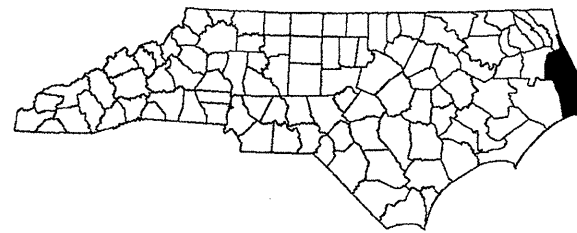


17BP.1.P.14

CONTRACT: C203065

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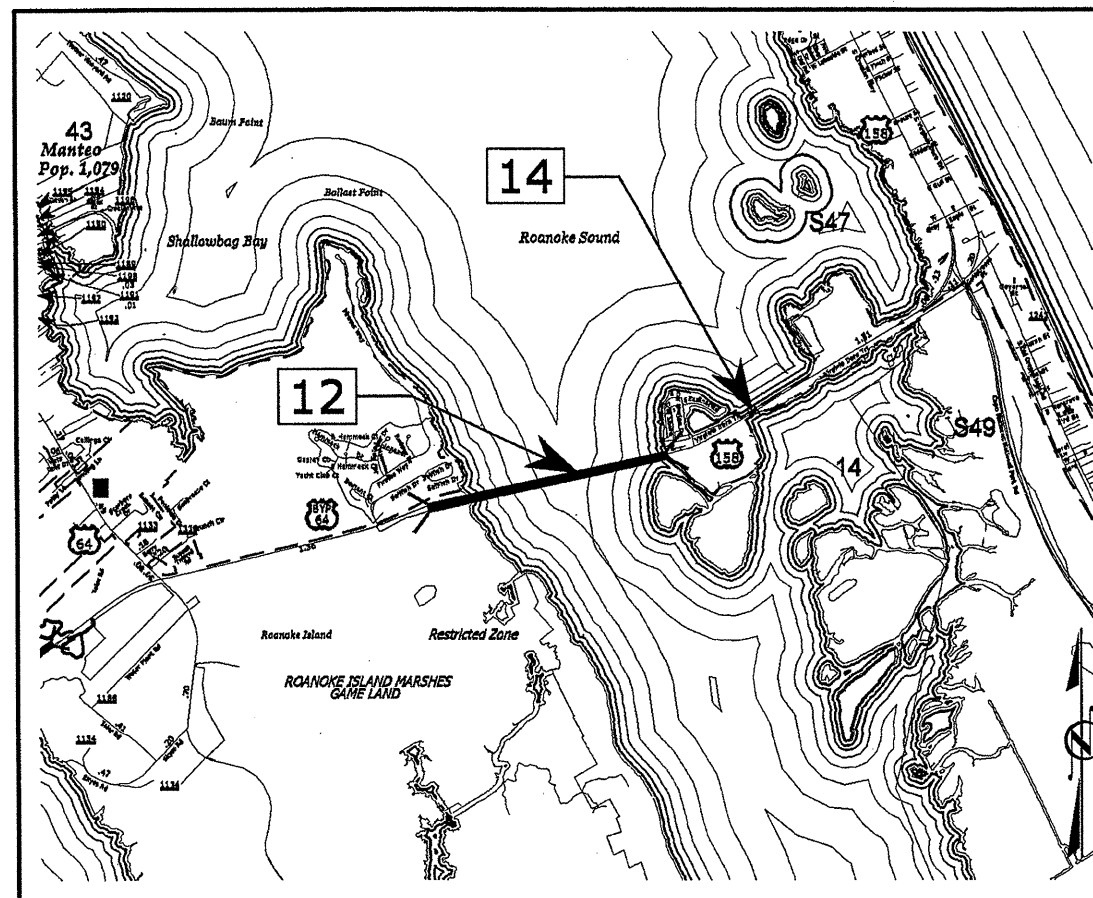
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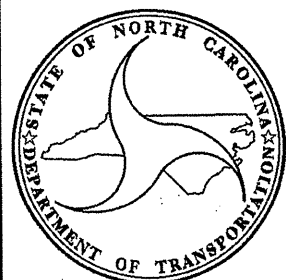
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**DARE COUNTY**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
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STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.1.P.14		P.E.	
17BP.1.P.14		CONST.	

**LOCATION: BRIDGE NO. 12 & NO. 14 ON US 64/264 OVER ROANOKE SOUND**  
**TYPE OF WORK: BRIDGE PRESERVATION: EPOXY OVERLAY, JOINT REPLACEMENT, CONCRETE GIRDER REPAIRS & SUBSTRUCTURE REPAIRS**



**STRUCTURES**



**DESIGN DATA**

BRIDGE #12  
ADT = 15,000  
IN 2009  
BRIDGE #14  
ADT = 18,000  
IN 2008

**PROJECT LENGTH**

LENGTH ROADWAY OF PROJECT = 0.00 MILES  
LENGTH STRUCTURE OF PROJECT = 1.14 MILES  
TOTAL LENGTH OF STATE PROJECT = 1.14 MILES

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

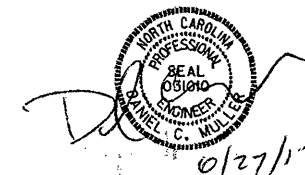
2012 STANDARD SPECIFICATIONS

LETTING DATE :  
AUGUST 21, 2012

**MATTHEW MOYER, P.E.**  
PROJECT ENGINEER

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

Prepared in the Office of:  
H  
HDR Engineering, Inc. of the Carolinas  
2701 National Drive, Suite 207 Raleigh, N.C. 27602  
N.C.B.E.L.S. License Number: P-0116



**DANIEL C. MULLER P.E.**  
BRIDGE DESIGN ENGINEER

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.1.P.14	1A	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.1.P.14		P.E.	
17BP.1.P.14		CONST.	

STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS  


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**DARE COUNTY**  


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**LOCATION: BRIDGE NO.12 & NO.14 ON US 64264 OVER ROANOKE SOUND**  
**TYPE OF WORK: BRIDGE PRESERVATION: EPOXY OVERLAY, JOINT REPLACEMENT,  
 CONCRETE GIRDER REPAIRS & SUBSTRUCTURE REPAIRS**

**INDEX OF SHEETS**

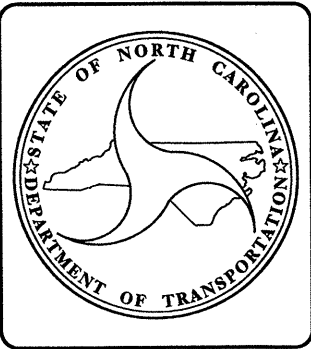
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1	TITLE SHEET
1A	INDEX OF SHEETS
2	SUMMARY OF QUANTITIES
S-1 THRU S-28	STRUCTURE PLANS
TMP-1 THRU TMP-3	TRANSPORTATION MANAGEMENT PLAN

**17BP.1.P.14**

**CONTRACT: C203065**

**STRUCTURES**

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

---

2012 STANDARD SPECIFICATIONS

<p>LETTING DATE :</p> <p>AUGUST 21, 2012</p>	<p style="text-align: center;"><u>MATTHEW MOYER, P.E.</u> PROJECT ENGINEER</p> <p style="text-align: center;"><u>RICK NELSON, P.E.</u> PROJECT ENGINEER</p>
--	---

Prepared In the Office of:

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

BRIDGE DESIGN ENGINEER

P.E.

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**SUMMARY OF QUANTITIES**

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C203065

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
1330000000-E	607	51	SY	INCIDENTAL MILLING
4400000000-E	1110	48	SF	WORK ZONE SIGNS (STATIONARY)
4405000000-E	1110	274	SF	WORK ZONE SIGNS (PORTABLE)
4415000000-N	1115	2	EA	FLASHING ARROW BOARD
4420000000-N	1120	2	EA	PORTABLE CHANGEABLE MESSAGE SIGN
4480000000-N	1165	4	EA	TMA
4516000000-N	1180	65	EA	SKINNY DRUM
4685000000-E	1205	2,266	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)
4810000000-E	1205	2,266	LF	PAINT PAVEMENT MARKING LINES (4")
4900000000-N	1251	35	EA	PERMANENT RAISED PAVEMENT MARKERS
8217000000-E	425	190	LB	REINFORCING STEEL (BRIDGE)
8280000000-E	440	170	LS	APPROX ..... LBS STRUCTURAL STEEL
8660000000-E	SP	10	CF	CONCRETE REPAIRS
8664000000-E	SP	60	CF	SHOTCRETE REPAIRS
8692000000-N	SP	Lump Sum		FOAM JOINT SEALS
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM BRIDGE JACKING
8892000000-E	SP	300	SF	GENERIC STRUCTURE ITEM CLASS II CONCRETE DECK REPAIR FOR EPOXY/ASPHALT OVERLAY
8892000000-E	SP	32,660	SF	GENERIC STRUCTURE ITEM PLACEMENT OF EPOXY OVERLAY
8892000000-E	SP	36,810	SF	GENERIC STRUCTURE ITEM PLACEMENT OF PRE-TREATMENT
8897000000-N	SP	6	EA	GENERIC STRUCTURE ITEM BEARING ADJUSTMENT OR REPLACEMENT IN KIND

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**DESIGN AND CONSTRUCTION SPECIFICATIONS**

STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES (2012)

**GENERAL**

EXISTING DIMENSIONS AND BRIDGE CONDITIONS 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.

THE LOCATION AND EXTENT OF REPAIRS SHOWN ON THE PLANS ARE GENERAL IN NATURE. THE ENGINEER WILL DETERMINE THE EXACT EXTENT OF REMOVAL IN THE FIELD BASED ON AN EVALUATION OF THE CONDITION OF THE EXPOSED SURFACES.

CONSTRUCTION METHODS, PROCEDURES AND SEQUENCES ARE THE CONTRACTOR'S RESPONSIBILITY AND THE CONTRACTOR SHALL TAKE ALL THE NECESSARY MEANS TO MAINTAIN AND PROTECT THE STRUCTURAL INTEGRITY OF ALL CONSTRUCTION AT ALL STAGES.

THE MANUFACTURER'S CERTIFIED DRAWINGS AND SPECIFICATION FOR EQUIPMENT ANCHORAGE AND DETAILS SHALL BE SUBMITTED FOR APPROVAL.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

REPAIR AREAS INACCESSIBLE BY POWER TOOLS SHALL BE CLEANED WITH HAND TOOLS.

**CONCRETE REPAIRS**

FOR SHOTCRETE REPAIR, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIR, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL PROTECT THE BEARING FROM SHOTCRETE OVERSPRAY WHEN PERFORMING SHOTCRETE REPAIRS NEAR THE GIRDER ENDS.

FOR "CONCRETE GIRDER REPAIR DETAIL", SEE DRAWING "SUPERSTRUCTURE UNDERSIDE REPAIR DETAILS", SHEET S-14.

FOR "BENT CAP REPAIR DETAIL", SEE DRAWING "SUBSTRUCTURE REPAIR DETAILS", SHEET S-24.

FOR "COLUMN AND STRUT REPAIR DETAIL", SEE DRAWING "SUBSTRUCTURE REPAIR DETAILS", SHEET S-24.

FIELD TESTING OF THE ADHESIVELY ANCHORED DOWELS IS NOT REQUIRED.

**DECK REHABILITATION**

FOR REPAIR OF BRIDGE WITH EPOXY AND STONE OVERLAY, SEE SPECIAL PROVISIONS.

FOR PLACEMENT OF PRE-TREATMENT, SEE SPECIAL PROVISIONS.

FOR CLASS II CONCRETE DECK REPAIR, SEE "CONCRETE DECK REPAIR FOR EPOXY OR ASPHALT OVERLAYS" SPECIAL PROVISION.

**JOINT REPLACEMENT**

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 2 1/2" AT END BENTS 1 AND 2 AND BENTS 16 AND 17.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

THE EXISTING EXPANSION JOINT SEALS AT BENTS 16 AND 17 SHALL BE REPLACED WITH NEW STANDARD FOAM JOINTS.

THE EXISTING COMPRESSION JOINT SEALS AT THE END BENTS AND BENTS 15 AND 18 SHALL BE REPLACED WITH NEW FOAM JOINT SEALS.

FOR JOINT REPLACEMENT DETAILS, SEE "JOINT DETAILS", SHEET S-9.

**JACKING**

FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

JACKING IS TO BE PERFORMED ON BRIDGE NO. 12 FOR THE PURPOSE OF REPLACING OR ADJUSTING ELASTOMERIC BEARING PADS. SEE "SUPERSTRUCTURE BEARING PAD REPAIRS FOR BRIDGE 12", SHEET S-15.

JACKING SHALL BE CONDUCTED IN A MANNER SUCH THAT THE SUPERSTRUCTURE WILL NOT BE DAMAGED.

THE MAXIMUM ALLOWABLE VERTICAL JACKING DISPLACEMENT SHALL BE 1/2 INCH WITH RESPECT TO BEARINGS OF ADJACENT PIERS.

BEARING NUTS SHALL BE LOOSENEED TO PROVIDE A MINIMUM OF 5/16 INCH GAP TO ALLOW FOR JACKING.

ALL BEAMS AT A PIER SHALL BE JACKED SIMULTANEOUSLY AND SHALL BE RAISED THE SAME AMOUNT AND AT THE SAME RATE. THE HYDRAULIC PRESSURE OF THE JACKS SHALL BE ADJUSTED AS REQUIRED TO ALLOW FOR EQUAL MOVEMENTS. JACKING DEVICES SHALL BE EQUIPPED WITH LOCKING RINGS. USE BEVELED JACKING PLATES AS NEEDED TO PROVIDE A LEVEL JACKING SURFACE.

EFFECT OF VIBRATIONS FROM TRAFFIC SHOULD BE CONSIDERED DURING JACKING AND WHEN JACKS ARE LOCKED.

PROVISIONS SHALL BE MADE TO ACCOUNT FOR THERMAL MOVEMENTS DURING THE PERIOD THAT THE STRUCTURE IS RESTING ON TEMPORARY SUPPORTS.

THE BRIDGE SHALL BE INSPECTED PRIOR TO JACKING TO VERIFY THAT ITEMS CONNECTED TO THE SUPERSTRUCTURE WILL NOT BE DAMAGED DURING THE JACKING AND BEARING REPLACEMENT PROCEDURE.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR PERFORMING THE JACKING TO DETERMINE A JACKING LOCATION AT EACH BEARING AND PROVIDE A DESIGN FOR THE JACKING LOADS. JACKS SHALL HAVE A MINIMUM SAFE LOAD CAPACITY OF 125% OF THE LOAD SPECIFIED IN THE JACKING LOAD TABLE. THE CONTRACTOR SHALL SUBMIT THE JACKING PLAN, DETAILS, PROCEDURES AND SUPPORTING CALCULATIONS TO THE ENGINEER FOR REVIEW AND APPROVAL.

TOTAL BILL OF MATERIAL FOR BRIDGE NO. 12						
CONCRETE REPAIRS	REINFORCING STEEL	SHOTCRETE REPAIRS	FOAM JOINT SEALS	BRIDGE JACKING	BEARING ADJUSTMENT OR REPLACEMENT IN KIND	STRUCTURAL STEEL
CU. FT.	LBS.	CU. FT.	LUMP SUM	LUMP SUM	EACH	LBS.
10	190	50	LUMP SUM	LUMP SUM	6	170

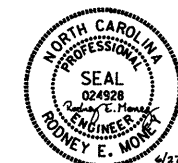
TOTAL BILL OF MATERIAL FOR BRIDGE NO. 14				
SHOTCRETE REPAIRS	CLASS II CONCRETE DECK REPAIR FOR EPOXY/ASPHALT OVERLAY	INCIDENTAL MILLING	* PLACEMENT OF PRE-TREATMENT	PLACEMENT OF EPOXY OVERLAY
CU. FT.	SQ. FT.	SQ. YDS.	SQ. FT.	SQ. FT.
10	300	51	36,810	32,660

\* INCLUDES APPROACH SLABS.

PROJECT NO. 17BP.1.P.14

DARE COUNTY

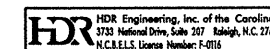
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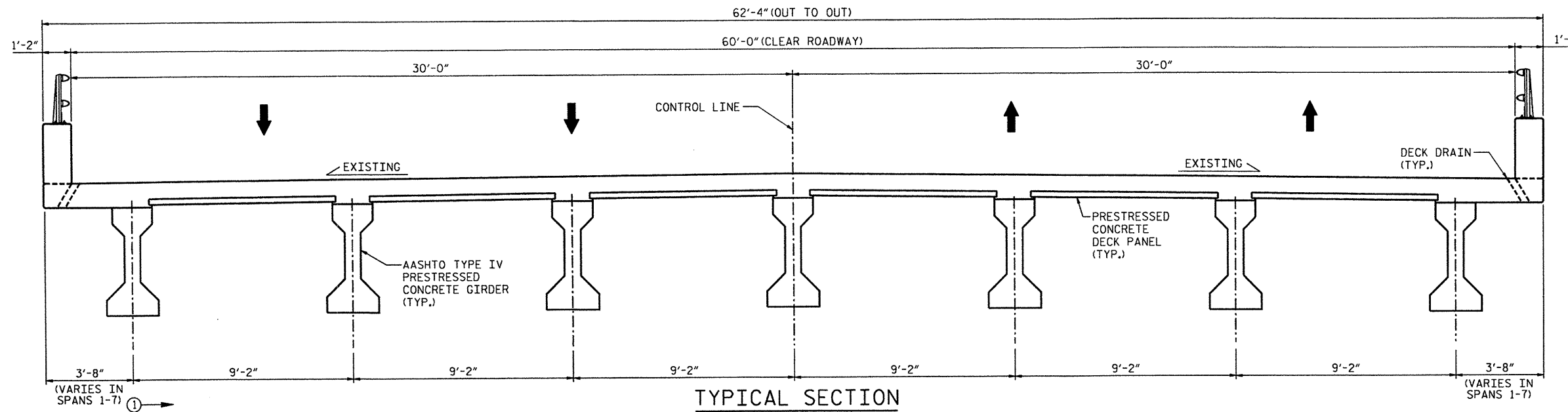
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

GENERAL NOTES  
AND TOTAL  
BILL OF MATERIAL

DRAWN BY: D. CHAPMAN DATE: 04/2012  
CHECKED BY: M. MOYER DATE: 04/2012

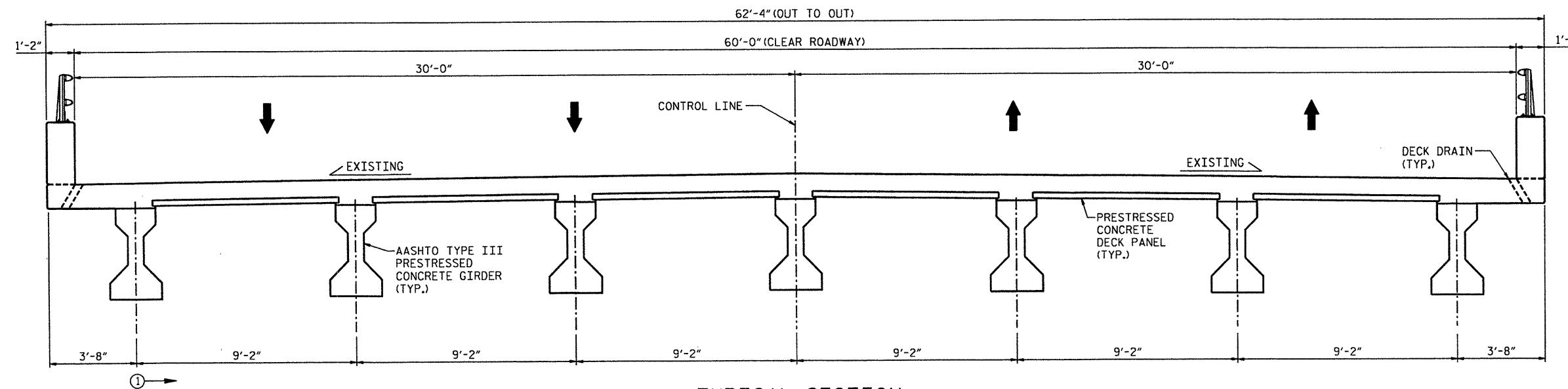


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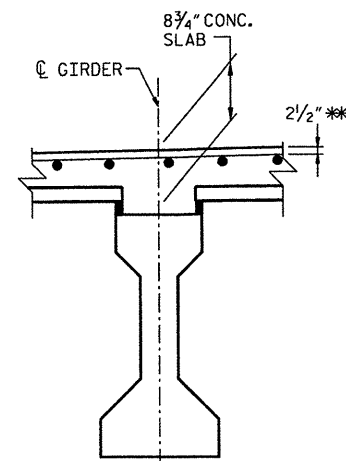
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(SPANS 1-15 AND 19-33 SHOWN)



TYPICAL SECTION

(SPANS 34-73 SHOWN)

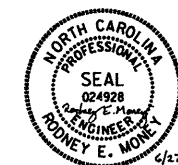


EXISTING SLAB SECTION

FOR SPANS 1-15 AND 19-73  
 \*\* CONCRETE COVER PER "AS-BUILT PLANS"

NOTES  
 FOR NOTES, SEE "GENERAL NOTES  
 AND TOTAL BILL OF MATERIAL".

PROJECT NO. 17BP.1.P.14  
 DARE COUNTY  
 BRIDGE NO.: 12

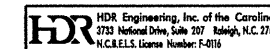


STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

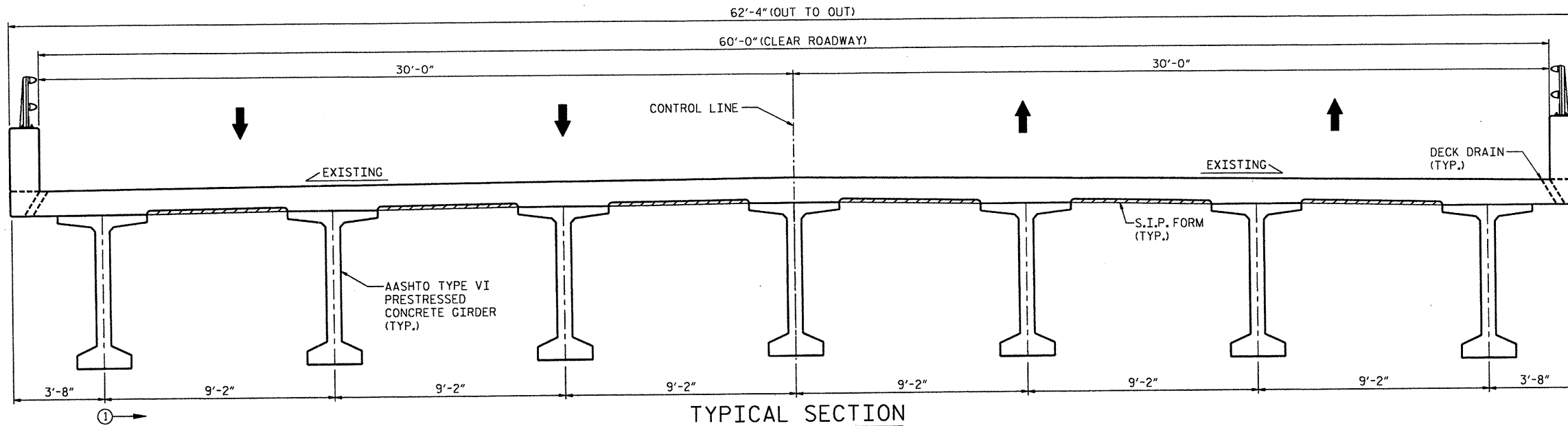
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 (US 64/264 OVER ROANOKE SOUND)

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 CHECKED BY : M. MOYER DATE : 04/2012

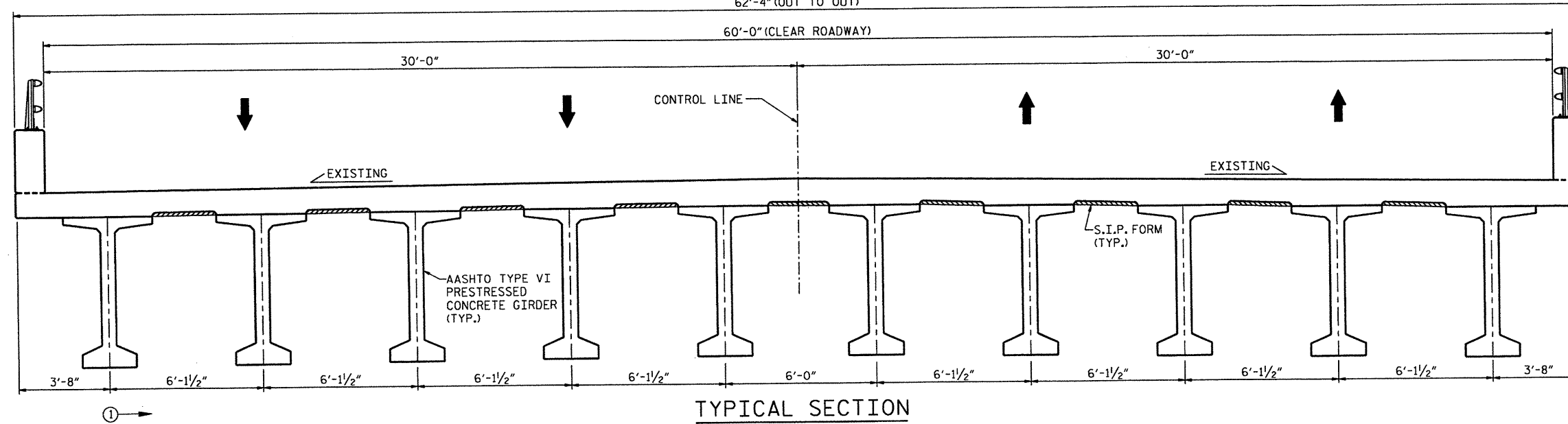


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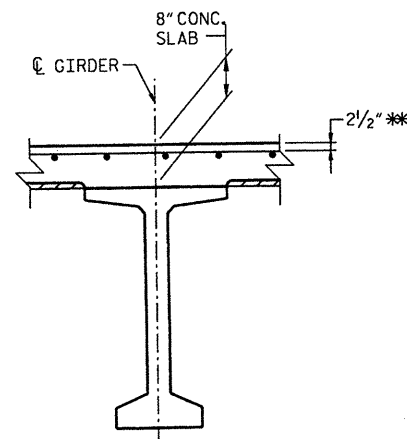
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(SPANS 16 AND 18 SHOWN)  
62'-4" (OUT TO OUT)



