

09/08/09
FILE: S:\NCDOT\121313\121313.dwg
DATE: 9/23/08 4:23:00 PM
CONTRACT: C201743
TIP PROJECT: R-2813B

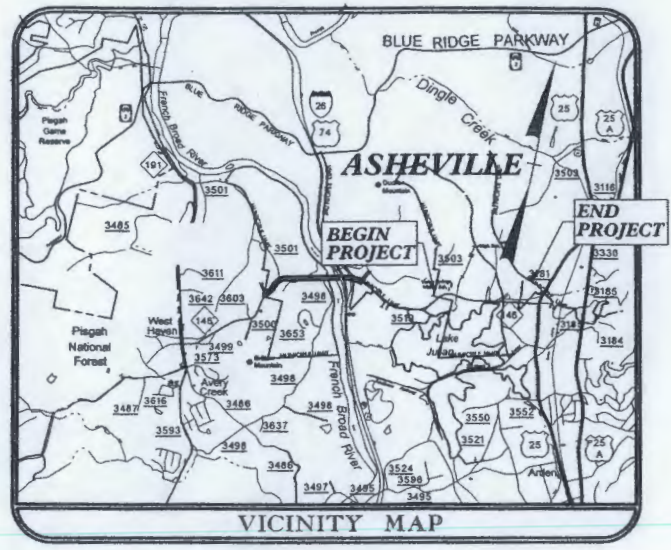
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

RELEASE FOR
CONSTRUCTION
DATE: 9-23-08

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2813B		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34505.3.3	STP-146(5)	CONST.	

BUNCOMBE COUNTY

LOCATION: NC 146 (LONG SHOALS ROAD) FROM WEST OF SR 3501
(CLAYTON ROAD) TO EAST OF I-26 NEAR ASHEVILLE
TYPE OF WORK: GRADING, PAVING, DRAINAGE, STRUCTURES, SIGNALS,
SIGNING, PAVEMENT MARKINGS, LIGHTING, AND UTILITIES



BEGIN CONSTRUCTION
-Y3- STA. 11+00.00
BEGIN BRIDGE
-L- STA. 41+72.00

STRUCTURES

-L- STA. 10+00.00
BEGIN TIP PROJECT R-2813B

BEGIN CONSTRUCTION
-L- STA. 9+97.00

-Y1- STA. 12+30.00

-Y1- STA. 20+03.93
-Y2- STA. 10+00.00
-Y2- STA. 15+00.00

END BRIDGE
-L- STA. 45+72.00

BEGIN BRIDGE
-Y3- STA. 28+61.00
END BRIDGE
-Y3- STA. 31+17.00

-L- END TIP PROJECT R-2813B
STA. 59+08.00

NOTE:
THIS IS A CONTROLLED-ACCESS PROJECT
ALONG I-26 AND AT -L- WITH ACCESS
BEING LIMITED TO POINTS AS SHOWN
ON THE PLANS

NOTE:
CLEARING ON THIS PROJECT SHALL BE
PERFORMED TO THE LIMITS ESTABLISHED
BY METHOD III.
THIS PROJECT IS LOCATED WITHIN THE
TOWN OF ASHEVILLE MUNICIPAL BOUNDARY.

NCDOT CONTACT: TERESA BRUTON, P.E. - PROJECT ENGINEER

TO HENDERSONVILLE

DESIGN DATA	
ADT 2007 =	23,150
ADT 2030 =	31,600
DHV =	10 %
D =	55 %
T =	7 % *
V =	50 MPH
* (TTST 2% + DUAL 5%)	

PROJECT LENGTH	
LENGTH ROADWAY -L-	
TIP PROJECT R-2813B =	0.854 MILES
LENGTH STRUCTURE -L-	
TIP PROJECT R-2813B =	0.076 MILES
TOTAL LENGTH OF -L-	
TIP PROJECT R-2813B =	0.930 MILES

Prepared In the Office of:
WILBUR SMITH ASSOCIATES
421 Fayetteville Street, Suite 1303, Raleigh NC 27601 Phone (919) 755-0583
2007 STANDARD SPECIFICATIONS

TOM M. HARRIS, P.E.
PROJECT DESIGN ENGINEER

LETTING DATE:
MARCH 22, 2007



DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

Design Load: HS25
per Mr. Tom Harris
on Aug. 18, 2011.
AIC

TOTAL BILL OF MATERIAL													
	CONSTRUCTION, MAINTANCE AND REMOVAL OF TEMPORARY ACCESS @ STA. 43+72.00 -L-	REMOVAL OF EXISTING STRUCTURE @ STA. 43+72.00 -L-	4'-6"Ø DRILLED PIERS IN SOIL	4'-6"Ø DRILLED PIERS NOT IN SOIL	PERMANENT STEEL CASING FOR 4'-6"Ø DRILLED PIERS	PDA TESTING	SID INSPECTION	CROSSHOLE SONIC LOGGING	UNCLASSIFIED STRUCTURE EXCAVATION STRUCTURE @ STA. 43+72.00 -L-	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS
	LUMP SUM	LUMP SUM	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	LUMP SUM	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM
SUPERSTRUCTURE										44,176	38,901		LUMP SUM
END BENT 1						1			LUMP SUM			112.6	
BENT 1			20.8	32.0	20.8							204.6	
BENT 2			29.5	32.0	29.5							212.2	
BENT 3			12.4	32.0								235.6	
END BENT 2						1						81.3	
TOTAL	LUMP SUM	LUMP SUM	62.7	96.0	50.3	2	1	1	LUMP SUM	44,176	38,901	846.3	LUMP SUM

	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	45" PRESTRESSED CONCRETE GIRDER	72" BULB TEE (BT-72) PRESTRESSED CONCRETE GIRDER	HP 12 x 53 STEEL PILES	STEEL PILE POINTS WITH TEETH	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE	ELASTOMERIC BEARINGS	EVAZOTE JOINT SEALS	STRUCTURE DRAINAGE SYSTEM	TEXAS TYPE C411 BRIDGE RAIL	24" WATER MAIN ATTACHMENT	2" SANITARY SEWER FORCE MAIN ATTACHMENT			
	LBS.	LBS.	No.	LIN. FT.	No.	LIN. FT.	No.	LIN. FT.	EACH	TON	SO. YDS.	LUMP SUM	LUMP SUM	LUMP SUM	LIN. FT.	LUMP SUM	LUMP SUM
SUPERSTRUCTURE			12	510.00	36	4,201.00						LUMP SUM	LUMP SUM	LUMP SUM	895.436	LUMP SUM	LUMP SUM
END BENT 1	18,720						21	525	21	340.0	380.0						
BENT 1	44,145	3,773															
BENT 2	44,980	4,460															
BENT 3	45,337	3,528															
END BENT 2	14,916						14	210	14								
TOTAL	168,098	11,761	12	510.00	36	4,201.00	35	735	35	340.0	380.0	LUMP SUM	LUMP SUM	LUMP SUM	895.436	LUMP SUM	LUMP SUM

PROJECT NO. R-2813B
BUNCOMBE COUNTY
STATION: 43 + 72.00 -L-

SHEET 8 OF 8

RELEASE FOR
CONSTRUCTION
DATE: 9-23-08



421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601

DRAWN BY : K.E. LOFTON
CHECKED BY : T.M. HARRIS

DATE : 9-08
DATE : 9-08

DWG. No.
S-8

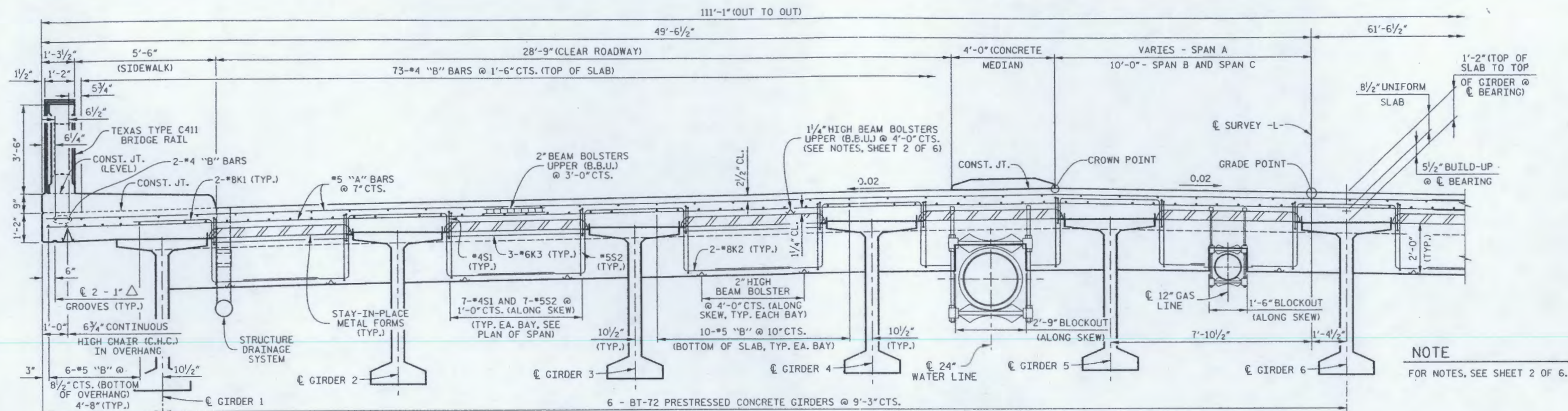


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

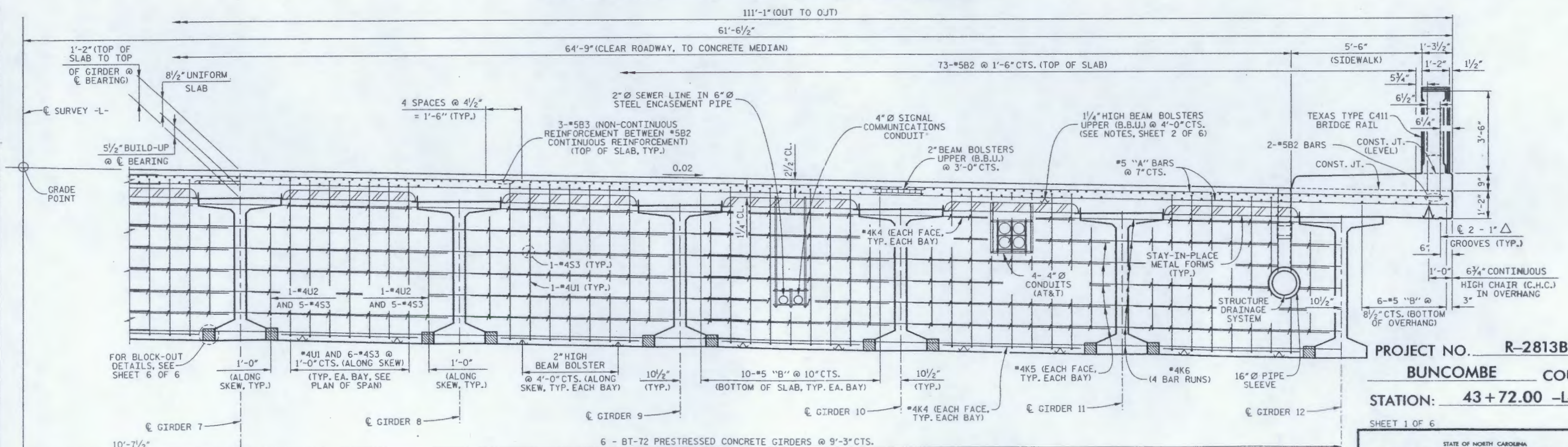
GENERAL DRAWING
BRIDGE OVER
FRENCH BROAD RIVER ON
NC 146 (LONG SHOALS ROAD)
BETWEEN SR 3498 AND I-26

REVISIONS				SHEET No.	
No.	BY:	DATE:	No.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS



HALF SECTION AT END BENT 1 AND BENT 3 DIAPHRAGM



HALF SECTION AT BENT 1 AND BENT 2 DIAPHRAGM

PROJECT NO. R-2813B
BUNCOMBE COUNTY
STATION: 43 + 72.00 -L-

SHEET 1 OF 6

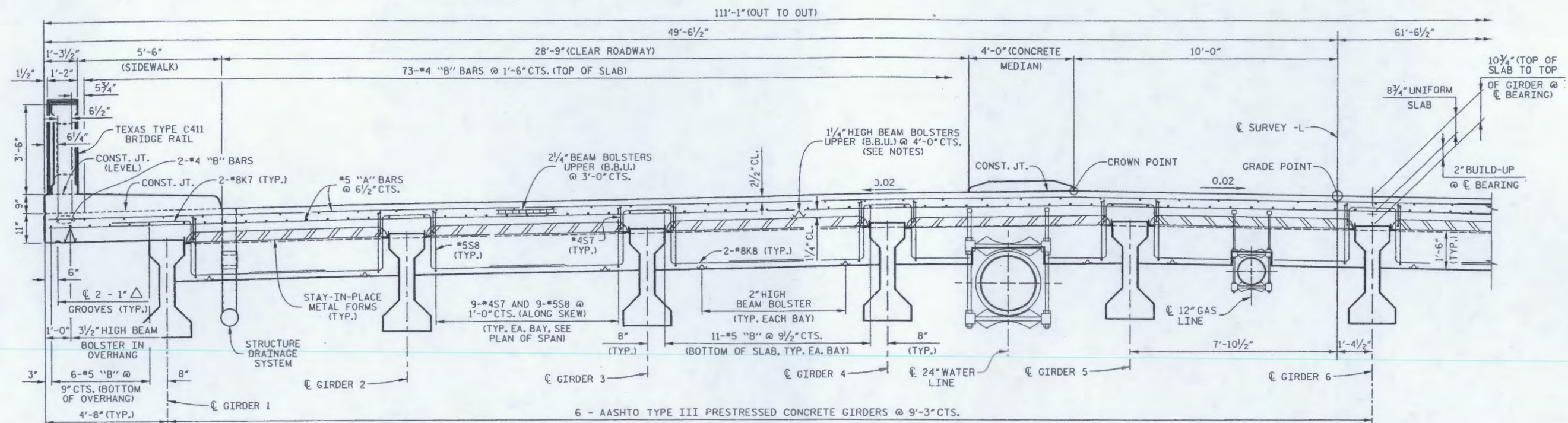
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
TYPICAL SECTION

