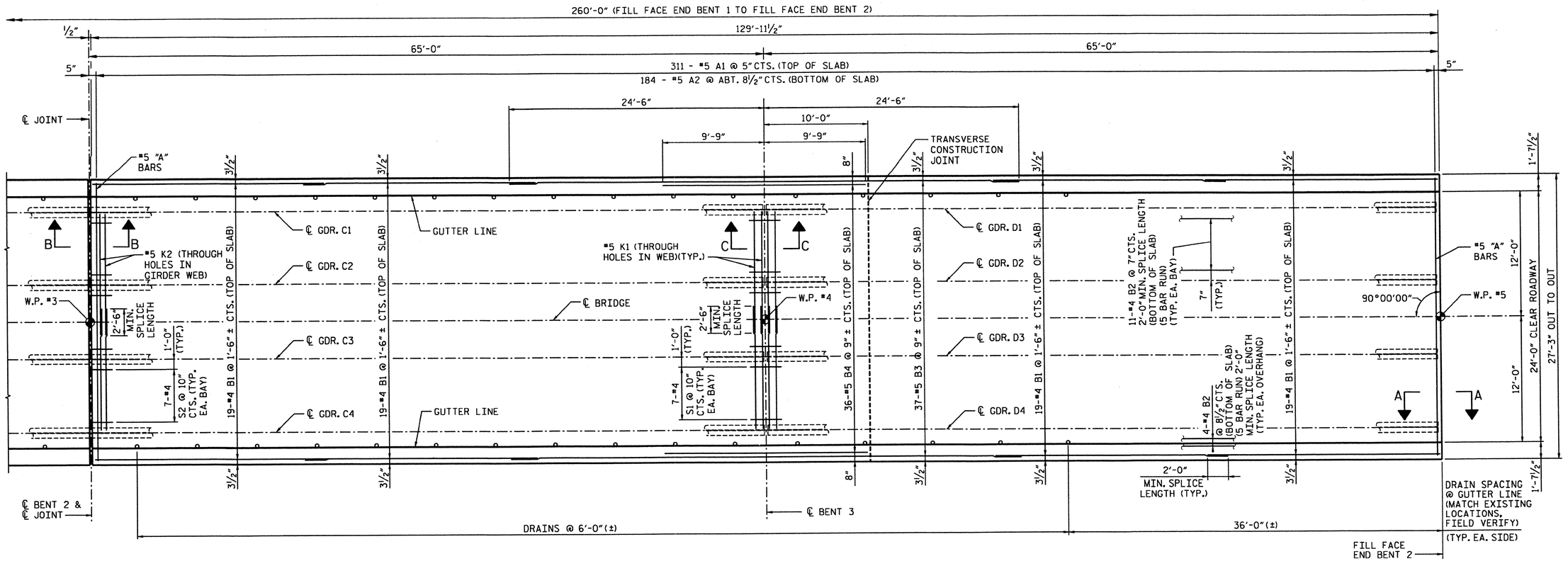
12-9-11

HDR Engineering, Inc. of the Carolinas
3723 National Drive, Suite 207 Raleigh, N.C. 27612
N.C.B.E.L.S. License Number: F-0116

REVISIONS						SHEET NO. S-26
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 32
2			4			

DRAWN BY : B. GREEN DATE : 12/2011
CHECKED BY : N. LAMPE DATE : 12/2011

PLOT DRIVER: NCDOT_pdf_mono_eng_50.plt
USER: msells
FILE: North Carolina Dept of Transportation\NCDOT_2010BridgeInspectionLSC\NCDOT_TO_7\13.00_CAD\Division 11 Project 1\Watauga 304\Drawings\DIV11.1_SD_Watauga304_05.dgn
PENTABLE: Division_11.tbl
TIME: 6:49:05 PM
DATE: 12/8/2011



SPAN C

SPAN D

PROJECT NO. WBS 17BP.11.H.2

WATAUGA COUNTY

BRIDGE NO.: 304

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE PLAN OF SPANS C & D FOR BRIDGE NO. 304

NORTH CAROLINA PROFESSIONAL SEAL 032129 ENGINEER MATTHEW J. MOYER

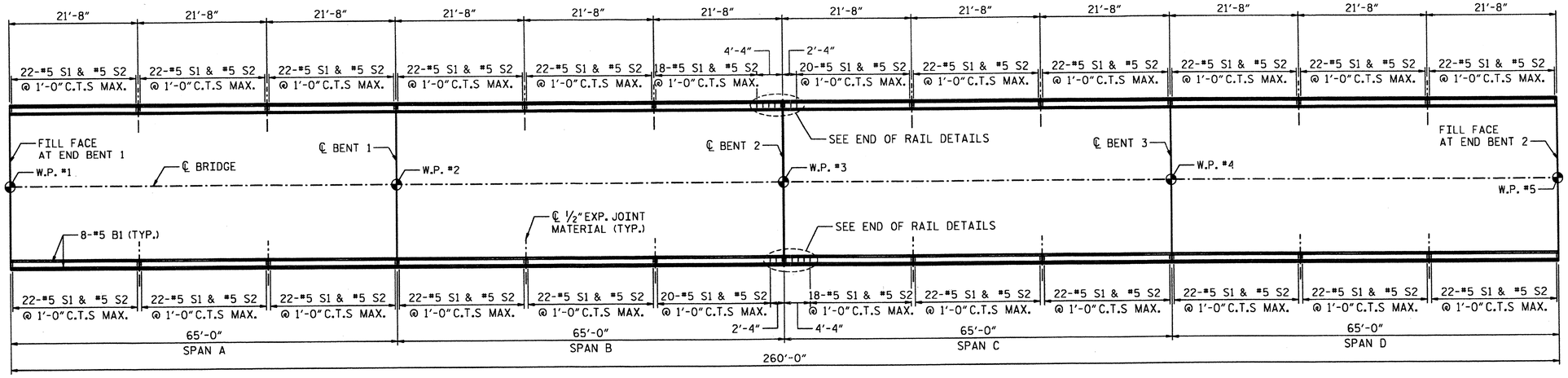
12-9-11

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

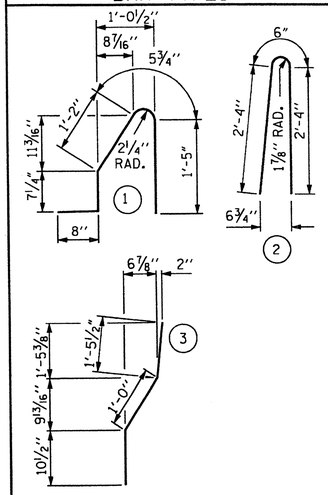
REVISIONS						SHEET NO. S-27
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 32
1			3			
2			4			

DRAWN BY : B. GREEN DATE : 12/2011
CHECKED BY : N. LAMPE DATE : 12/2011

PLOT DRIVER: NCDOT_pdf_mono_eng_50.pltPENTABLE: Division_11.tbl
USER: msells TIME: 6:49:21 PM
DATE: 12/8/2011
FILE: North Carolina_Dept_of_Transportation\NCDOT_2010Bridge\Inspection\SC\NCDOT_T0_T\13.00_CAD\Division 11 Project 1\Watauga 304\Drawings\DIV11_1_SD_Watauga304_06.dgn



BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

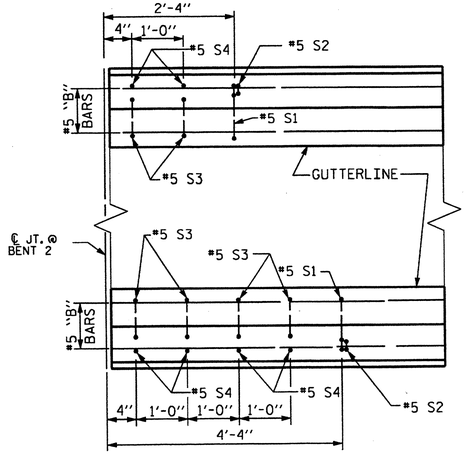
BILL OF MATERIAL

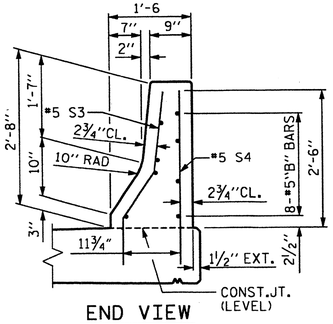
FOR CONCRETE BARRIER RAIL ONLY

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	192	#5	STR	21'-3"	4255
* S1	516	#5	1	4'-4"	2332
* S2	516	#5	2	5'-2"	2781
* S3	12	#5	3	3'-4"	42
* S4	12	#5	STR	3'-2"	40

* EPOXY COATED REINFORCING STEEL	9450 LBS.
LIGHTWEIGHT CONCRETE	52.1 CU. YDS.
CONCRETE BARRIER RAIL	520 LIN. FT.

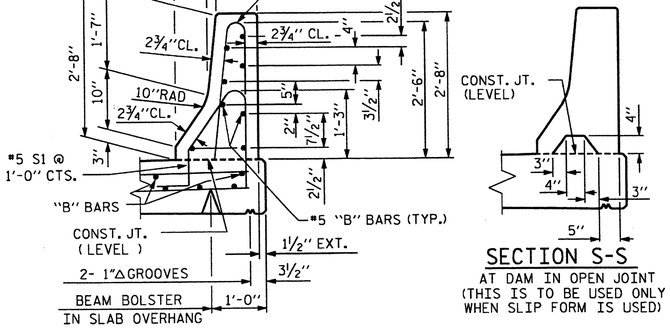
PLAN





END VIEW

PLAN



SECTION THRU RAIL

SECTION S-S

AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)

END OF RAIL DETAILS

FOR ADHESIVE ANCHORING AT SAWED JOINTS

NOTES

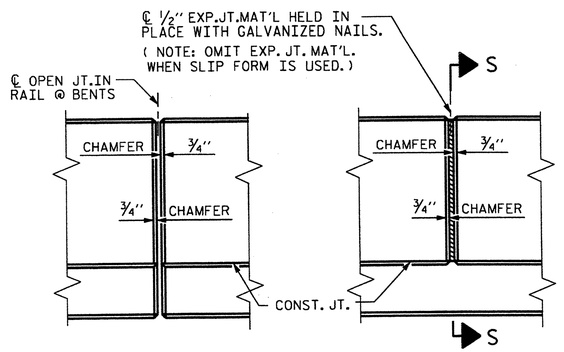
THE BARRIER RAIL IN EACH SPAN SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THAT SPAN HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

WHEN FOAM JOINT SEAL IS REQUIRED, THE JOINT IN THE DECK SHALL BE SAWED PRIOR TO THE CASTING OF BARRIER RAIL.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

THE #5 S3 AND #5 S4 BARS SHALL BE INSTALLED, USING AN ADHESIVE ANCHORING SYSTEM, AFTER SAWING THE JOINT. THE YIELD LOAD FOR THE #5 S3 AND #5 S4 BARS IS 18.6 KIPS. FIELD TESTING FOR THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.

GROOVED CONTRACTION JOINTS, ½" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.



ELEVATION AT EXPANSION JOINTS

BARRIER RAIL DETAILS

ASSEMBLED BY : M. SELLS	DATE : 11/2011
CHECKED BY : M. MOYER	DATE : 11/2011
DRAWN BY : ARB 5/87	REV. 5/7/03R RWW/JTE
CHECKED BY : SJD 9/87	REV. 5/1/06R TLA/GM
	REV. 10/1/11 MAA/GM

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

PROJECT NO. WBS 17BP.11.H.2

WATAUGA COUNTY

BRIDGE NO.: 304

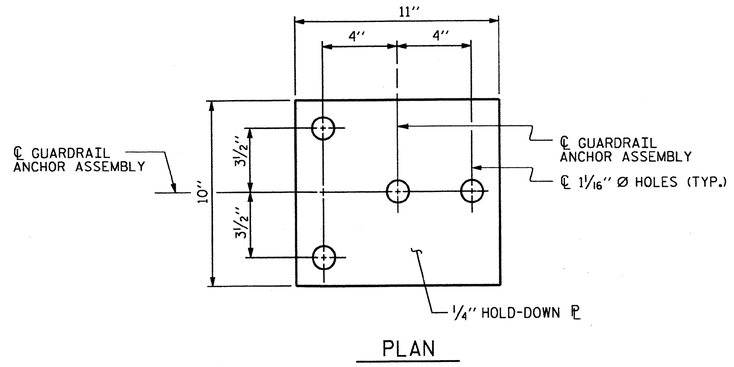
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

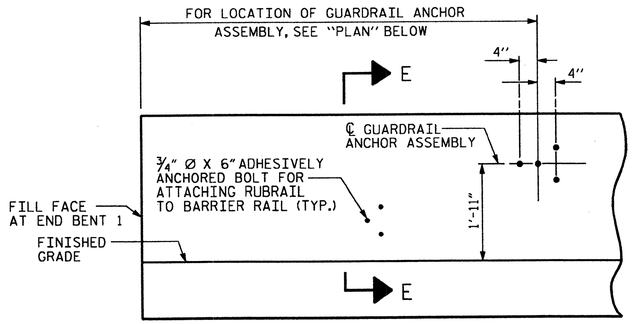
CONCRETE BARRIER RAIL FOR BRIDGE NO. 304

REVISIONS						SHEET NO. S-28
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 32
2			4			

STD. NO. CBR1 (SHT 1)