TYPICAL SECTION

(SPAN 17 SHOWN)



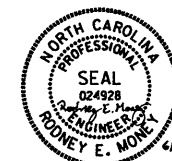
EXISTING SLAB SECTION

FOR SPANS 16 - 18  
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NOT SHOWN FOR CLARITY  
\*\* CONCRETE COVER PER "AS-BUILT PLANS"

NOTES

FOR NOTES, SEE "GENERAL NOTES AND TOTAL BILL OF MATERIAL".  
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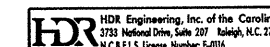
PROJECT NO. 17BP.1.P.14  
DARE COUNTY  
BRIDGE NO.: 12



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

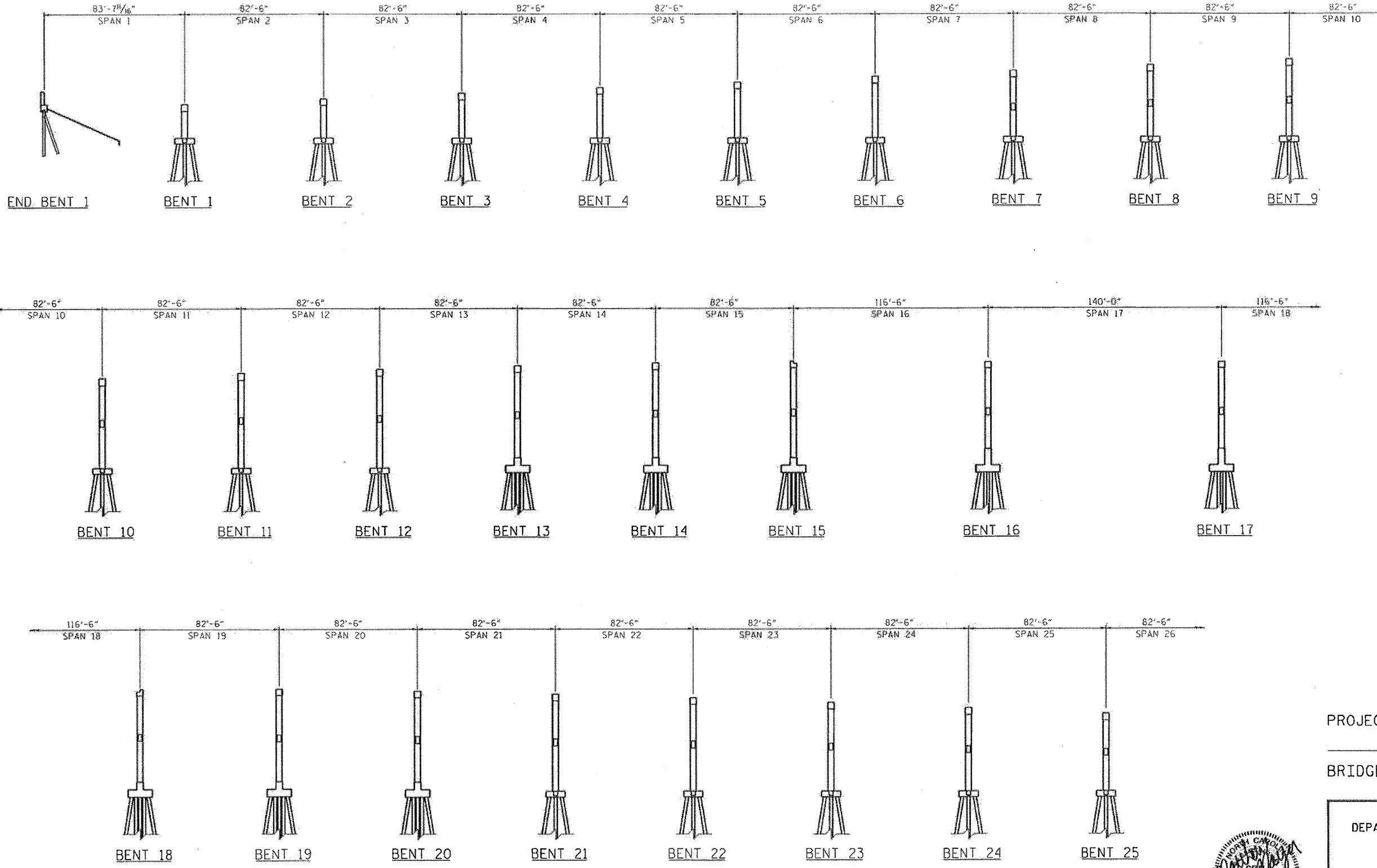
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(US 64/264 OVER ROANOKE SOUND)

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**BRIDGE PROFILE**

SECTIONS AT END BENTS AND BENTS ARE AT RIGHT ANGLES TO BENTS  
ALL DIMENSIONS ARE MEASURED ALONG CONTROL LINE

PROJECT NO. 17BP.1.P.14  
 \_\_\_\_\_ DARE \_\_\_\_\_ COUNTY  
 BRIDGE NO.: 12

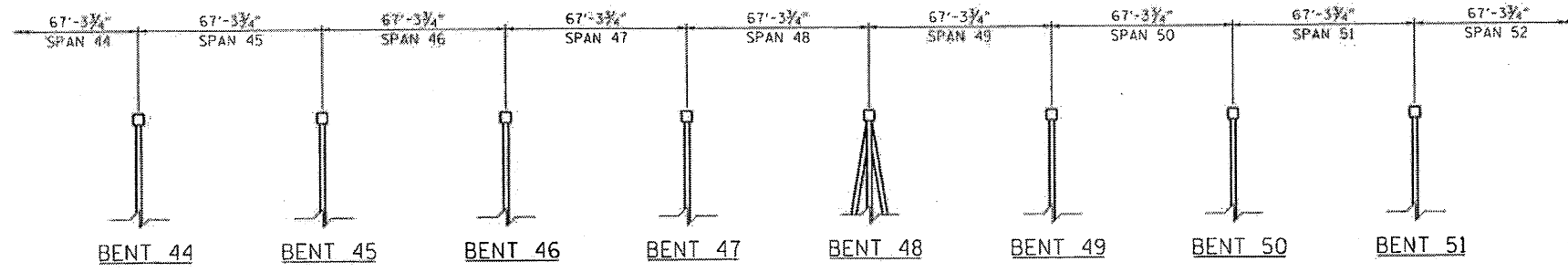
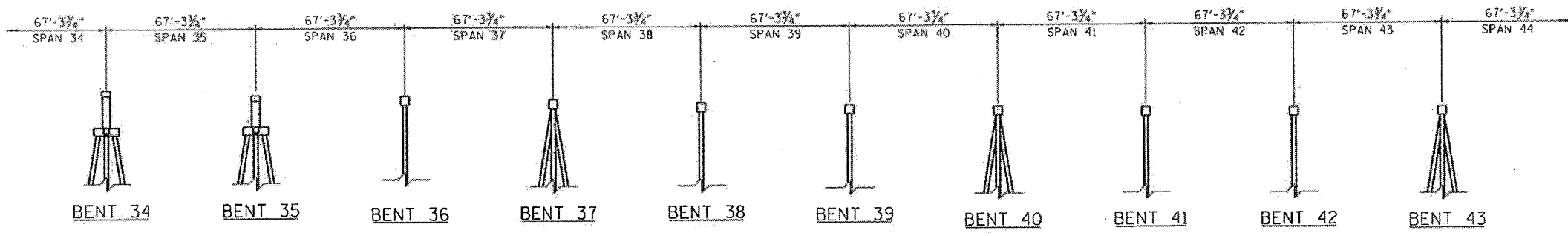
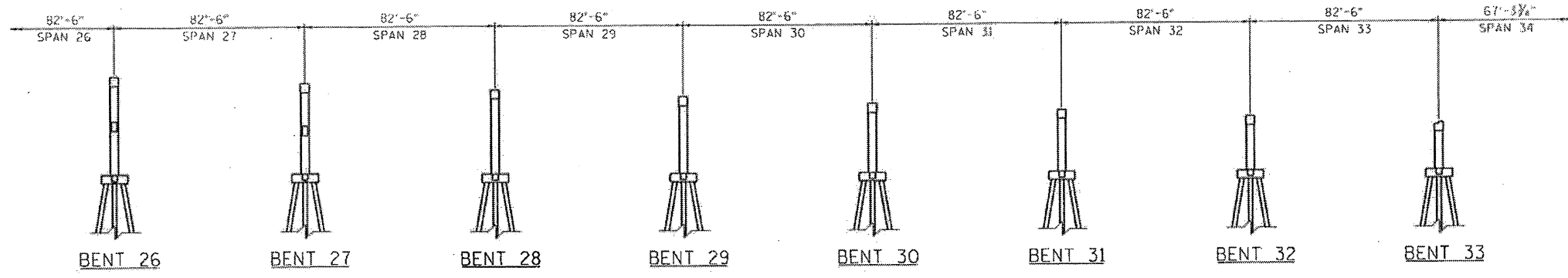


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DEPARTMENT OF TRANSPORTATION RALEIGH						
BRIDGE PROFILE SPANS 1-25						TOTAL SHEETS 28
REVISIONS						
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1			3			
2			4			

**HDR** HDR Engineering, Inc. of the Carolinas  
 2753 National Drive, Suite 201 Raleigh, NC 27615  
 NCEELS Linear Member F-015

DRAWN BY: D. CHAPMAN DATE: 04/2012  
 CHECKED BY: M. MOYER DATE: 04/2012

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**BRIDGE PROFILE**

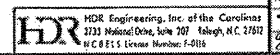
SECTIONS AT END BENTS AND BENTS ARE AT RIGHT ANGLES TO BENTS  
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PROJECT NO. 17BP.1.P.14  
DARE COUNTY  
 BRIDGE NO.: 12



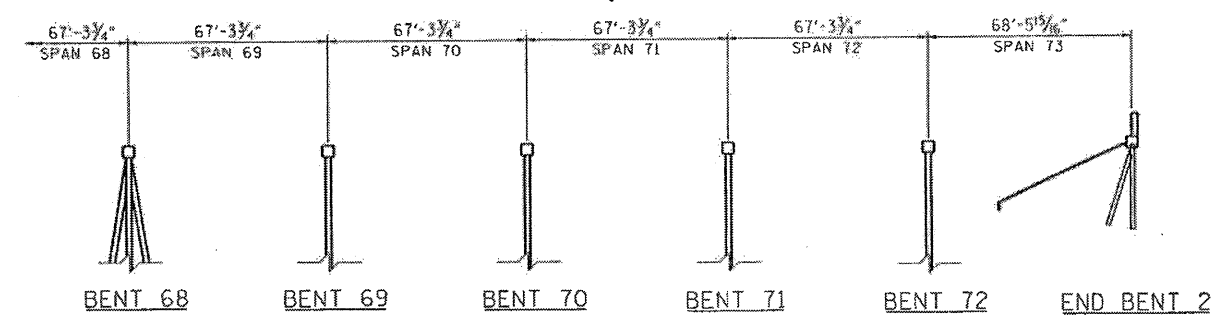
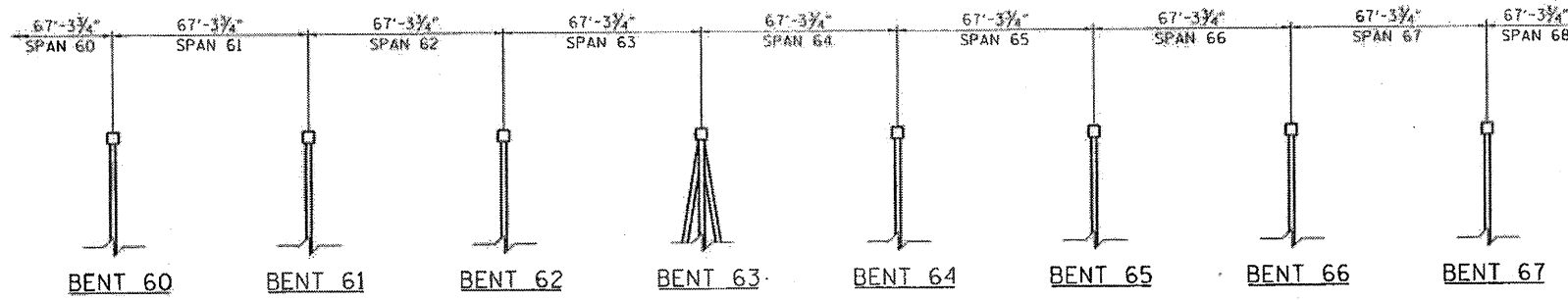
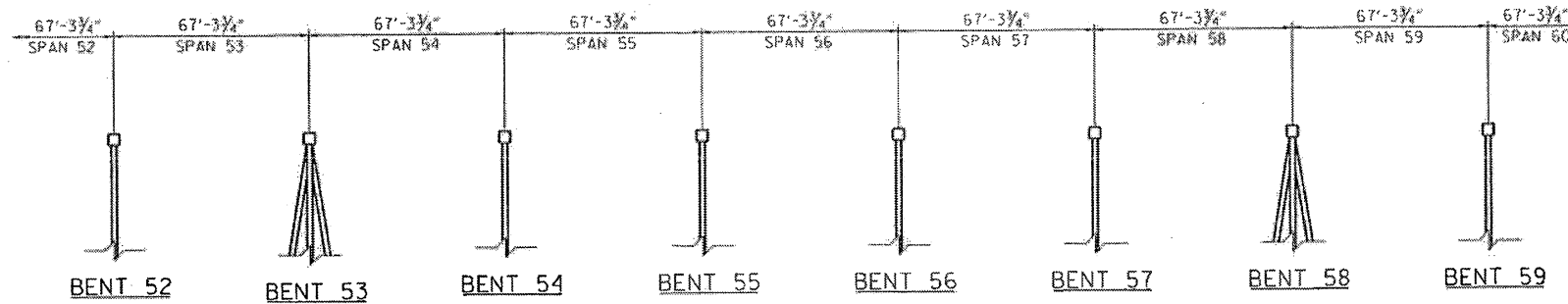
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TOTAL SHEETS 28					

DRAWN BY : G. CHAPMAN DATE : 04/2012  
 CHECKED BY : M. MOYER DATE : 04/2012



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**BRIDGE PROFILE**

SECTIONS AT END BENTS AND BENTS ARE AT RIGHT ANGLES TO BENTS  
ALL DIMENSIONS ARE MEASURED ALONG CONTROL LINE

PROJECT NO. 17BP.1.P.14  
DARE COUNTY  
BRIDGE NO.: 12

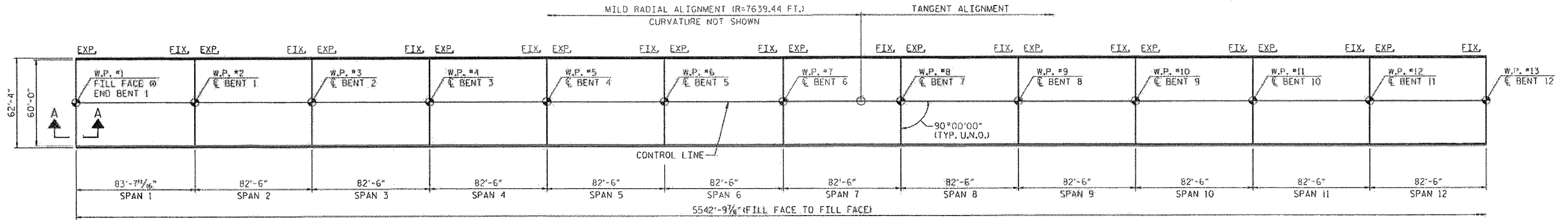


STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
**BRIDGE PROFILE  
SPANS 52-73**

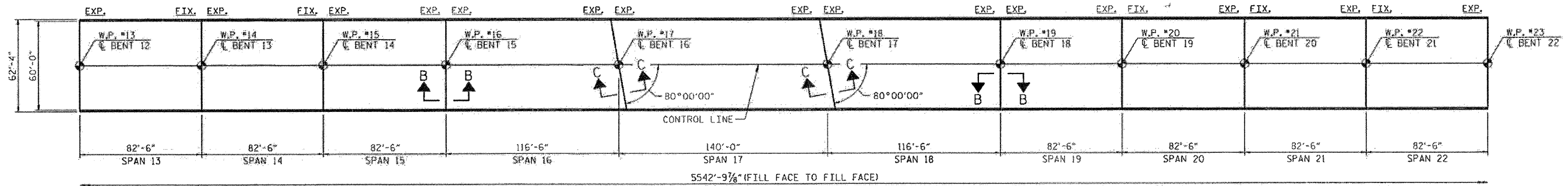
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CHECKED BY : M. MOYER DATE : 04/2012

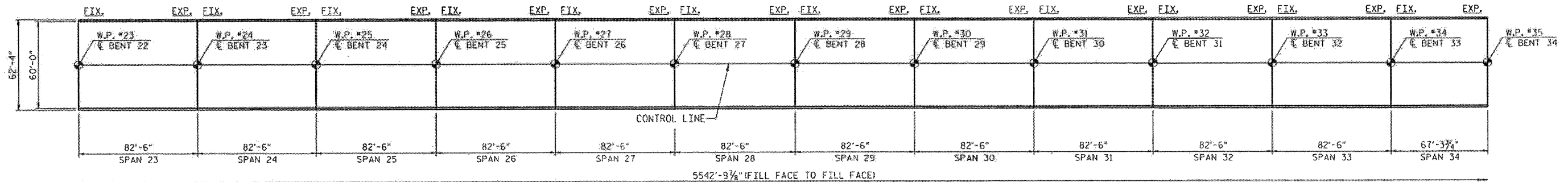
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PLAN VIEW  
SPANS 1-12



PLAN VIEW  
SPANS 13-22



PLAN VIEW  
SPANS 23-34

PROJECT NO. 17BP.1.P.14  
DARE COUNTY  
BRIDGE NO.: 12

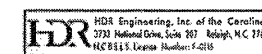
NOTES

- FOR SECTIONS A-A, B-B AND C-C, SEE "JOINT DETAILS".
- OPEN JOINTS OCCUR AT BENTS 1-14 & 19-34.
- DECK DRAINS NOT SHOWN.



4-16-12

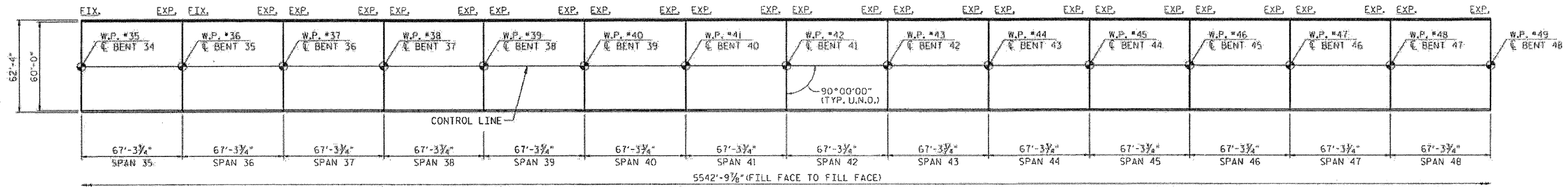
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
PLAN VIEW SPANS 1-34					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
					SHEET NO. 5-7 TOTAL SHEETS 28



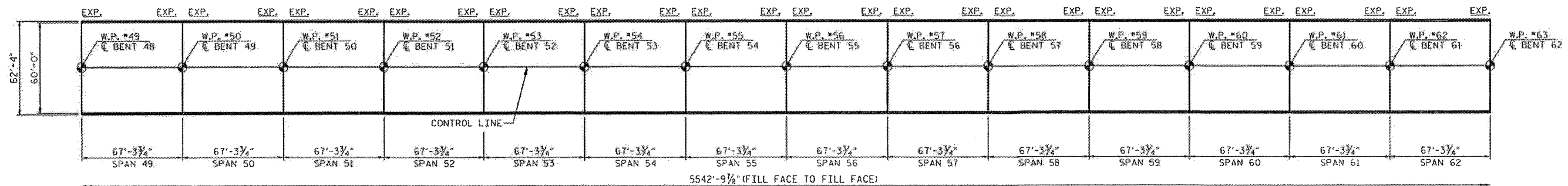
HDR Engineering, Inc. of the Carolinas  
3733 Redwood Glen, Suite 207 Raleigh, NC 27610  
NCEES License Number: 74216

DRAWN BY: D. CHAPMAN DATE: 04/2012  
CHECKED BY: M. MOYER DATE: 04/2012

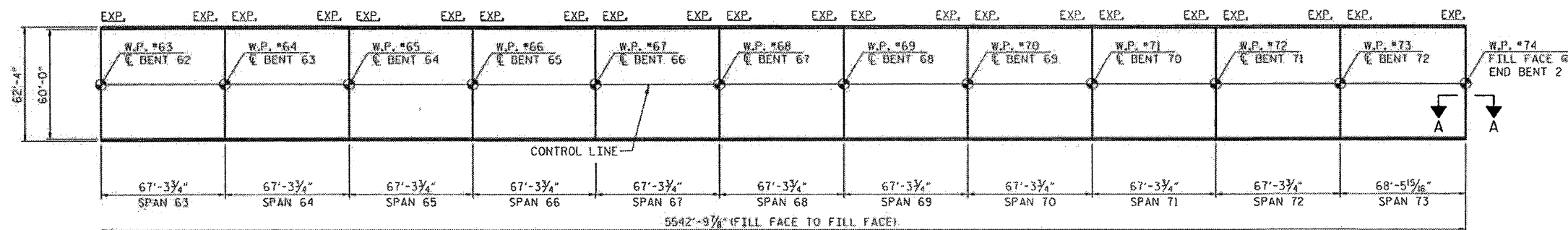
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PLAN VIEW  
SPANS 35-48



PLAN VIEW  
SPANS 49-62

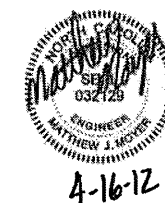


PLAN VIEW  
SPANS 63-73

NOTES

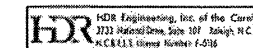
- FOR SECTION A-A, SEE "JOINT DETAILS".
- OPEN JOINTS OCCUR AT BENTS 34-72.
- DECK DRAINS NOT SHOWN.