RELEASE FOR
CONSTRUCTION
DATE: 9-23-08

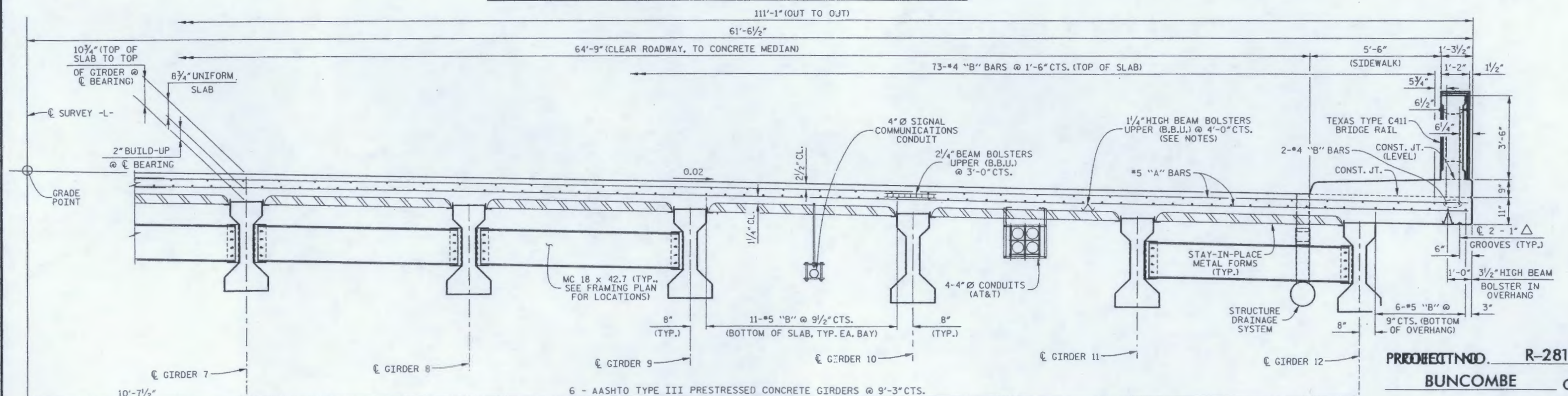
421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601
DRAWN BY: E.E. LOFTON
CHECKED BY: T.M. HARRIS
DATE: 9-08
DWG. No. S-9

NORTH CAROLINA
PROFESSIONAL
ENGINEER
THOMAS M. HARRIS
9-23-08

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



HALF SECTION AT BENT 3 AND END BENT 2 DIAPHRAGM



HALF SECTION AT INTERMEDIATE DIAPHRAGM - SPAN D

NOTES

PROVIDE 1 1/4" HIGH BEAM BOLSTERS UPPER AT 4'-0" CTS. ATOP THE METAL STAY-IN-PLACE FORMS TO SUPPORT THE BOTTOM MAT OF "A" BARS. WHEN USING REMOVABLE FORMS, PROVIDE CONTINUOUS HIGH CHAIRS FOR METAL DECK (C.H.C.M.) @ 4'-0" CTS. WITH A HEIGHT TO SUPPORT THE BOTTOM MAT OF "A" BARS A CLEAR DISTANCE OF 2 1/2" ABOVE THE TOP OF THE REMOVABLE FORM.

LONGITUDINAL STEEL MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO AVOID INTERFERENCE WITH STIRRUPS IN PRESTRESSED CONCRETE GIRDERS.

THE FOLLOWING PIPE SLEEVES SHALL BE INSTALLED IN THE BENT 1 AND BENT 2 DIAPHRAGMS:

12" Ø PVC SLEEVE (SCHEDULE 40) FOR 8" Ø PVC PIPE (STRUCTURE DRAINAGE SYSTEM).

30" Ø STEEL SLEEVE FOR 24" Ø WATER LINE.

16" Ø PVC SLEEVE (SCHEDULE 40) FOR 12" Ø GAS LINE.

10" Ø STEEL SLEEVE FOR 2" Ø SANITARY SEWER.

8" Ø PVC SLEEVE (SCHEDULE 40) FOR 4" Ø SIGNAL COMMUNICATION CONDUIT.

16" Ø PVC SLEEVE (SCHEDULE 40) FOR 12" Ø PVC PIPE (STRUCTURE DRAINAGE SYSTEM).

CONTRACTOR SHALL PROVIDE A BLOCKOUT IN THE BENT 1 AND BENT 2 DIAPHRAGMS FOR THE FOUR (4) AT&T CONDUITS.

THE JOINT IN THE DECK SHALL BE SAWED PRIOR TO THE CASTING OF THE SIDEWALK.

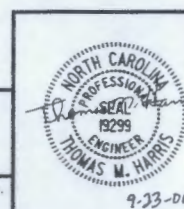
ADDITIONAL NOTES SEE SHEET 3 OF 6.

RELEASE FOR
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DATE: 9-23-08

421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601

DRAWN BY: K.E. LOFTON DATE: 9-08
CHECKED BY: T.M. HARRIS DATE: 9-08

DWG. No.
S-10



PROJECT NO. R-2813B
BUNCOMBE COUNTY
STATION: 43 + 72.00 -L-

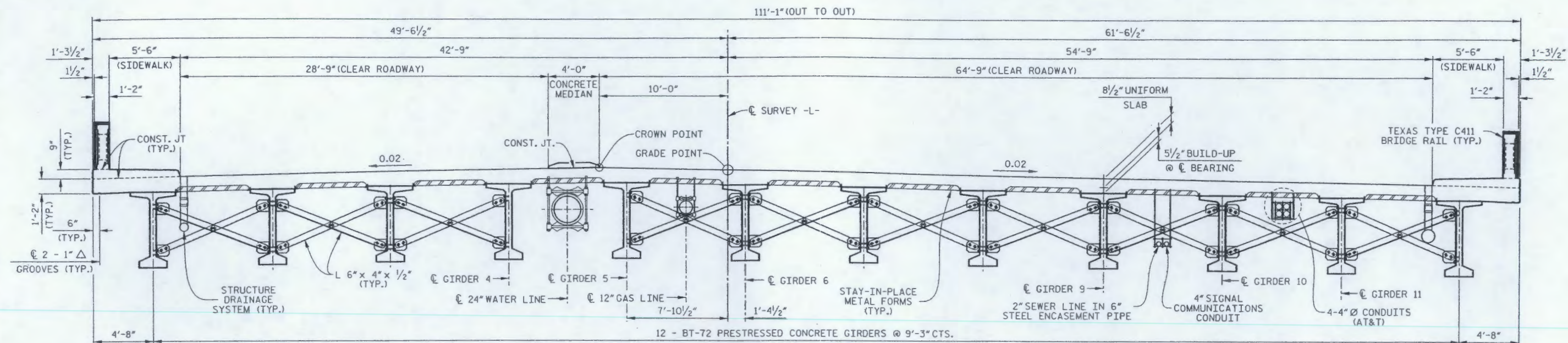
SHEET 2 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

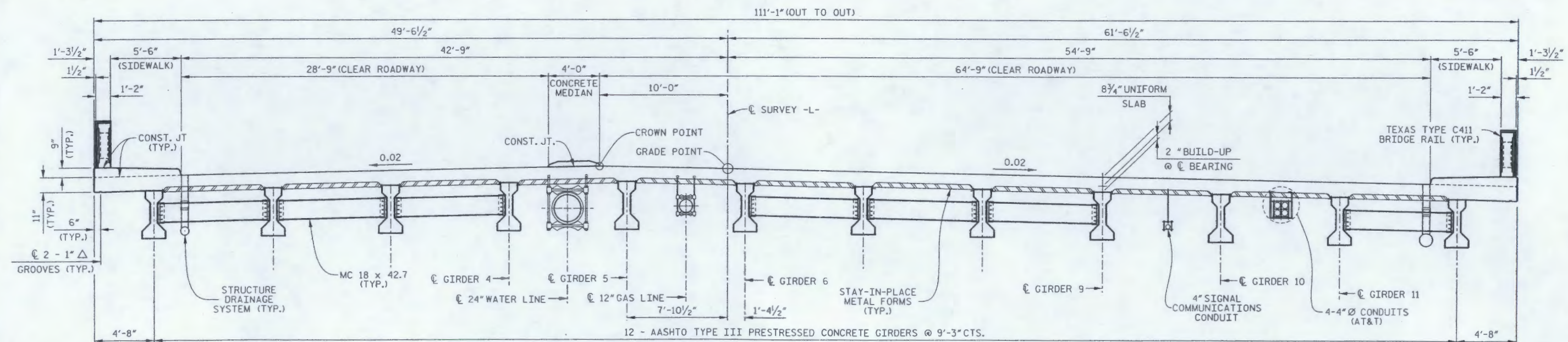
SUPERSTRUCTURE

TYPICAL SECTION

REVISIONS				SHEET No.
No.	BY	DATE	DATE	
1			3	TOTAL SHEETS
2			4	



SPANS A, B AND C



SPANS D

NOTES CONTINUED

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE EVAZOTE JOINT SEAL SHALL BE 3/8" AT BENT 3. FOR EVAZOTE JOINT SEALS, SEE SPECIAL PROVISIONS.

PREVIOUSLY CAST CONCRETE IN A CONTINUOUS UNIT SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN THE UNIT.

SIDEWALK IN A CONTINUOUS UNIT SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THE UNIT HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

SIDEWALK IN SPAN D 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.

CONCRETE IN END BENT 1, BENT 3 AND END BENT 2 DIAPHRAGMS MAY BE CLASS A IN LIEU OF CLASS AA.

DIAPHRAGM REINFORCING MAY BE SHIFTED, FIELD BENT AND CUT AS NECESSARY AND DIRECTED BY ENGINEER TO PROVIDE 2" MINIMUM CLEARANCE TO PIPE SLEEVES AND BLOCK-OUTS.

GROOVED CONTRACTION JOINTS 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF SIDEWALK AND CONCRETE MEDIAN IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINTS SHALL BE LOCATED AT A SPACING OF 8 FEET TO 10 FEET BETWEEN EXPANSION JOINTS. NO CONTRACTION JOINTS WILL BE REQUIRED FOR SEGMENTS LESS THAN 10 FEET IN LENGTH.

FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS.

FOR CONCRETE MEDIAN DETAILS, SEE "CONCRETE MEDIAN" SHEET.

FOR CONCRETE SIDEWALK, DETAILS, SEE "CONCRETE SIDEWALK" SHEET.

FOR RAILING DETAILS, SEE "TEXAS TYPE C411 BRIDGE RAIL" SHEETS.

FOR STRUCTURE DRAINAGE SYSTEM DETAILS, SEE "STRUCTURE DRAINAGE SYSTEM" SHEETS.

FOR 24" DIAMETER WATER LINE ATTACHMENT DETAILS, SEE "24" Ø WATER LINE ATTACHMENT" SHEETS.

FOR 12" GAS LINE ATTACHMENT DETAILS, SEE UTILITY PLANS.

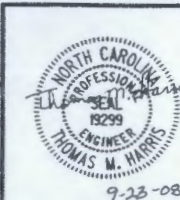
FOR AT&T CONDUIT ATTACHMENT DETAILS, SEE UTILITY PLANS.

FOR SEWER LINE AND 4" SIGNAL COMMUNICATIONS CONDUIT ATTACHMENT DETAILS, SEE "UTILITY ATTACHMENT DETAILS" SHEETS.

FOR 2" SEWER LINE ATTACHMENT TO BENT 3, SEE UTILITY PLANS.