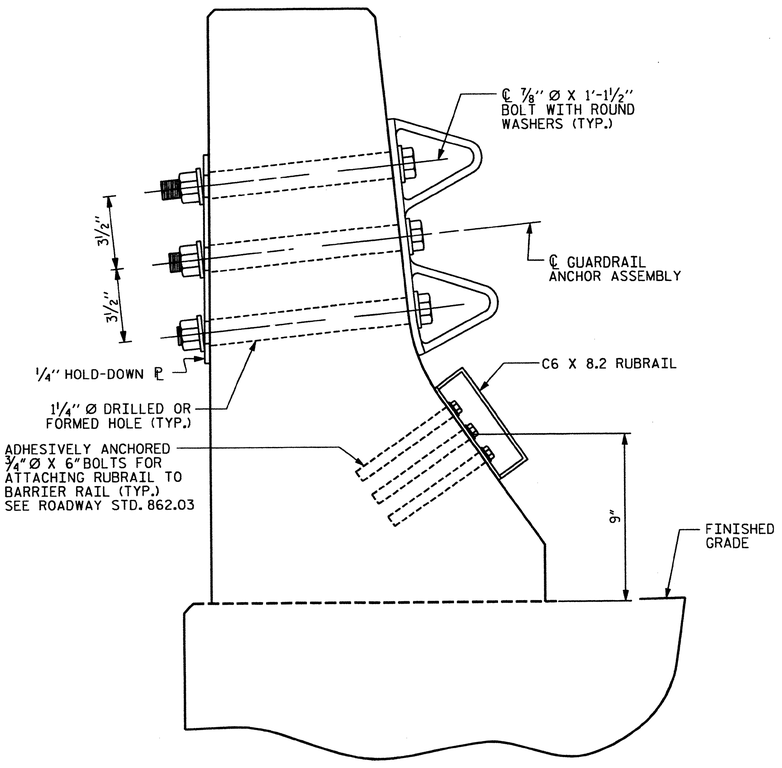


PLAN



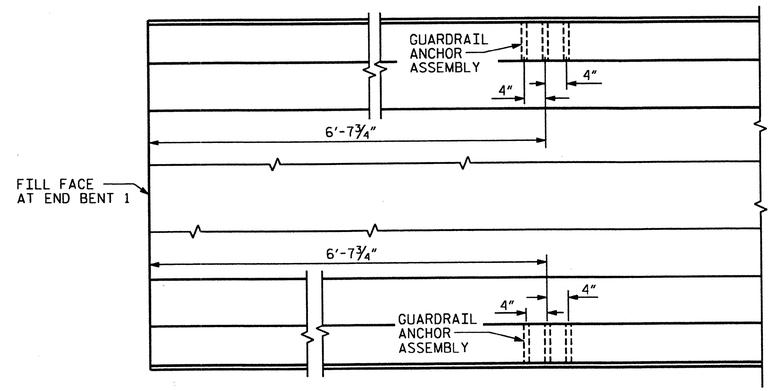
ELEVATION

FOR LOCATION OF RUBRAIL, SEE ROADWAY STD. 862.03



SECTION E-E

GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

END BENT #1 SHOWN, END BENT #2 SIMILAR.

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A ¼'' HOLD-DOWN PLATE AND 4 - ⅞'' Ø BOLTS WITH NUTS AND WASHERS, RUBRAIL, AND ADHESIVELY ANCHORED BOLTS.

THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE ⅞'' Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

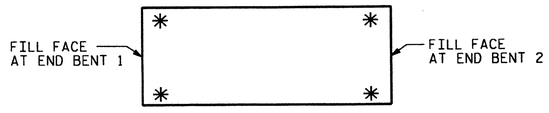
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.

THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

THE 1 ¼'' Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE ¾''Ø X 6'' BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE ¾''Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.



SKETCH SHOWING POINTS OF ATTACHMENTS

✳ DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. WBS 17BP.11.H.2

WATAUGA COUNTY

BRIDGE NO.: 304

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
GUARDRAIL ANCHORAGE FOR BARRIER RAIL FOR BRIDGE NO. 304

NORTH CAROLINA PROFESSIONAL SEAL 032129 ENGINEER MATTHEW J. MOYER

12-9-11

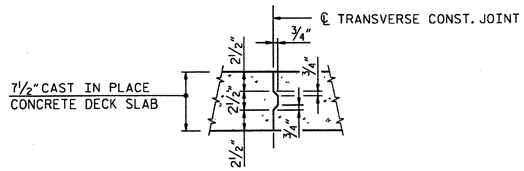
REVISIONS						SHEET NO. S-29
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 32
1			3			
2			4			

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

ASSEMBLED BY : M. SELLS	DATE : 11/2011
CHECKED BY : M. MOYER	DATE : 11/2011
DRAWN BY : TLA 5/06	ADDED 5/1/06RR KMM/GM
CHECKED BY : GM 5/06	REV. 10/1/11 MAA/GM

STD. NO. GRA2 (SHT 1)

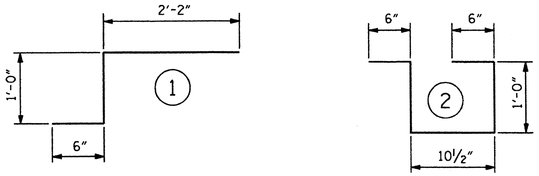
PLOT DRIVER: NCDOT_pdf_mono_eng-50.plt
USER: msells
FILE: North Carolina_Dept_of_Transportation\NCDOT_2010Bridge Inspection\SC\NCDOT_TO_TX13.00_CAD\Division 11 Project 1\Watauga 304\Drawings\DIV11.1_SD_Watauga304_08.dgn
PENTABLE: Division_11.tbl
DATE: 12/8/2011
TIME: 6:49:43 PM



TRANSVERSE CONSTRUCTION JOINT

REINFORCING STEEL IN SLAB NOT SHOWN.
LONGITUDINAL REINFORCING STEEL SHALL BE CONTINUOUS THROUGH JOINT.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

SUPERSTRUCTURE BILL OF MATERIAL

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
✳ A1	622	#5	STR	26'-11"	17462
A2	368	#5	STR	26'-11"	10331
✳ B1	152	#4	STR	22'-2"	2251
B2	410	#4	STR	27'-7"	7555
✳ B3	74	#5	STR	49'-0"	3782
✳ B4	72	#5	STR	19'-6"	1464
✳ G1	2	#5	STR	26'-11"	56
✳ S1	84	#4	1	3'-8"	206
✳ S2	42	#4	2	3'-11"	110
✳ K1	16	#5	STR	11'-7"	193
✳ K2	8	#5	STR	11'-7"	97

REINFORCING STEEL = 17,886 LBS.
✳ EPOXY COATED REINFORCING STEEL = 25,621 LBS.

	SAND LIGHTWEIGHT CONCRETE (CU. YDS.)
POUR 1	38.2
POUR 2	54.5
POUR 3	38.2
POUR 4	54.5
TOTALS✳✳	185.4

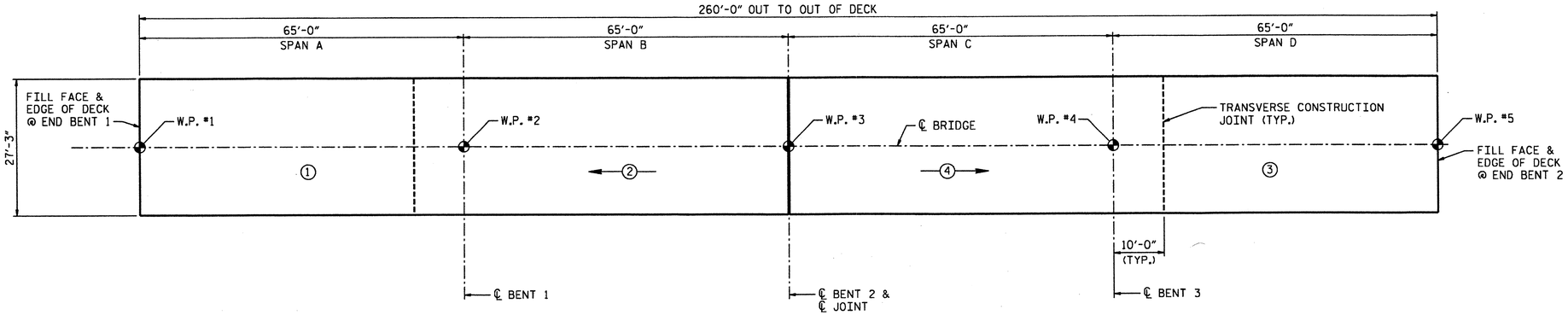
✳✳ QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED

GROOVING BRIDGE FLOORS

BRIDGE DECK 5,425 SQ.FT.

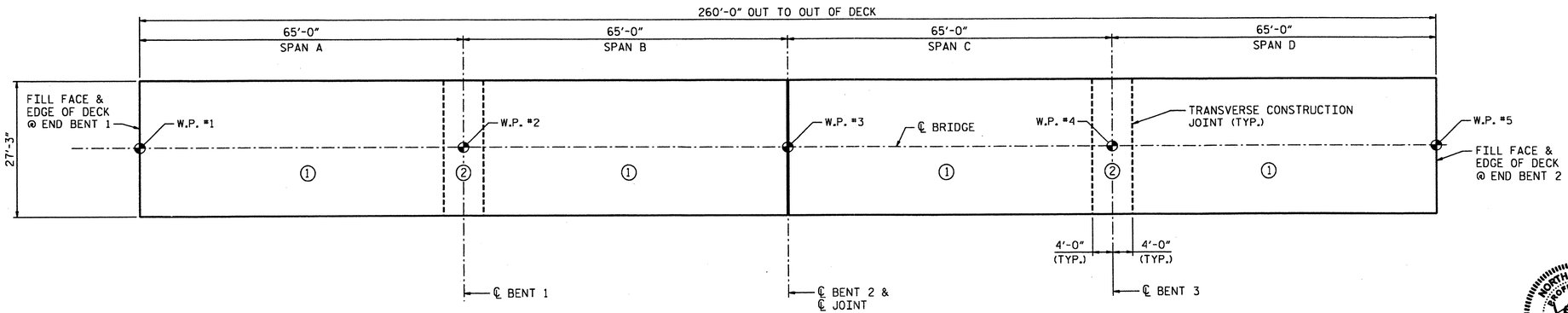
SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS

BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL		APPROACH SLABS		PARAPET AND BARRIER RAIL
	EPOXY COATED	UNCOATED	EPOXY COATED	UNCOATED	
#4	2'-0"	1'-9"	2'-0"	1'-9"	2'-9"
#5	2'-6"	2'-2"	2'-6"	2'-2"	3'-5"
#6	3'-0"	2'-7"	3'-10"	2'-7"	4'-4"
#7	5'-3"	3'-6"			
#8	6'-10"	4'-7"			



POUR SEQUENCE
(SQ. FT. = 7,085)

⑧ INDICATES POUR NUMBER



OPTIONAL POUR SEQUENCE

NOTES

✳ DENOTES EPOXY COATED REINFORCING STEEL.

PERFORM BRIDGE DECK GROOVING IN ACCORDANCE WITH STANDARD SPEC. ITEM 420-14.

PROJECT NO. WBS 17BP.11.H.2
WATAUGA COUNTY
BRIDGE NO.: 304

NORTH CAROLINA PROFESSIONAL SEAL 032129 ENGINEER MATTHEW J. MOYER
1-3-2012

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE BILL OF MATERIAL FOR BRIDGE NO. 304

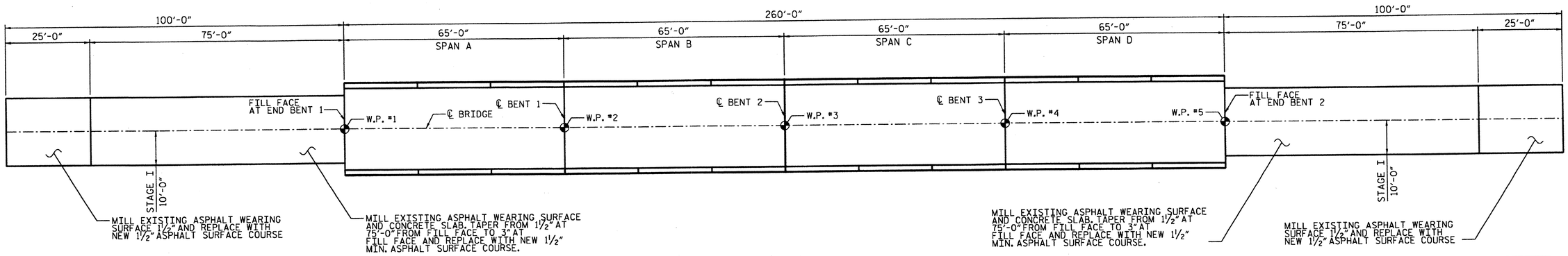
REVISIONS						SHEET NO. S-30
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 32
2			4			

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

STD. NO. BOM1SM

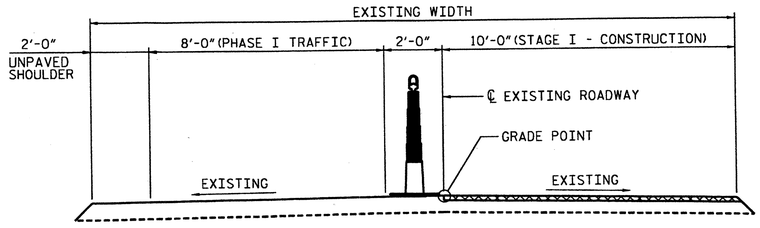
ASSEMBLED BY : B. GREEN	DATE : 12/2011
CHECKED BY : N. LAMPE	DATE : 12/2011
DRAWN BY : ARB 5/87	REV. 5/7/03R RWW/JTE
CHECKED BY : SJD 9/87	REV. 5/1/06R TLA/GM
	REV. 10/1/11 MAA/GM

PLOT DRIVER: NCDOT_pdf_mono_eng_50.plt
USER: mseils
FILE: North Carolina_Dept_of_Transportation\NCDOT 2010BridgeInspection\SC\NCDOT_TO_7\13.00_CAD\Division 11 Project 1\Watauga 304\Drawings\DIV11_1_SD_Watauga304_09.dgn
PENTABLE: Division_11.tbl
DATE: 1/3/2012
TIME: 1:35:49 PM



PLAN - STAGE I CONSTRUCTION

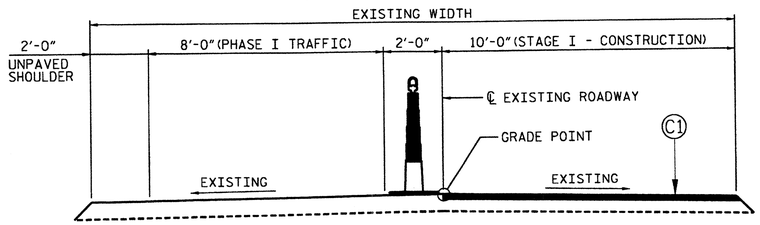
C1	PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF 9.5A AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH.