PROJECT NO. 17BP.1.P.14  
DARE COUNTY  
BRIDGE NO.: 12

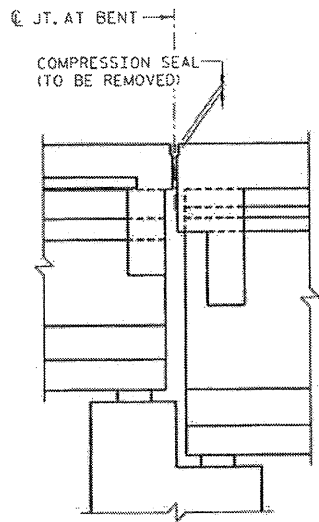


STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
PLAN VIEW SPANS 35-73					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			2		
2			3		
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					TOTAL SHEETS 28

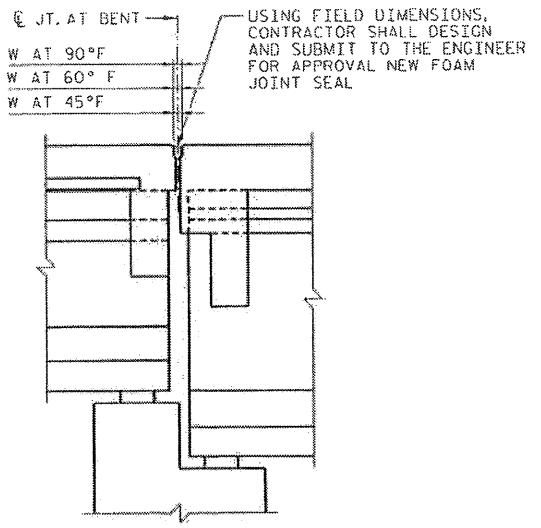
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CHECKED BY: M. MOYER DATE: 04/2012



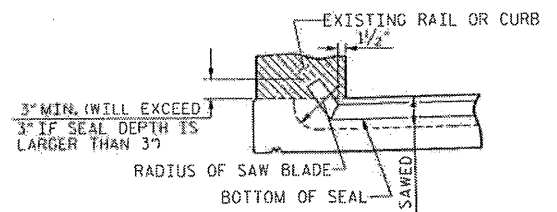
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 USER: jpofters DATE: 4/16/2012  
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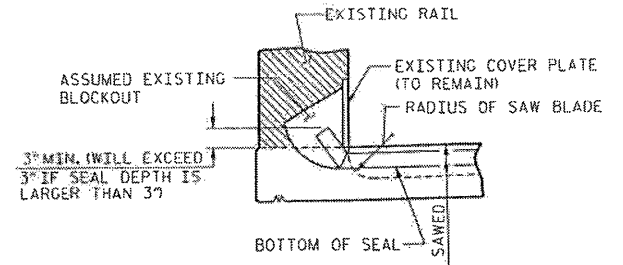
EXISTING SECTION AT BENTS 15 & 18



PROPOSED SECTION AT BENTS 15 & 18



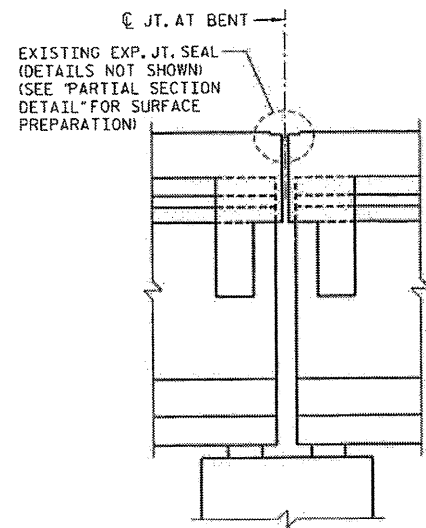
JOINT DETAIL AT RAIL  
AT END BENTS AND AT BENTS 15 & 18



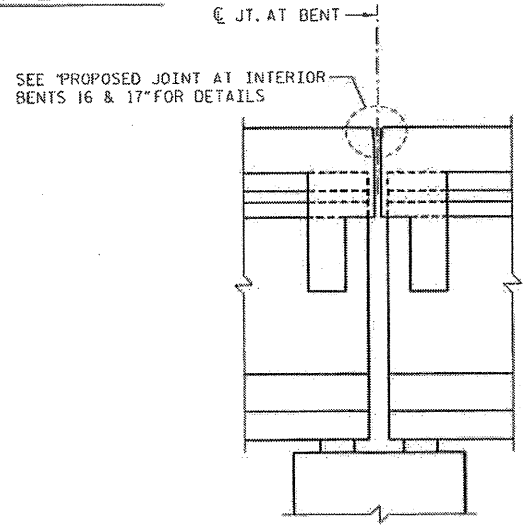
JOINT DETAIL AT RAIL  
AT BENTS 16 & 17

**NOTES**  
FOR NOTES, SEE "GENERAL NOTES AND TOTAL BILL OF MATERIAL."

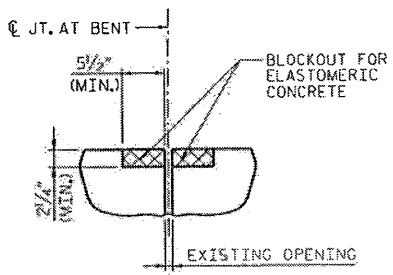
**SECTION B-B**



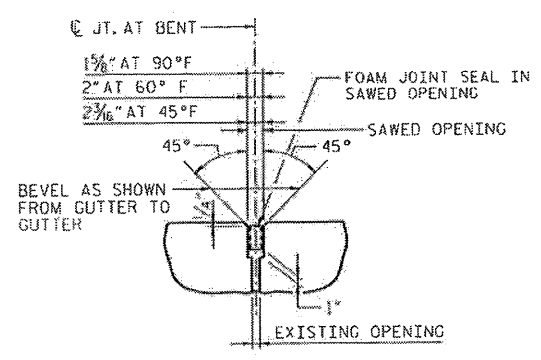
EXISTING SECTION AT BENTS 16 & 17



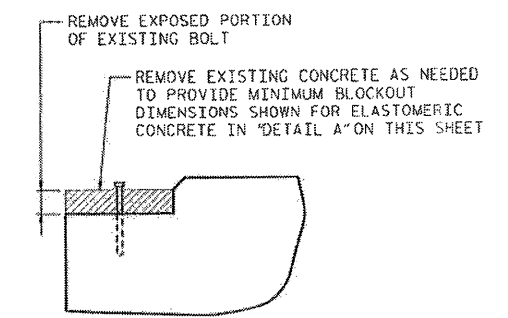
PROPOSED SECTION AT BENTS 16 & 17



DETAIL A  
PRE-SAWED ELASTOMERIC CONCRETE



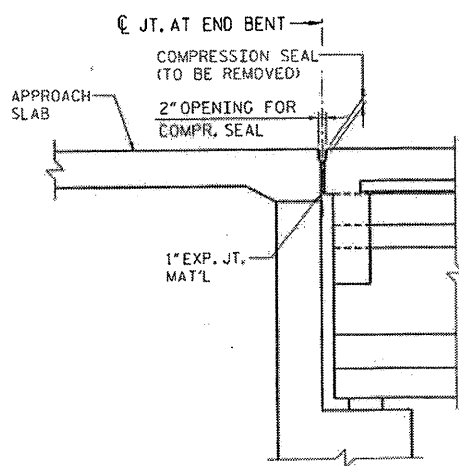
DETAIL B  
SAWED OPENING DETAILS



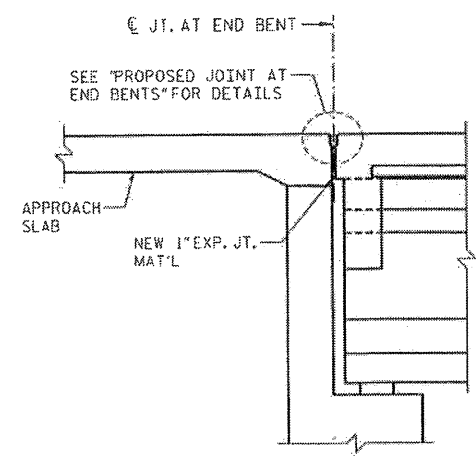
PARTIAL SECTION DETAIL

PROPOSED JOINT AT INTERIOR BENTS 16 & 17

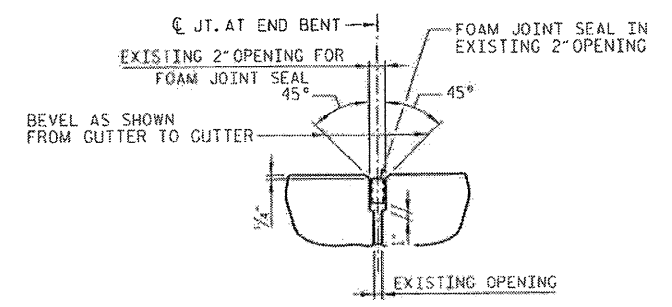
**SECTION C-C**



EXISTING SECTION AT END BENTS



PROPOSED SECTION AT END BENTS

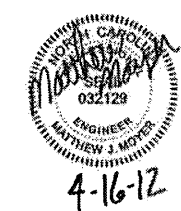


PROPOSED JOINT AT END BENTS

**SECTION A-A**

DRAWN BY : D. CHAPMAN DATE : 04/2012  
CHECKED BY : M. MOYER DATE : 04/2012

PROJECT NO. 17BP.1.P.14  
DARE COUNTY  
BRIDGE NO.: 12



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
JOINT DETAILS					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
					SHEET NO. 5-9 TOTAL SHEETS 78

HDR Engineering, Inc. of the Carolinas  
3223 National Drive, Suite 707 Raleigh, NC 27608  
NCEES License Number: 7-029

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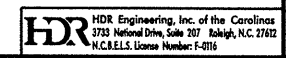
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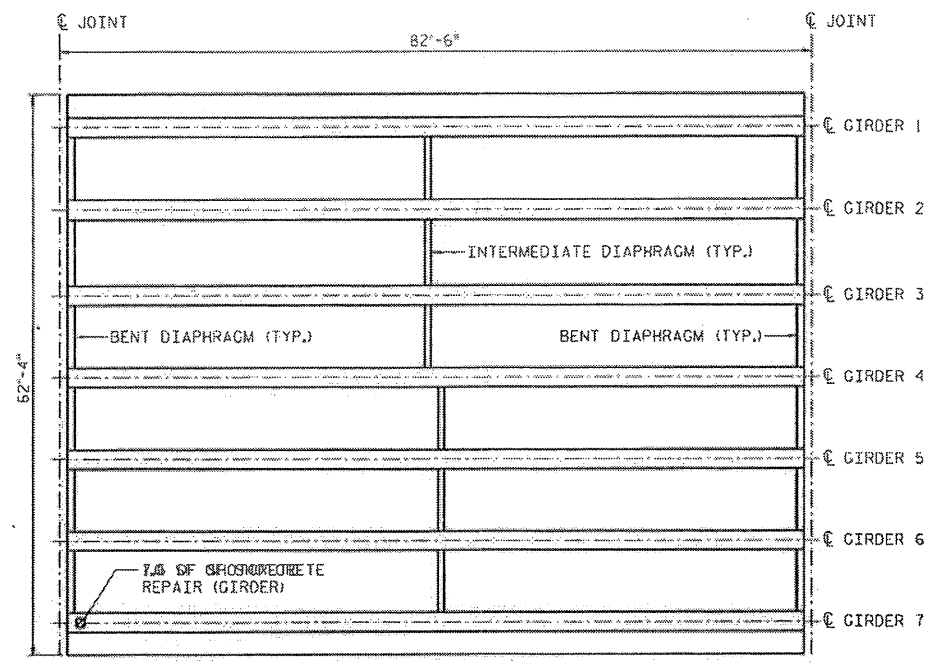
PROJECT NO. 17BP.1.P.14  
                     DARE                      COUNTY  
BRIDGE NO.: 12

STATE OF NORTH CAROLINA					
DEPARTMENT OF TRANSPORTATION					
RALEIGH					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-10					TOTAL SHEETS 28

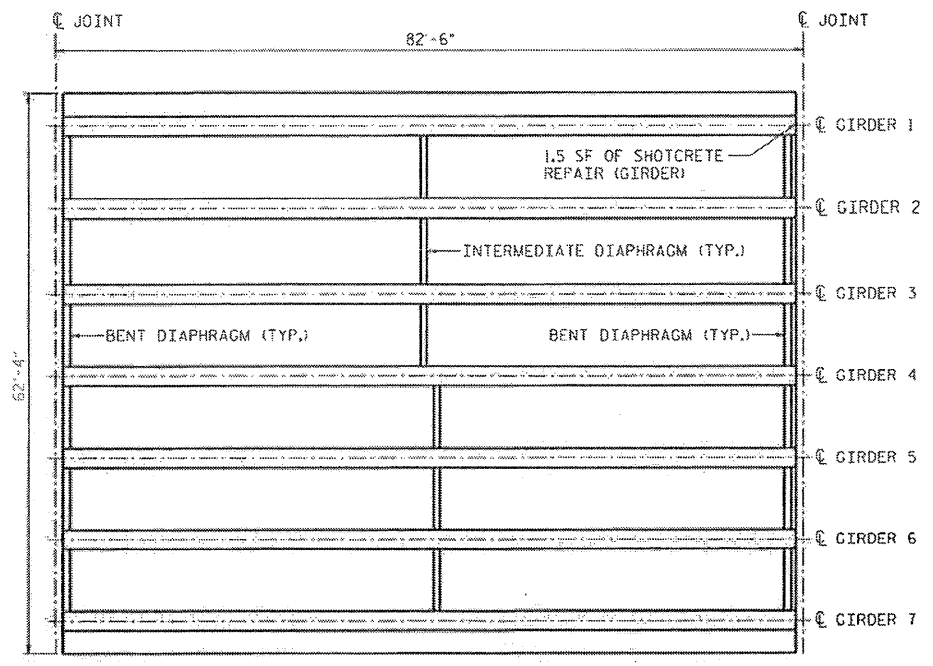
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CHECKED BY :	DATE :



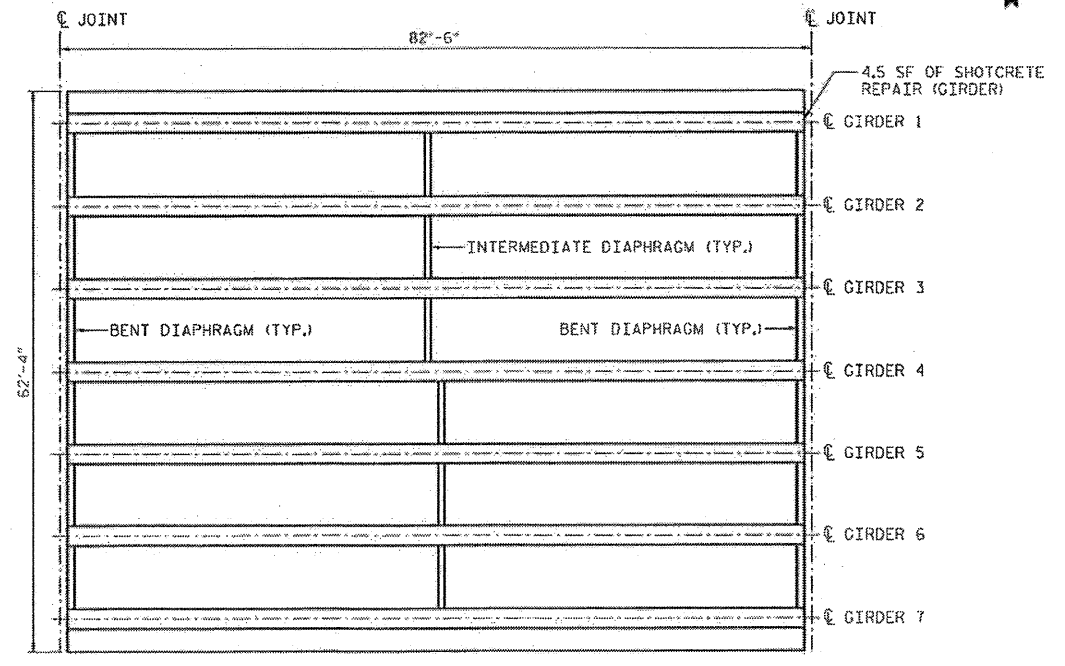
BILL OF MATERIAL		
SPANS 4, 15, 23 & 28		
SHOTCRETE REPAIR SPAN 4	CF	1.3
SHOTCRETE REPAIR SPAN 15	CF	0.3
SHOTCRETE REPAIR SPAN 23	CF	0.8
SHOTCRETE REPAIR SPAN 28	CF	0.3



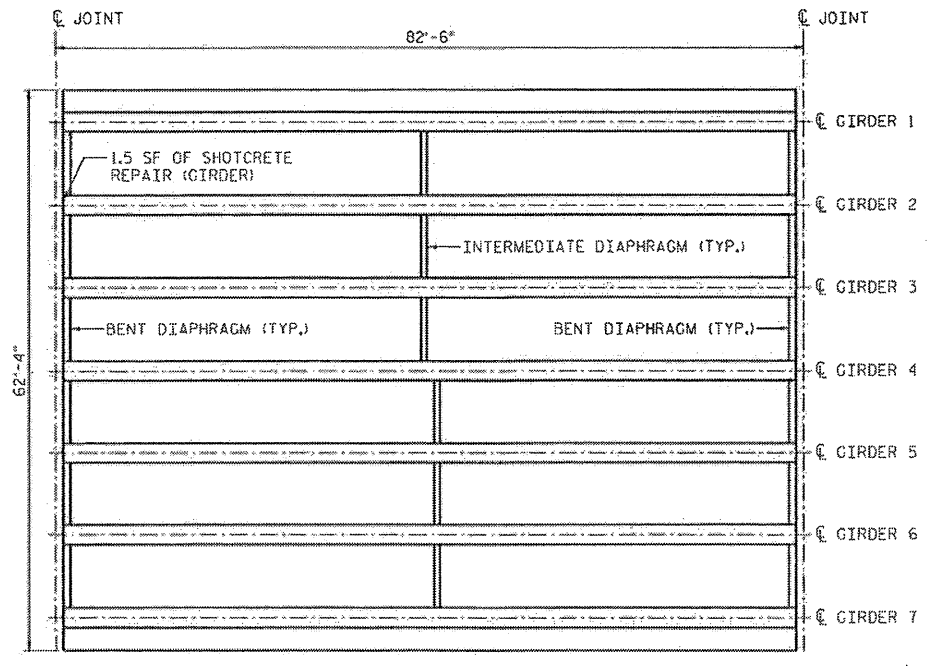
BENT 3 BENT 4  
**SPAN 4 - UNDERSIDE**



BENT 14 BENT 15  
**SPAN 15 - UNDERSIDE**



BENT 22 BENT 23  
**SPAN 23 - UNDERSIDE**

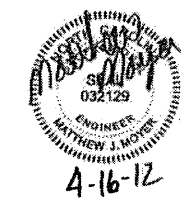


BENT 27 BENT 28  
**SPAN 28 - UNDERSIDE**

**NOTES**  
 FOR NOTES AND REPAIR DETAILS, SEE "SUPERSTRUCTURE REPAIR DETAILS".  
 DECK DRAINS NOT SHOWN.

SHOTCRETE REPAIR

PROJECT NO. 17BP.1.P.14  
DARE COUNTY  
 BRIDGE NO.: 12



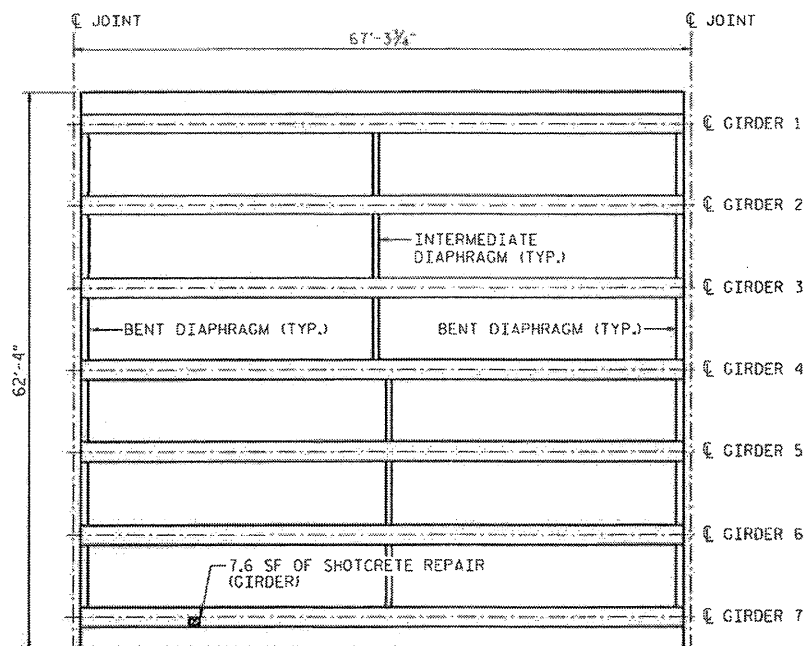
REVISIONS						SHEET NO. 5-11
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			2			TOTAL SHEETS 28
2			3			

**HDR** HDR Engineering, Inc. of the Carolinas  
 3733 National Drive, Suite 207 Raleigh, NC 27617  
 NCE ELEC License Number: 8-010

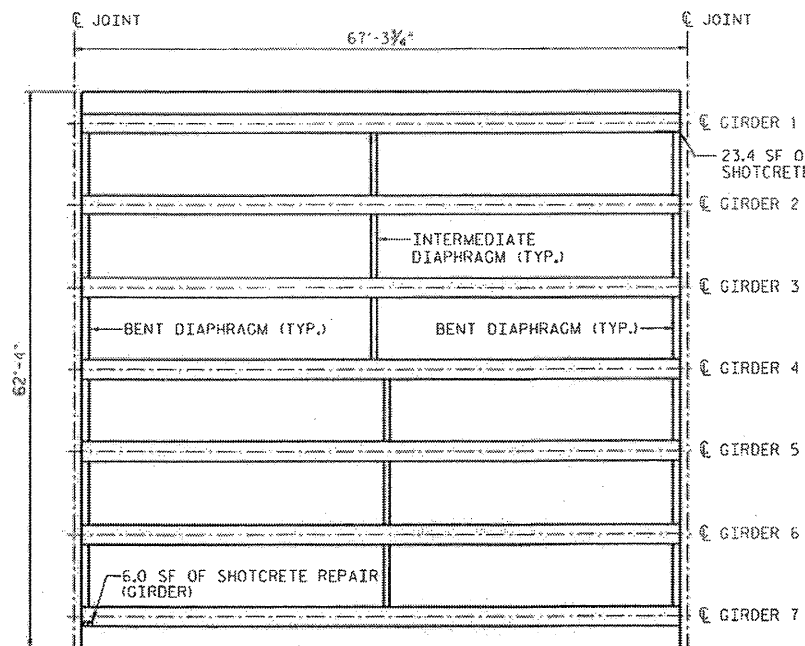
DRAWN BY: D. CHAPMAN DATE: 04/2012  
 CHECKED BY: M. MOYER DATE: 04/2012

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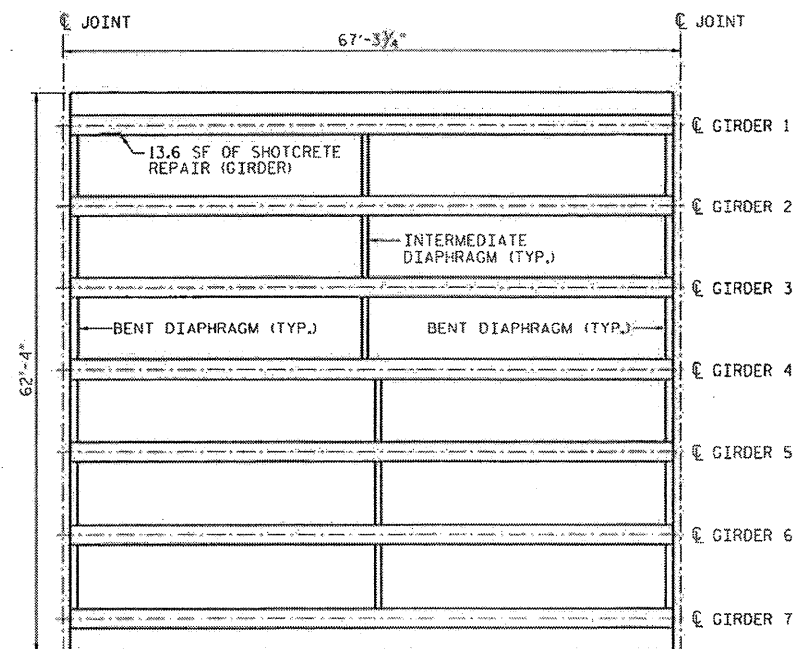
BILL OF MATERIAL	
SPANS 36, 39, 42 & 43	
SHOTCRETE REPAIR SPAN 36	CF 1.3
SHOTCRETE REPAIR SPAN 39	CF 4.9
SHOTCRETE REPAIR SPAN 42	CF 2.3
SHOTCRETE REPAIR SPAN 43	CF 3.7



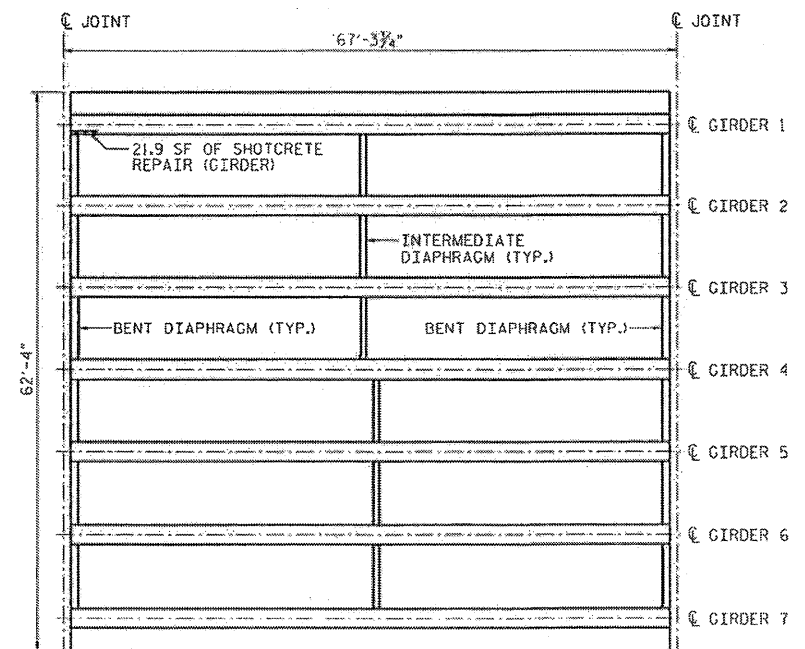
BENT 35 BENT 36  
SPAN 36 - UNDERSIDE



BENT 38 BENT 39  
SPAN 39 - UNDERSIDE



BENT 41 BENT 42  
SPAN 42 - UNDERSIDE



BENT 42 BENT 43  
SPAN 43 - UNDERSIDE

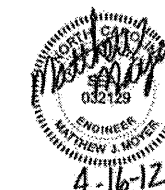
**NOTES**

FOR NOTES AND REPAIR DETAILS, SEE "SUPERSTRUCTURE REPAIR DETAILS".

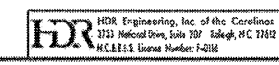
DECK DRAINS NOT SHOWN.