**RELEASE FOR
CONSTRUCTION**
DATE: 9-23-08

WilburSmith
421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601
DRAWN BY: K.E. LOFTON DATE: 9-08
CHECKED BY: T.M. HARRIS DATE: 9-08
DWG. No. S-11



PROJECT NO. R-2813B

BUNCOMBE COUNTY

STATION: 43 + 72.00

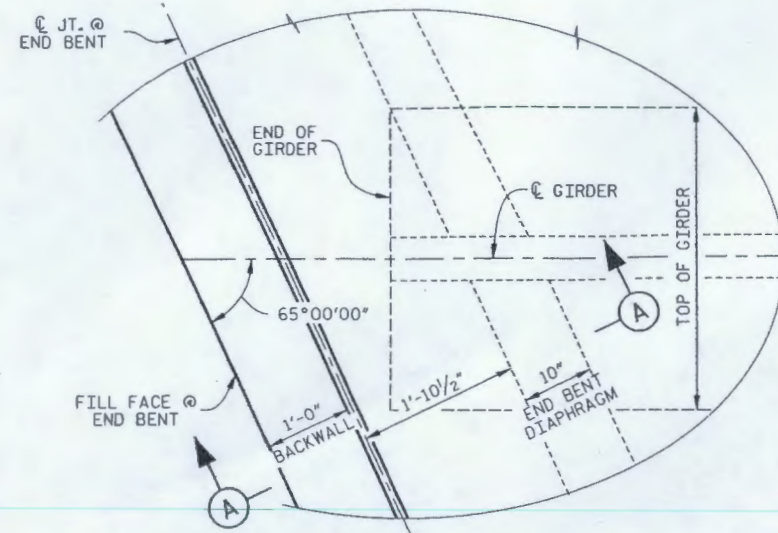
SHEET 3 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

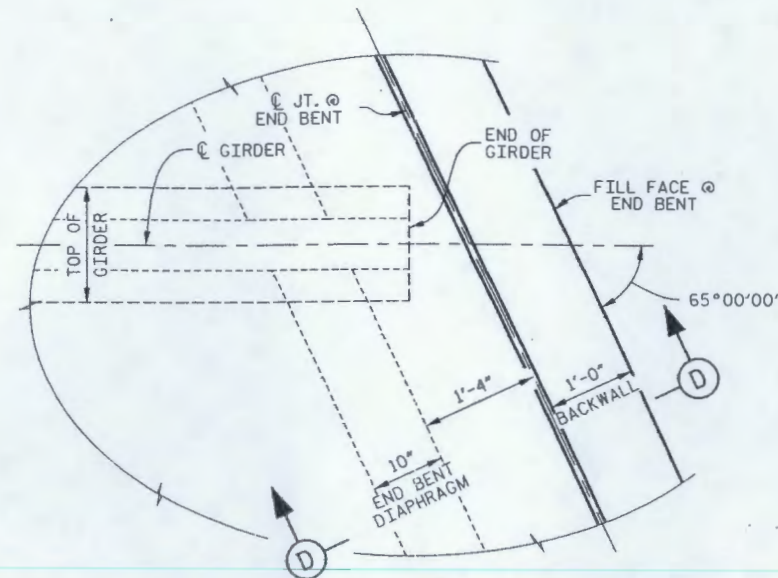
SUPERSTRUCTURE

TYPICAL SECTION

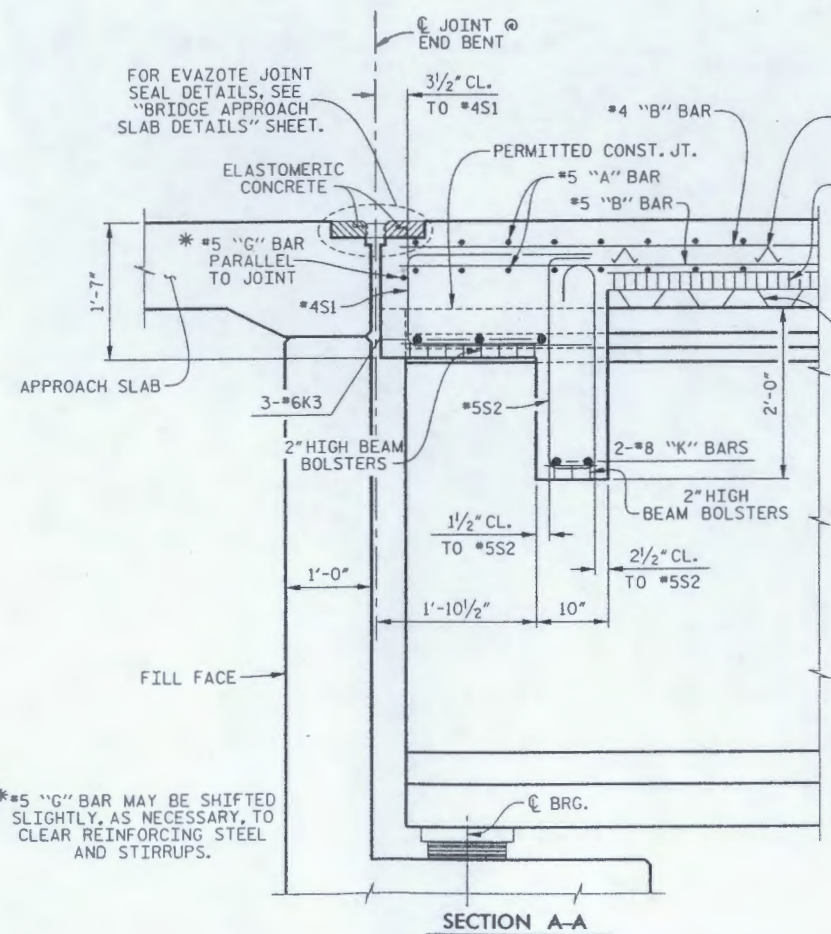
REVISIONS				SHEET No.
No.	BY:	DATE:	DATE:	
1			3	TOTAL SHEETS
2			4	



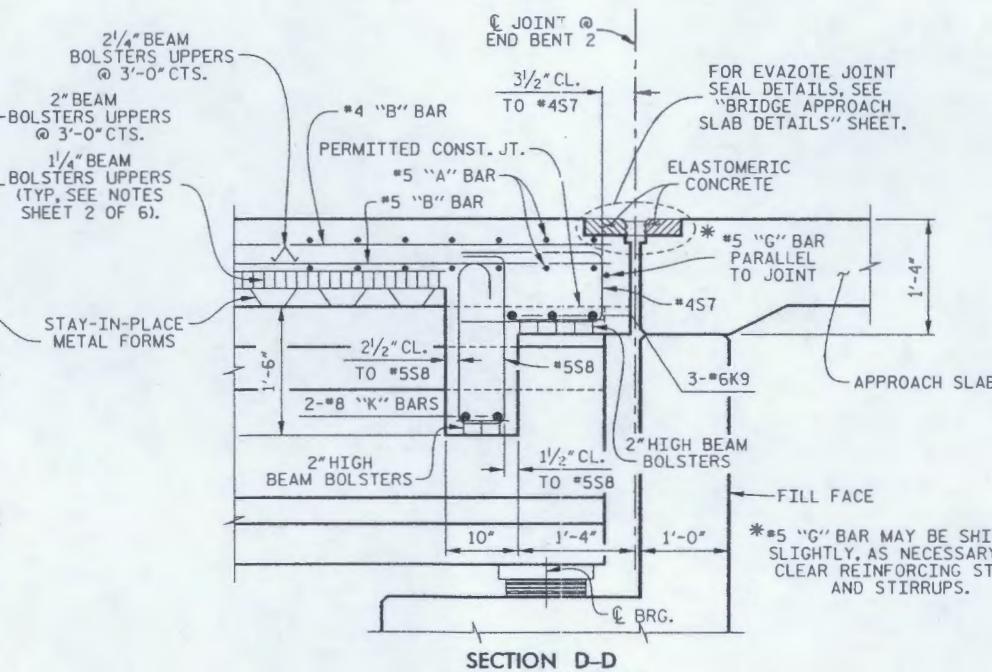
PLAN OF DIAPHRAGM - END BENT 1



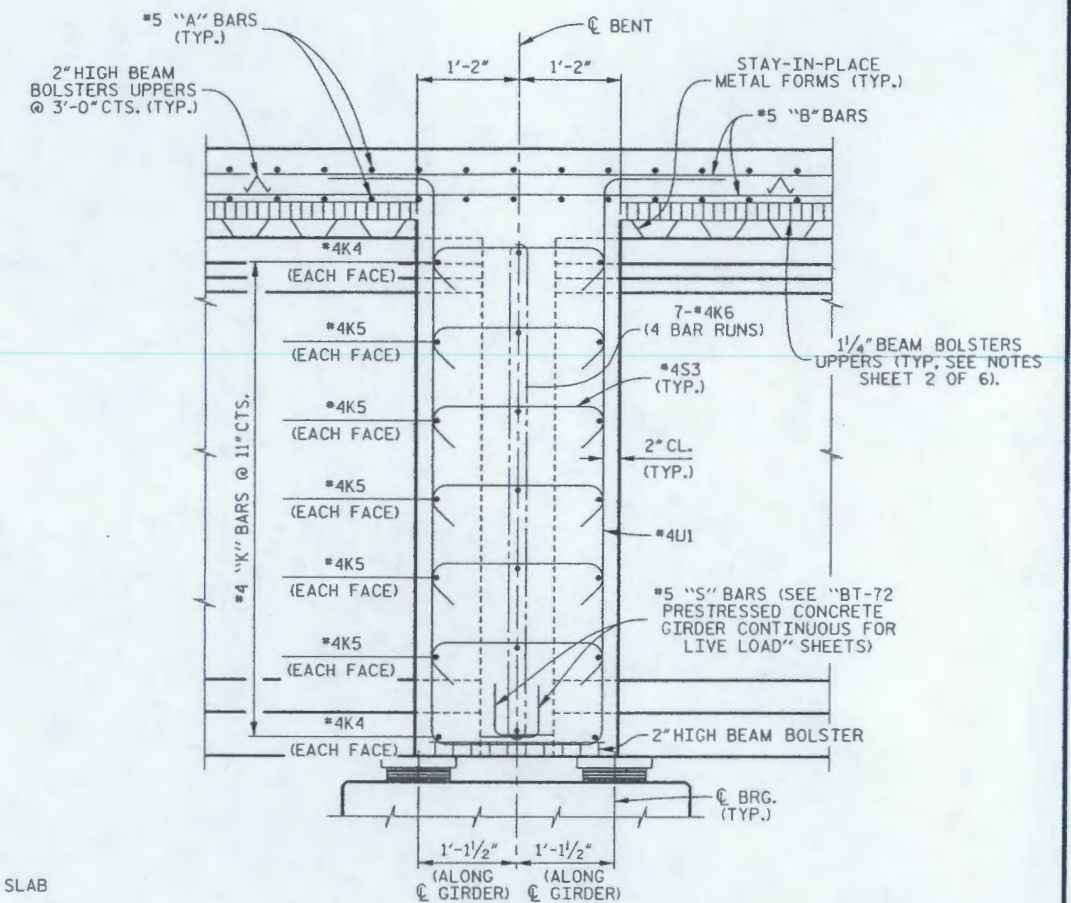
PLAN OF DIAPHRAGM - END BENT 2



SECTION THRU END BENT 1 DIAPHRAGM



SECTION THRU END BENT 2 DIAPHRAGM



SECTION THRU BENT DIAPHRAGM

(BENT 1 AND BENT 2)