TYPICAL ROADWAY MILLING SECTION - STAGE I

(MILLING DEPTH VARIES, SEE PLAN)

ASPHALT MILLING



TYPICAL ROADWAY SECTION - STAGE I

PROJECT NO. WBS 17BP.11.H.2

WATAUGA COUNTY

BRIDGE NO.: 304

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION & MILLING DETAILS FOR BRIDGE NO. 304 (STAGE I)

NORTH CAROLINA PROFESSIONAL SEAL 032129 ENGINEER MATTHEW J. MOYER

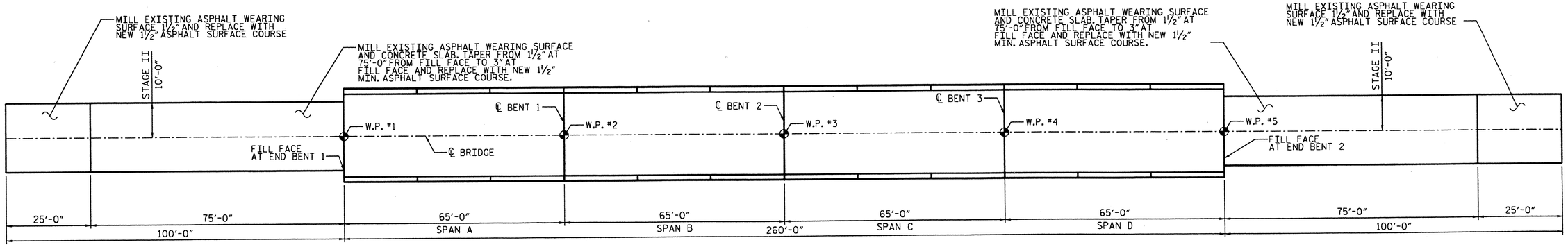
1-3-2012

REVISIONS							SHEET NO. 5-31
NO.	BY:	DATE:	NO.	BY:	DATE:		
1			3				TOTAL SHEETS 32
2			4				

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

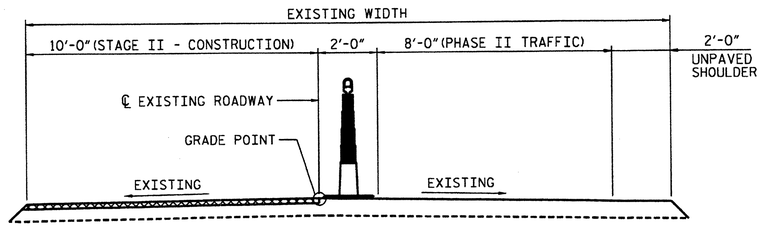
DRAWN BY : L. PATTERSON DATE : 12/2011
CHECKED BY : M. MOYER DATE : 12/2011

PLOT DRIVER: NCDOT_pdf_mono_eng_50.plt + PENTABLE: DIvision_11.tbl
USER: msells DATE: 1/3/2012 TIME: 1:36:08 PM
FILE: North Carolina_Dept_of_Transportation\NCDOT_2010BridgeInspection\SC\NCDOT_TO_7\13.00.CAD\Division 11 Project 1\Watauga 304\Drawings\DIVi1.1_SD_Watauga304_10.dgn



PLAN - STAGE II CONSTRUCTION

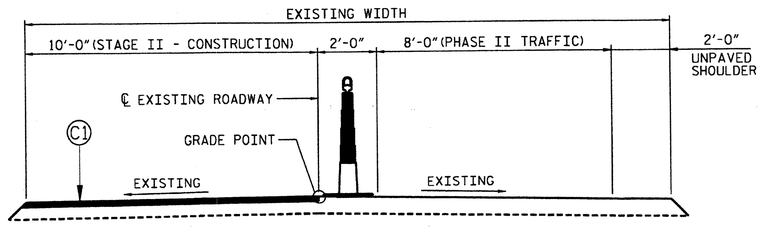
C1	PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF 9.5A AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH.



TYPICAL ROADWAY MILLING SECTION - STAGE II

(MILLING DEPTH VARIES, SEE PLAN)

ASPHALT MILLING



TYPICAL ROADWAY SECTION - STAGE II

PROJECT NO. WBS 17BP.11.H.2

WATAUGA COUNTY

BRIDGE NO.: 304

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION & MILLING DETAILS FOR BRIDGE NO. 304 (STAGE II)

NORTH CAROLINA PROFESSIONAL SEAL 032129 ENGINEER MATTHEW J. MOYER

1-3-2012

REVISIONS						SHEET NO. S-32
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 32
1			3			
2			4			

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

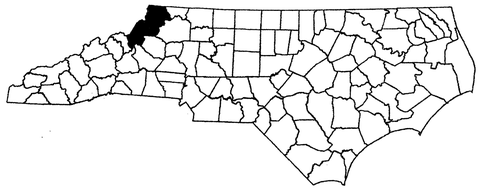
DRAWN BY : L. PATTERSON DATE : 12/2011
CHECKED BY : M. MOYER DATE : 12/2011

PLOT DRIVER: NCDOT_pdf_mono_eng_50.plt + PENTABLE: Division_11.tbl
USER: msells DATE: 1/3/2012 TIME: 1:36:28 PM
FILE: North Carolina_Dept_of_Transportation\NCDOT_2010BridgeInspectionLSC\NCDOT_TO_7\13.00_CAD\Division 11 Project 1\Watauga 304\Drawings\DIV11_SD_Watauga304_11.dgn

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRAFFIC CONTROL PLAN

ASHE, AVERY, & WATAUGA COUNTIES



LOCATION: *BRIDGE NO. 26 ON US 19 OVER NORTH TOE RIVER*
BRIDGE NO. 30 ON NC 16 OVER SR 1573
BRIDGE NO. 42 ON NC 16 OVER SR 1536 & HELTON'S CREEK
BRIDGE NO. 304 ON SR 1202 OVER WATAUGA RIVER
BRIDGE NO. 305 ON SR 1202 OVER BEAVERDAM CREEK
(SEE SHEET TCP-2 FOR VICINITY MAPS)

TYPE OF WORK: TRAFFIC CONTROL FOR BRIDGE DECK PRESERVATION

INDEX OF SHEETS

SHEET NO.
TCP-1

17BP.11.H.2

PROJECT:

WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

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*
MATTHEW MOYER, P.E. — *PROJECT MANAGER*
MICHELLE WARD, P.E. — *TRAFFIC CONTROL PROJECT DESIGN ENGINEER*
CHRIS HARNDEN — *TRAFFIC CONTROL DESIGN ENGINEER*

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

PLAN PREPARED BY:
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

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 033789 ENGINEER MICHELLE WARD
4/20/18

PLOT DRIVER: NCDOT_pdf_color_eng_50.plt
USER: Blubby
FILE: North Carolina.Dept_of_Transportation\NCDOT_DOO.CEI.BM_LSC_MASTER\NCDOT_Division_11_Project_1\13.00_CADD\TCP\17BP-11-H-2_TC_TCP-01.dgn

PENTABLE: NCDOT_tcp.tbl
DATE: 1/20/2012
TIME: 11:24:31 AM

PROJ. REFERENCE NO.	SHEET NO.
17BP.11.H.2	TCP-1A

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

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
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUM
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1180.01	SKINNY-DRUM
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
1253.01	RAISED PAVEMENT MARKERS - SNOWPLOWABLE

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- WORK AREA
- REMOVAL
- CONTINUING CONSTRUCTION
- TEMPORARY PAVEMENT

TRAFFIC CONTROL DEVICES

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

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

SIGNALS

EXISTING PROPOSED TEMPORARY

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

PAVEMENT MARKERS

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

PAVEMENT MARKING SYMBOLS

PAVEMENT MARKING SYMBOLS

TEMPORARY PAVEMENT MARKING

- (PA) 4" WHITE EDGE LINE (PAINT)
- (PI) 4" YELLOW DOUBLE CENTER (PAINT)

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 033789 ENGINEER MICHELLE WARD

1/3/2012

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

ROADWAY STANDARD DRAWINGS & LEGEND

PLOT DRIVER: NCDOT_pdf_color_eng_50.plt
USER: charnden
FILE: North Carolina_Dept_of_Transportation\NCDOT_2010BridgeInspectionLSC\NCDOT_TO_7\13.00_CAD\Division 11 Project 1\TCP\17BP-11-H-2_TC_TCP-01.dgn
PENTABLE: NCDOT_tcp.tbl
DATE: 1/3/2012
TIME: 11:0:48 AM

PROJ. REFERENCE NO.	SHEET NO.
17BP.11.H.2	TCP-1B

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

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. MODIFICATIONS 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 PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR AS DIRECTED BY THE ENGINEER.

TIME RESTRICTIONS

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

ROAD NAMES	DAY & TIME	
BETHEL ROAD (SR1202) (WHEN BETHEL ELEMENTARY SCHOOL IS IN SESSION)	MONDAY-FRIDAY:	7:00 AM - 8:00 AM 2:00 PM - 3:00 PM

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

ROAD NAMES
ALL ROADS

1) FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.

2) FOR NEW YEAR'S, BETWEEN THE HOURS OF 6 A.M. DECEMBER 31ST TO 6 P.M. JANUARY 2ND. IF NEW YEARS DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OF MONDAY THEN UNTIL 6 P.M. THE FOLLOWING TUESDAY.

3) FOR EASTER, BETWEEN THE HOURS OF 6 A.M. THURSDAY AND 6 P.M. MONDAY.

4) FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6 A.M. FRIDAY AND 6 P.M. TUESDAY.

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

6) FOR LABOR DAY, BETWEEN THE HOURS OF 6 A.M. FRIDAY AND 6 P.M. TUESDAY.

7) FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6 A.M. TUESDAY AND 6 P.M. MONDAY.

8) FOR CHRISTMAS, BETWEEN THE HOURS OF 6 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 6 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

C) DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE HAULING OPERATION IS PROTECTED BY BARRIER OR GUARDRAIL OR AS DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

D) 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.

E) 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.

F) 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.

G) 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.

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

PAVEMENT EDGE DROP OFF REQUIREMENTS

I) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREA ADJACENT TO AN OPEN TRAVEL LANE THAT HAS 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.

J) 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) 500 FT. IN ADVANCE AND A MINIMUM OF ONCE EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

L) INSTALL ADVANCE WORK ZONE SIGNS WHEN WORK IS WITHIN 40 FT. FROM THE EDGE OF TRAVEL LANE AND NO MORE THAT THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

M) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.

N) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

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

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 033789 ENGINEER MICHELLE WARD

1/3/2012

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

GENERAL NOTES

REVISIONS

PLOT DRIVER: NCDOT_pdf_color_eng_50.plt PENTABLE: NCDOT_tcp.tbl
USER: charnden DATE: 1/3/2012 TIME: 11:10:51 AM
FILE: North Carolina_Dept_of_Transportation\NCDOT_2010BridgeInspectionLSC\NCDOT_TO_7\13.00_CAD\Division 11 Project 1\TCP\17BP-11-H-2_TC_TCP-01.dgn

PROJ. REFERENCE NO.	SHEET NO.
17BP.11.H.2	TCP-1C

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

GENERAL NOTES

TRAFFIC CONTROL DEVICES

P) SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER 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.

Q) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE THE ENTIRE ROADWAY.

R) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 200 FT. CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

PAVEMENT MARKINGS AND MARKERS

S) INSTALL FINAL PAVEMENT MARKINGS AND PAVEMENT MARKERS AS FOLLOWS:

ROAD NAME	MARKING	MARKER
ALL ROADS	POLYUREA	SNOWPLOWABLE

T) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS AS FOLLOWS:

ROAD NAME	MARKING	MARKER
ALL ROADS	PAINT	NONE

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

V) REMOVE/REPLACE ANY CONFLICTING OR DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATIONS, WITH ONE APPLICATION OF PAINT.

MISCELLANEOUS

W) LAW ENFORCEMENT OFFICERS MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA, INCLUDING ROADS UNDER BRIDGES, AND/OR INTERSECTIONS, AS DIRECTED BY THE ENGINEER.

X) ENGINEER WILL NOTIFY THE OVERSIZE/OVERWEIGHT PERMIT UNIT AT 919-733-4740 TWO WEEKS PRIOR TO TRAFFIC BEING PLACED IN A ONE-LANE TRAFFIC PATTERN AND WHEN TRAFFIC IS RESTORED TO THE EXISTING PATTERN.

Y) DO NOT ALLOW WATER AND CONCRETE SLURRY FROM HYDRO-DEMOLITION TO DRAIN ACROSS TRAVEL LANES.