SHOTCRETE REPAIR

PROJECT NO. 17BP.1.P.14  
DARE COUNTY  
 BRIDGE NO.: 12



STATE OF NORTH CAROLINA		DEPARTMENT OF TRANSPORTATION	
RALEIGH			
SUPERSTRUCTURE REPAIR LOCATIONS			
SPANS 36, 39, 42 & 43			
REVISIONS			
NO.	BY:	DATE:	NO.
1			1
2			2
			SHEET NO. 5-12
			TOTAL SHEETS 28

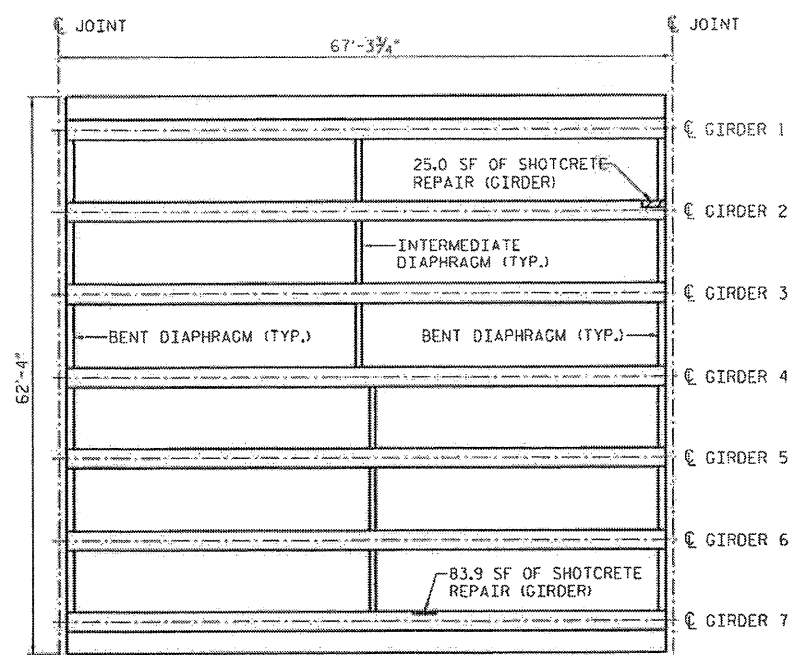


DRAWN BY : D. CHAPMAN DATE : 04/2012  
 CHECKED BY : M. MOYER DATE : 04/2012

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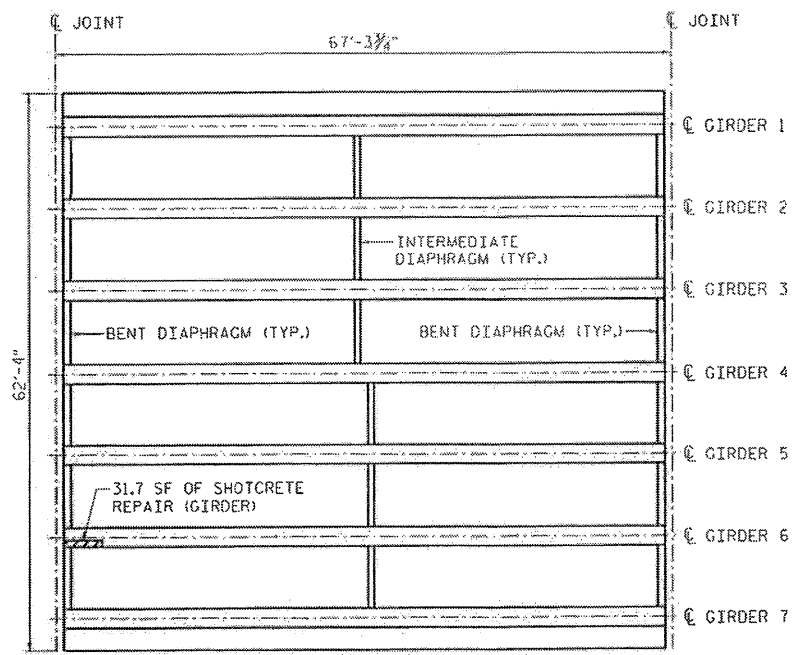


BILL OF MATERIAL		
SPANS 45, 52, 59 & 61		
SHOTCRETE REPAIR SPAN 45	CF	18.1
SHOTCRETE REPAIR SPAN 52	CF	5.3
SHOTCRETE REPAIR SPAN 59	CF	0.6
SHOTCRETE REPAIR SPAN 61	CF	2.1



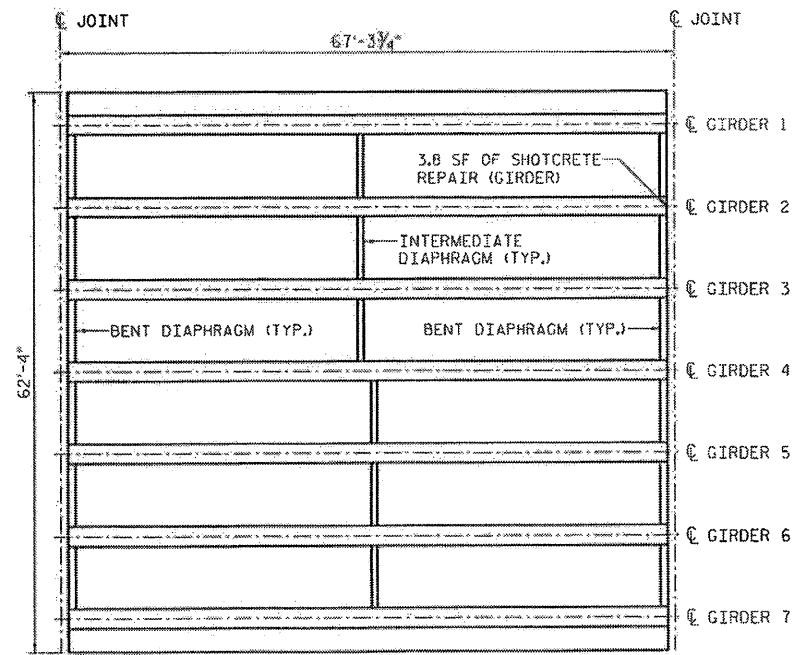
BENT 44 BENT 45

SPAN 45 - UNDERSIDE



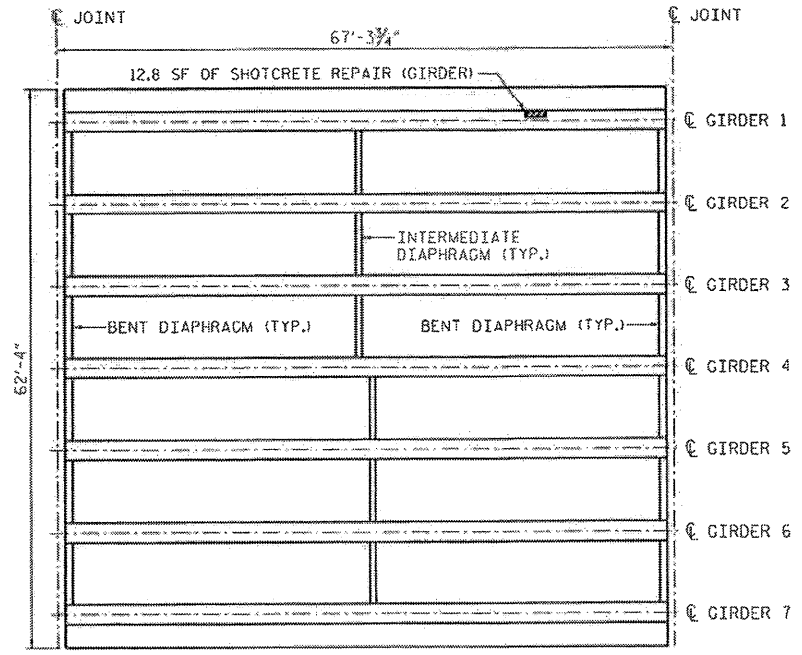
BENT 51 BENT 52

SPAN 52 - UNDERSIDE



BENT 58 BENT 59

SPAN 59 - UNDERSIDE



BENT 60 BENT 61

SPAN 61 - UNDERSIDE

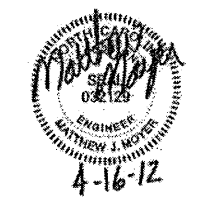
NOTES

FOR NOTES AND REPAIR DETAILS, SEE "SUPERSTRUCTURE REPAIR DETAILS".

DECK DRAINS NOT SHOWN.

SHOTCRETE REPAIR

PROJECT NO. 17BP.1.P.14  
DARE COUNTY  
 BRIDGE NO.: 12



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUPERSTRUCTURE  
 REPAIR LOCATIONS  
 SPANS 45, 52, 59 & 61**

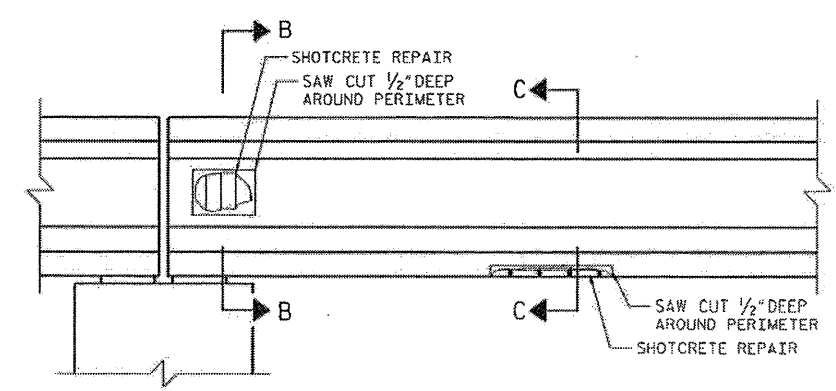
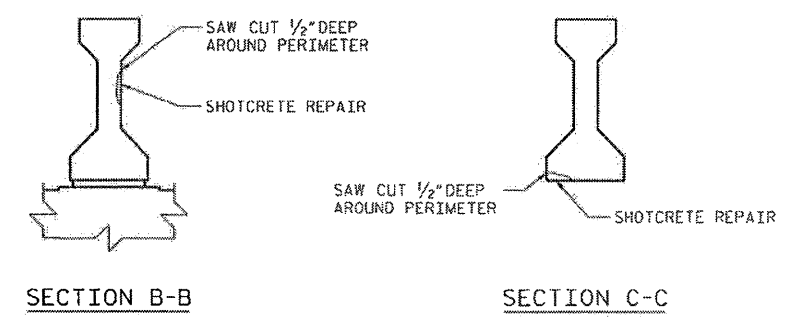
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NO.	BY	DATE	NO.	BY	DATE	
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2			4			

DRAWN BY : D. CHAPMAN DATE : 04/2012  
 CHECKED BY : M. MOYER DATE : 04/2012

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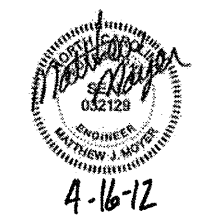


**NOTES**  
 FOR NOTES, SEE "GENERAL NOTES AND TOTAL BILL OF MATERIAL".

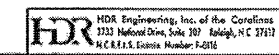


**CONCRETE GIRDER REPAIR DETAIL**

PROJECT NO. 17BP.1.P.14  
 \_\_\_\_\_ DARE \_\_\_\_\_ COUNTY  
 BRIDGE NO.: 12



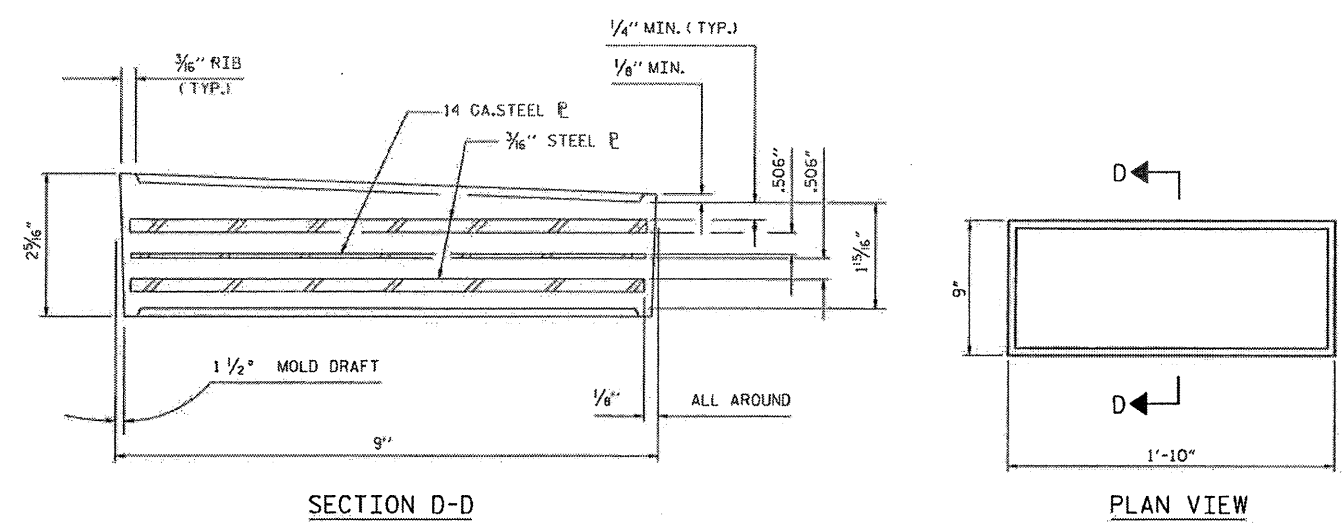
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE UNDERSIDE REPAIR DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. 5-14 TOTAL SHEETS 28



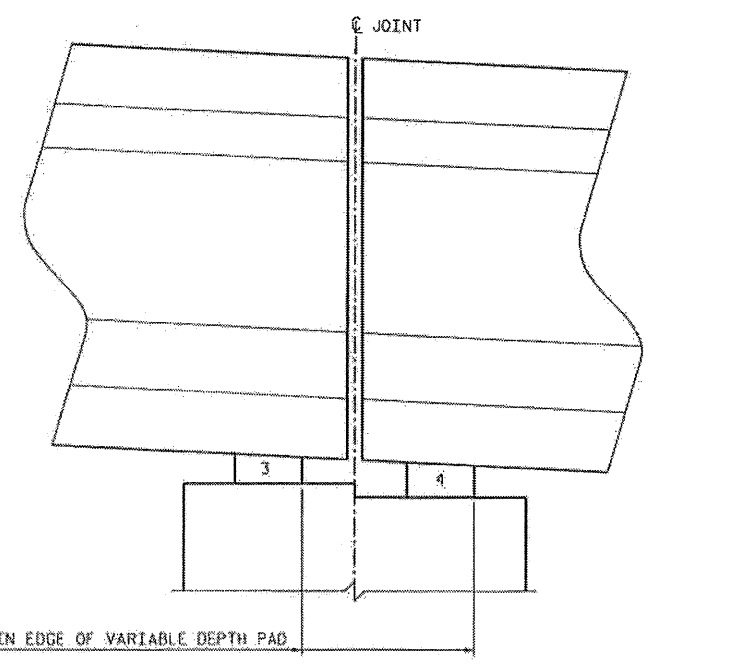
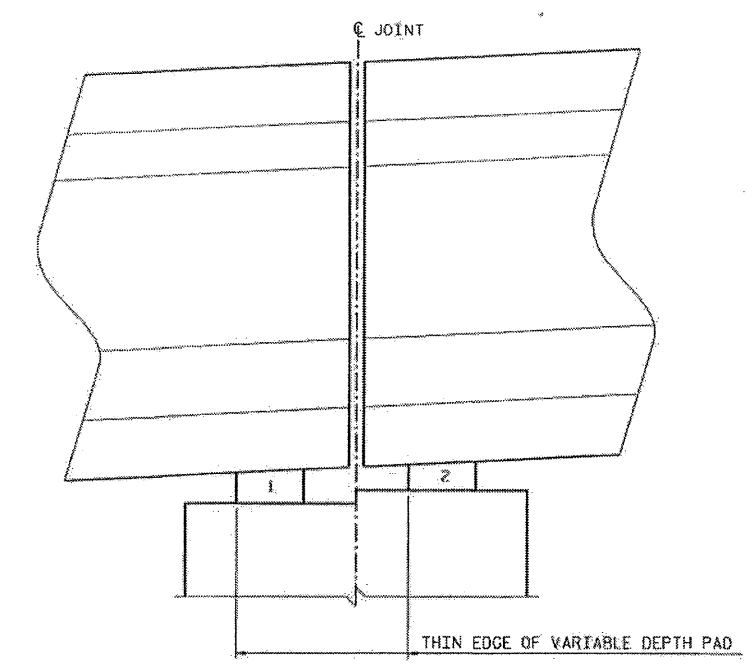
DRAWN BY : D. CHAPMAN DATE : 04/2012  
 CHECKED BY : M. MOYER DATE : 04/2012

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 PENTABLE: Dore 12.pent.tbl  
 TIME: 3:36:53 PM

**NOTES**  
 FOR NOTES, SEE "GENERAL NOTES AND TOTAL BILL OF MATERIAL".  
 REPLACEMENT BEARING PADS SHALL BE 50 DUROMETER.



**ELASTOMERIC BEARING DETAILS**  
 BEARING DIMENSIONS PER "AS-BUILT PLANS"



SUPPORT	LOCATION		REPAIR	PAD INSTALL ORIENTATION	* RETAINER TYPE
	SPAN	GDR			
BENT 5	6	1	REPLACEMENT	2	A
BENT 6	7	1	REPLACEMENT	2	A
BENT 26	26	1	REPLACEMENT	3	A
BENT 27	28	7	ADJUSTMENT	-	A
BENT 28	29	1	REPLACEMENT	4	A
BENT 39	40	7	ADJUSTMENT	-	B

\* FOR RETAINER DETAILS SEE SHEET S-15A

SUPPORT	DL (KIP)		LL+I (KIP)	
	BACK	AHEAD	BACK	AHEAD
BENT 5	98	98	88	88
BENT 6	98	98	88	88
BENT 26	98	98	88	88
BENT 27	98	98	88	88
BENT 28	98	98	88	88
BENT 39	71	71	86	86

**PAD INSTALL ORIENTATION DIAGRAM**

PROJECT NO. 17BP.1.P.14  
 DARE COUNTY  
 BRIDGE NO.: 12



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUPERSTRUCTURE BEARING PAD REPAIRS FOR BRIDGE 12**  
 (1 OF 2)

DRAWN BY: D. CHAPMAN DATE: 04/2012  
 CHECKED BY: M. MOYER DATE: 04/2012

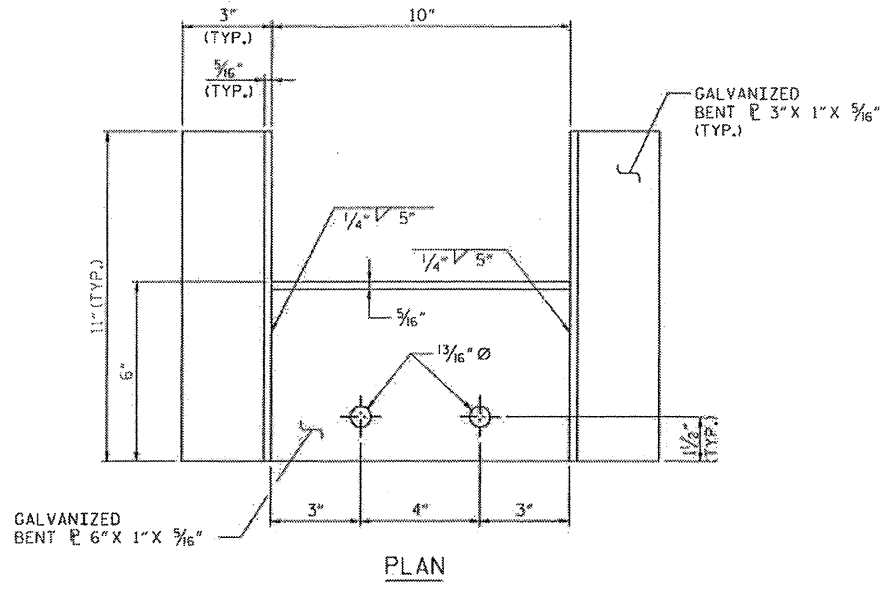


HDR Engineering, Inc. of the Carolinas  
 3733 Hedwood Drive, Suite 307 Raleigh, NC 27612  
 N.C. License Number 7-003

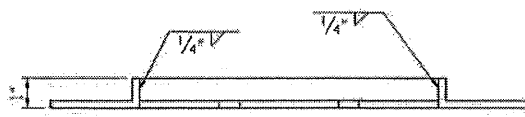
REVISIONS						SHEET NO. S-15
NO.	BY:	DATE:	NO.	BY:	DATE:	
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2			4			

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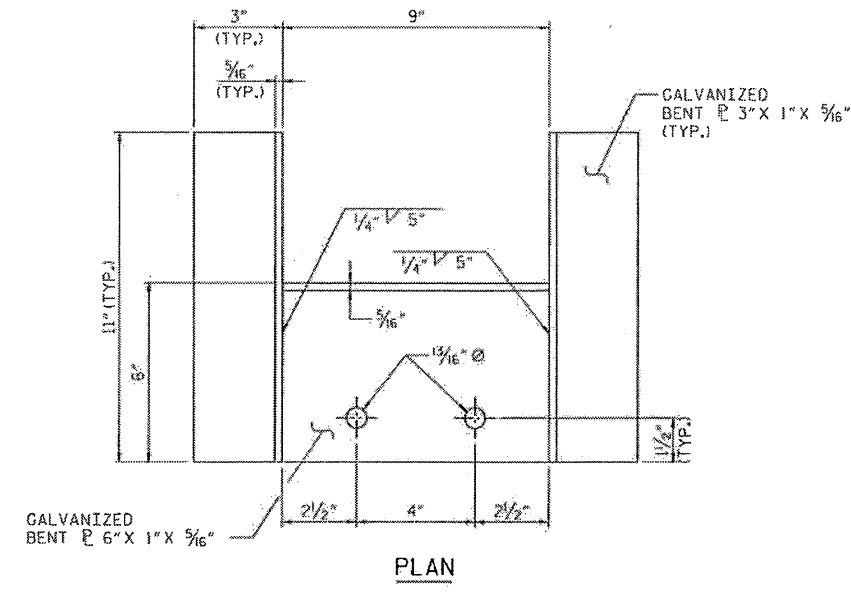


PLAN

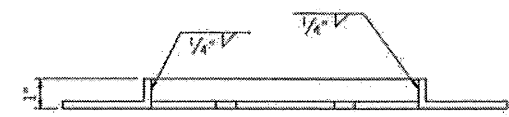


ELEVATION

**TYPE A RETAINER RING**  
(10 REQ'D)

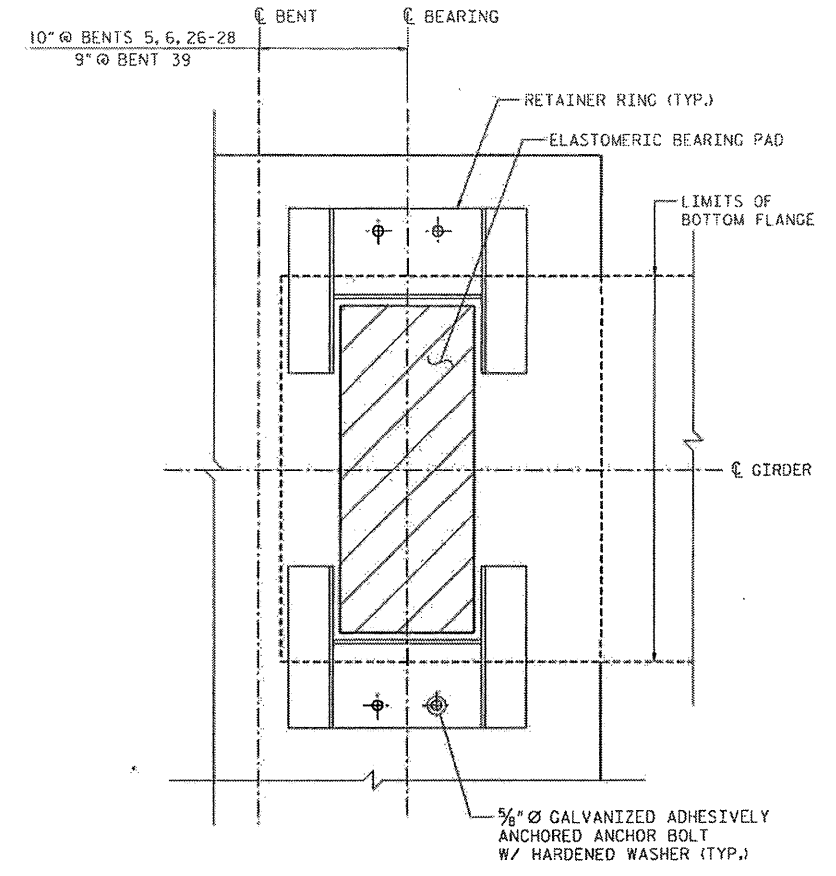


PLAN



ELEVATION

**TYPE B RETAINER RING**  
(2 REQ'D)



**GENERAL PLAN**  
(BENT 6, GIRDER 1 SHOWN, OTHERS SIMILAR.)

**NOTES**

- STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 36 OR HIGHER.
- STRUCTURAL STEEL, ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
- ADHESIVELY ANCHORED ANCHOR BOLTS SHALL CONFORM TO THE STANDARD SPECIFICATIONS WITH THE EXCEPTION OF FIELD TESTING. FIELD TESTING OF THE ADHESIVELY ANCHORED ANCHOR BOLTS IS NOT REQUIRED.
- THE STRUCTURAL STEEL FABRICATOR SHALL PROVIDE SHOP DRAWINGS TO THE ENGINEER FOR REVIEW AND APPROVAL.
- ANCHOR BOLTS SHALL BE SHIFTED AS NECESSARY TO CLEAR EXISTING REINFORCING STEEL.
- INSTALLATION OF ADHESIVELY ANCHORED ANCHOR BOLTS AND RETAINER RINGS SHALL BE INCLUDED IN THE LUMP SUM PRICE FOR STRUCTURAL STEEL.