PROJECT NO. **R-2813B**
BUNCOMBE COUNTY
 STATION: **43 + 72.00 -L-**

SHEET 4 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

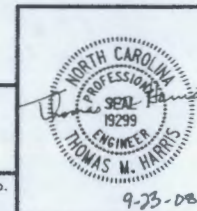
SUPERSTRUCTURE

TYPICAL SECTION
 DETAILS

REVISIONS				SHEET No.	
No.	BY	DATE	No.	BY	DATE
1			3		
2			4		

TOTAL SHEETS

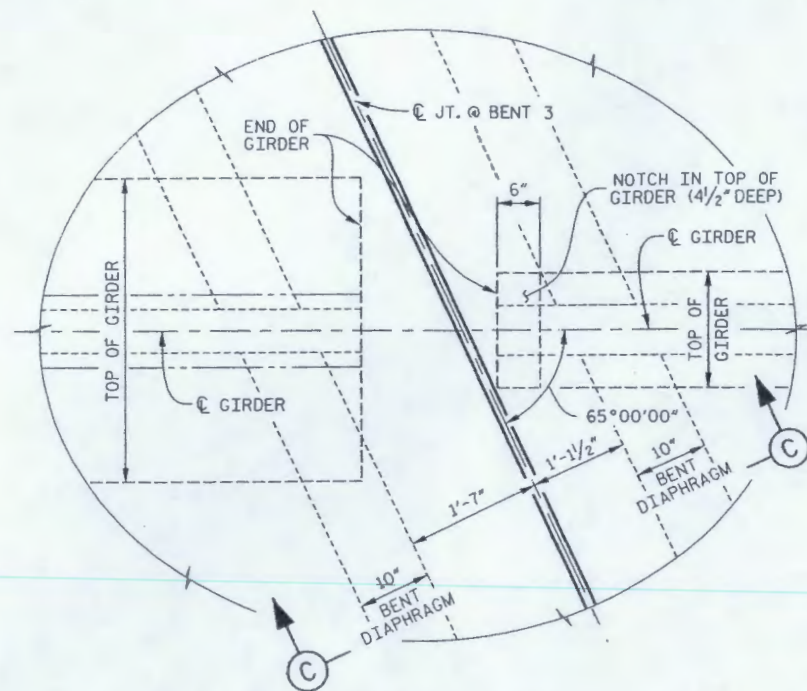
RELEASE FOR
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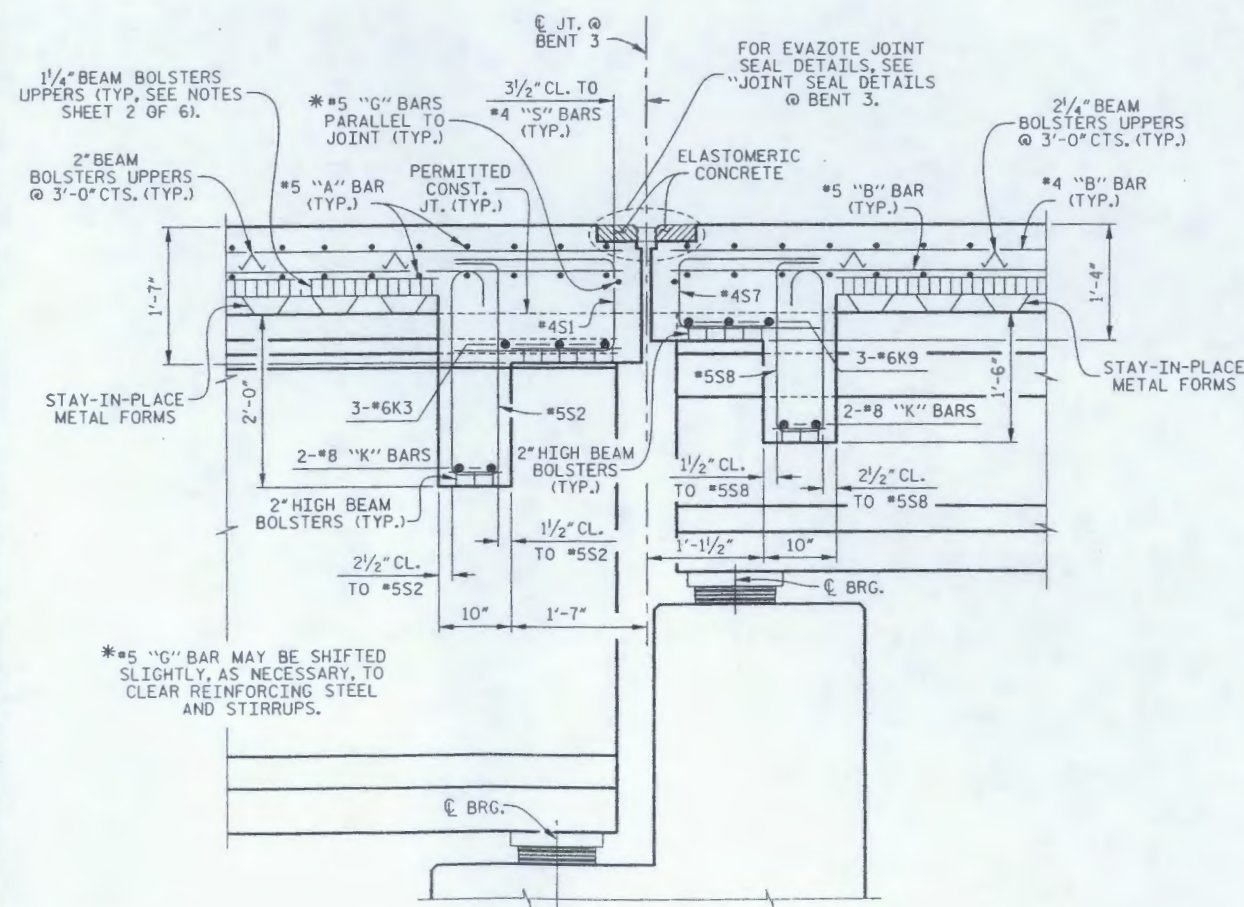
421 Fayetteville Street
 Suite 1303
 RALEIGH, N. C. 27601

WILBURSMITH ASSOCIATES

DRAWN BY: K.E. LOFTON DATE: 9-08 DWG. No. S-12
 CHECKED BY: T.M. HARRIS DATE: 9-08

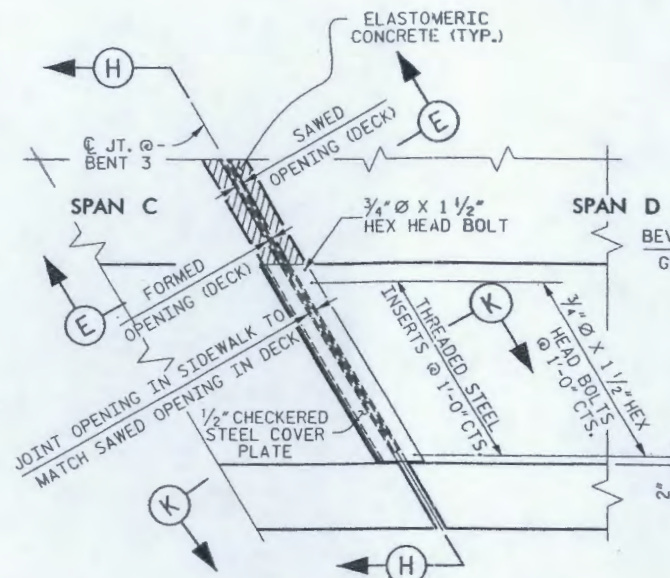


PLAN OF DIAPHRAGMS - BENT 3



SECTION C-C

SECTION THRU BENT DIAPHRAGM

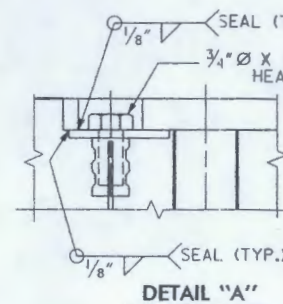


PLAN VIEW OF EVAZOTE JOINT
SEAL @ BENT 3 FOR SIDEWALK

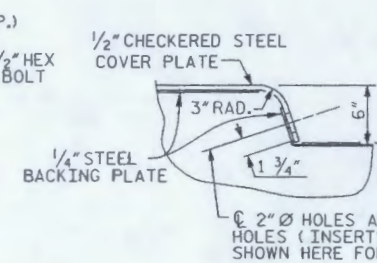
NOTES

THE STEEL PLATES SHALL CONFORM TO AASHTO M270 GRADE 36 OR APPROVED EQUAL. AFTER FABRICATION, THE PLATES SHALL BE COMMERCIAL BLAST CLEANED AND COATED WITH A MINIMUM THICKNESS OF 4 MILS (DRY) OF ZINC RICH PAINT IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. AT THE CONTRACTOR'S OPTION, THESE SURFACES MAY BE METALLIZED TO A MINIMUM THICKNESS OF 6 MILS. SEE SPECIAL PROVISIONS FOR THERMAL SPRAYED COATINGS (METALLIZATION).

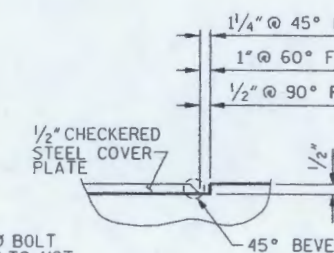
THE 3/4" DIAMETER HEX HEAD BOLTS SHALL CONFORM TO ASTM F593 ALLOY 304 STAINLESS STEEL.



DETAIL "A"

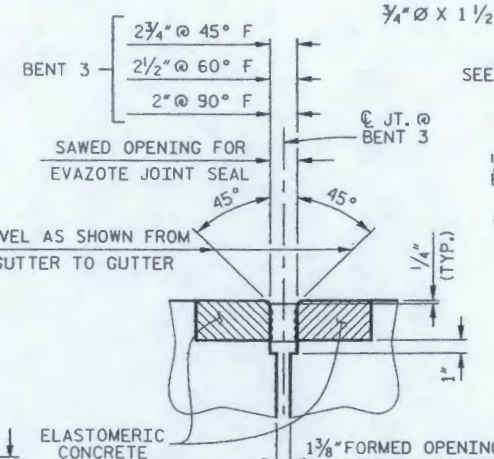


DETAIL "B"

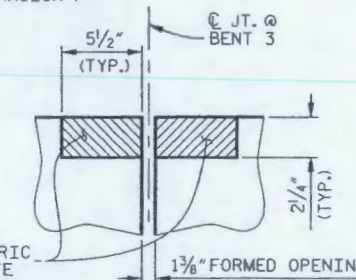


DETAIL "C"

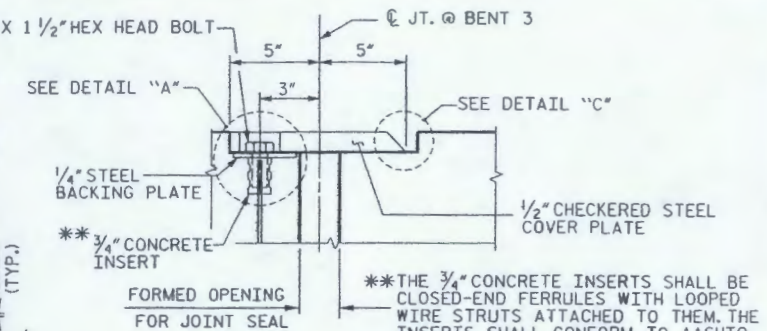
JOINT SEAL DETAILS @ BENT 3



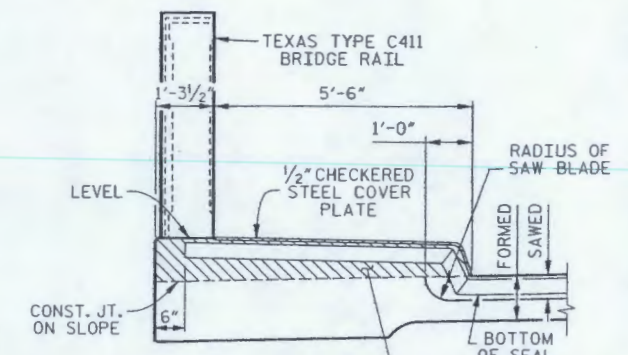
SECTION E-E
EVAZOTE JOINT SEAL
(EXPANSION)



SECTION E-E
EVAZOTE JOINT SEAL
(PRE-SAWED ELASTOMERIC
CONCRETE DIMENSIONS)



SECTION K-K



SECTION H-H

ELASTOMERIC CONCRETE	
BENT	ELASTOMERIC CONCRETE* (CU. FT.)
3	20.6

*BASED ON THE MINIMUM BLOCKOUT SHOWN.

PROJECT NO. **R-2813B**
BUNCOMBE COUNTY
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SHEET 5 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE

TYPICAL SECTION
 DETAILS

REVISIONS				SHEET No.	
No.	BY	DATE	No.	BY	DATE
1			3		
2			4		

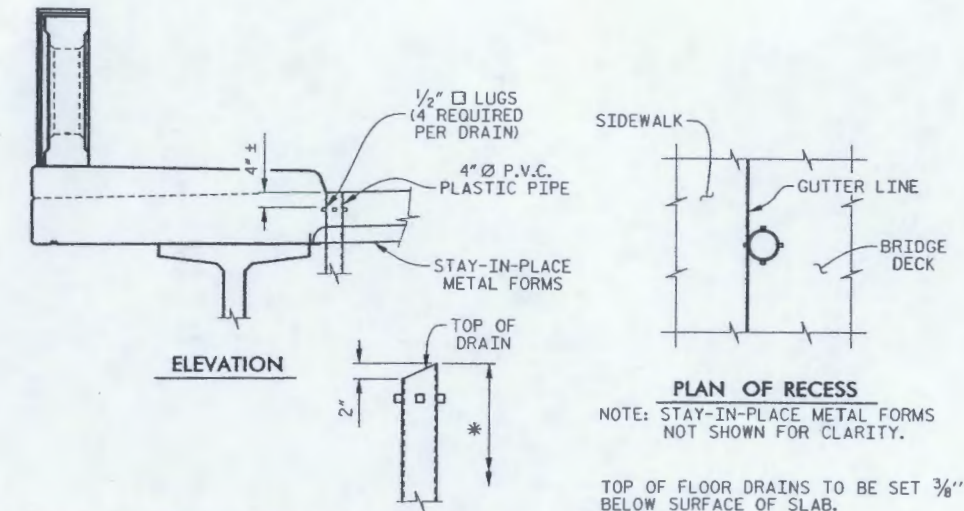
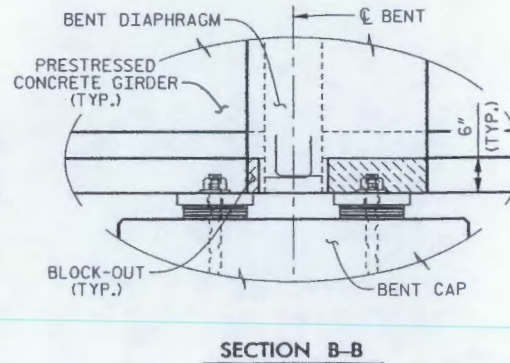
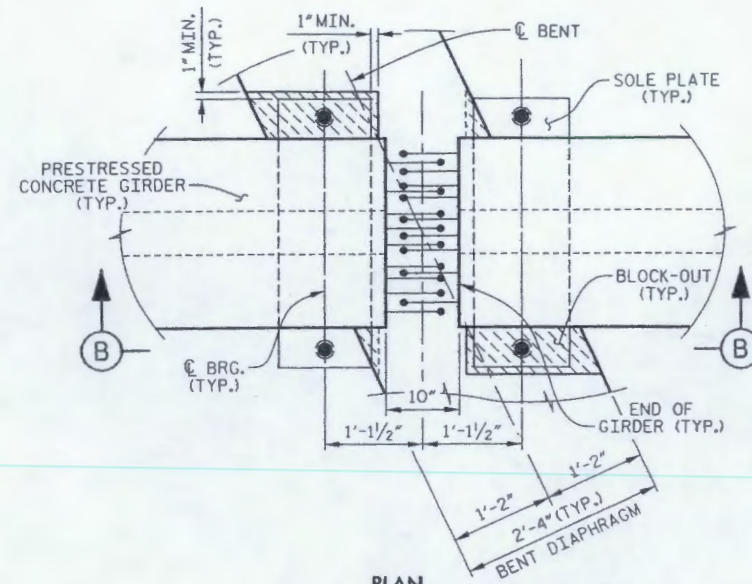
TOTAL SHEETS