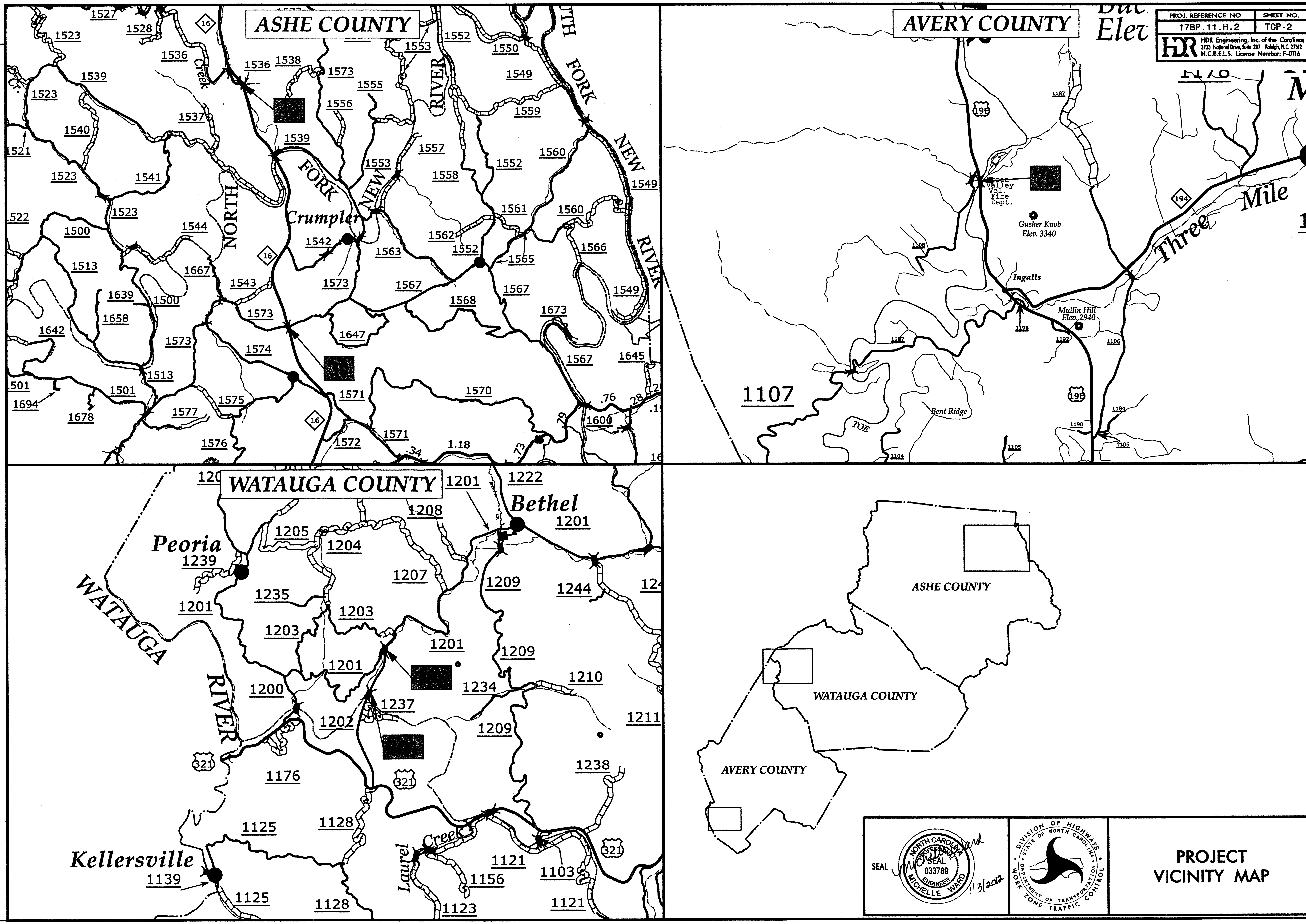
REVISIONS

SEAL — NORTH CAROLINA PROFESSIONAL SEAL 033789 ENGINEER MICHELLE WARD — 1/3/2012

DIVISION OF HIGHWAYS — STATE OF NORTH CAROLINA — DEPARTMENT OF TRANSPORTATION — WORK ZONE TRAFFIC CONTROL

GENERAL NOTES

PLOT DRIVER: NCDOT_pdf_color_eng_50.pltPENTABLE: NCDOT_tcp.tbl
USER: charnden DATE: 1/3/2012 TIME: 11:10:57 AM
FILE: North Carolina_Dept_of_Transportation\NCDOT_2010BridgeInspectionLSC\NCDOT_TO_7\13.00_CAD\Division 11 Project 1\TCP\17BP-11-H-2_TC_TCP-01.dgn

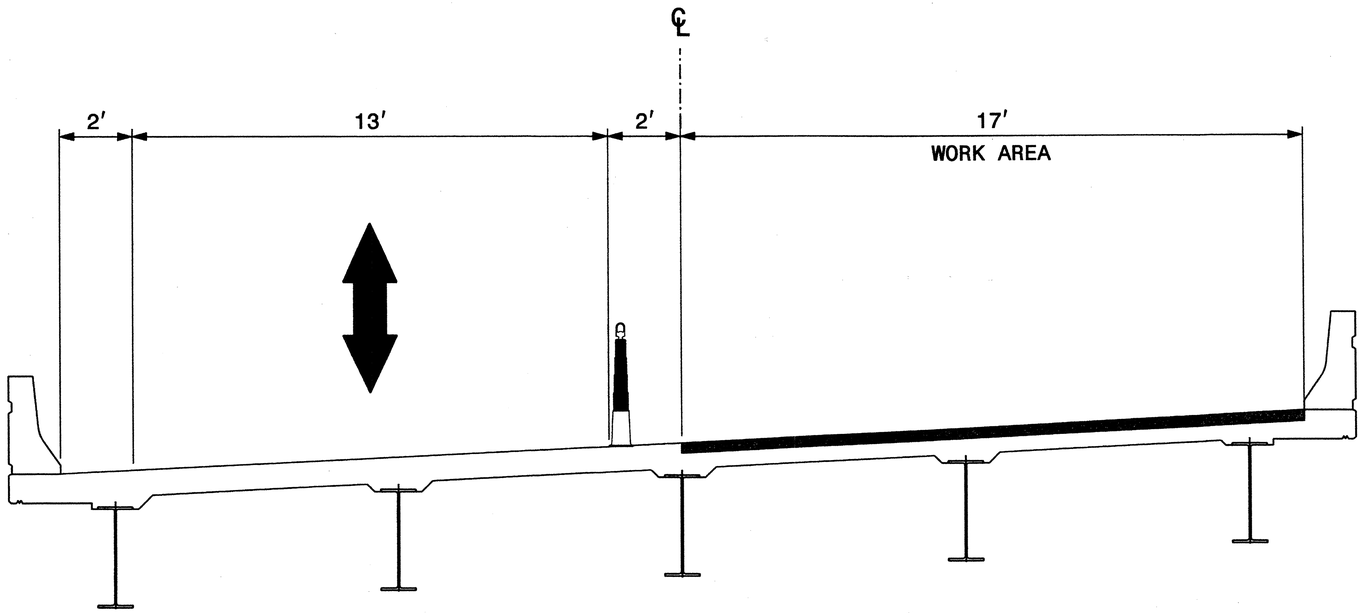

ASHE COUNTY
AVERY COUNTY
WATAUGA COUNTY
PROJ. REFERENCE NO.
17BP.11.H.2
SHEET NO.
TCP-2
HDR Engineering, Inc. of the Carolinas
3733 National Drive, Suite 207 Raleigh, N.C. 27612
N.C.B.E.L.S. License Number: F-0116
Crumpler
NORTH FORK NEW RIVER
Green Valley Vol. Fire Dept.
Gusher Knob Elev. 3340
Ingalls
Mullin Hill Elev. 2940
Bent Ridge
Three Mile
Peoria
Bethel
Kellersville
WATAUGA RIVER
Laurel Creek
PROJECT VICINITY MAP
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 033789 ENGINEER MICHELLE WARD
1/3/2012
DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

PLOT DRIVER: NCDOT_pdf_color_eng_50.plt PENTABLE: NCDOT_tcp.tbl
USER: charnden DATE: 1/3/2012 TIME: 11:11:06 AM
FILE: North Carolina_Dept_of_Transportation\NCDOT_2010BridgeInspection\SC\NCDOT_TO_7\13.00_CAD\Division 11 Project 1\TCP\17BP-11-H-2_TC_TCP-01.dgn

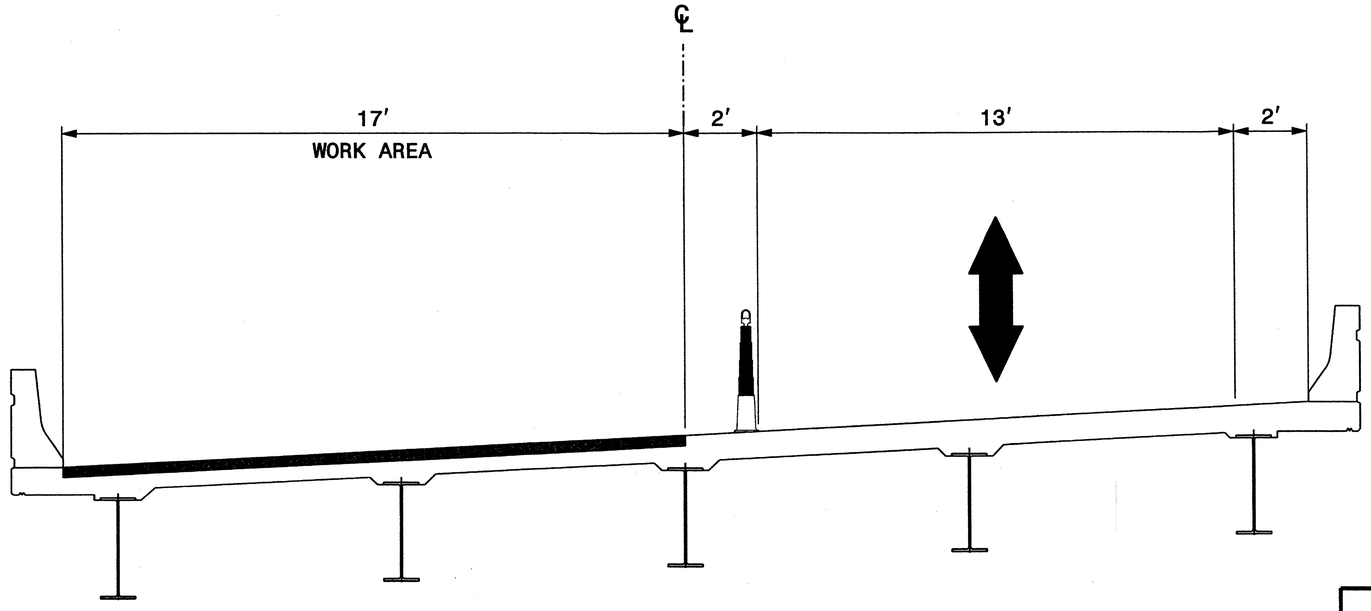
REVISIONS

PROJ. REFERENCE NO.	SHEET NO.
17BP.11.H.2	TCP-3

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



TYPICAL SECTION - STAGE I



TYPICAL SECTION - STAGE II

TRAFFIC CONTROL STAGING

NOTE: AT THE END OF THE WORK DAY, REMOVE ALL TRAFFIC CONTROL DEVICES, COVER OR REMOVE ALL ADVANCED TRAFFIC CONTROL SIGNS FOR THE LANE CLOSURE OPERATION, AND RETURN TRAFFIC TO ITS EXISTING PATTERN.

STAGE 1:

STEP 1: USING THIS SHEET, TCP-4, AND STANDARD DRAWING 1101.02, SHEET 1 OF 15, CONSTRUCT TEMPORARY PAVEMENT, THEN COMPLETE BRIDGE WORK ON THE FIRST HALF OF THE BRIDGE.

STAGE 2:

STEP 1: USING THIS SHEET, TCP-4, AND STANDARD DRAWING 1101.02, SHEET 1 OF 15, CONSTRUCT TEMPORARY PAVEMENT, THEN COMPLETE BRIDGE WORK ON THE SECOND HALF OF THE BRIDGE.

STEP 2: USING STANDARD DRAWING 1101.02, SHEET 1 OR 11 OF 15, PLACE FINAL MARKINGS AND MARKERS, AND OPEN TO TRAFFIC.

STEP 3: REMOVE ALL REMAINING TRAFFIC CONTROL DEVICES.

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 033789 ENGINEER MICHELLE WARD
1/3/2012

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

AVERY CO. - BRIDGE NO. 26
TRAFFIC CONTROL STAGING

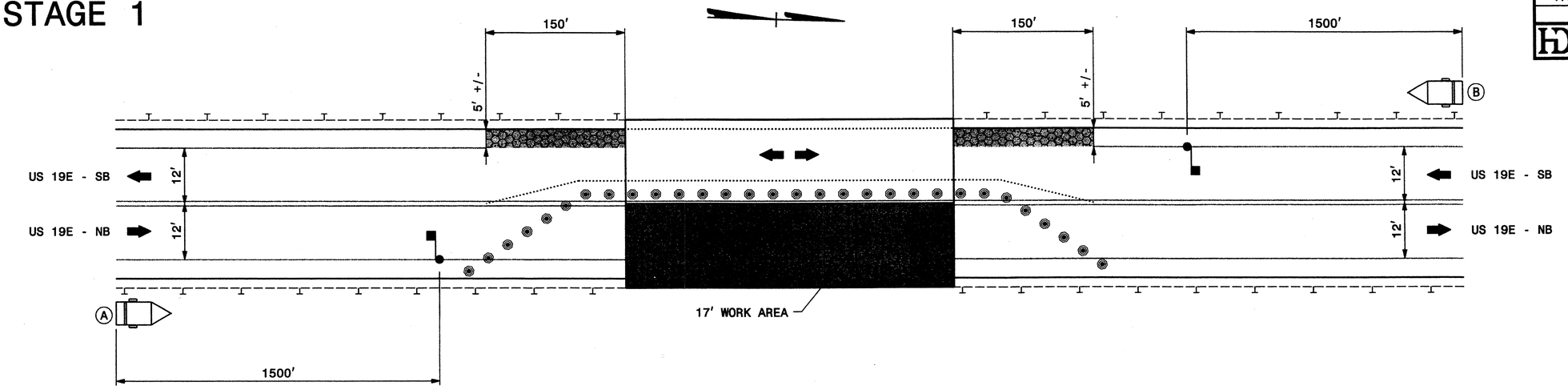
REVISIONS

PLOT DRIVER: NCDOT_pdf_color_eng_50.plt PENTABLE: NCDOT_tcp.tbl
USER: charnden DATE: 1/3/2012 TIME: 11:11:18 AM
FILE: North Carolina Dept of Transportation\NCDOT_2010Bridge Inspection LSC\NCDOT_10_7\13.00_CAD\Division 11 Project 1\TCP\17BP-11-H-2_TC_TCP-03.dgn

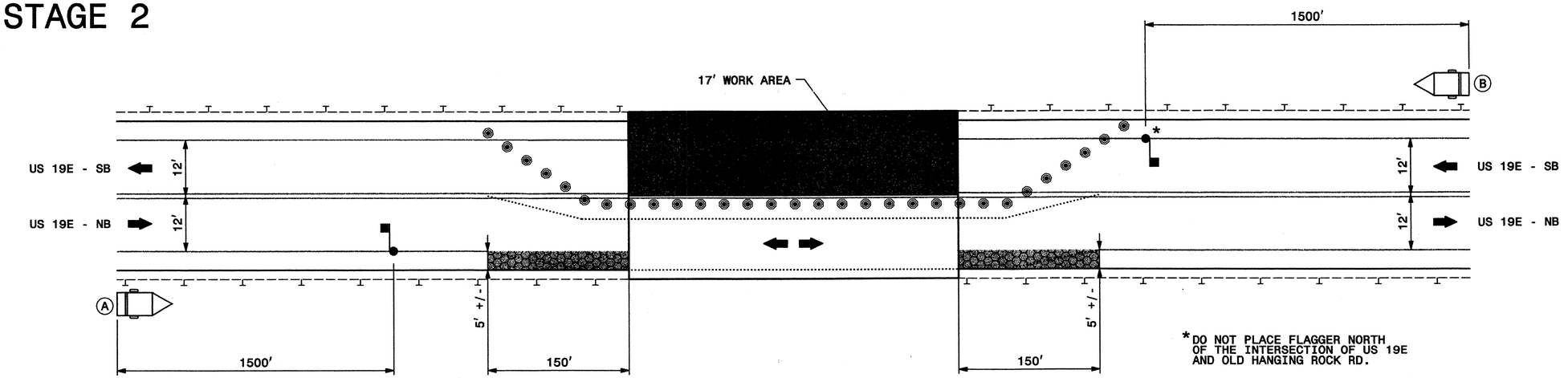
PROJ. REFERENCE NO.	SHEET NO.
17BP.11.H.2	TCP-4

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

STAGE 1



STAGE 2



NOTE: USE CMS SIGNS INSTEAD OF W20-4 SIGNS (SEE STANDARD DRAWING 1101.02, SHEET 1 OF 15).