DRAWN BY : M. SELLS      DATE : 04/2012  
 CHECKED BY : M. MOYER      DATE : 04/2012

PROJECT NO. 17BP.1.P.14  
 DARE COUNTY  
 BRIDGE NO.: 12

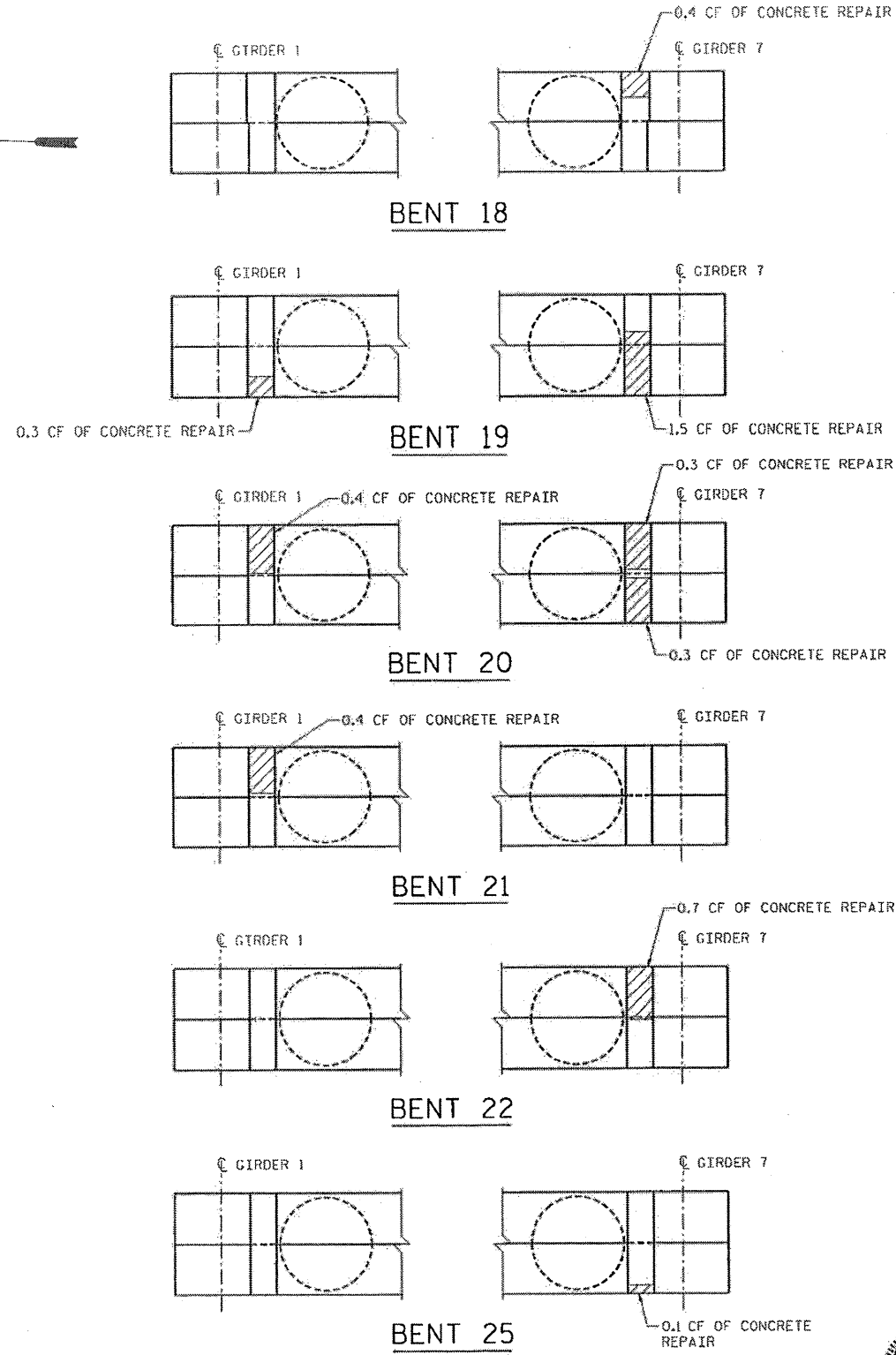
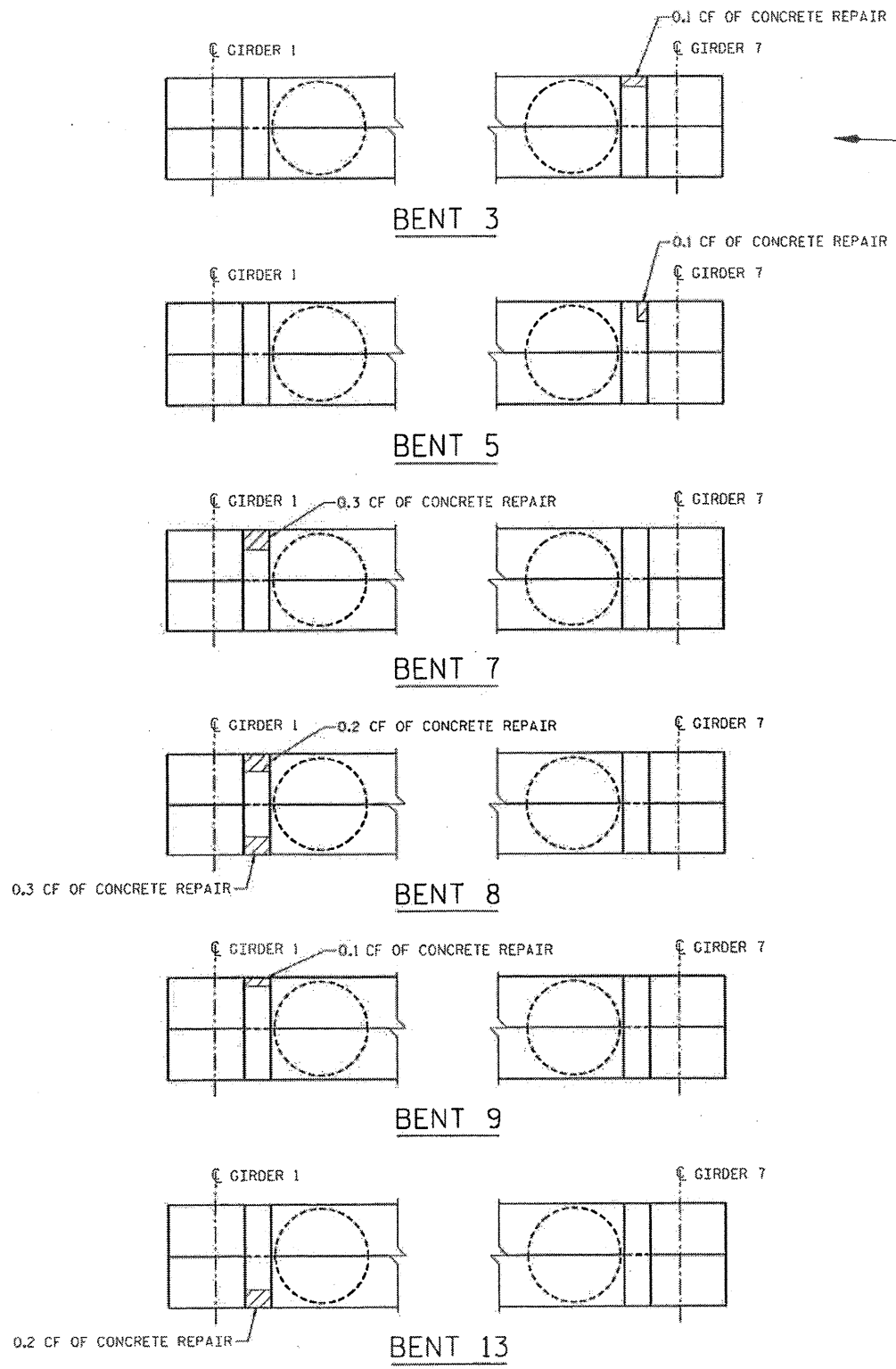


4-17-12

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. 5-154 TOTAL SHEETS 28
<b>SUPERSTRUCTURE BEARING PAD REPAIRS FOR BRIDGE 12 (2 OF 2)</b>						
REVISIONS						
NO.	BY	DATE	NO.	BY	DATE	
1			3			
2			4			



HDR Engineering, Inc. of the Carolinas  
 2728 National Drive, Suite 207 Raleigh, NC 27601  
 N.C. REG. LICENSE NUMBER: F-0115



**NOTES**  
 FOR NOTES, SEE "GENERAL NOTES AND TOTAL BILL OF MATERIAL".

PLOT DREVERB NCDOT.ppt mono\_eng\_5d.dwt  
 USER: porters DATE: 4/16/2012  
 FILE: North Carolina Dept. of Transportation\NCDOT\C2011\STROSN.DWG\Call TO 3\13.00.CAD\Draw 2\NCA001V1.J.D.DAREIZ.16.DWG

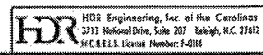
DRAWN BY : D. CHAPMAN DATE : 04/2012  
 CHECKED BY : M. MOYER DATE : 04/2012

PROJECT NO. 17BP.1.P.14  
DARE COUNTY  
 BRIDGE NO.: 12



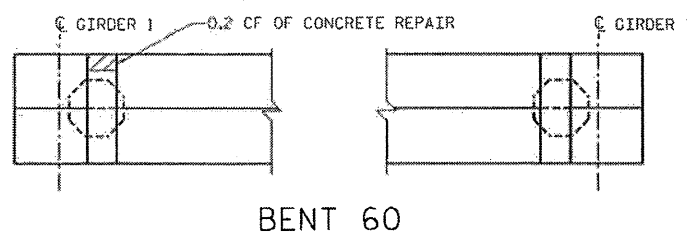
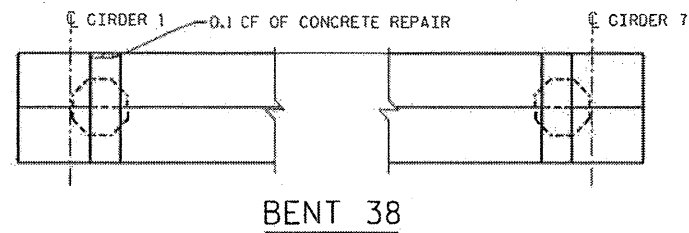
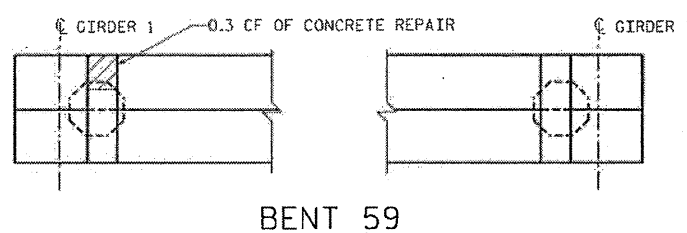
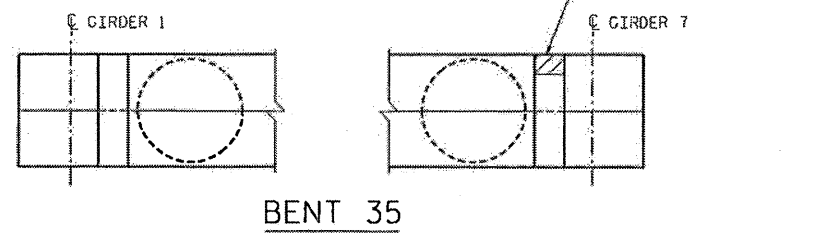
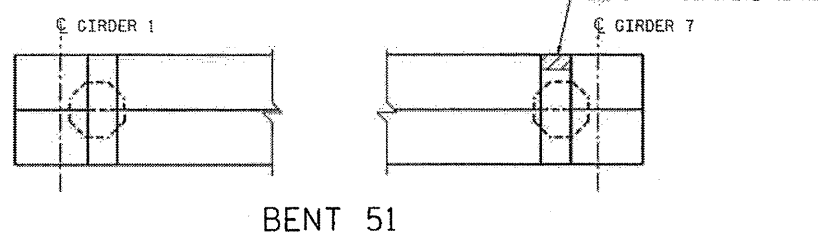
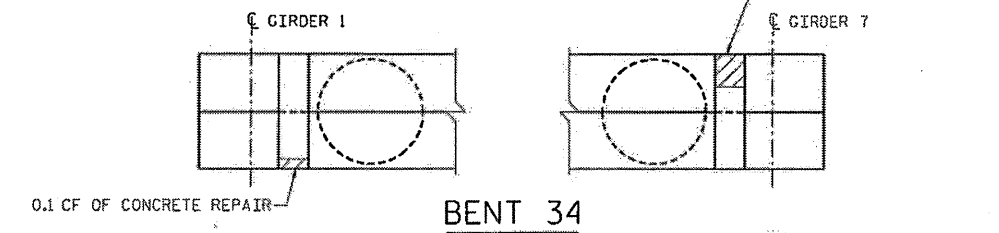
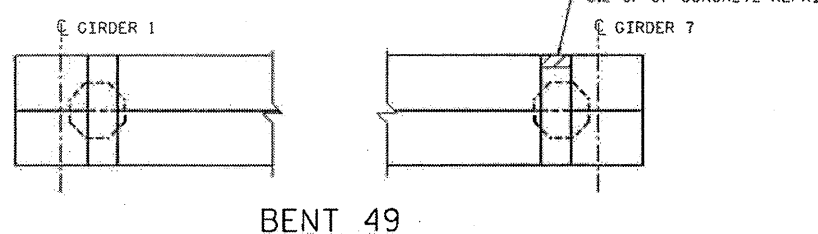
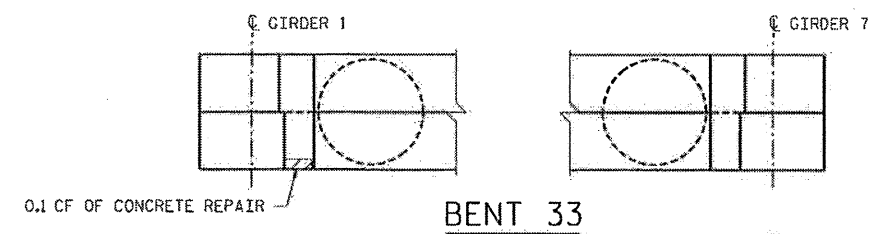
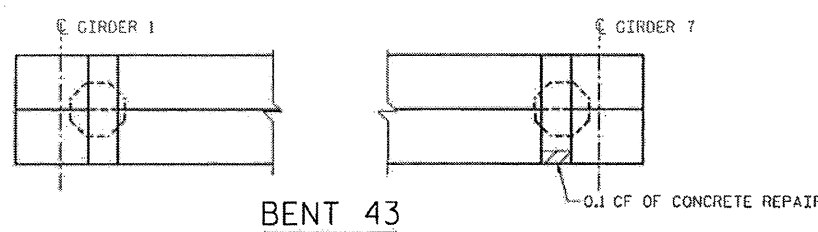
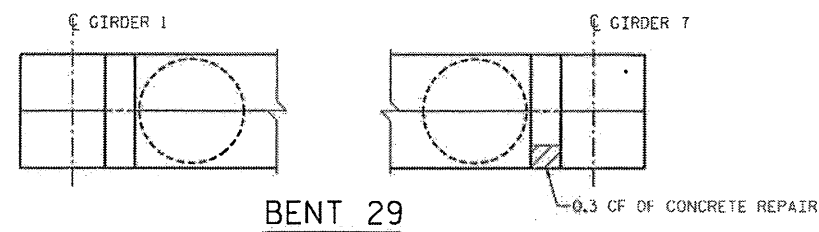
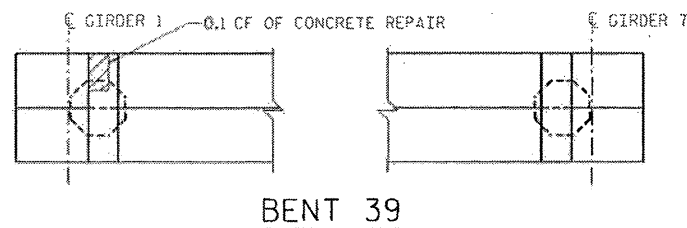
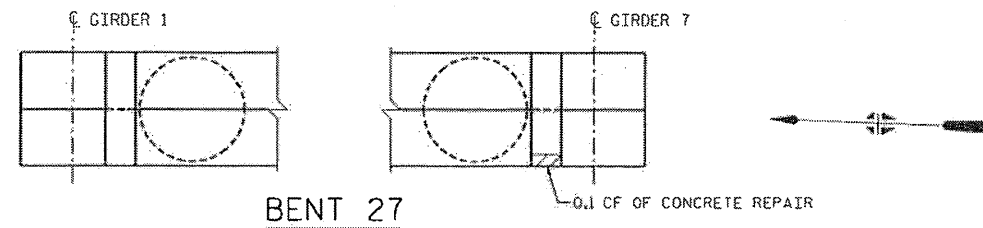
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUBSTRUCTURE REPAIR  
 RETAINER BLOCKS**  
 BENTS 3, 5, 7, 8, 9, 13,  
 18, 19, 20, 21, 22 & 25

REVISIONS						SHEET NO. S-16
NO.	BY	DATE	NO.	BY	DATE	
1			2			TOTAL SHEETS 29
2			3			

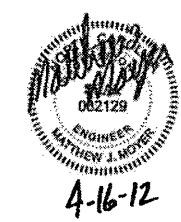


**NOTES**

FOR NOTES, SEE "GENERAL NOTES AND TOTAL BILL OF MATERIAL".



PROJECT NO. 17BP.1.P.14  
 DARE COUNTY  
 BRIDGE NO.: 12



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SUBSTRUCTURE REPAIR  
 RETAINER BLOCKS**  
 BENTS 27, 29, 33, 34, 35,  
 38, 39, 43, 49, 51, 59 & 60



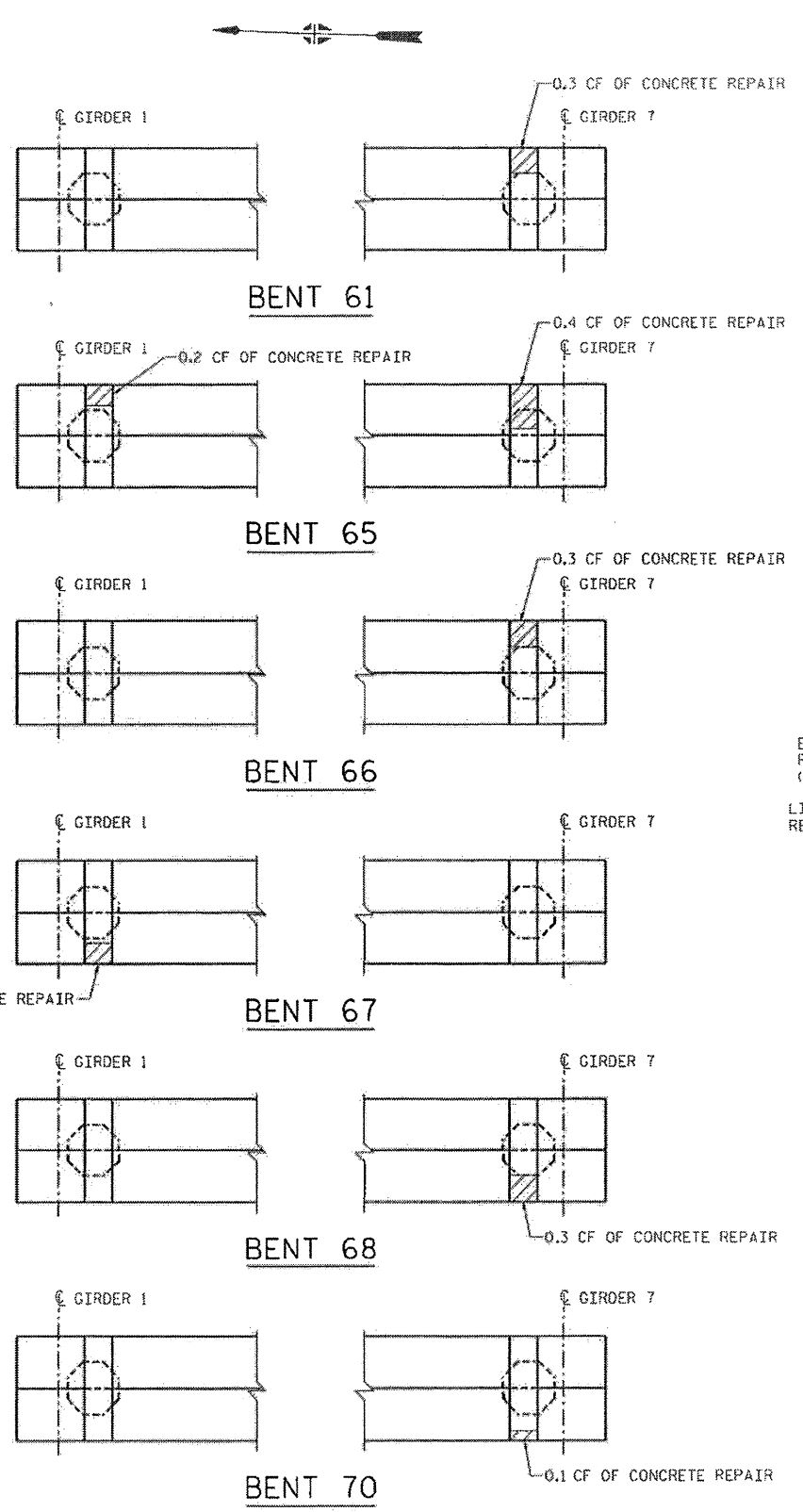
HDR Engineering, Inc. of the Carolinas  
 1771 Woodland Drive, Suite 107 Raleigh, NC 27603  
 NCEES License Number: 7-000

REVISIONS						SHEET NO. 5-11
NO.	BY:	DATE:	NO.	BY:	DATE:	
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2			4			

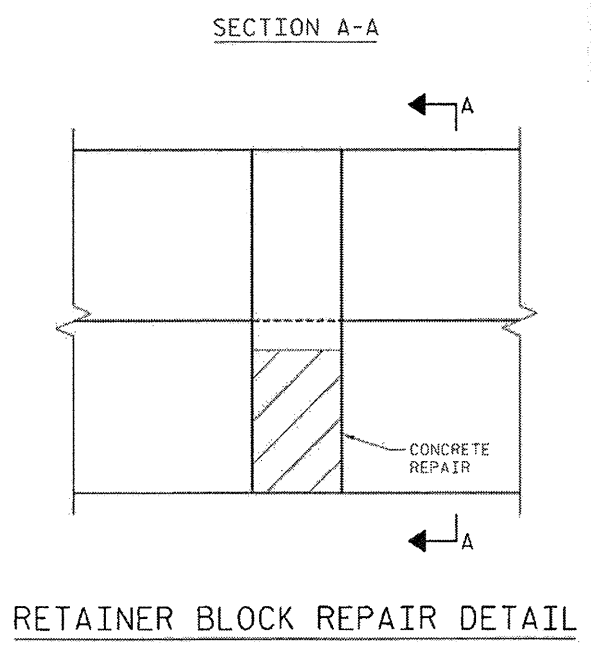
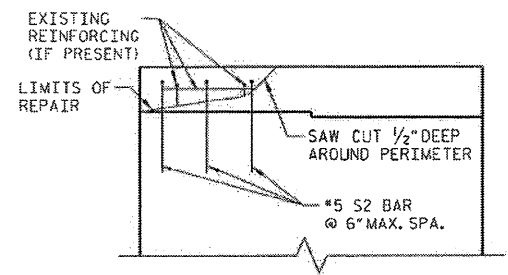
DRAWN BY: D. CHAPMAN DATE: 04/2012  
 CHECKED BY: M. MOYER DATE: 04/2012

PLOT DRIVERS: NCDOT.plt, mono, arno, 50.lpt  
 USER: jbothers DATE: 4/16/2012 TIME: 3:39:55 PM  
 FILE: North Carolina Dept. of Transportation\NCDOT\_C2011\_5TR05N\_0mCell\_TO\_2133\_00\_CAD\Done\_2\NCAD\DIVIII\_50\_DARE12\_17.dgn

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**NOTES**  
 FOR NOTES, SEE "GENERAL NOTES AND TOTAL BILL OF MATERIAL".