RELEASE FOR
 CONSTRUCTION
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421 Fayetteville Street
 Suite 1303
 RALEIGH, N. C. 27601

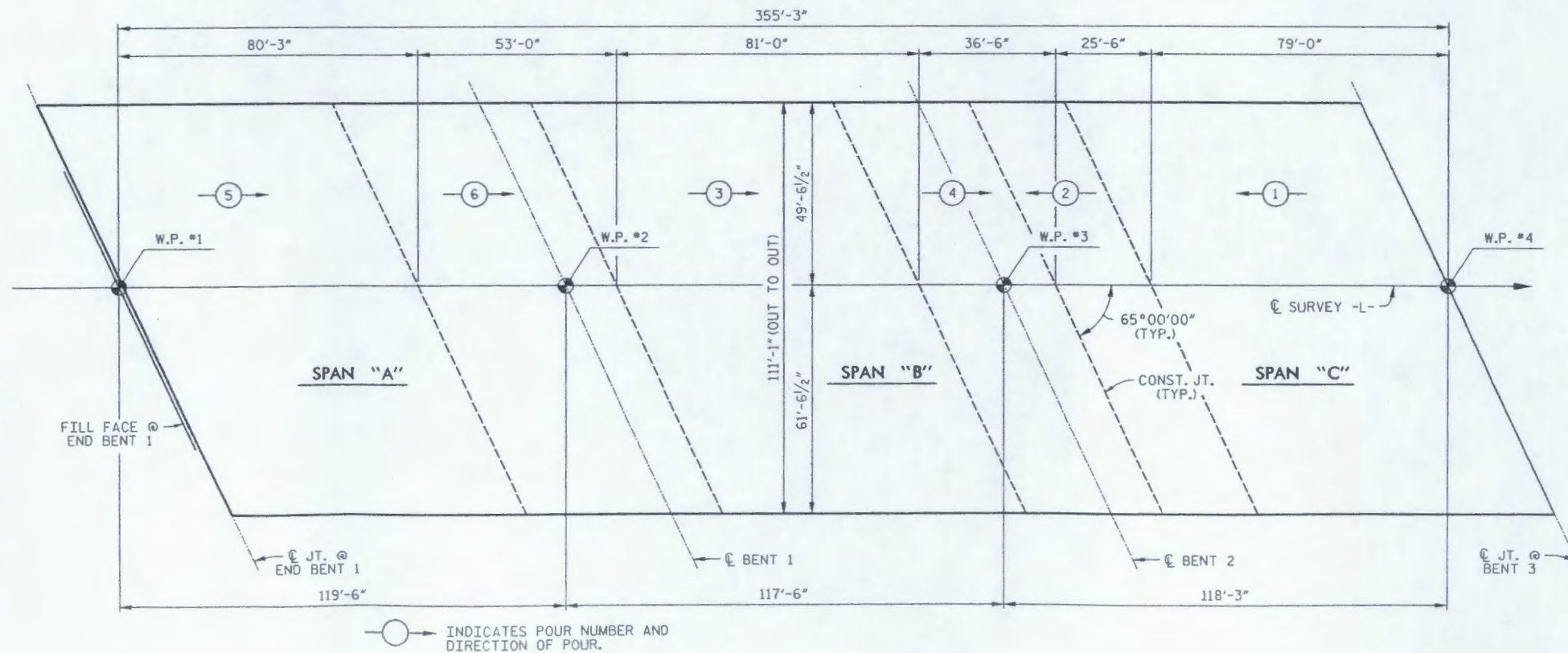
DRAWN BY: K.E. LOFTON
 CHECKED BY: T.M. HARRIS
 DATE: 9-08
 DATE: 9-08
 DWG. No. S-13



* LENGTH TO BE DETERMINED BY LOCATION OF DRAINAGE SYSTEM (86 DRAINS REQUIRED)

PIPE DETAIL

DRAIN DETAILS

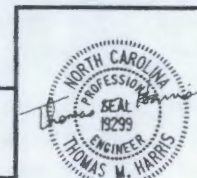


CLASS AA CONCRETE BREAKDOWN		
POUR 1	298.0	CU. YDS.
POUR 2	92.5	CU. YDS.
POUR 3	295.3	CU. YDS.
POUR 4	186.4	CU. YDS.
POUR 5	298.0	CU. YDS.
POUR 6	246.1	CU. YDS.
TOTAL	1,416.3	CU. YDS.

PROJECT NO. R-2813B
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SHEET 6 OF 6

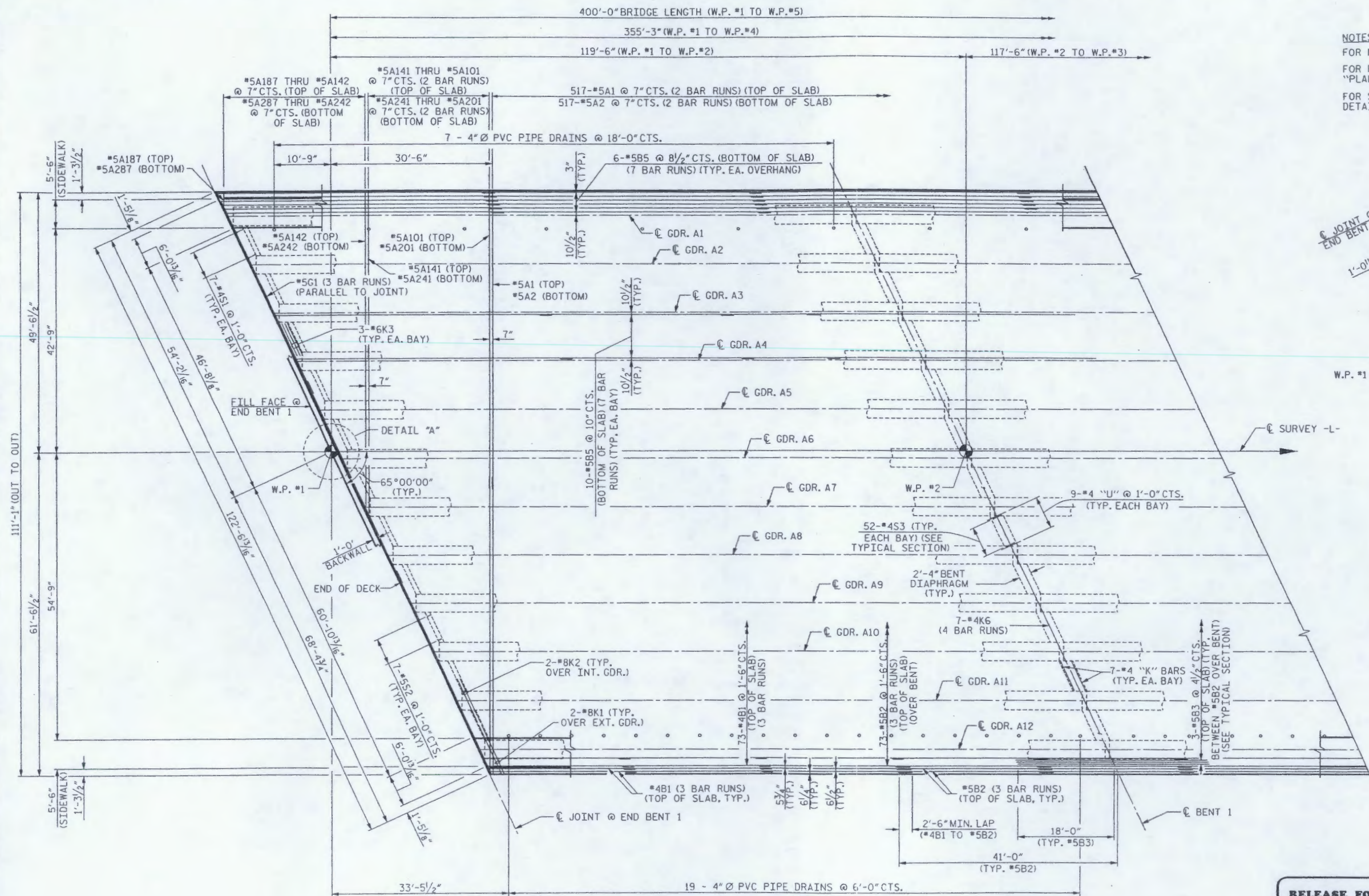
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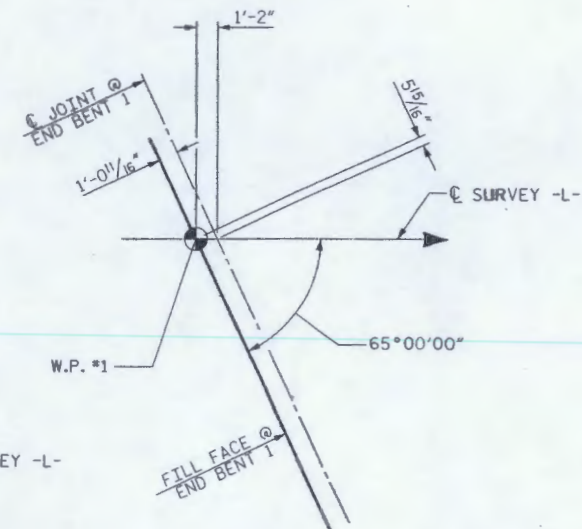
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 TYPICAL SECTION DETAILS

REVISIONS				SHEET No.	
No.	BY	DATE	No.	BY	DATE
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TOTAL SHEETS					

WilburSmith
 421 Fayetteville Street
 Suite 1303
 RALEIGH, N. C. 27601
 DRAWN BY: K.E. LOFTON
 CHECKED BY: T.M. HARRIS
 DATE: 9-08
 DATE: 9-08
 DWG. No. S-14



NOTES:
 FOR NOTES, SEE "TYPICAL SECTION" SHEET 2 OF 6.
 FOR REINFORCING STEEL IN SIDEWALK, SEE "PLAN OF SIDEWALK AND DETAILS" SHEET.
 FOR SLAB POURING SEQUENCE, SEE "TYPICAL SECTION DETAILS" SHEET 6 OF 6.



DETAIL "A"

PROJECT NO. **R-2813B**
BUNCOMBE COUNTY
 STATION: **43+72.00 -L-**

RELEASE FOR
 CONSTRUCTION
 DATE: 7-23-08

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

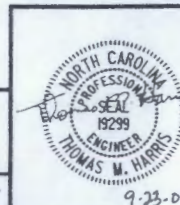
SUPERSTRUCTURE

PLAN OF SPAN A

WilburSmith
 421 Fayetteville Street
 Suite 1303
 RALEIGH, N. C. 27601

DRAWN BY: K.E. LOFTON DATE: 9-08
 CHECKED BY: T.M. HARRIS DATE: 9-08

DWG. No. S-15



REVISIONS				SHEET No.	
No.	BY	DATE	No.	BY	DATE
1			3		
2			4		
				TOTAL SHEETS	

400'-0" BRIDGE LENGTH (W.P. #1 TO W.P. #5)

355'-3" (W.P. #1 TO W.P. #4)

117'-6" (W.P. #2 TO W.P. #3)

118'-3" (W.P. #3 TO W.P. #4)

517'-5A1 @ 7" CTS. (2 BAR RUNS) (TOP OF SLAB)
517'-5A2 @ 7" CTS. (2 BAR RUNS) (BOTTOM OF SLAB)

7 - 4" Ø PVC PIPE DRAINS @ 18'-0" CTS.