Ⓐ

MESSAGE NO. 1	MESSAGE NO. 2
ONE LANE ROAD AHEAD	BRIDGE WORK AHEAD

CHANGEABLE MESSAGE SIGN

Ⓑ

MESSAGE NO. 1	MESSAGE NO. 2
ONE LANE ROAD AHEAD	BRIDGE WORK AHEAD

CHANGEABLE MESSAGE SIGN

SEAL 033789 — NORTH CAROLINA PROFESSIONAL SEAL ENGINEER MICHELLE WARD — 1/3/2012

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION — WORK ZONE TRAFFIC CONTROL

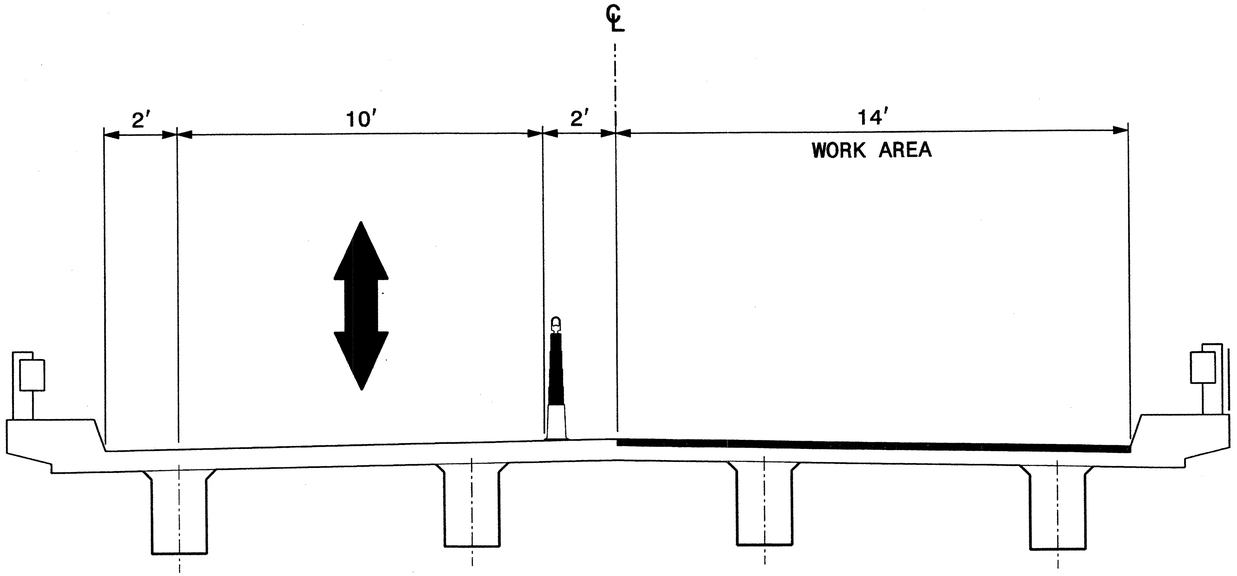
AVERY CO. - BRIDGE NO. 26
TRAFFIC CONTROL DETAIL
STAGE 1 & 2

REVISIONS

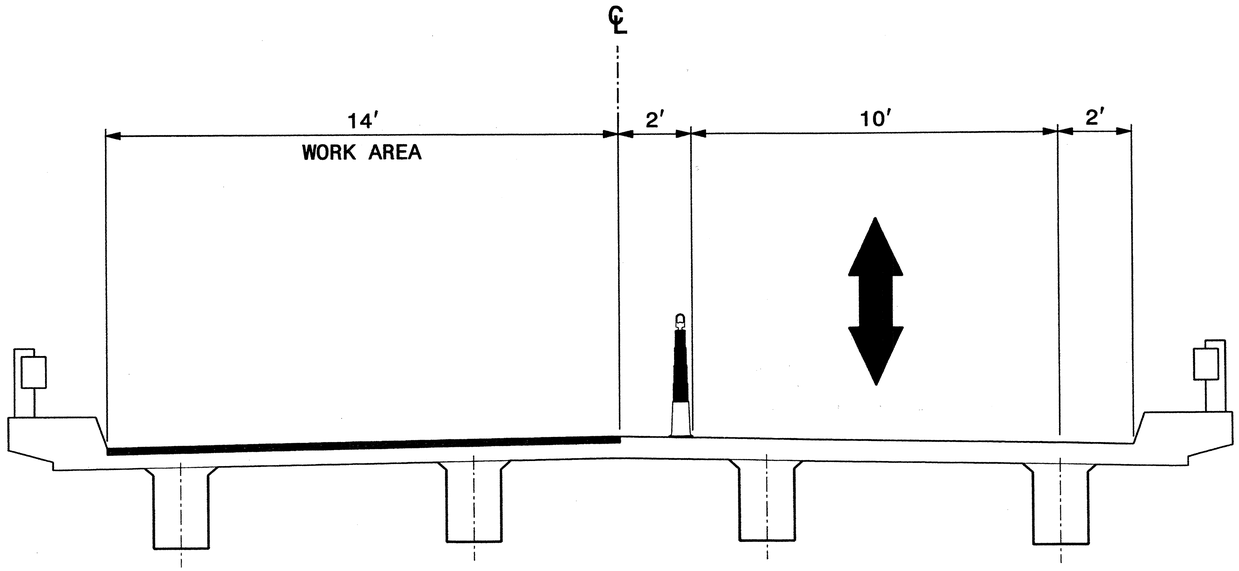
PLOT DRIVER: NCDOT_pdf_color_eng_50.plt
USER: charnden
FILE: North Carolina_Dept_of_Transportation\NCDOT_2010BridgeInspection\SC\NCDOT_TO_7\13.00_CAD\Division 11 Project 1\TCP\17BP-11-H-2_TC_TCP-04.dgn
PENTABLE: NCDOT_tcp.tbl
DATE: 1/3/2012
TIME: 11:11:27 AM

PROJ. REFERENCE NO.	SHEET NO.
17BP.11.H.2	TCP-5

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



TYPICAL SECTION - STAGE I



TYPICAL SECTION - STAGE II

TRAFFIC CONTROL STAGING

NOTE: AT THE END OF THE WORK DAY, REMOVE ALL TRAFFIC CONTROL DEVICES, COVER OR REMOVE ALL ADVANCED TRAFFIC CONTROL SIGNS FOR THE LANE CLOSURE OPERATION, AND RETURN TRAFFIC TO ITS EXISTING PATTERN.

STAGE 1:

STEP 1: USING THIS SHEET, TCP-6, AND STANDARD DRAWING 1101.02, SHEET 1 OF 15, CONSTRUCT TEMPORARY PAVEMENT, THEN COMPLETE BRIDGE WORK ON THE FIRST HALF OF THE BRIDGE.

STAGE 2:

STEP 1: USING THIS SHEET, TCP-6, AND STANDARD DRAWING 1101.02, SHEET 1 OF 15, CONSTRUCT TEMPORARY PAVEMENT, THEN COMPLETE BRIDGE WORK ON THE SECOND HALF OF THE BRIDGE.

STEP 2: USING STANDARD DRAWING 1101.02, SHEET 1 OR 11 OF 15, PLACE FINAL MARKINGS AND MARKERS, AND OPEN TO TRAFFIC.

STEP 3: REMOVE ALL REMAINING TRAFFIC CONTROL DEVICES.

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 033789 ENGINEER MICHELLE WARD
1/3/2012

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

ASHE CO. - BRIDGE NO. 30
TRAFFIC CONTROL STAGING

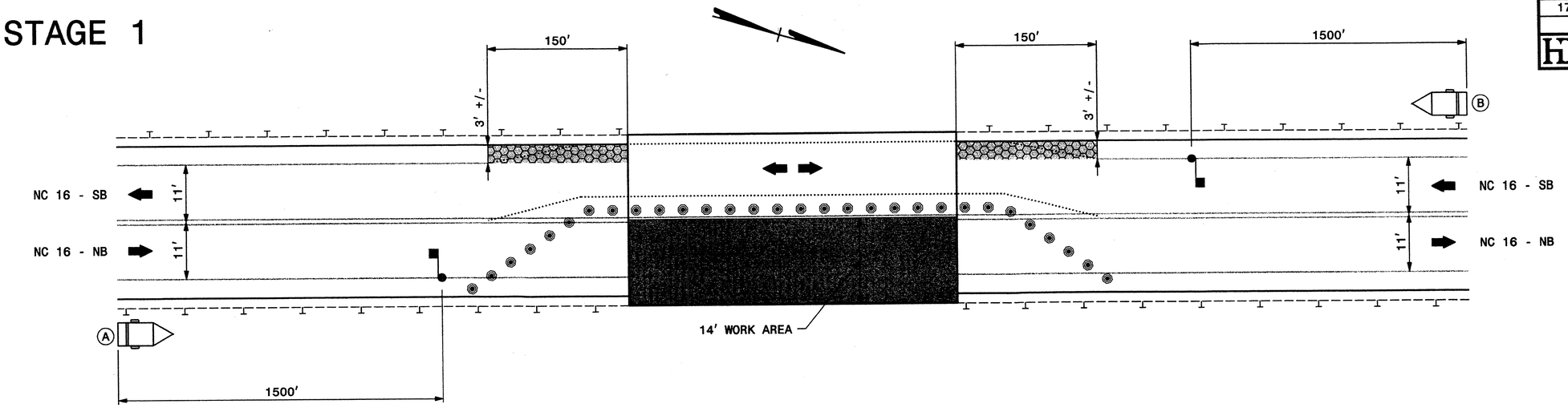
REVISIONS

PLOT DRIVER: NCDOT.pdf_color_eng_50.plt PENTABLE: NCDOT_tcp.tbl
USER: charnden DATE: 1/3/2012 TIME: 11:11:35 AM
FILE: North Carolina.Dept_of_Transportation\NCDOT_2010BridgeInspectionLSC\NCDOT_TO.7\13.00_CAD\Division 11 Project 1\TCP\17BP-11-H-2_TC_TCP-05.dgn

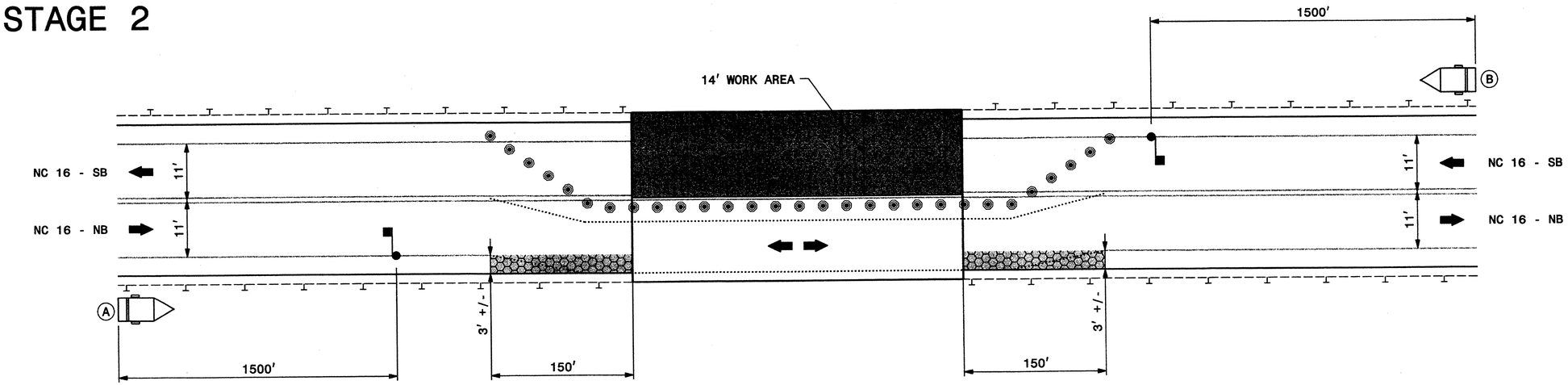
PROJ. REFERENCE NO.	SHEET NO.
17BP.11.H.2	TCP-6

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

STAGE 1



STAGE 2



NOTE: USE CMS SIGNS INSTEAD OF W20-4 SIGNS (SEE STANDARD DRAWING 1101.02, SHEET 1 OF 15).