BILL OF MATERIAL															
BENT 3				BENT 20				BENT 35				BENT 61			
BAR NO.	SIZE	TYPE	LENGTH	BAR NO.	SIZE	TYPE	LENGTH	BAR NO.	SIZE	TYPE	LENGTH	BAR NO.	SIZE	TYPE	LENGTH
S1 VAR.	#4	1	VARIES	S1 VAR.	#4	1	VARIES	S1 VAR.	#4	1	VARIES	S1 VAR.	#4	1	VARIES
S2 VAR.	#5	2	VARIES	S2 VAR.	#5	2	VARIES	S2 VAR.	#5	2	VARIES	S2 VAR.	#5	2	VARIES
CONCRETE REPAIR	CF	0.1		CONCRETE REPAIR	CF	1.0		CONCRETE REPAIR	CF	0.2		CONCRETE REPAIR	CF	0.3	
SHOTCRETE REPAIR	CF	0		SHOTCRETE REPAIR	CF	0		SHOTCRETE REPAIR	CF	0		SHOTCRETE REPAIR	CF	0	
REINFORCING STEEL	LBS	0		REINFORCING STEEL	LBS	10		REINFORCING STEEL	LBS	10		REINFORCING STEEL	LBS	10	
BENT 5				BENT 21				BENT 38				BENT 65			
S1 VAR.	#4	1	VARIES	S1 VAR.	#4	1	VARIES	S1 VAR.	#4	1	VARIES	S1 VAR.	#4	1	VARIES
S2 VAR.	#5	2	VARIES	S2 VAR.	#5	2	VARIES	S2 VAR.	#5	2	VARIES	S2 VAR.	#5	2	VARIES
CONCRETE REPAIR	CF	0.1		CONCRETE REPAIR	CF	0.4		CONCRETE REPAIR	CF	0.1		CONCRETE REPAIR	CF	0.4	
SHOTCRETE REPAIR	CF	0		SHOTCRETE REPAIR	CF	0		SHOTCRETE REPAIR	CF	0		SHOTCRETE REPAIR	CF	0	
REINFORCING STEEL	LBS	0		REINFORCING STEEL	LBS	10		REINFORCING STEEL	LBS	0		REINFORCING STEEL	LBS	10	
BENT 7				BENT 22				BENT 39				BENT 66			
S1 VAR.	#4	1	VARIES	S1 VAR.	#4	1	VARIES	S1 VAR.	#4	1	VARIES	S1 VAR.	#4	1	VARIES
S2 VAR.	#5	2	VARIES	S2 VAR.	#5	2	VARIES	S2 VAR.	#5	2	VARIES	S2 VAR.	#5	2	VARIES
CONCRETE REPAIR	CF	0.3		CONCRETE REPAIR	CF	0.7		CONCRETE REPAIR	CF	0.1		CONCRETE REPAIR	CF	0.3	
SHOTCRETE REPAIR	CF	0		SHOTCRETE REPAIR	CF	0		SHOTCRETE REPAIR	CF	0		SHOTCRETE REPAIR	CF	0	
REINFORCING STEEL	LBS	10		REINFORCING STEEL	LBS	10		REINFORCING STEEL	LBS	0		REINFORCING STEEL	LBS	10	
BENT 8				BENT 25				BENT 43				BENT 67			
S1 VAR.	#4	1	VARIES	S1 VAR.	#4	1	VARIES	S1 VAR.	#4	1	VARIES	S1 VAR.	#4	1	VARIES
S2 VAR.	#5	2	VARIES	S2 VAR.	#5	2	VARIES	S2 VAR.	#5	2	VARIES	S2 VAR.	#5	2	VARIES
CONCRETE REPAIR	CF	0.5		CONCRETE REPAIR	CF	0.1		CONCRETE REPAIR	CF	0.1		CONCRETE REPAIR	CF	0.2	
SHOTCRETE REPAIR	CF	0		SHOTCRETE REPAIR	CF	0		SHOTCRETE REPAIR	CF	0		SHOTCRETE REPAIR	CF	0	
REINFORCING STEEL	LBS	10		REINFORCING STEEL	LBS	0		REINFORCING STEEL	LBS	0		REINFORCING STEEL	LBS	10	
BENT 9				BENT 27				BENT 49				BENT 68			
S1 VAR.	#4	1	VARIES	S1 VAR.	#4	1	VARIES	S1 VAR.	#4	1	VARIES	S1 VAR.	#4	1	VARIES
S2 VAR.	#5	2	VARIES	S2 VAR.	#5	2	VARIES	S2 VAR.	#5	2	VARIES	S2 VAR.	#5	2	VARIES
CONCRETE REPAIR	CF	0.1		CONCRETE REPAIR	CF	0.1		CONCRETE REPAIR	CF	0.2		CONCRETE REPAIR	CF	0.3	
SHOTCRETE REPAIR	CF	0		SHOTCRETE REPAIR	CF	0		SHOTCRETE REPAIR	CF	0		SHOTCRETE REPAIR	CF	0	
REINFORCING STEEL	LBS	0		REINFORCING STEEL	LBS	0		REINFORCING STEEL	LBS	0		REINFORCING STEEL	LBS	10	
BENT 13				BENT 29				BENT 51				BENT 70			
S1 VAR.	#4	1	VARIES	S1 VAR.	#4	1	VARIES	S1 VAR.	#4	1	VARIES	S1 VAR.	#4	1	VARIES
S2 VAR.	#5	2	VARIES	S2 VAR.	#5	2	VARIES	S2 VAR.	#5	2	VARIES	S2 VAR.	#5	2	VARIES
CONCRETE REPAIR	CF	0.2		CONCRETE REPAIR	CF	0.3		CONCRETE REPAIR	CF	0.2		CONCRETE REPAIR	CF	0.1	
SHOTCRETE REPAIR	CF	0		SHOTCRETE REPAIR	CF	0		SHOTCRETE REPAIR	CF	0		SHOTCRETE REPAIR	CF	0	
REINFORCING STEEL	LBS	10		REINFORCING STEEL	LBS	10		REINFORCING STEEL	LBS	10		REINFORCING STEEL	LBS	0	
BENT 18				BENT 33				BENT 59				BAR TYPE			
S1 VAR.	#4	1	VARIES	S1 VAR.	#4	1	VARIES	S1 VAR.	#4	1	VARIES	VAR. VARIES			
S2 VAR.	#5	2	VARIES	S2 VAR.	#5	2	VARIES	S2 VAR.	#5	2	VARIES	HK. VAR. ①			
CONCRETE REPAIR	CF	0.4		CONCRETE REPAIR	CF	0.1		CONCRETE REPAIR	CF	0.3		VARIES ②			
SHOTCRETE REPAIR	CF	0		SHOTCRETE REPAIR	CF	0		SHOTCRETE REPAIR	CF	0		BAR DIMENSIONS ARE OUT TO OUT			
REINFORCING STEEL	LBS	10		REINFORCING STEEL	LBS	0		REINFORCING STEEL	LBS	10					
BENT 19				BENT 34				BENT 60							
S1 VAR.	#4	1	VARIES	S1 VAR.	#4	1	VARIES	S1 VAR.	#4	1	VARIES				
S2 VAR.	#5	2	VARIES	S2 VAR.	#5	2	VARIES	S2 VAR.	#5	2	VARIES				
CONCRETE REPAIR	CF	1.8		CONCRETE REPAIR	CF	0.1		CONCRETE REPAIR	CF	0.2					
SHOTCRETE REPAIR	CF	0		SHOTCRETE REPAIR	CF	0		SHOTCRETE REPAIR	CF	0					
REINFORCING STEEL	LBS	10		REINFORCING STEEL	LBS	10		REINFORCING STEEL	LBS	10					

PROJECT NO. 17BP.1.P.14  
 DARE COUNTY  
 BRIDGE NO.: 12



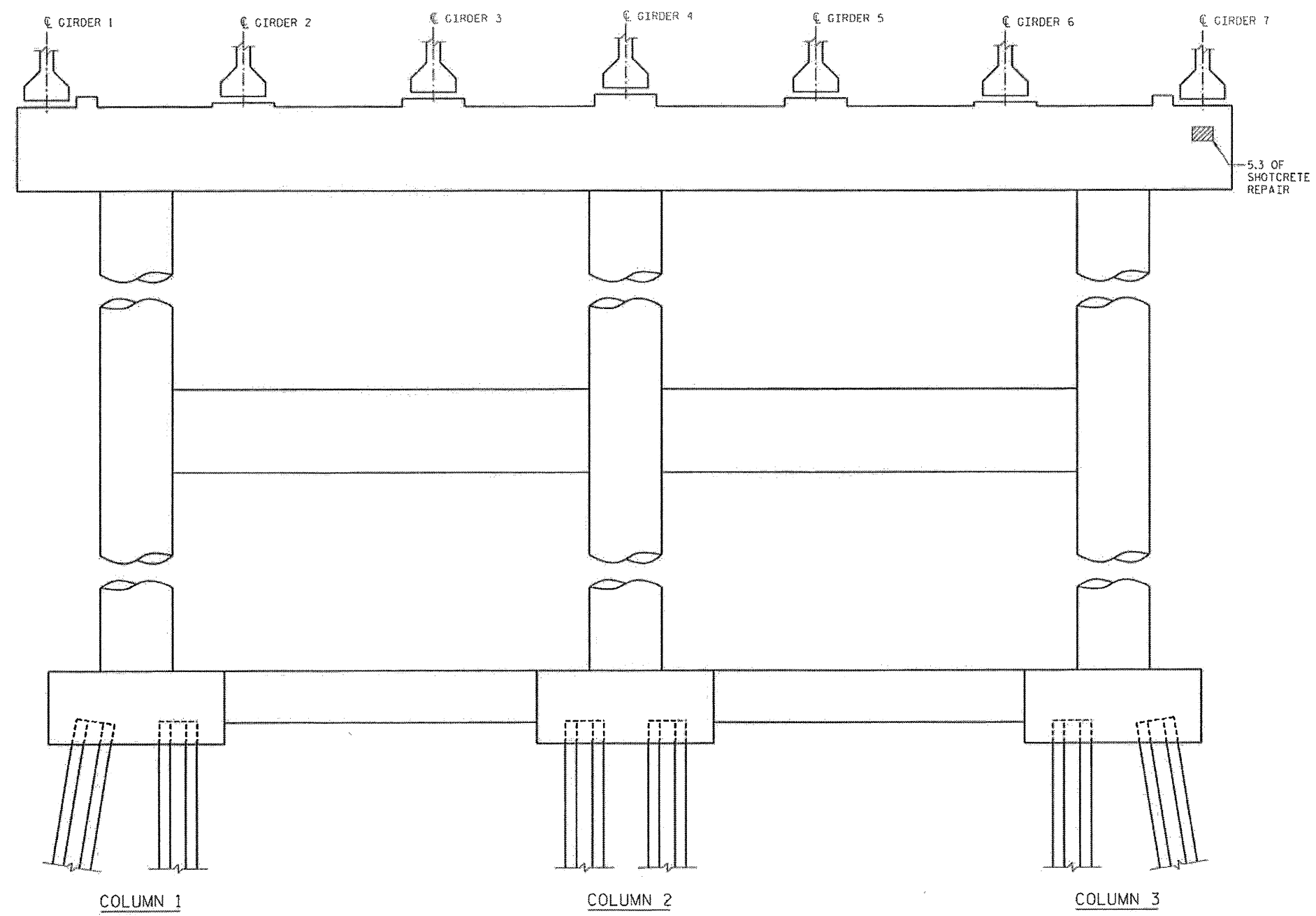
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SUBSTRUCTURE REPAIR  
 RETAINER BLOCKS  
 BENTS 61, 65, 66, 67,  
 68 & 70

DRAWN BY: D. CHAPMAN DATE: 04/2012  
 CHECKED BY: M. MOYER DATE: 04/2012

REVISIONS						SHEET NO. 5-18
NO.	BY	DATE	NO.	BY	DATE	
1			2			TOTAL SHEETS 20
2						

HDR Engineering, Inc. of the Carolinas  
 3732 Redwood Drive, Suite 207, Raleigh, NC 27617  
 WCE 0111, License Number: 2-0111

PLOT DATE: 4/16/2012 3:59:00 PM  
 USER: bcharters  
 FILE: North Carolina Dept. of Transportation\CDOT\C2011\STRPSR\OnCall\_TO\_3\1300\_CAD\_Doc\2\CAD\DIV11\SD\_DARE\12-19.DGN

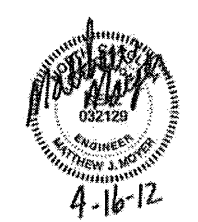


WEST ELEVATION

CONCRETE REPAIR  
 SHOTCRETE REPAIR

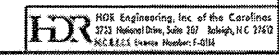
BILL OF MATERIAL				
BENT 21				
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S2	VAR.	#5	2	VARIES
CONCRETE REPAIR				CF 0
SHOTCRETE REPAIR				CF 1.8
REINFORCING STEEL				LBS 0
BAR TYPE				
*BAR DIMENSIONS ARE OUT TO OUT*				

PROJECT NO. 17BP.1.P.14  
 DARE COUNTY  
 BRIDGE NO.: 12

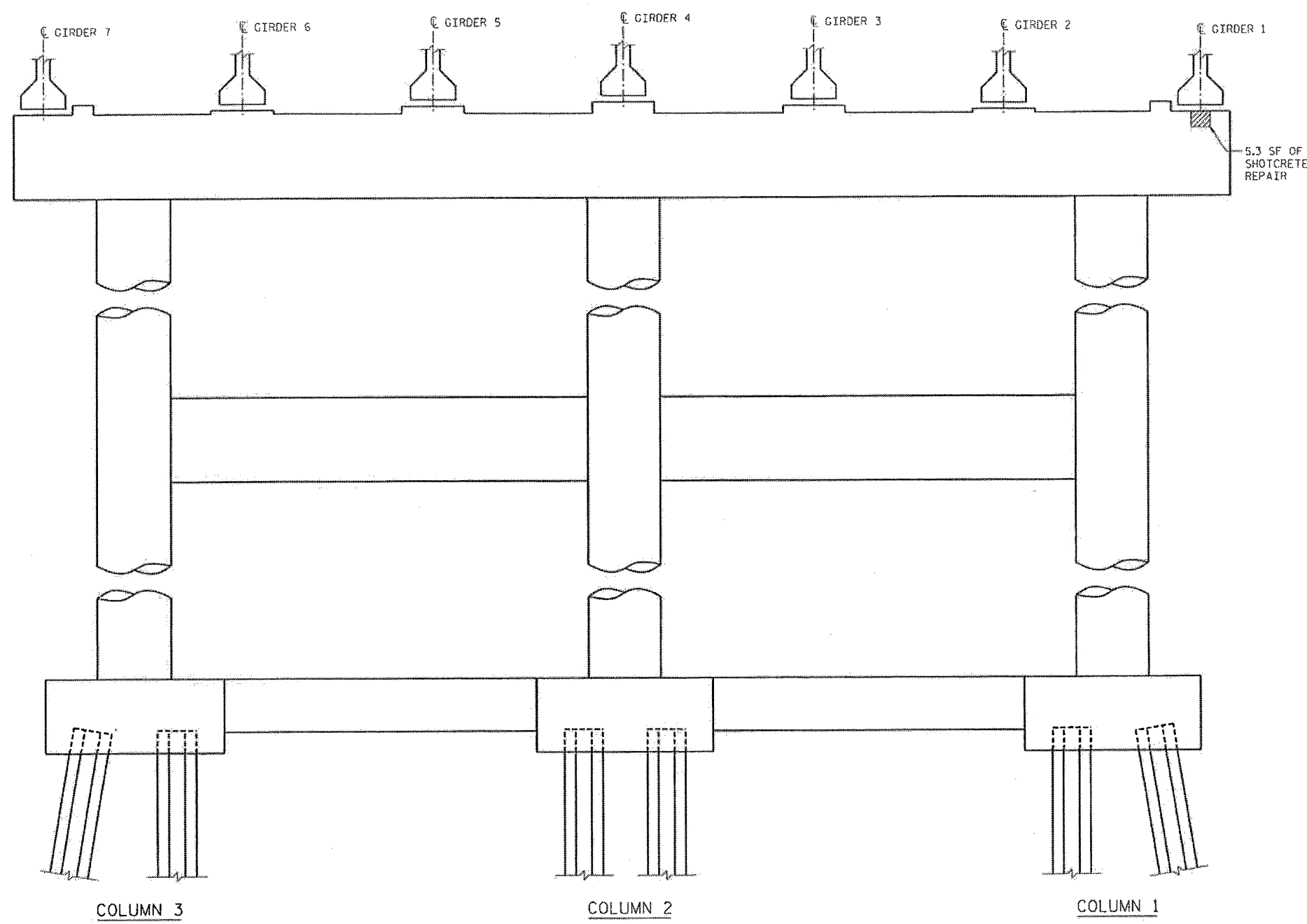


STATE OF NORTH CAROLINA					
DEPARTMENT OF TRANSPORTATION					
RALEIGH					
SUBSTRUCTURE REPAIR					
BENT 21					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			2		
					SHEET NO. 5-19
					TOTAL SHEETS 28

DRAWN BY: D. CHAPMAN DATE: 04/2012  
 CHECKED BY: M. MOYER DATE: 04/2012



PLOT DRIVER: NCDOT\_dot\_memo\_eng\_sq.plt  
 USER: dotter's  
 FILE: North Carolina Dept. of Transportation\NCDOT\C2011\STR05M\_0ncol\_TO\_313.00.CAD\Draw\_2\CAD\DIVI\1\_SD\_DARE12.20.dgn  
 DATE: 4/16/2012  
 TIME: 3:40:10 PM



**EAST ELEVATION**

- CONCRETE REPAIR
- SHOTCRETE REPAIR

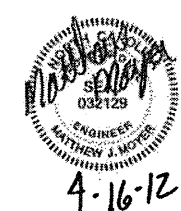
BILL OF MATERIAL				
BENT 22				
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S2	VAR.	#5	2	VARIES
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SHOTCRETE REPAIR				CF 1.8
REINFORCING STEEL				LBS 0

BAR TYPE	
VAR.	VARIES
HK.	VARIES
VAR.	VARIES
VARIES	VARIES

BAR DIMENSIONS ARE OUT TO OUT

PROJECT NO. 17BP.1.P.14  
 DARE \_\_\_\_\_ COUNTY \_\_\_\_\_  
 BRIDGE NO.: 12

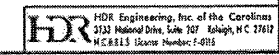


STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUBSTRUCTURE  
 REPAIR  
 BENT 22**

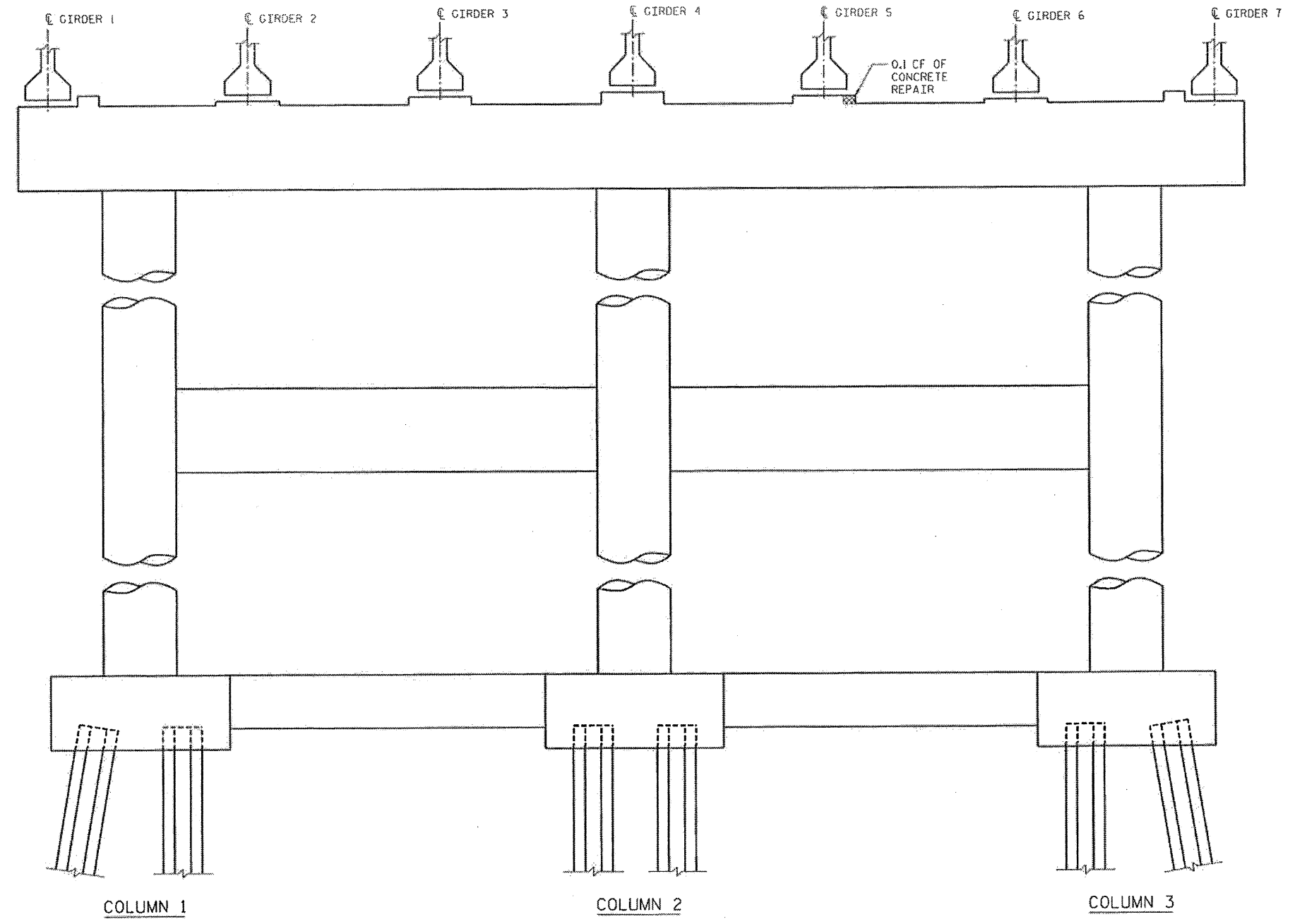
REVISIONS						SHEET NO. S-20
NO.	BY	DATE	NO.	BY	DATE	
1			1			TOTAL SHEETS: 20
2			2			

DRAWN BY: D. CHAPMAN DATE: 04/2012  
 CHECKED BY: M. MOYER DATE: 04/2012





PLOT DRIVER: NCDOT\pct\_memo\_eng\_50.plt  
 USER: jpotter DATE: 4/16/2012  
 FILE: North Carolina Dept. of Transportation\NCDOT\C2011\STPESH\00Call\_TO\_311300\_CAD\Draws\3\NCAD\DTV11\_5D\_DARE\21.DGN



**WEST ELEVATION**

CONCRETE REPAIR  
 SHOTCRETE REPAIR

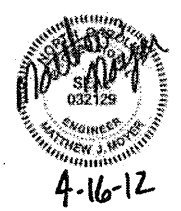
BILL OF MATERIAL				
BENT 27				
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S2	VAR.	#5	2	VARIES
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SHOTCRETE REPAIR				CF 0
REINFORCING STEEL				LBS 0

BAR TYPE	
VAR.	VARIES
HK.	
	①
VAR.	VARIES
	②

BAR DIMENSIONS ARE OUT TO OUT

PROJECT NO. 17BP.1.P.14  
 \_\_\_\_\_ DARE \_\_\_\_\_ COUNTY  
 BRIDGE NO.: 12

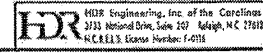


STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

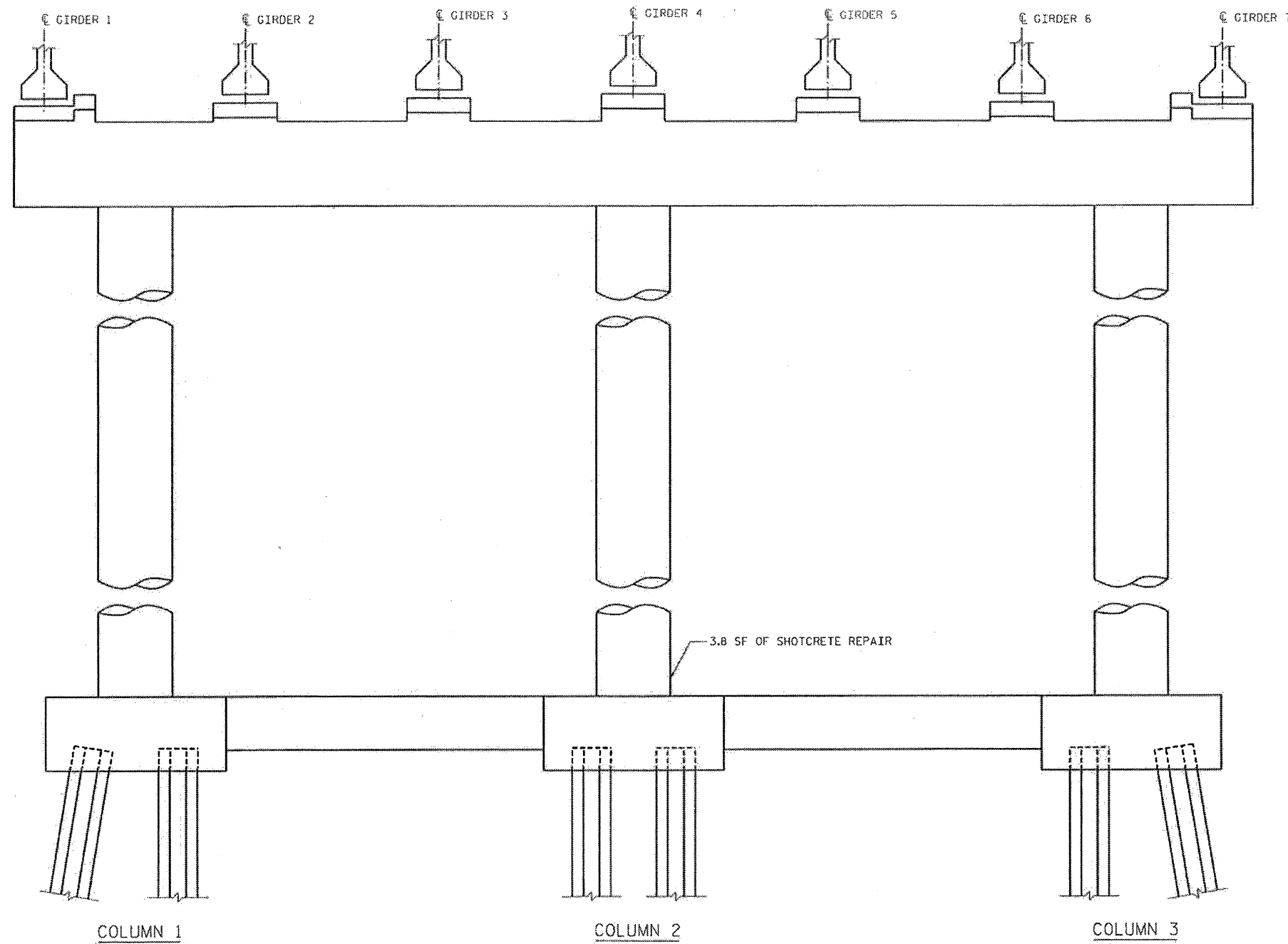
**SUBSTRUCTURE  
 REPAIR  
 BENT 27**

DRAWN BY : D. CHAPMAN DATE : 04/2012  
 CHECKED BY : M. MOYER DATE : 04/2012



REVISIONS						SHEET NO. 5-21
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS 28
2			4			



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 USER: bcharters DATE: 4/16/2012  
 FILE: North Carolina Dept. of Transportation\NCDOT\_C2011\STRESH\Project\10\_113100.CAD\Drawings\2\CAD\DWG\11150.DARE\12.ZZ.DWG



WEST ELEVATION

 CONCRETE REPAIR  
 SHOTCRETE REPAIR

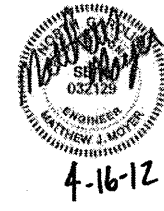
BILL OF MATERIAL				
BENT 33				
BAR	NO.	SIZE	TYPE	LENGTH
S1	VAR.	*4	1	VARIES
S2	VAR.	*5	2	VARIES
CONCRETE REPAIR				CF 0
SHOTCRETE REPAIR				CF 1.3
REINFORCING STEEL				LBS 0