6"-5B5 @ 8 1/2" CTS. (BOTTOM OF SLAB)
(7 BAR RUNS) (TYP. EA. OVERHANG)

CL BENT 2

CL JT. @ BENT 3

CL GDR. C1

CL GDR. C2

CL GDR. C3

CL GDR. C4

CL GDR. C5

CL GDR. C6

CL GDR. C7

CL GDR. C8

CL GDR. C9

CL GDR. C10

CL GDR. C11

CL GDR. C12

52'-4S3 (TYP. EACH BAY) (SEE TYPICAL SECTION)

9'-4 "U" @ 1'-0" CTS. (TYP. EACH BAY)

2'-4" BENT DIAPHRAGM (TYP.)

7'-4K6 (4 BAR RUNS)

7'-4 "K" BARS (TYP. EA. BAY)

3'-5B3 @ 4 1/2" CTS. (TOP OF SLAB) (TYP. BETWEEN #5B2 OVER BENT) (SEE TYPICAL SECTION)

73'-5B2 @ 1'-6" CTS. (TOP OF SLAB) (3 BAR RUNS)

5B2 (3 BAR RUNS) (TOP OF SLAB, TYP.)

18'-0" (TYP. #5B3)

41'-0" (TYP. #5B2)

2'-6" MIN. LAP (#5B2 TO #4B1)

4B1 (3 BAR RUNS) (TOP OF SLAB, TYP.)

19 - 4" Ø PVC PIPE DRAINS @ 6'-0" CTS.

*5G1 (3 BAR RUNS) (PARALLEL TO JOINT)

3'-6K3 (TYP. EA. BAY)

*5A1 (TOP)
*5A2 (BOTTOM)

*5A142 (TOP)
*5A242 (BOTTOM)

*5A101 (TOP)
*5A201 (BOTTOM)

*5A141 (TOP)
*5A241 (BOTTOM)

*5A101 THRU *5A141 @ 7" CTS. (2 BAR RUNS) (TOP OF SLAB)

*5A201 THRU *5A241 @ 7" CTS. (2 BAR RUNS) (BOTTOM OF SLAB)

*5A187 THRU *5A142 @ 7" CTS. (TOP OF SLAB)

*5A287 THRU *5A242 @ 7" CTS. (BOTTOM OF SLAB)

2'-8K2 (TYP. OVER INT. GDR.)

2'-8K1 (TYP. OVER EXT. GDR.)

RELEASE FOR CONSTRUCTION
DATE: 9-23-08

SPAN C

NOTE: UTILITY BLOCKOUTS AND PIPE SLEEVES IN DIAPHRAGMS NOT SHOWN FOR CLARITY.

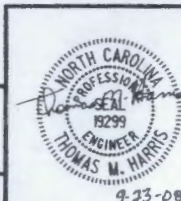


421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601

DRAWN BY: K.E. LOFTON
CHECKED BY: T.M. HARRIS

DATE: 9-08
DATE: 9-08

DWG. No. S-17



PROJECT NO. R-2813B
BUNCOMBE COUNTY
STATION: 43 + 72.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN C

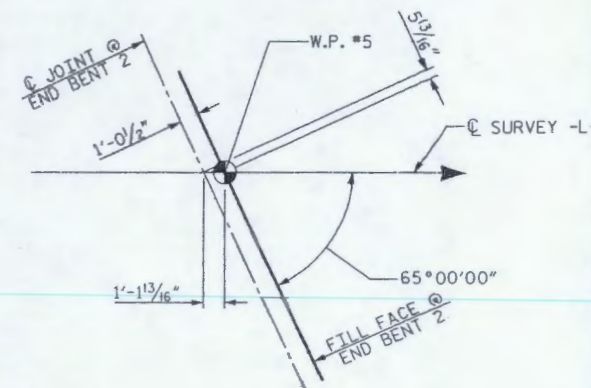
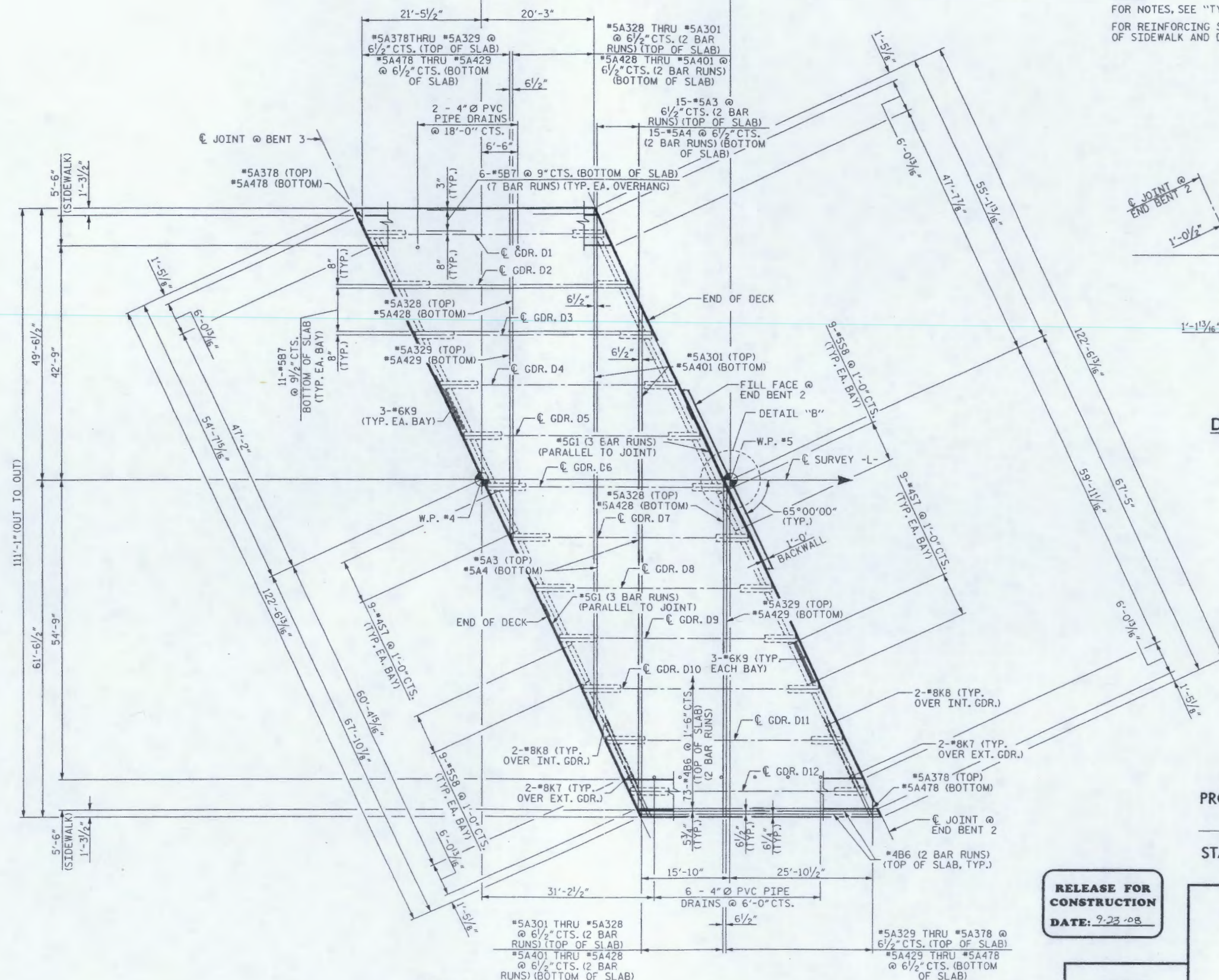
REVISIONS

No.	BY:	DATE:	No.	BY:	DATE:	SHEET No.
1			3			TOTAL SHEETS
2			4			

400'-0" BRIDGE LENGTH (W.P. #1 TO W.P. #5)

44'-9" (W.P. #4 TO W.P. #5)

NOTES:
FOR NOTES, SEE "TYPICAL SECTION" SHEET 2 OF 6.
FOR REINFORCING STEEL IN SIDEWALK, SEE "PLAN OF SIDEWALK AND DETAILS" SHEET.



DETAIL "B"

SPAN D

NOTE: UTILITY BLOCKOUTS AND PIPE SLEEVES IN DIAPHRAGMS NOT SHOWN FOR CLARITY.

PROJECT NO. **R-2813B**
BUNCOMBE COUNTY
STATION: **43+72.00 -L-**

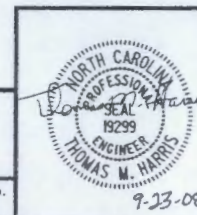
RELEASE FOR
CONSTRUCTION
DATE: 9-23-08

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

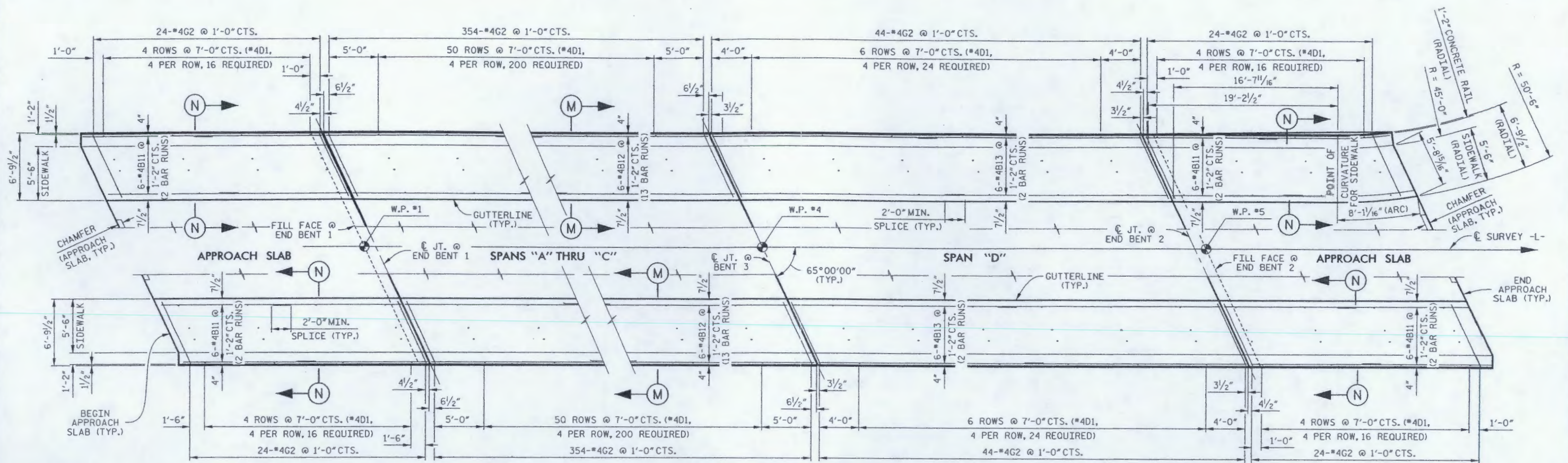
SUPERSTRUCTURE

PLAN OF SPAN D

421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601
DRAWN BY: K.E. LOFTON
CHECKED BY: T.M. HARRIS
DATE: 9-08
DATE: 9-08
DWG. No. S-18



REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			



PLAN OF CONCRETE SIDEWALK

NOTES

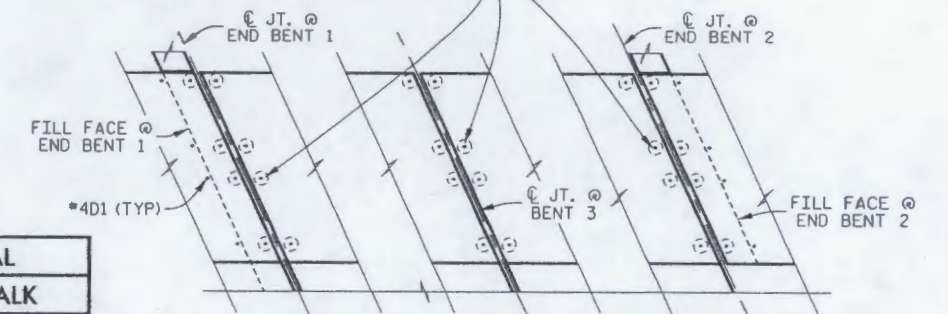
ALL REINFORCING STEEL IN CONCRETE SIDEWALK SHALL BE EPOXY COATED.

FOR APPROACH SLAB DETAILS, SEE "BRIDGE APPROACH SLAB" SHEETS.

WORK THIS DRAWING WITH "PLAN OF SPANS" AND "BRIDGE APPROACH SLAB" SHEETS.