A

MESSAGE NO. 1	MESSAGE NO. 2
ONE LANE ROAD AHEAD	BRIDGE WORK AHEAD

CHANGEABLE MESSAGE SIGN

B

MESSAGE NO. 1	MESSAGE NO. 2
ONE LANE ROAD AHEAD	BRIDGE WORK AHEAD

CHANGEABLE MESSAGE SIGN

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 033789 ENGINEER MICHELLE WARD
1/3/2012

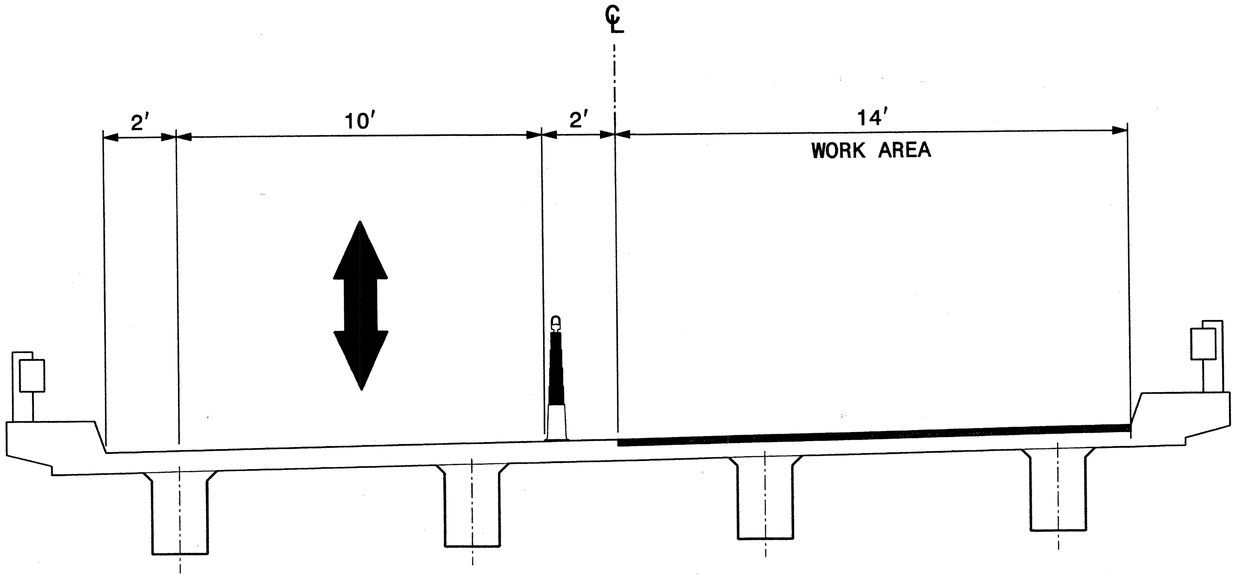
DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

ASHE CO. - BRIDGE NO. 30
TRAFFIC CONTROL DETAIL
STAGE 1 & 2

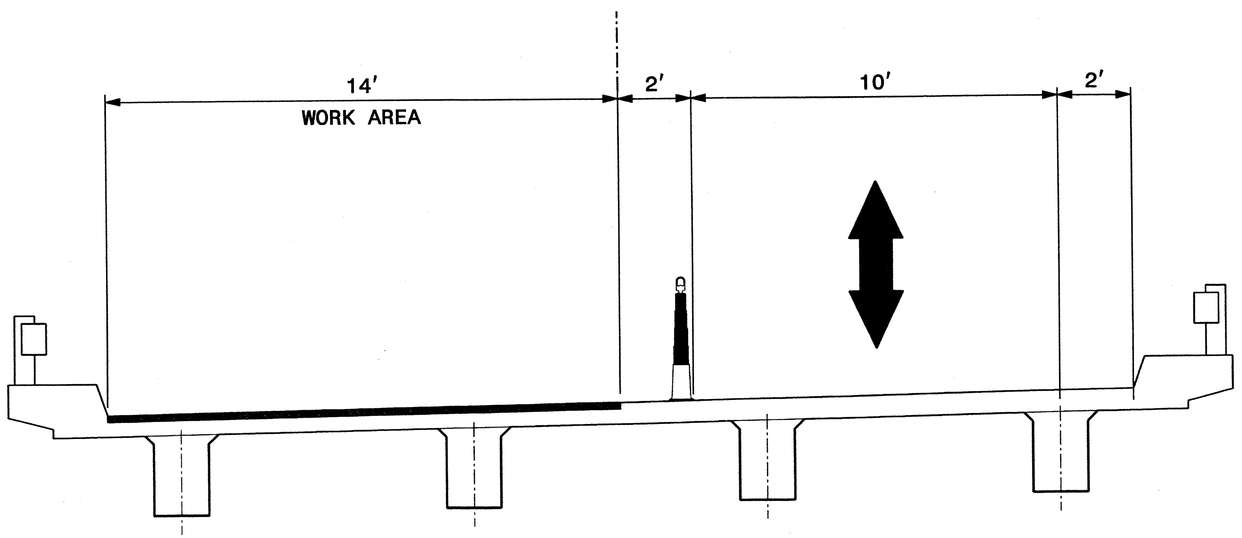
REVISIONS

PLOT DRIVER: NCDOT_pdf_color_eng_50.plt PENTABLE: NCDOT_tcp.tbl
USER: charnden DATE: 1/3/2012 TIME: 11:11:42 AM
FILE: North Carolina_Dept_of_Transportation\NCDOT_2010BridgeInspection\SC\NCDOT_TO_7\13.00_CAD\Division 11 Project 1\TCP\17BP-11-H-2_TC_TCP-06.dgn

PROJ. REFERENCE NO. 17BP.11.H.2 | SHEET NO. TCP-7
HDR Engineering, Inc. of the Carolinas
N.C.B.E.L.S. License Number: F-0116
3733 National Drive, Suite 207 Raleigh, N.C. 27612



TYPICAL SECTION - STAGE I



TYPICAL SECTION - STAGE II

TRAFFIC CONTROL STAGING

NOTE: AT THE END OF THE WORK DAY, REMOVE ALL TRAFFIC CONTROL DEVICES, COVER OR REMOVE ALL ADVANCED TRAFFIC CONTROL SIGNS FOR THE LANE CLOSURE OPERATION, AND RETURN TRAFFIC TO ITS EXISTING PATTERN.

STAGE 1:

STEP 1: USING THIS SHEET, TCP-8, AND STANDARD DRAWING 1101.02, SHEET 1 OF 15, CONSTRUCT TEMPORARY PAVEMENT, THEN COMPLETE BRIDGE WORK ON THE FIRST HALF OF THE BRIDGE.

STAGE 2:

STEP 1: USING THIS SHEET, TCP-8, AND STANDARD DRAWING 1101.02, SHEET 1 OF 15, CONSTRUCT TEMPORARY PAVEMENT, THEN COMPLETE BRIDGE WORK ON THE SECOND HALF OF THE BRIDGE.

STEP 2: USING STANDARD DRAWING 1101.02, SHEET 1 OR 11 OF 15, PLACE FINAL MARKINGS AND MARKERS, AND OPEN TO TRAFFIC.

STEP 3: REMOVE ALL REMAINING TRAFFIC CONTROL DEVICES.

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 033789 ENGINEER MICHELLE WARD
1/3/2012

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

ASHE CO. - BRIDGE NO. 42
TRAFFIC CONTROL STAGING

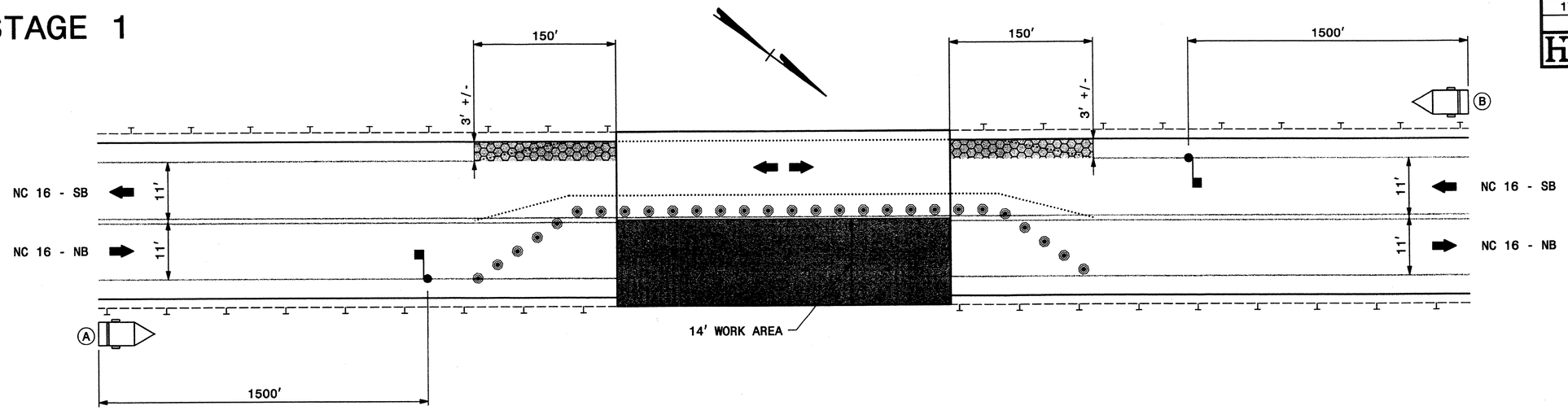
REVISIONS

PLOT DRIVER: NCDOT_pdf_color_eng_50.pit
USER: charnden
FILE: North Carolina_Dept_of_Transportation\NCDOT.2010BridgeInspectionLSC\NCDOT_TO_7\13.00_CAD\Division 11 Project 1\TCP\17BP-11-H-2_TC_TCP-07.dgn
PENTABLE: NCDOT_tcp.tbl
DATE: 1/3/2012
TIME: 11:11:49 AM

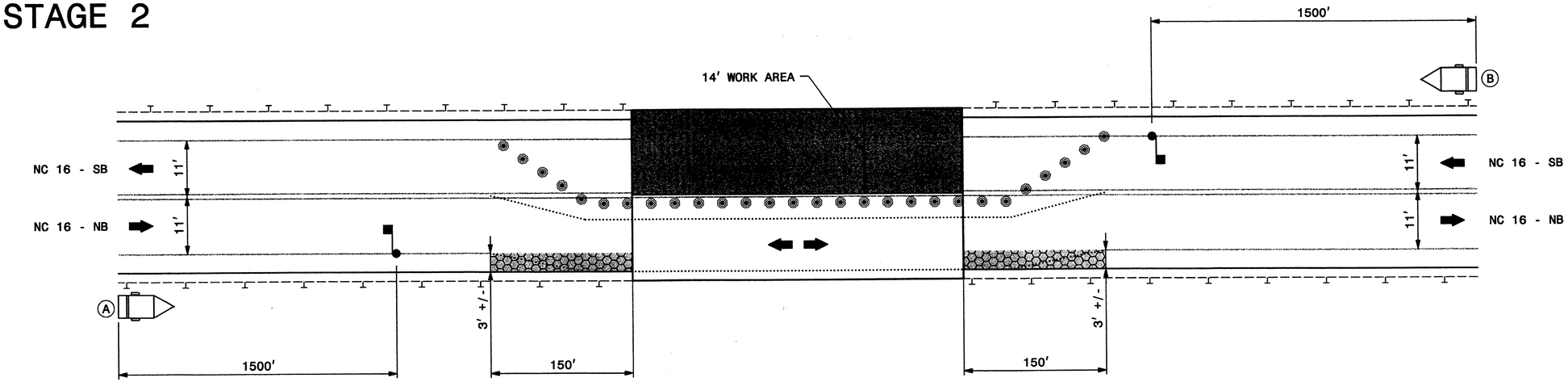
PROJ. REFERENCE NO.	SHEET NO.
17BP.11.H.2	TCP-8

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

STAGE 1



STAGE 2



NOTE: USE CMS SIGNS INSTEAD OF W20-4 SIGNS (SEE STANDARD DRAWING 1101.02, SHEET 1 OF 15).

A

MESSAGE NO. 1	MESSAGE NO. 2
ONE LANE ROAD AHEAD	BRIDGE WORK AHEAD

CHANGEABLE MESSAGE SIGN

B

MESSAGE NO. 1	MESSAGE NO. 2
ONE LANE ROAD AHEAD	BRIDGE WORK AHEAD

CHANGEABLE MESSAGE SIGN

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 033789 ENGINEER MICHELLE WARD
1/3/2012

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

ASHE CO. - BRIDGE NO. 42
TRAFFIC CONTROL DETAIL
STAGE 1 & 2

REVISIONS

PLOT DRIVER: NCDOT.pdf.color_eng.50.plt PENTABLE: NCDOT.tcp.tbl
USER: charnden DATE: 1/3/2012 TIME: 11:11:59 AM
FILE: North Carolina_Dept_of_Transportation\NCDOT_2010BridgeInspection\SC\NCDOT_TO_7\13.00_CADD\Division 11 Project 1\TCP\17BP-11-H-2_TC_TCP-08.dgn

PROJ. REFERENCE NO.	SHEET NO.
17BP.11.H.2	TCP-9

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

TRAFFIC CONTROL STAGING

NOTE: AT THE END OF THE WORK DAY, REMOVE ALL TRAFFIC CONTROL DEVICES, COVER OR REMOVE ALL ADVANCED TRAFFIC CONTROL SIGNS FOR THE LANE CLOSURE OPERATION, AND RETURN TRAFFIC TO ITS EXISTING PATTERN.

NOTE: COMPLETE WORK AT BRIDGE NO. 304 IN UNISON WITH WORK AT BRIDGE NO. 305.

NOTE: SEE TCP-10 FOR DETOUR ROUTING PLAN AND SIGN SCHEDULE.

NOTE: SEE TCP-11 FOR TYPICAL SECTIONS OF BRIDGE NO. 304.

NOTE: SEE TCP-13 FOR TRAFFIC CONTROL DETAILS OF BRIDGE NO. 304.

ICT

COMPLETE THE WORK REQUIRED FOR BRIDGE NO. 304 IN STEPS 1 THRU 3 FROM JUNE 8, 2012 TO AUGUST 10, 2012.
(SEE SPECIAL PROVISIONS & LIQUIDATED DAMAGES)

STEP 1: USING SHEET TCP-10 AND ROADWAY STANDARD DRAWING 1101.03, SHEET 1 OF 9, CLOSE BETHEL RD (SR 1202) & PLACE TRAFFIC IN AN OFFSITE DETOUR.