BAR TYPE	
VAR. HK.	VARIES
	①
VARIES	
	②

BAR DIMENSIONS ARE OUT TO OUT

PROJECT NO. 17BP.L.P.14  
 DARE COUNTY  
 BRIDGE NO.: 12



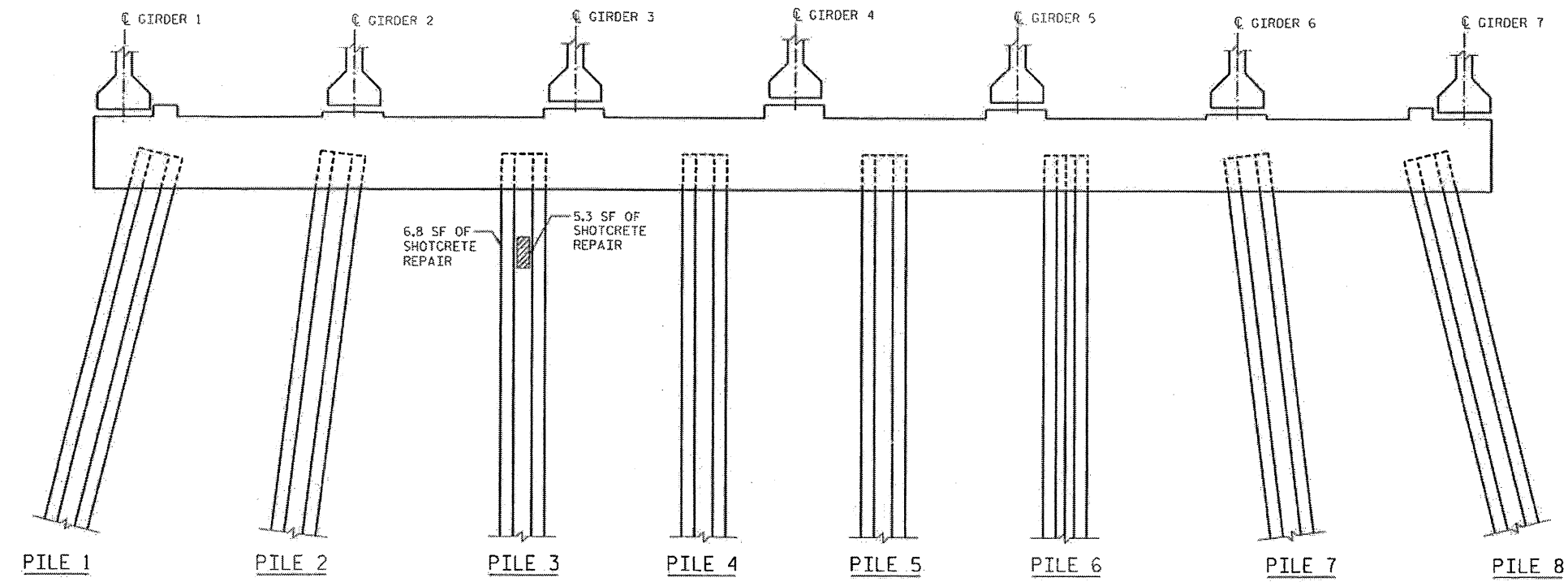
4-16-12

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE REPAIR BENT 33					
REVISIONS					SHEET NO. 3-22
NO.	BY:	DATE:	NO.	DATE:	
1			3		TOTAL SHEETS 20
2			4		

DRAWN BY: D. CHAPMAN DATE: 04/2012  
 CHECKED BY: M. MOYER DATE: 04/2012

HDR Engineering, Inc. of the Carolinas  
 2723 Inwood Drive, Suite 207 Raleigh, NC 27604  
 NCEES License Number: F-018

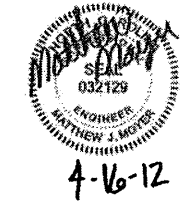
BILL OF MATERIAL				
BENT 42				
BAR	NO.	SIZE	TYPE	LENGTH
S1	VAR.	#4	1	VARIES
S2	VAR.	#5	2	VARIES
CONCRETE REPAIR				CF 0
SHOTCRETE REPAIR				CF 4.1
REINFORCING STEEL				LBS 0
BAR TYPE				
VAR.	VARIES			
HK.	VARIES			
VARIES				
(BAR DIMENSIONS ARE OUT TO OUT)				



**WEST ELEVATION**

- CONCRETE REPAIR
- SHOTCRETE REPAIR

PROJECT NO. 17BP.1.P.14  
 DARE COUNTY  
 BRIDGE NO.: 12

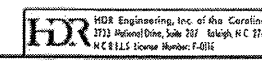


STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUBSTRUCTURE REPAIR  
 BENT 42**

REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. S-23  
 TOTAL SHEETS 28

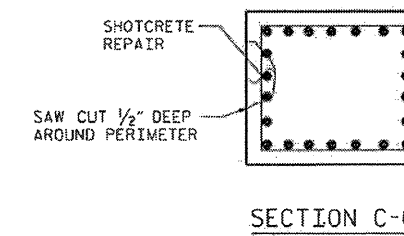
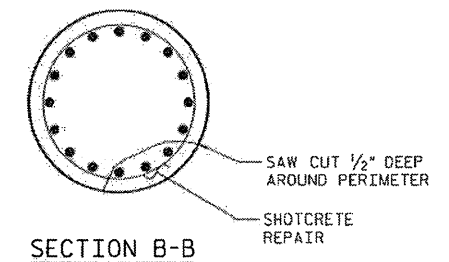
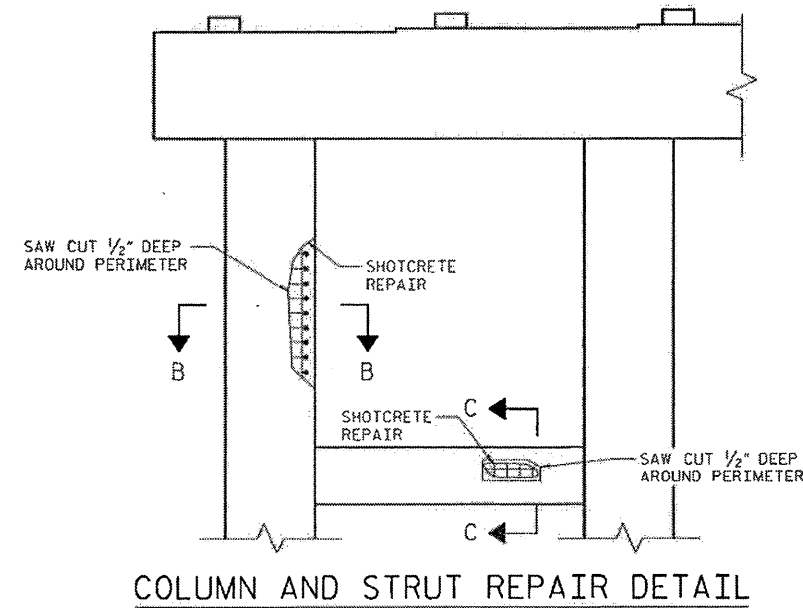
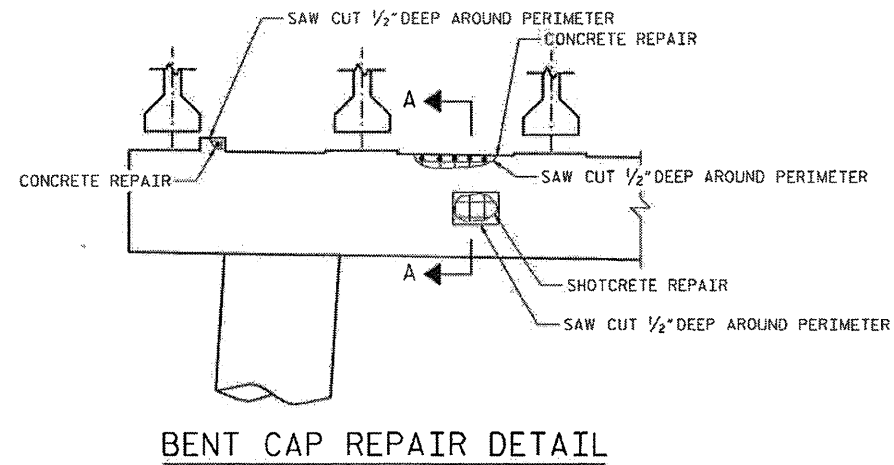
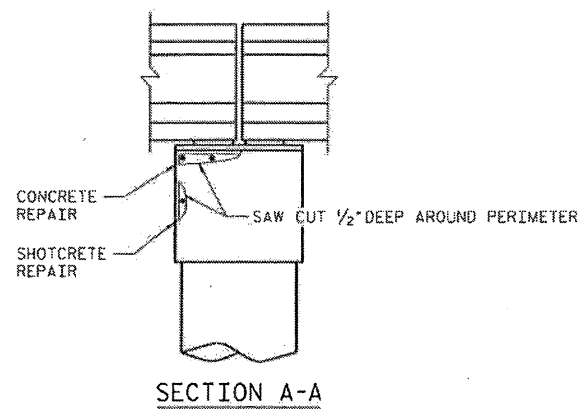


DRAWN BY: D. CHAPMAN DATE: 04/2012  
 CHECKED BY: M. MOYER DATE: 04/2012

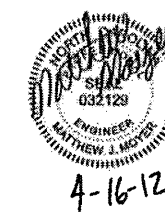
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 FILE: Nor th Carolina Dep t. of Transportation\NCDOT\_C2011\_STROSN\_0ncoll TO\_S11300\_CAD\Dore :2\CAD\DIV1\50\_DARE12\_23.DGN

**NOTES**

FOR NOTES, SEE "GENERAL NOTES AND TOTAL BILL OF MATERIAL".



PROJECT NO. 17BP.1.P.14  
DARE COUNTY  
BRIDGE NO.: 12



STATE OF NORTH CAROLINA					
DEPARTMENT OF TRANSPORTATION					
RALEIGH					
<b>SUBSTRUCTURE REPAIR DETAILS</b>					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			2		
2			4		
					SHEET NO. 5-24
					TOTAL SHEETS 20

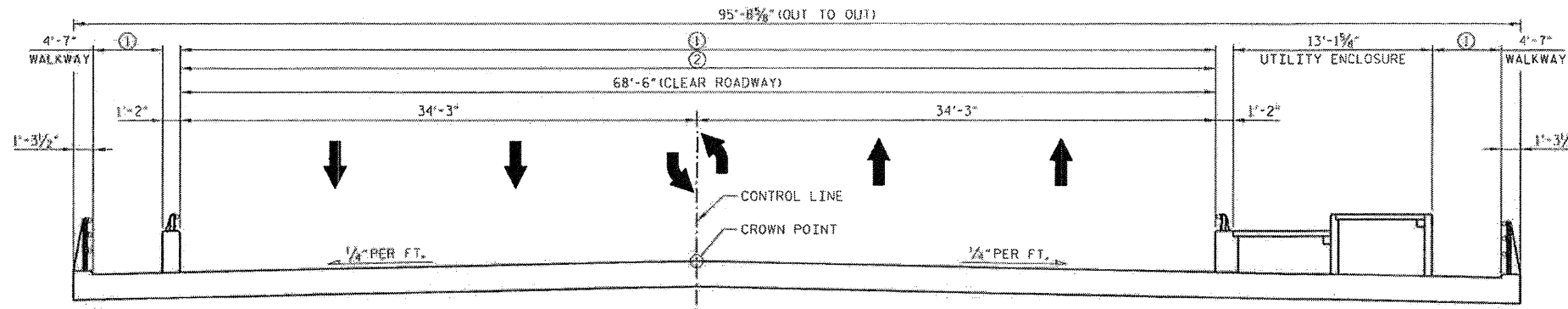


DRAWN BY: D. CHAPMAN DATE: 04/2012  
CHECKED BY: M. MAYER DATE: 04/2012

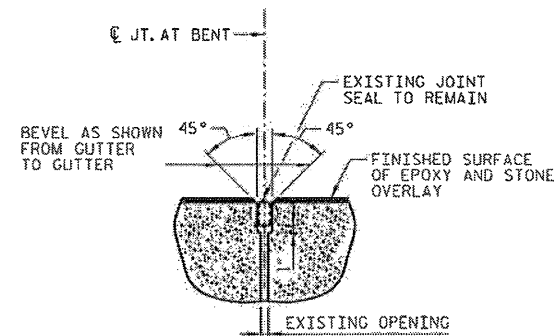
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**NOTES**

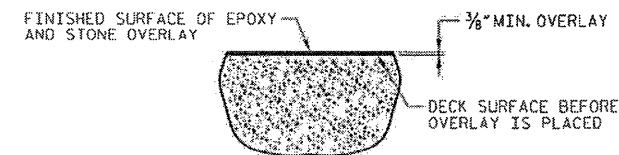
- ① LIMITS FOR "PLACEMENT OF PRE-TREATMENT".
  - ② LIMITS FOR "PLACEMENT OF EPOXY OVERLAY".
- FOR NOTES, SEE "GENERAL NOTES AND BILL OF MATERIAL".



**TYPICAL SECTION**



**EXPANSION JOINT AT BENTS 4 AND 8**

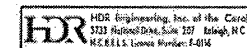


**DETAIL FOR EPOXY AND STONE OVERLAY**

PROJECT NO. 17BP.1.P.14  
 DARE COUNTY  
 BRIDGE NO.: 14



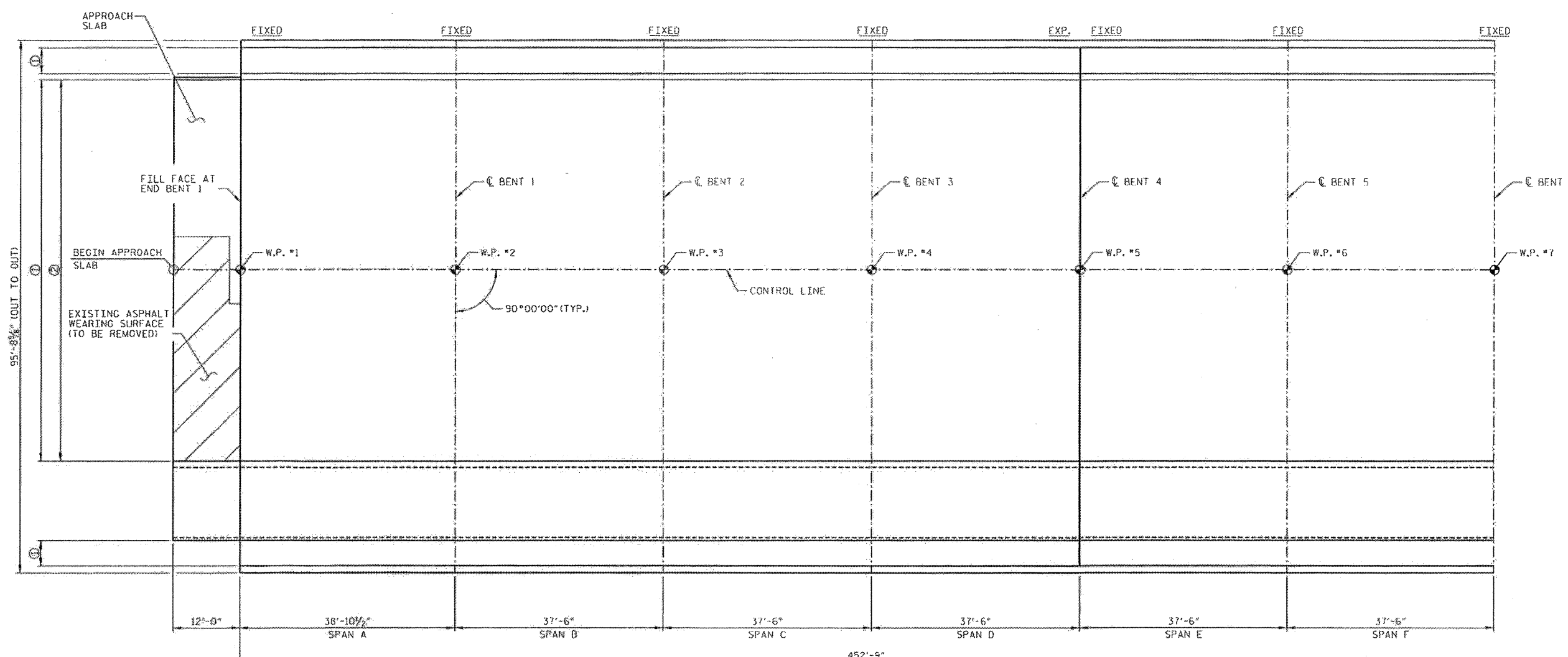
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**TYPICAL SECTION  
 & OVERLAY DETAILS**  
 (US 64/264 OVER ROANOKE SOUND)



REVISIONS						SHEET NO. 5-25
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 28
2			4			

DRAWN BY: M. SELLS DATE: 03/2012  
 CHECKED BY: M. MOYER DATE: 03/2012

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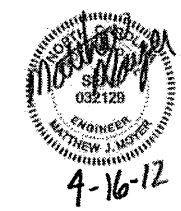


PLAN OF SPANS - DECK REPAIRS  
SPANS A-F

NOTES

- ① LIMITS FOR "PLACEMENT OF PRE-TREATMENT".
  - ② LIMITS FOR "PLACEMENT OF EPOXY OVERLAY".
- FOR NOTES, SEE "GENERAL NOTES AND BILL OF MATERIAL".

PROJECT NO. 17BP.1.P.14  
DARE COUNTY  
BRIDGE NO.: 14



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
PLAN VIEW  
& DECK REPAIRS  
SPANS A-F

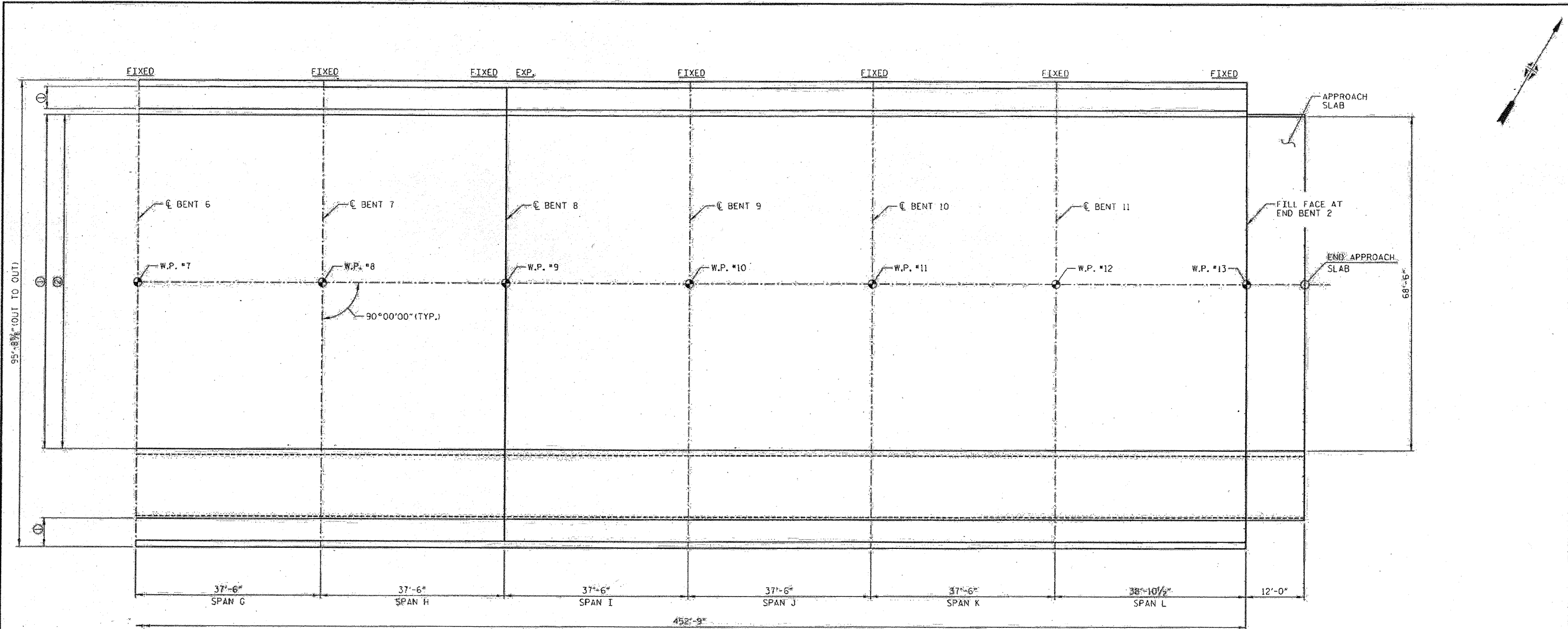
DRAWN BY: M. SELLS DATE: 03/2012  
CHECKED BY: M. MOYER DATE: 03/2012



HDR Engineering, Inc. of the Carolinas  
3733 Woodloch Drive, Suite 307 Raleigh, NC 27612  
NC 8112 License Number: F-0716

REVISIONS						SHEET NO. S-26
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS 28
2			4			

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PLAN OF SPANS - DECK REPAIRS  
SPANS G-L

NOTES  
 ① LIMITS FOR 'PLACEMENT OF PRE-TREATMENT'.  
 ② LIMITS FOR 'PLACEMENT OF EPOXY OVERLAY'.  
 FOR NOTES, SEE 'GENERAL NOTES AND BILL OF MATERIAL'.

PROJECT NO. 17BP.1.P.14  
 DARE COUNTY  
 BRIDGE NO.: 14



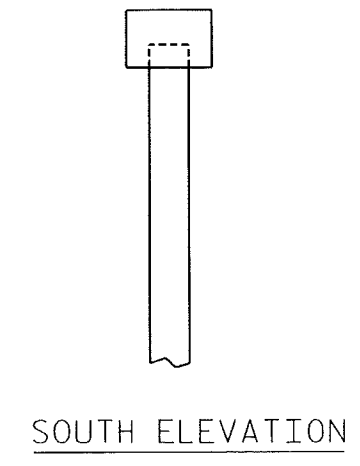
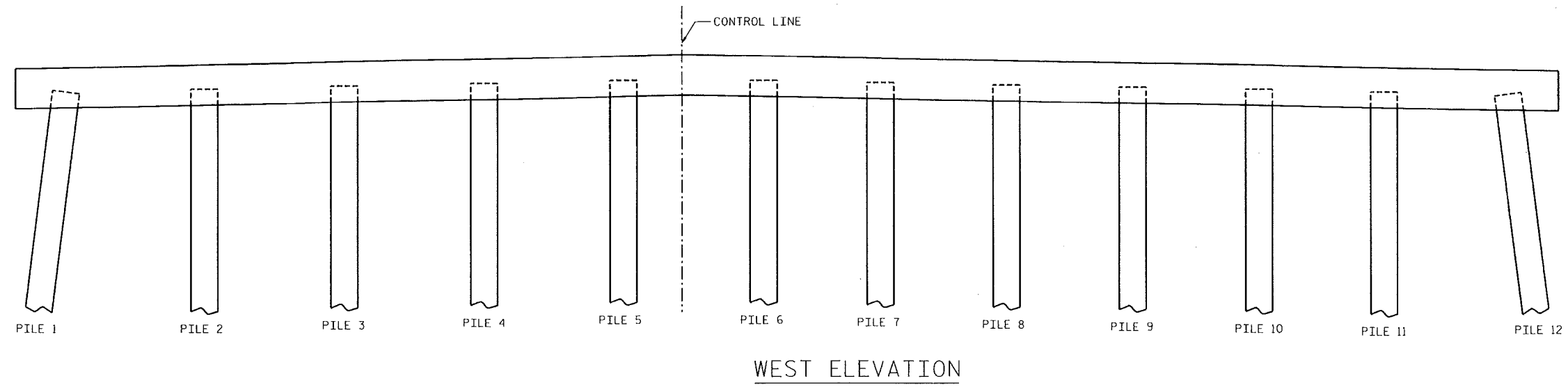
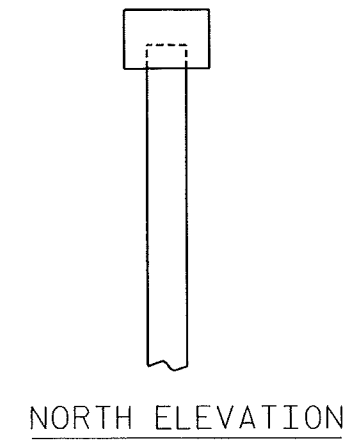
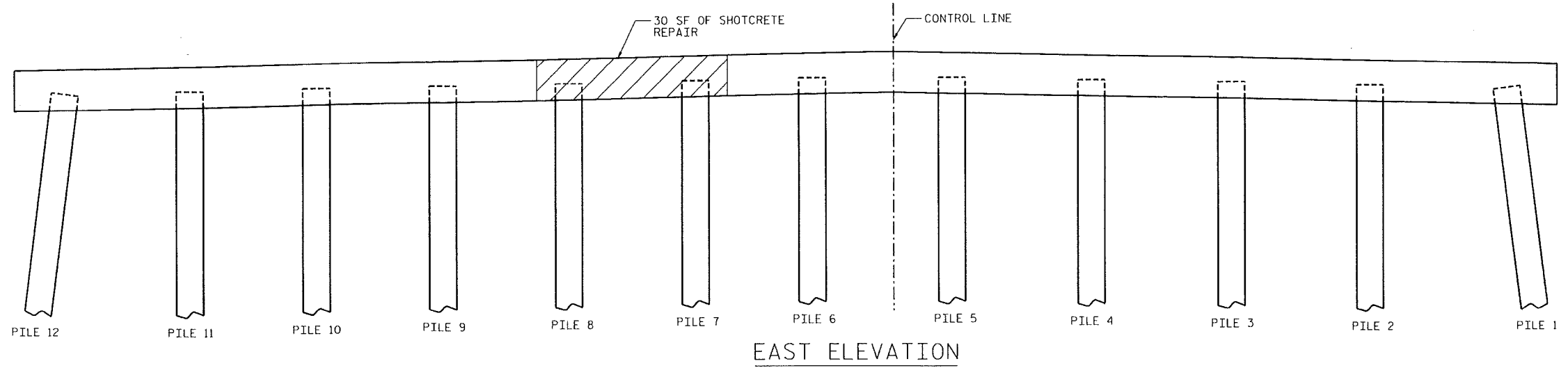
4-16-12

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
PLAN VIEW & DECK REPAIRS SPANS G-L					
REVISIONS					
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2			4		
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DRAWN BY: M. SELLS DATE: 03/2012  
 CHECKED BY: M. MOYER DATE: 03/2012

HDR Engineering, Inc. of the Carolinas  
 3731 Robeson Drive, Suite 207 Raleigh, N.C. 27601  
 M.C. Sells, License Number: F-0114



NOTES

▨ SHOTCRETE REPAIR

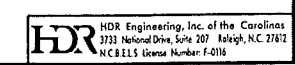
FOR NOTES, SEE "GENERAL NOTES AND BILL OF MATERIAL".