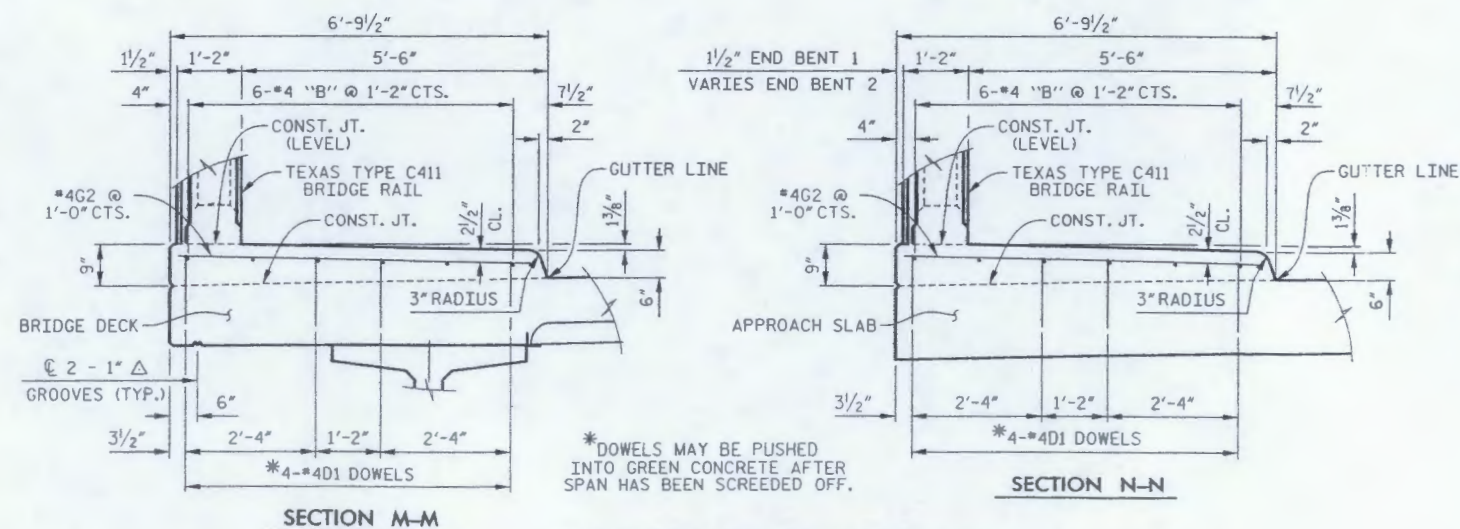
GROOVED CONTRACTION JOINTS $\frac{1}{2}$ " IN DEPTH, SHALL BE TOoled IN ALL EXPOSED FACES OF SIDEWALK IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINTS SHALL BE LOCATED AT A SPACING OF 8 FEET TO 10 FEET BETWEEN EXPANSION JOINTS. NO CONTRACTION JOINTS WILL BE REQUIRED FOR SEGMENTS LESS THAN 10 FEET IN LENGTH.

THESE DOWELS ARE TO BE PLACED AFTER SAWING OF THE JOINT. THE HOLES SHALL BE DRILLED AND THE DOWELS GROUTED INTO PLACE. (TYP.)



SIDEWALK DOWEL (#4D1) DETAIL

BILL OF MATERIAL					
CONCRETE SIDEWALK					
BAR No.	SIZE	TYPE	LENGTH	WEIGHT	
*B11	48	*4	STR 13'-9"	441	
*B12	156	*4	STR 29'-1"	3031	
*B13	24	*4	STR 23'-0"	369	
*D1	560	*4	STR 0'-10"	312	
*G2	892	*4	STR 6'-9"	4022	
*EPOXY COATED REINFORCING STEEL				8,175 LBS.	
CLASS AA CONCRETE					
APPROACH SLABS				15.8 CU. YDS.	
BRIDGE				125.8 CU. YDS.	
TOTAL				141.6 CU. YDS.	



CONCRETE SIDEWALK DETAILS

PROJECT NO. **R-2813B**
BUNCOMBE COUNTY
 STATION: **43+72.00 -L-**

RELEASE FOR
 CONSTRUCTION
 DATE: 9-23-08

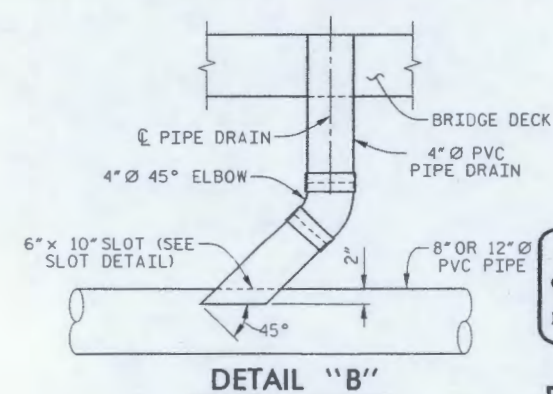
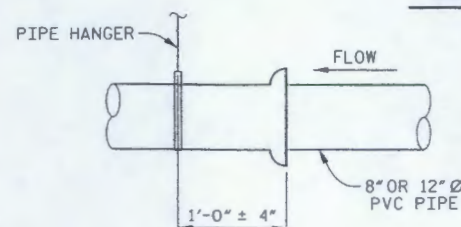
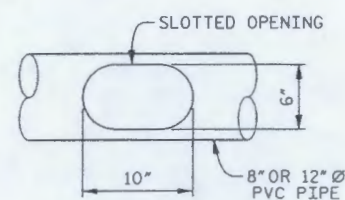
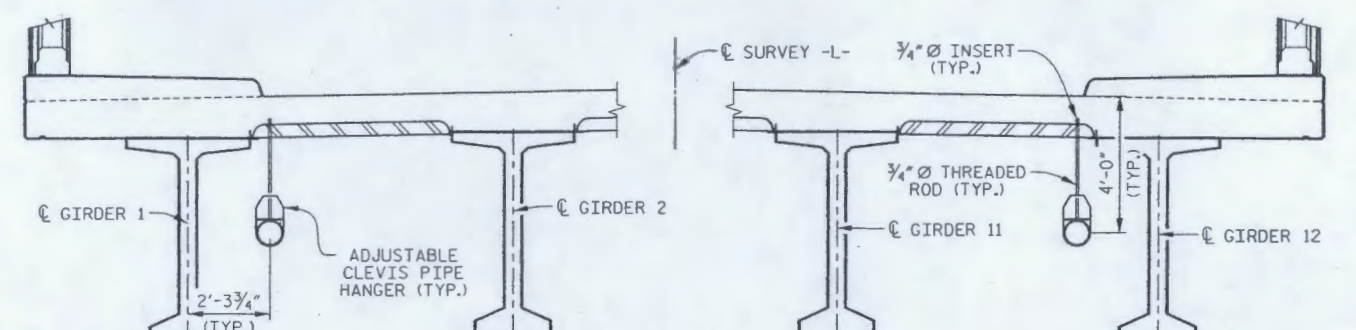
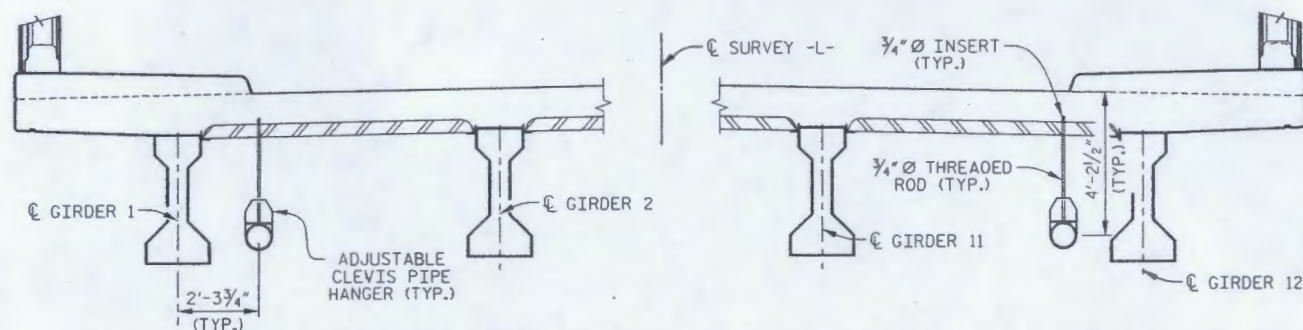
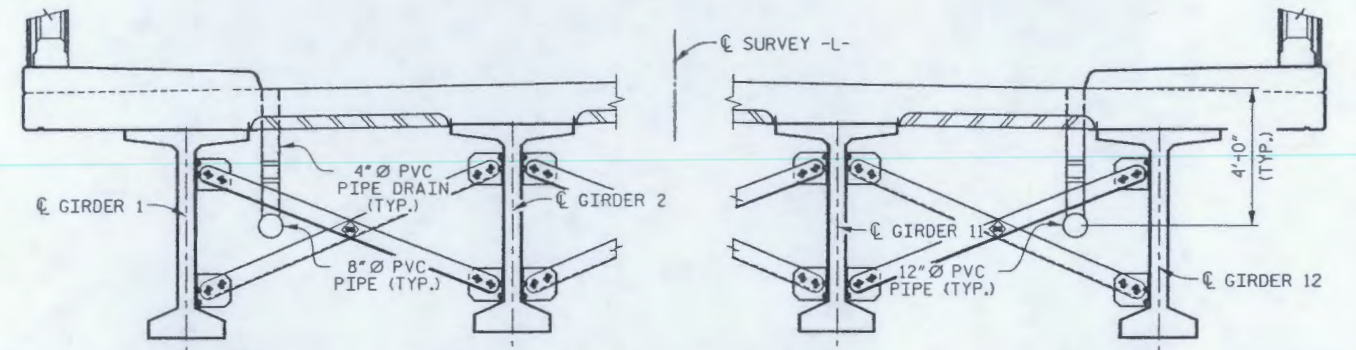
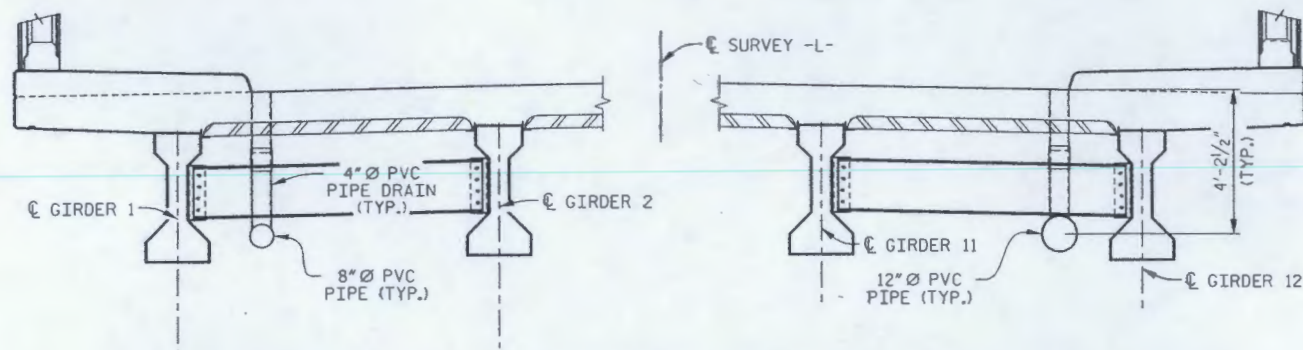
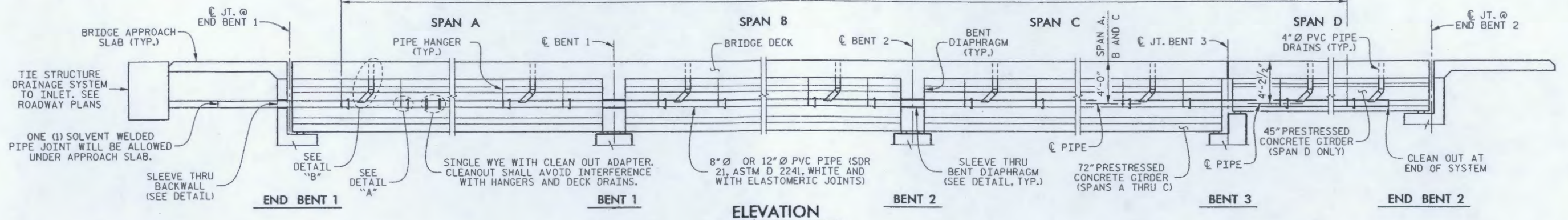
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 CONCRETE SIDEWALK

421 Fayetteville Street
 Suite 1303
 RALEIGH, N. C. 27601
 WilburSmith
 ENGINEERS
 DRAWN BY: K.E. LOFTON DATE: 9-08
 CHECKED BY: T.M. HARRIS DATE: 9-08
 DWG. No. S-19



REVISIONS				SHEET No.
No.	BY	DATE	DESCRIPTION	
1				TOTAL SHEETS
2				

FOR LOCATION OF CONCRETE INSERTS AND HANGERS, SEE "STRUCTURE DRAINAGE SYSTEM, SHEET 2 OF 2".



NOTES

THE CONTRACTOR SHALL SUBMIT FOR ACCEPTANCE, PRIOR TO PURCHASE, A PLAN FOR THE STRUCTURE DRAINAGE SYSTEM, INCLUDING ATTACHMENTS TO THE BRIDGE SUPERSTRUCTURE AND SUBSTRUCTURE.

SEE SUPERSTRUCTURE PLAN OF SPANS FOR LOCATION OF PIPE DRAINS.

THE CONTRACTOR SHALL DETERMINE THE QUANTITIES OF FITTINGS, PIPE LENGTHS, AND ATTACHMENTS NECESSARY FOR THE STRUCTURE DRAINAGE SYSTEM.