STEP 2: AWAY FROM TRAFFIC, COMPLETE THE WORK AT BRIDGE #304 AS SHOWN IN THE CONSTRUCTION SEQUENCE ON THE BRIDGE PLANS (STEP 1 THRU 10).

STEP 3: REMOVE ALL SIGNS AND TRAFFIC CONTROL DEVICES FOR THE DETOUR AND OPEN BETHEL RD (SR 1202) TO TRAFFIC.

STEP 4: USING TCP-11 & TCP-13 AND ROADWAY STANDARD DRAWING 1101.02, SHEET 1 OF 15, CONSTRUCT TEMPORARY PAVEMENT AT THE BRIDGE APPROACHES AS SHOWN ON TCP-13, THEN COMPLETE THE REMAINING BRIDGE WORK & ROADWAY APPROACH WORK AT BRIDGE NO. 304.

STEP 5: USING ROADWAY STANDARD DRAWING 1101.02, SHEET 1 OR 11 OF 15, PLACE FINAL MARKINGS AND MARKERS ON BRIDGE NO. 304 AND APPROACHES, AND OPEN TO TRAFFIC.

STEP 6: REMOVE ALL REMAINING TRAFFIC CONTROL DEVICES.

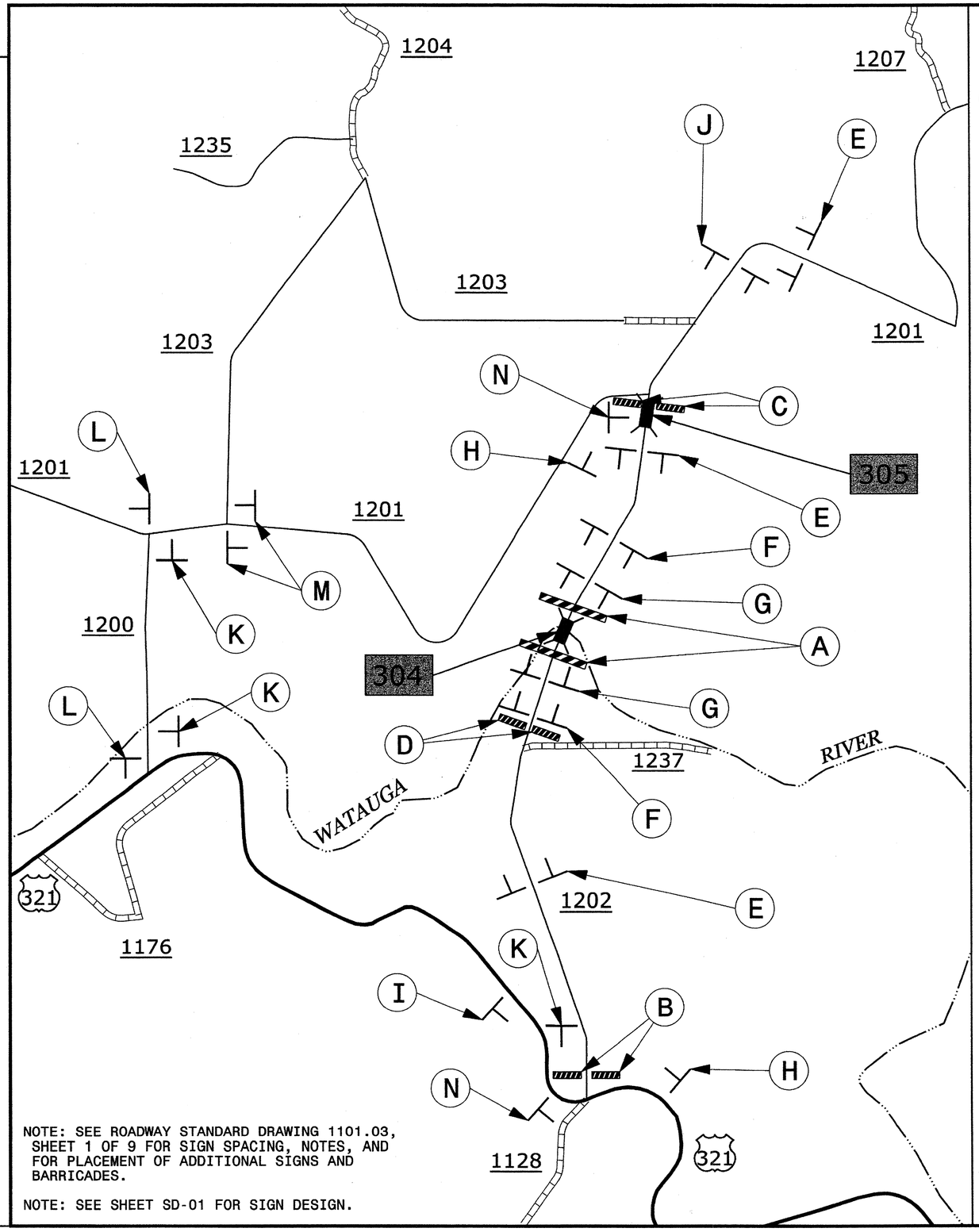
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 033789 ENGINEER MICHELLE WARD
1/20/12

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

WATAUGA CO.
BRIDGE NO. 304
STAGING NOTES

REVISIONS

PLOT DRIVER: NCDOT.pdf.color_eng_50.plt PENTABLE: NCDOT_tcp.tbl
USER: BLibby DATE: 1/20/2012 TIME: 11:24:46 AM
FILE: North Carolina_Dept_of_Transportation\NCDOT_DOO_CEI_BM_LSC_MASTER\NCDOT_Division_11_Project_1\13.00_CAD\TCP\17BP-11-H-2_TC_TCP-09.dgn



NOTE: SEE ROADWAY STANDARD DRAWING 1101.03, SHEET 1 OF 9 FOR SIGN SPACING, NOTES, AND FOR PLACEMENT OF ADDITIONAL SIGNS AND BARRICADES.

NOTE: SEE SHEET SD-01 FOR SIGN DESIGN.

A — R11-2, 48" x 30", ROAD CLOSED
TYPE III BARRICADE(S)

B — R11-3, 60" x 30", ROAD CLOSED 1 MILE AHEAD / LOCAL TRAFFIC ONLY / DETOUR; M4-10L, 48" x 18"
TYPE III BARRICADE

C — R11-3, 60" x 30", ROAD CLOSED 1 MILE AHEAD / LOCAL TRAFFIC ONLY / DETOUR; M4-10R, 48" x 18"
TYPE III BARRICADE

D — R11-4, 60" x 30", ROAD CLOSED TO THRU TRAFFIC
TYPE III BARRICADE

E — ROAD CLOSED AHEAD, W20-3, 48" X 48"

F — ROAD CLOSED 1000 FT, W20-3, 48" X 48"

G — ROAD CLOSED 500 FT, W20-3, 48" X 48"

H — ROAD CLOSED AHEAD, W20-3, 48" X 48"
NEXT RIGHT, SP-4R, 48" X 12"

I — ROAD CLOSED AHEAD, W20-3, 48" X 48"
NEXT LEFT, SP-4L, 48" X 12"

J — DETOUR AHEAD, W20-2, 48" X 48"

K — Bethel Rd, SP-01, 30" X 12"
DETOUR, M4-8, 24" X 12"
M6-1, 21" X 15"

L — Bethel Rd, SP-01, 30" X 12"
DETOUR, M4-8, 24" X 12"
M6-1 L, 21" X 15"

M — Bethel Rd, SP-01, 30" X 12"
DETOUR, M4-8, 24" X 12"
M6-3, 21" X 15"

N — Bethel Rd, SP-01, 30" X 12"
END DETOUR, M4-8 A, 24" X 18"

PROJ. REFERENCE NO.	SHEET NO.
17BP.11.H.2	TCP-10

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

SEAL 033789 ENGINEER MICHELLE WARD — 1/20/12

DIVISION OF HIGHWAYS — STATE OF NORTH CAROLINA — DEPARTMENT OF TRANSPORTATION — WORK ZONE TRAFFIC CONTROL

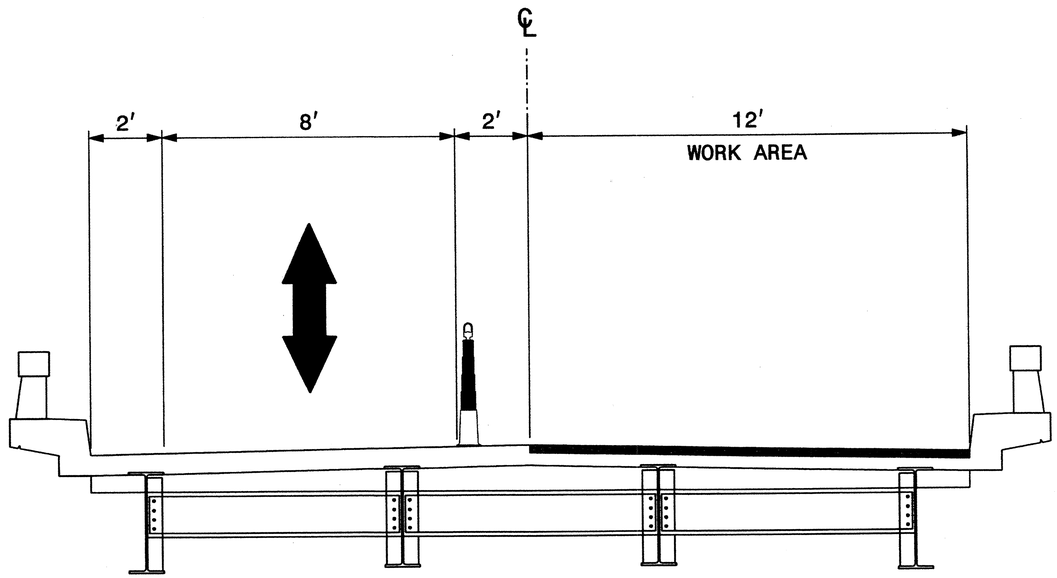
WATAUGA CO.
BRIDGE NO. 304
DETOUR ROUTING PLAN & SIGNING SCHEDULE

REVISIONS

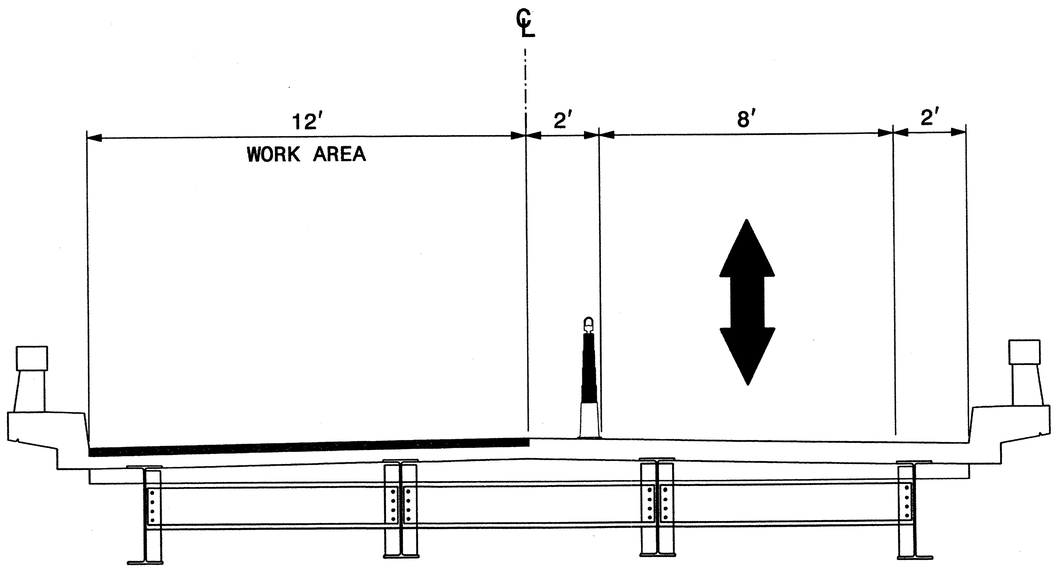
PLOT DRIVER: NCDOT_pdf_color_eng_50.plt
USER: BLibby
FILE: North Carolina_Dept_of_Transportation\NCDOT_DOO_CEI_BM_LSC_MASTER\NCDOT_Division_11_Project_1\13.00_CAD\TCP\17BP-11-H-2_TC_TCP-10.dgn
PENTABLE: NCDOT_tcp.tbl
DATE: 1/20/2012
TIME: 11:24:57 AM

PROJ. REFERENCE NO.	SHEET NO.
17BP.11.H.2	TCP-11

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



TYPICAL SECTION - STAGE I



TYPICAL SECTION - STAGE II

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 033789 ENGINEER MICHELLE WARD
11/3/2012

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

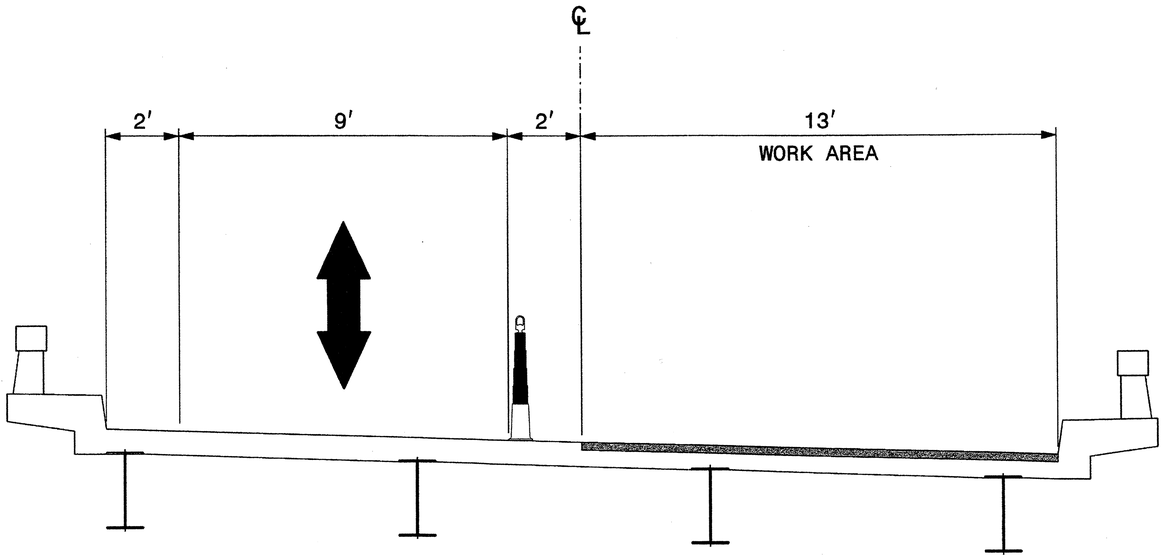
WATAUGA CO.
BRIDGE NO. 304 - TYPICALS
(ROADWAY APPROACH WORK)