PROJECT NO. 17BP.1.P.14  
 DARE COUNTY  
 BRIDGE NO.: 14



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE REPAIRS BENT 8					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
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SHEET NO. 5-28					TOTAL SHEETS 28

DRAWN BY : M. SELLS DATE : 03/2012  
 CHECKED BY : M. MOYER DATE : 03/2012



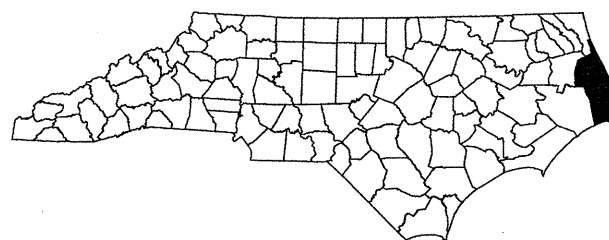
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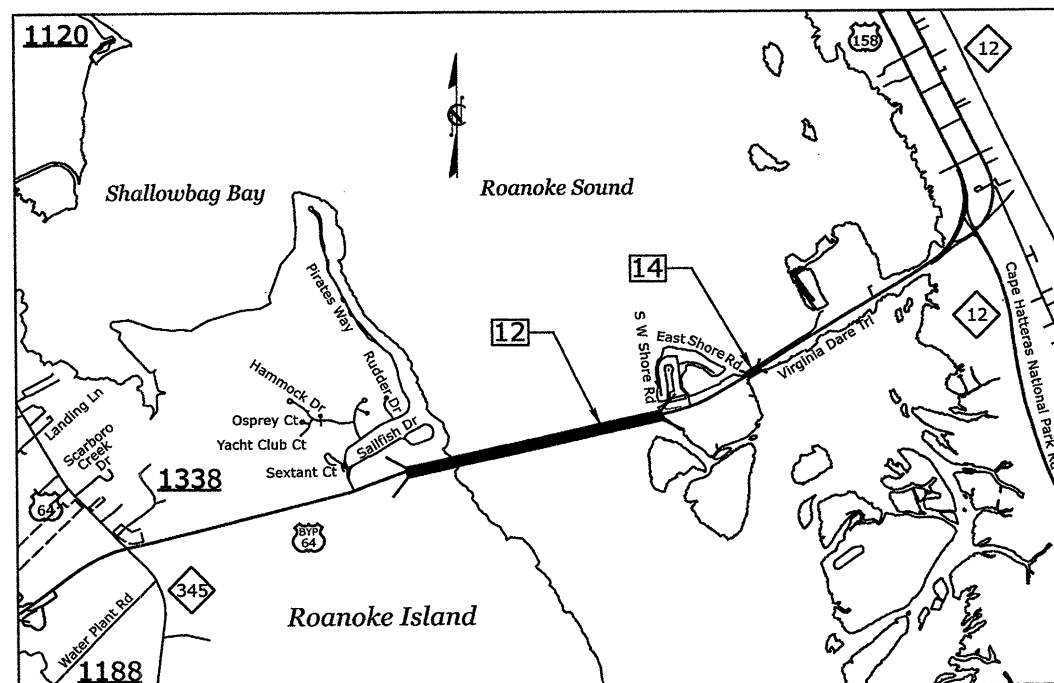
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**TRANSPORTATION MANAGEMENT PLAN**

**DARE COUNTY**



**LOCATION: BRIDGE 12 & 14 ON US 64/264 OVER ROANOKE SOUND**



**INDEX OF SHEETS**

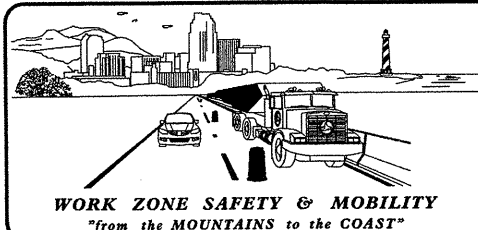
SHEET NO.	TITLE
TMP-1	TITLE SHEET AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS AND LEGEND
TMP-1B & 1C	GENERAL NOTES
TMP-2	STAGING & TYPICALS - BRIDGE 12
TMP-3	STAGING & TYPICALS - BRIDGE 14

SHEET NO.  
TMP-1

**17BP.1.P.14**

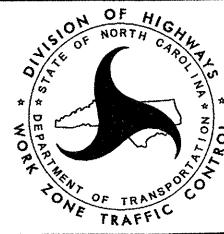
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 TIME: 10:07:25 AM



**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



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

SEAL



4/13/12






## 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:

<u>STD. NO.</u>	<u>TITLE</u>
1101.01	WORK ZONE 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
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE & MULTILANE ROADWAYS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - (PERMANENT AND TEMPORARY)












## LEGEND

### GENERAL




-  DIRECTION OF TRAFFIC FLOW
-  DIRECTION OF PEDESTRIAN TRAFFIC FLOW
-  EXIST. PVMT.
-  NORTH ARROW
-  PROPOSED PVMT.

-  WORK AREA

### 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

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 PENTABLE: NCDOT\_top.tbl  
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 FILE: North Carolina Dept of Transportation\NCDOT\_C2011\_STRDSL\onCell\_TO\_3\13.00\_CAD\TMP\17BP-1-P-4\_TMP\_TMP-01.dgn

		<h2 style="margin: 0;">ROADWAY STANDARD DRAWINGS &amp; LEGEND</h2>
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## PROJECT NOTES

### 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 UNDESIRE 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:

<u>ROAD NAMES</u>	<u>DAY &amp; TIME RESTRICTIONS</u>
US 64/264	MAY 1 - SEPTEMBER 30 6:00 AM FRIDAY TO MIDNIGHT SUNDAY

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

- | <u>ROAD NAMES</u> | <u>DAY AND TIME RESTRICTIONS</u>  | <u>DURATION OF OPERATION</u> |
|-------------------|-----------------------------------|------------------------------|
| US 64/264         | MONDAY-SUNDAY: 5:00AM TO MIDNIGHT | 30 MINUTES FOR JACKING       |
- 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 6:00 A.M. DECEMBER 31ST TO 7:00 P.M. JANUARY 2ND. IF NEW YEARS DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OF MONDAY THEN UNTIL 7:00 P.M. THE FOLLOWING TUESDAY.
  - 3) FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 7:00 P.M. MONDAY.
  - 4) FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 7:00 P.M. TUESDAY.
  - 5) FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 7:00 P.M. THE DAY AFTER INDEPENDENCE DAY. IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN BETWEEN THE HOURS OF 6:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 7:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
  - 6) FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 7:00 P.M. TUESDAY.
  - 7) FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY AND 7:00 P.M. MONDAY.
  - 8) FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 7:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.
  - 9) FOR THE MARATHON HELD VETERAN'S DAY WEEKEND, BETWEEN THE HOURS OF 6:00 AM THE FRIDAY OF THE WEEKEND OF THE MARATHON AND MIDNIGHT THE SUNDAY OF THE WEEKEND OF THE MARATHON.

C) DO NOT STOP TRAFFIC AS FOLLOWS:

<u>ROAD NAMES</u>	<u>DAY AND TIME RESTRICTIONS</u>	<u>DURATION OF OPERATION</u>
US 64/264	MONDAY-SUNDAY: 5:00AM TO MIDNIGHT	30 MINUTES FOR JACKING

D) 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

- E) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED, OR AS DIRECTED BY THE ENGINEER.
- F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT. OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.
- G) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO 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.
- H) 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.
- I) 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.
- J) DO NOT INSTALL MORE THAN 1/2 MILE OF LANE CLOSURE ON US 64/264 MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.
- K) DO NOT INSTALL MORE THAN ONE LANE CLOSURE IN ANY ONE DIRECTION ON US 64/264.



### PAVEMENT EDGE DROP OFF REQUIREMENTS

- L) 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

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

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		<h2 style="margin: 0;">PROJECT NOTES</h2> <h3 style="margin: 0;">(SHEET 1 OF 2)</h3>
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## PROJECT NOTES

### GENERAL NOTES

#### SIGNING

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

#### TRAFFIC CONTROL DEVICES

- P) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.
- Q) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT. CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

#### PAVEMENT MARKINGS AND MARKERS

- R) INSTALL FINAL PAVEMENT MARKINGS AND PAVEMENT MARKERS AS FOLLOWS:

<u>ROAD NAME</u>	<u>MARKING</u>	<u>MARKER</u>
US 64/264	THERMOPLASTIC	PERMANENT RAISED

- S) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS AS FOLLOWS:

<u>ROAD NAME</u>	<u>MARKING</u>	<u>MARKER</u>
US 64/264	PAINT	NONE

- T) TIE PROPOSED MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- U) REMOVE/REPLACE ANY CONFLICTING OR DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATIONS, WITH ONE APPLICATION OF PAINT.

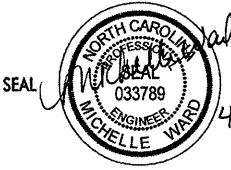

### MISCELLANEOUS

- V) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA, INCLUDING ROADS UNDER BRIDGES, AND/OR INTERSECTIONS, AS DIRECTED BY THE ENGINEER.
- W) COMPLETE PROPOSED CONSTRUCTION IN SUCH A MANNER THAT PONDING OF WATER WILL NOT OCCUR IN THE TRAVEL LANES.
- X) ENGINEER WILL NOTIFY THE OVERSIZE/OVERWEIGHT PERMIT UNIT AT 919-733-7154 OR 919-733-4740 TWO WEEKS PRIOR TO TRAFFIC BEING PLACED IN A ONE-LANE TRAFFIC PATTERN IN EITHER DIRECTION, IF NECESSARY, AND WHEN TRAFFIC IS RESTORED TO THE EXISTING PATTERN.

### LOCAL NOTES

- 1) WHEN USING RSD 1101.03, SHEET 9 OF 9 FOR JACKING, INITIALLY PLACE CHANGEABLE MESSAGE SIGNS ONE WEEK IN ADVANCE OF CLOSURE WITH MESSAGE AS DIRECTED BY THE ENGINEER. BOTH DIRECTIONS OF TRAVEL WILL NEED TO BE CLOSED TO PERFORM THE JACKING OPERATION.
- 2) AFTER COMPLETION OF THE DECK WORK, PLACE PAINT PAVEMENT MARKING AND ALLOW PAINT TO REMAIN ON BRIDGE FOR 2 WEEKS PRIOR TO PLACING FINAL PAVEMENT MARKINGS (THERMOPLASTIC).

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 TIME: 10:07:43 AM

		<b>PROJECT NOTES</b> <b>(SHEET 2 OF 2)</b>
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**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: PERFORM DECK SEALANT AFTER ALL OTHER MAINTENANCE ACTIVITIES ARE COMPLETE.

**STAGE I:**

STEP 1: USING THE FOLLOWING, AS NECESSARY, COMPLETE THE SUBSTRUCTURE WORK:

- RSD 1101.02, SHEET 3 OF 15
- RSD 1101.04, SHEET 1 OF 1
- RSD 1101.03, SHEET 9 OF 9 (FOR JACKING)
- (SEE LOCAL NOTE 1 ON SHEET TMP-1C)

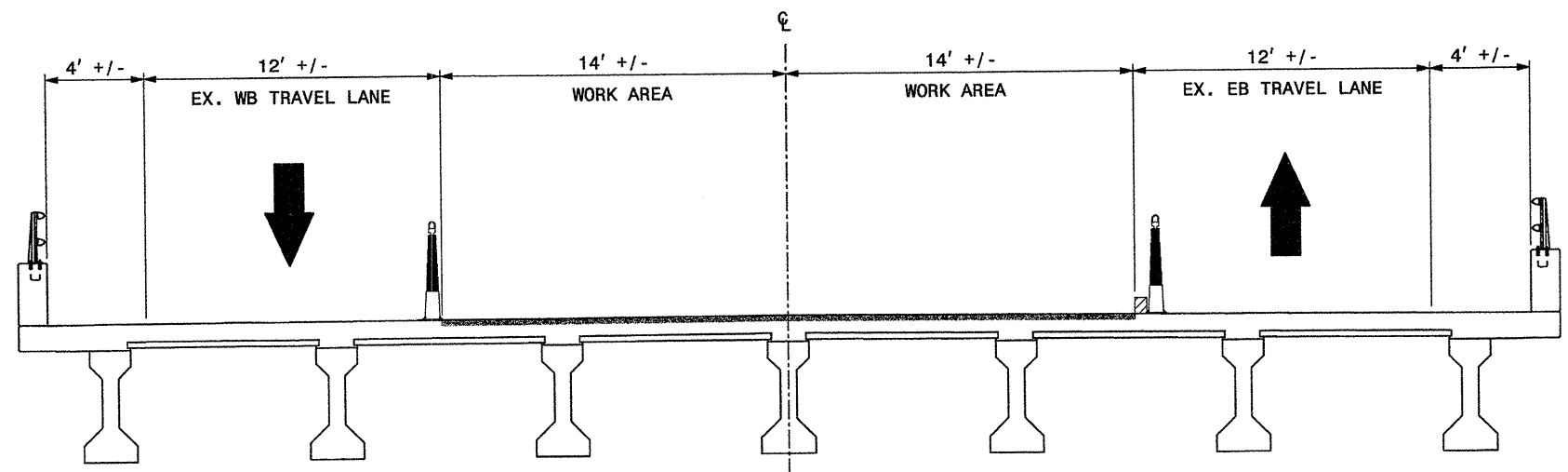
STEP 2: USING THIS SHEET AND RSD 1101.02, SHEET 7 OF 15, COMPLETE BRIDGE WORK ON THE MEDIAN LANE OF BOTH SIDES OF THE BRIDGE.

**STAGE II:**

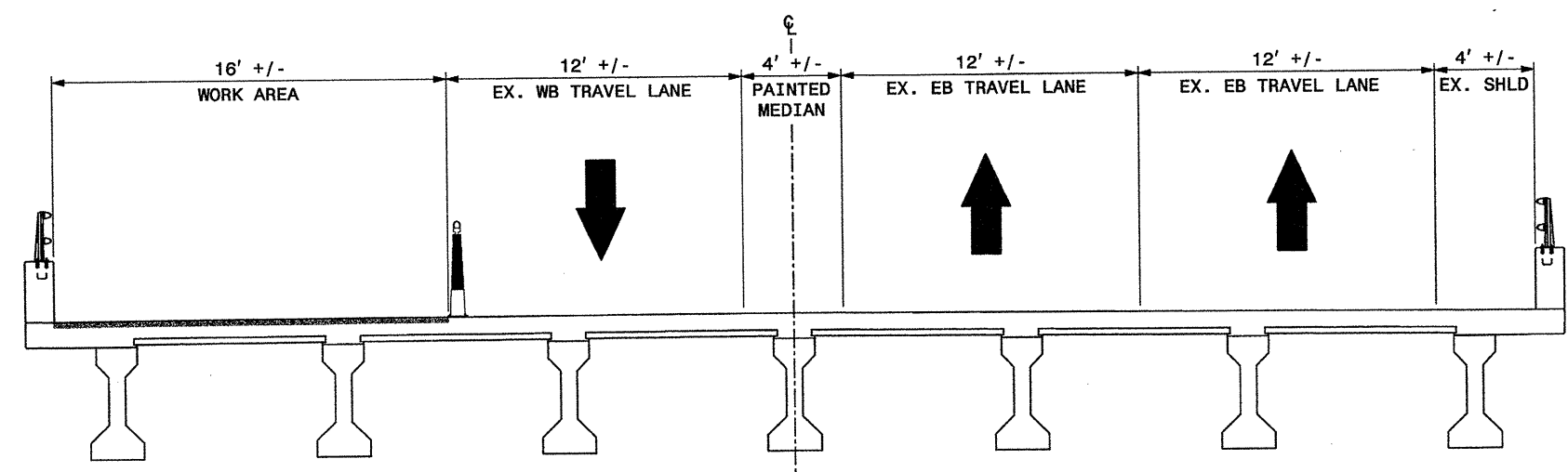
STEP 1: USING THIS SHEET AND RSD 1101.02, SHEET 3 OF 15, COMPLETE BRIDGE WORK ON THE WB OUTSIDE LANE OF THE BRIDGE.

**STAGE III:**

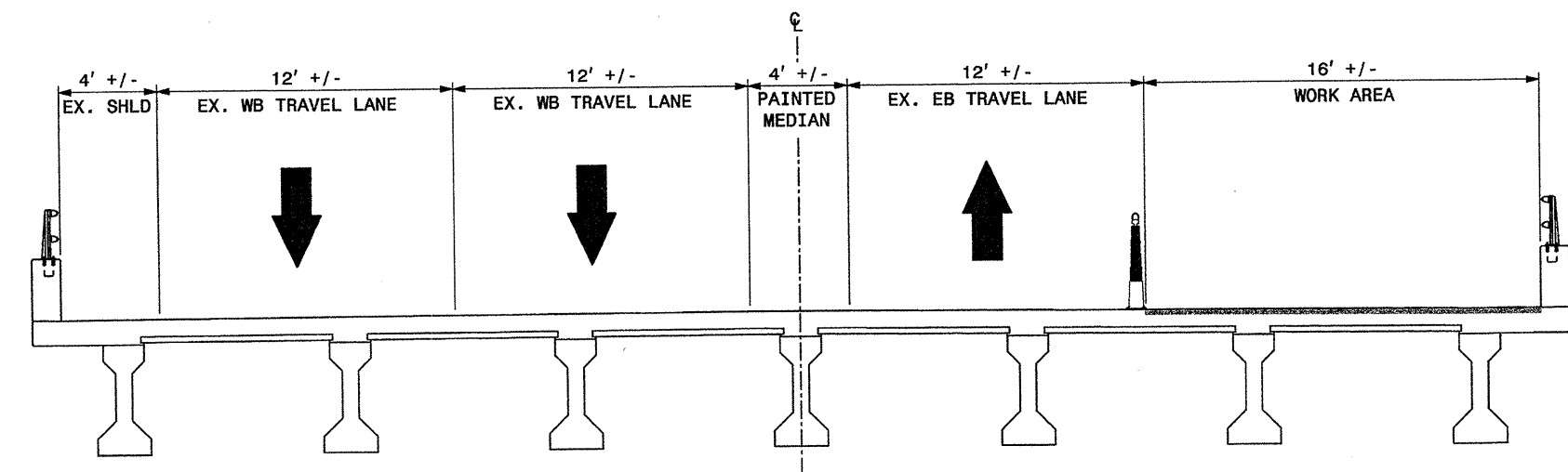
STEP 1: USING THIS SHEET AND RSD 1101.02, SHEET 3 OF 15, COMPLETE BRIDGE WORK ON THE EB OUTSIDE LANE OF THE BRIDGE.



TYPICAL SECTION - STAGE I



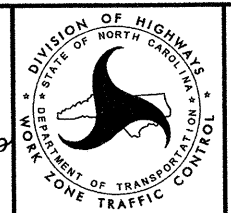
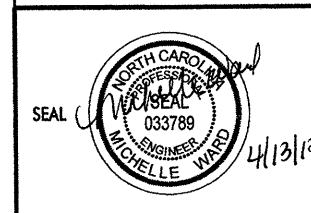
TYPICAL SECTION - STAGE II




TYPICAL SECTION - STAGE III

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REVISIONS



DARE CO.  
 BRIDGE NO. 12  
 (US 64/264 OVER  
 ROANOKE SOUND)  
 TYPICALS & STAGING

PROJ. REFERENCE NO.	SHEET NO.
17BP.1.P.14	TMP-3
 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	

**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, PLACE TEMPORARY PAINT MARKING, AND RETURN TRAFFIC TO ITS EXISTING PATTERN.

NOTE: PERFORM EPOXY OVERLAY AFTER ALL OTHER MAINTENANCE ACTIVITIES ARE COMPLETE.

**STAGE I:**

STEP 1: USING RSD 1101.02, SHEET 3 OF 15 OR 1101.04, SHEET 1 OF 1, COMPLETE SUBSTRUCTURE WORK.

STEP 2: USING THIS SHEET AND RSD 1101.02, SHEET 7 OF 15, COMPLETE BRIDGE WORK ON THE MEDIAN LANE OF BOTH SIDES OF THE BRIDGE (INCLUDING CENTER TURN LANE).

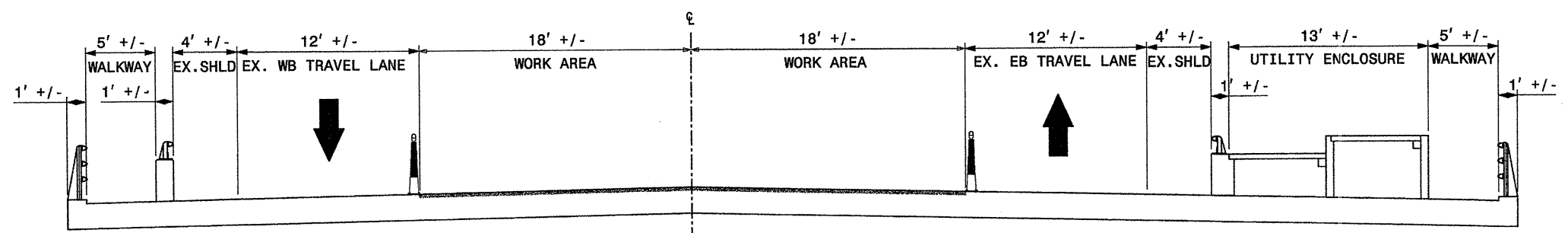
**STAGE II:**

STEP 1: USING THIS SHEET AND RSD 1101.02, SHEET 3 OF 15, COMPLETE BRIDGE WORK ON THE WB OUTSIDE LANE, SHOULDER AND WALKWAY OF THE BRIDGE.

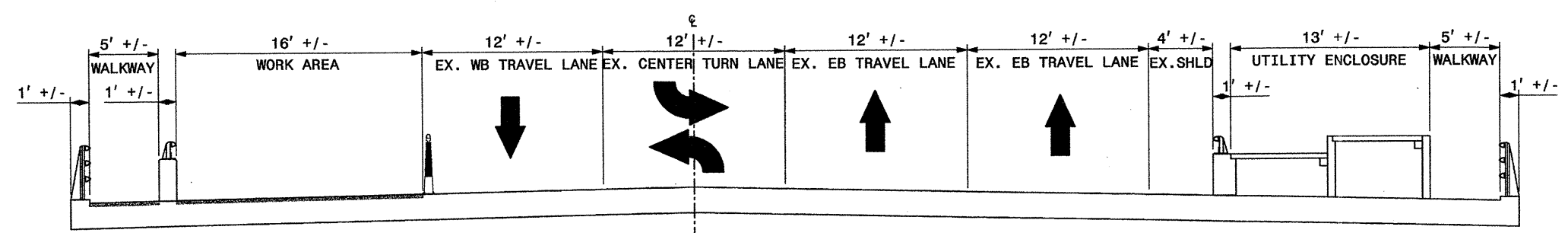
**STAGE III:**

STEP 1: USING THIS SHEET AND RSD 1101.02, SHEET 3 OF 15, COMPLETE BRIDGE WORK ON THE EB OUTSIDE LANE, SHOULDER AND WALKWAY OF THE BRIDGE.

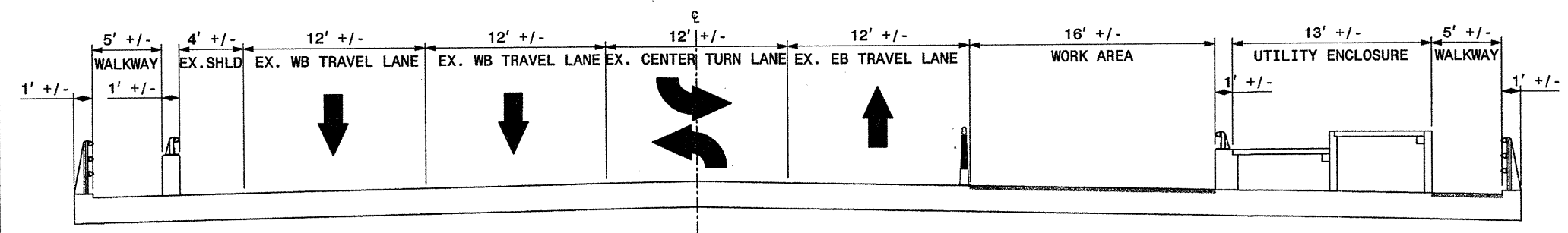
STEP 2: USING RSD 1101.02, SHEET 3 OR 7 OF 15, PLACE FINAL PAVEMENT MARKINGS AND MARKERS AND OPEN TO TRAFFIC. REMOVE ALL REMAINING TRAFFIC CONTROL DEVICES. (SEE LOCAL NOTE 2 ON SHEET TMP-1C.)



TYPICAL SECTION - STAGE I

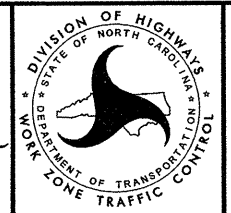
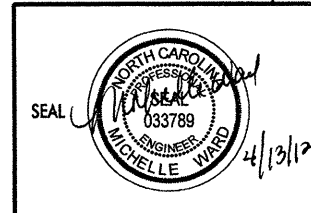


TYPICAL SECTION - STAGE II



TYPICAL SECTION - STAGE III

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 REVISIONS



DARE CO.  
 BRIDGE NO. 14  
 (US 64/264 OVER  
 ROANOKE SOUND)  
 TYPICALS & STAGING



## 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. FINIS 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