PLOT DRIVER: NCDOT_pdf_color_eng_50.plt PENTABLE: NCDOT_tcp.tbl
USER: charnden DATE: 1/3/2012 TIME: 11:12:29 AM
FILE: North Carolina_Dept_of_Transportation\NCDOT_2010BridgeInspectionLSC\NCDOT_TO_7\13.00_CAD\Division 11 Project 1\TCP\17BP-11-H-2_TC_TCP-11.dgn

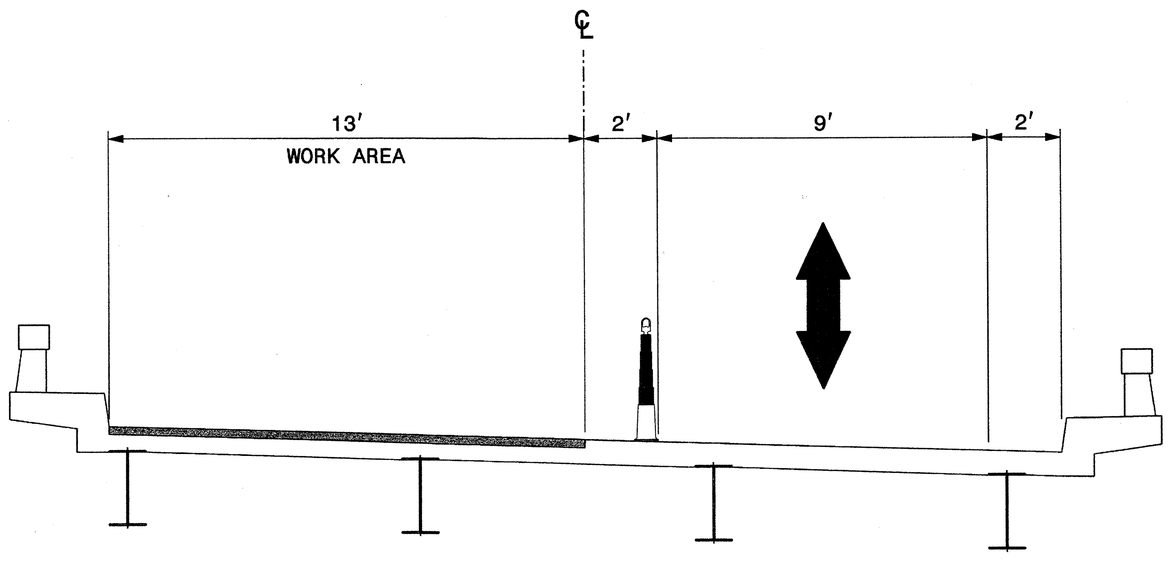
REVISIONS

PROJ. REFERENCE NO.	SHEET NO.
17BP.11.H.2	TCP-12

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



TYPICAL SECTION - STAGE I



TYPICAL SECTION - STAGE II

TRAFFIC CONTROL STAGING

NOTE: COMPLETE WORK AT BRIDGE #304 IN UNISON WITH WORK AT BRIDGE #305.

NOTE: AT THE END OF THE WORK DAY, REMOVE ALL TRAFFIC CONTROL DEVICES, COVER OR REMOVE ALL ADVANCED TRAFFIC CONTROL SIGNS FOR THE LANE CLOSURE OPERATION, AND RETURN TRAFFIC TO ITS EXISTING PATTERN.

STAGE 1:

STEP 1: USING THIS SHEET, TCP-13, AND STANDARD DRAWING 1101.02, SHEET 1 OF 15, CONSTRUCT TEMPORARY PAVEMENT, THEN COMPLETE BRIDGE WORK ON THE FIRST HALF OF THE BRIDGE.

STAGE 2:

STEP 1: USING THIS SHEET, TCP-13, AND STANDARD DRAWING 1101.02, SHEET 1 OF 15, CONSTRUCT TEMPORARY PAVEMENT, THEN COMPLETE BRIDGE WORK ON THE SECOND HALF OF THE BRIDGE.

STEP 2: USING ROADWAY STANDARD DRAWING 1101.02, SHEET 1 OF 15, COMPLETE REMAINING BRIDGE WORK AND ROADWAY APPROACH WORK.

STEP 3: USING STANDARD DRAWING 1101.02, SHEET 1 OR 11 OF 15, PLACE FINAL MARKINGS AND MARKERS, AND OPEN TO TRAFFIC.

STEP 4: REMOVE ALL REMAINING TRAFFIC CONTROL DEVICES.

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 033789 ENGINEER MICHELLE WARD
1/30/12

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL *

WATAUGA CO.
BRIDGE NO. 305
TRAFFIC CONTROL STAGING

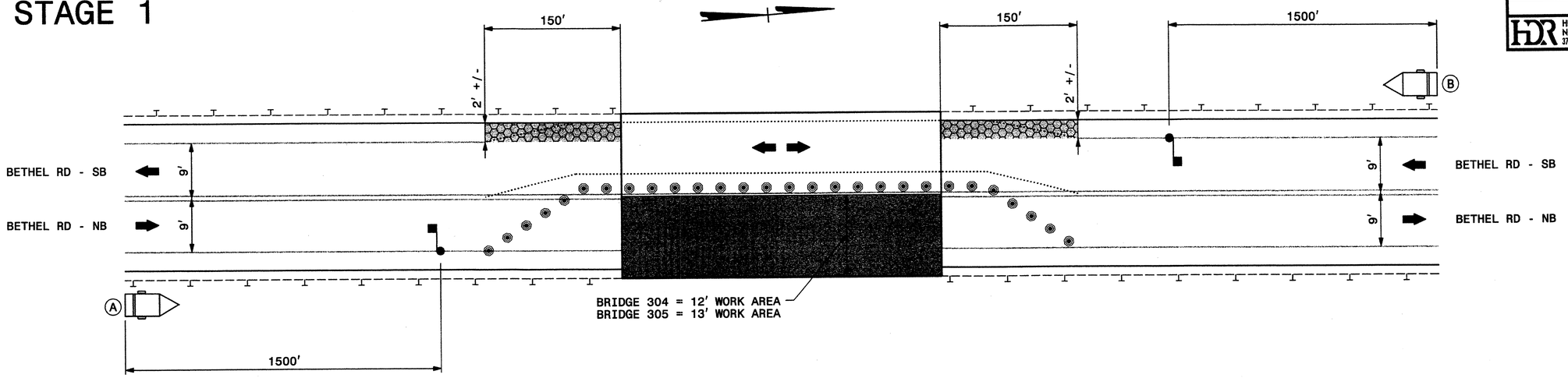
REVISIONS

PLOT DRIVER: NCDOT.pdf_color_eng_50.plt
USER: BLibby
DATE: 1/20/2012
FILE: North Carolina_Dept_of_Transportation\NCDOT_DDO_CEI_BM_LSC_MASTER\NCDOT_Division_11_Project_1\1300_CAD\TCP\17BP-11-H-2_TC_TCP-12.dgn
PENTABLE: NCDOT_tcp.tbl
TIME: 11:25:07 AM

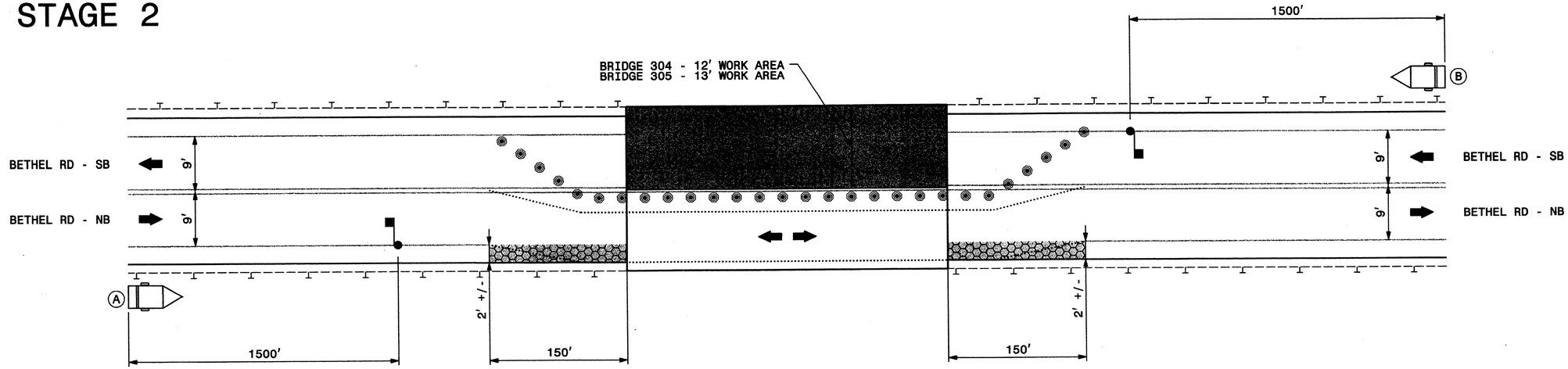
PROJ. REFERENCE NO.	SHEET NO.
17BP.11.H.2	TCP-13

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

STAGE 1



STAGE 2



NOTE: USE CMS SIGNS INSTEAD OF W20-4 SIGNS (SEE STANDARD DRAWING 1101.02, SHEET 1 OF 15).

A

MESSAGE NO. 1	MESSAGE NO. 2
ONE LANE ROAD AHEAD	BRIDGE WORK AHEAD

CHANGEABLE MESSAGE SIGN

B

MESSAGE NO. 1	MESSAGE NO. 2
ONE LANE ROAD AHEAD	BRIDGE WORK AHEAD

CHANGEABLE MESSAGE SIGN

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 033789 ENGINEER MICHELLE WARD
1/3/2012

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

WATAUGA CO.
BRIDGE NOS. 304 & 305
TRAFFIC CONTROL DETAIL
STAGE 1 & 2

REVISIONS

PLOT DRIVER: NCDOT_pdf_color_eng-50.pltt
USER: charnden
FILE: North Carolina_Dept_of_Transportation\NCDOT_2010BridgeInspection\SC\NCDOT_TO.7\13.00_CAD\Division 11 Project 1\TCP\17BP-11-H-2_TC_TCP-13.dgn
PENTABLE: NCDOT_tcp.tbl
DATE: 1/13/2012
TIME: 11:12:46 AM

PROJ. REFERENCE NO.	SHEET NO.
17BP.11.H.2	SD-01

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

SIGN NUMBER: SP01
TYPE: D
QUANTITY: 1

SIGN WIDTH: 3'-6"
HEIGHT: 1'-0"
TOTAL AREA: 3.5 Sq.Ft.

BORDER TYPE: FLUSH
RECESS: 0.38"
WIDTH: 0.38"
RADII: 1.5"

NO. Z BARS:
LENGTH:

BACKG COLOR: Orange
COPY COLOR: Black

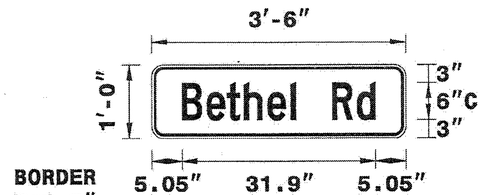
SYMBOL	X	Y	WID	HT

MAT'L: 0.125" (3.2 mm) ALUMINUM

USE NOTES:

1. Legend and border shall be direct applied non-reflective sheeting.
2. Background shall be Grade B reflective sheeting.

DESIGN BY: D KERNS
PROJECT ID: ID
CHECKED BY:
DIV: DIV
DATE: Dec 14, 2011



BORDER
R=1.5"
TH=0.38"
IN=0.38"

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

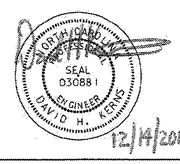
Letter spacings are to start of next letter

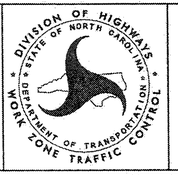
Series/Size
Text Length

																											Series/Size	Text Length
		B	e	t	h	e	l		R	d																	C 2000	
	5	4.1	3.4	2.8	3.9	3.8	0.8	6	4.1	3.1	5																	31.9

FILENAME: DWSignDesigns

NORTH CAROLINA D.O.T. SIGN DETAIL





SIGN DETAIL
BETHEL RD

REVISIONS

PLOT DRIVER: tcu_pdf.plt
USER: dkerns
FILE: North Carolina_Dept.of_Transportation\NCDOT_2010BridgeInspection\SCV\NCDOT_TO_7\13.00_CADD\Division 11 Project 1\TCP\17BP-11-H-2_TC_SD-01.dgn
PENTABLE: NCDOT.tcp.tbl
DATE: 12/14/2011
TIME: 15:50:56

STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	SEE PLANS
IMPACT ALLOWANCE	SEE A.A.S.H.T.O.
STRESS IN EXTREME FIBER OF	
STRUCTURAL STEEL - AASHTO M270 GRADE 36	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION GRADE 60	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	SEE A.A.S.H.T.O.
STRUCTURAL TIMBER - TREATED OR UNTREATED - EXTREME FIBER STRESS	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH	30 LBS. PER CU. FT. (MINIMUM)

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2006 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

ENGLISH
JANUARY, 1990
STD. NO. SN