FOR STRUCTURE DRAINAGE SYSTEM, SEE SPECIAL PROVISIONS.

CONCRETE INSERTS SHALL BE OF AN APPROVED TYPE HAVING A MINIMUM WORKING LOAD TENSION CAPACITY OF 2.5 KIPS.

BOLTS, NUTS, AND WASHERS SHALL BE HIGH STRENGTH AND GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

CONCRETE INSERTS, THREADED RODS AND CLEVIS PIPE HANGERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

PIPE AND FITTINGS SHALL BE PVC, SDR 21, ASTM D 2241.

PIPE JOINTS SHALL BE ELASTOMERIC TYPE UNLESS OTHERWISE NOTED.

FITTING JOINTS SHALL BE SOLVENT CEMENT TYPE.

PROJECT NO. **R-2813B**
BUNCOMBE COUNTY
 STATION: **43 + 72.00 -L-**

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE

STRUCTURE
 DRAINAGE SYSTEM

REVISIONS

No.	BY:	DATE:	No.	BY:	DATE:
1			3		
2			4		

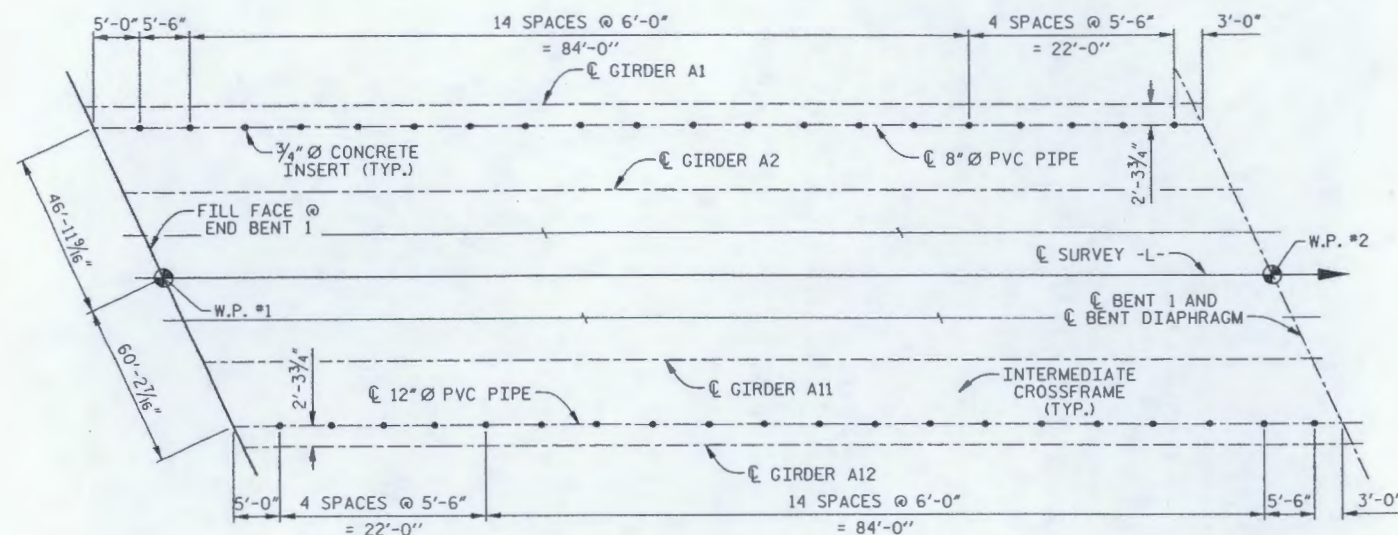
SHEET No.

TOTAL SHEETS

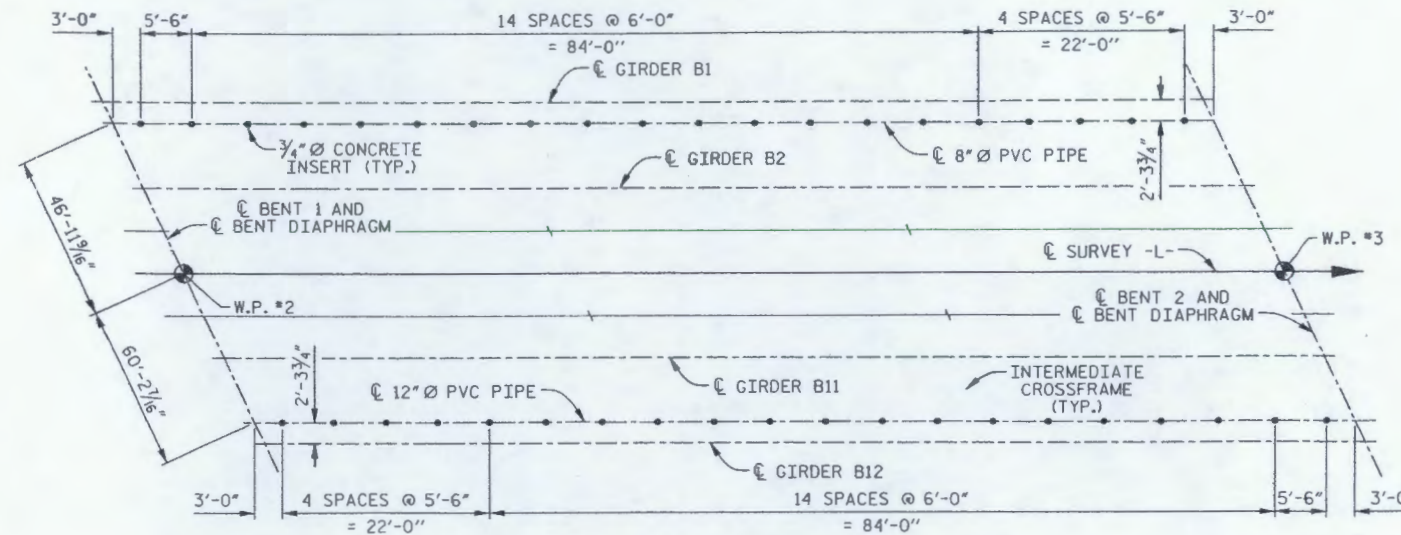
WILBUR SMITH
 ENGINEERS
 421 Fayetteville Street
 Suite 1303
 RALEIGH, N. C. 27601

RELEASE FOR
 CONSTRUCTION
 DATE: 9-23-08

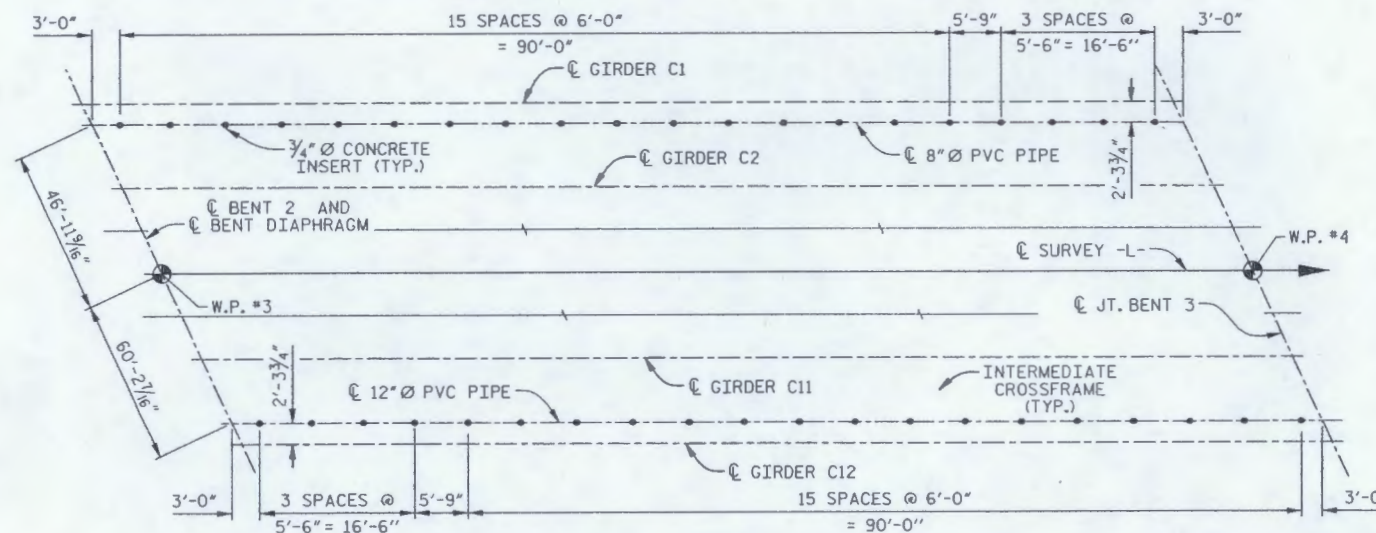
THOMAS M. HARRIS
 PROFESSIONAL ENGINEER
 13299
 9-23-08



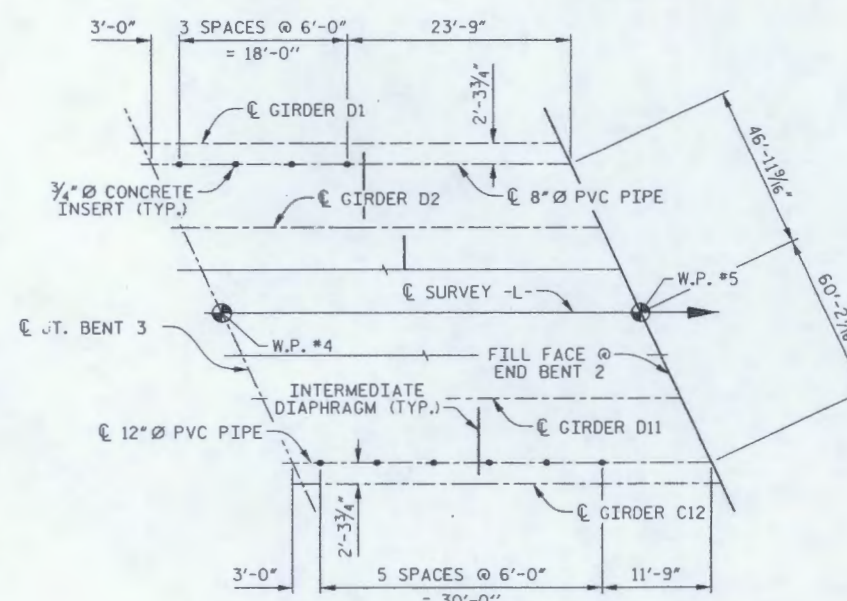
PLAN OF SPAN A



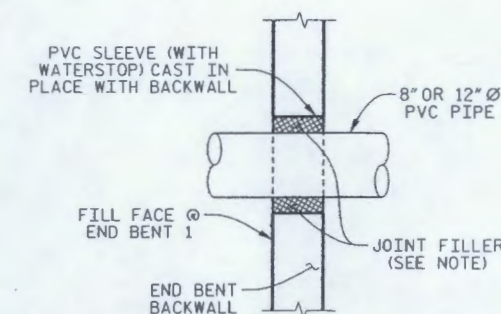
PLAN OF SPAN B



PLAN OF SPAN C

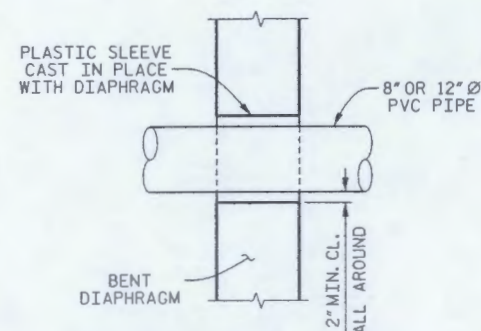


PLAN OF SPAN D

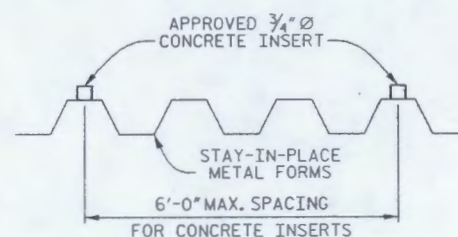


DETAIL OF PIPE THRU END BENT 1 BACKWALL

CENTER PIPE IN BLOCKOUT AND FILL ANNULAR SPACE AROUND PIPE WITH JOINT FILLER IN ACCORDANCE WITH STANDARD SPECIFICATION ARTICLE 1028-1.



DETAIL OF PIPE THRU BENT 1 AND 2 DIAPHRAGM



DETAIL OF INSERT LOCATIONS WITH STAY-IN-PLACE METAL FORMS

NOTES

INSERTS SHALL BE LOCATED IN THE HIGH PART OF THE STAY-IN-PLACE METAL FORMS.
EXACT SPACING MAY VARY IN ORDER TO AVOID LOCATING INSERTS ON SLOPING OR LOW SURFACE OF FORM.

RELEASE FOR CONSTRUCTION
DATE: 9-23-08

PROJECT NO. R-2813B
BUNCOMBE COUNTY
STATION: 43+72.00 -L-

SHEET 2 OF 2

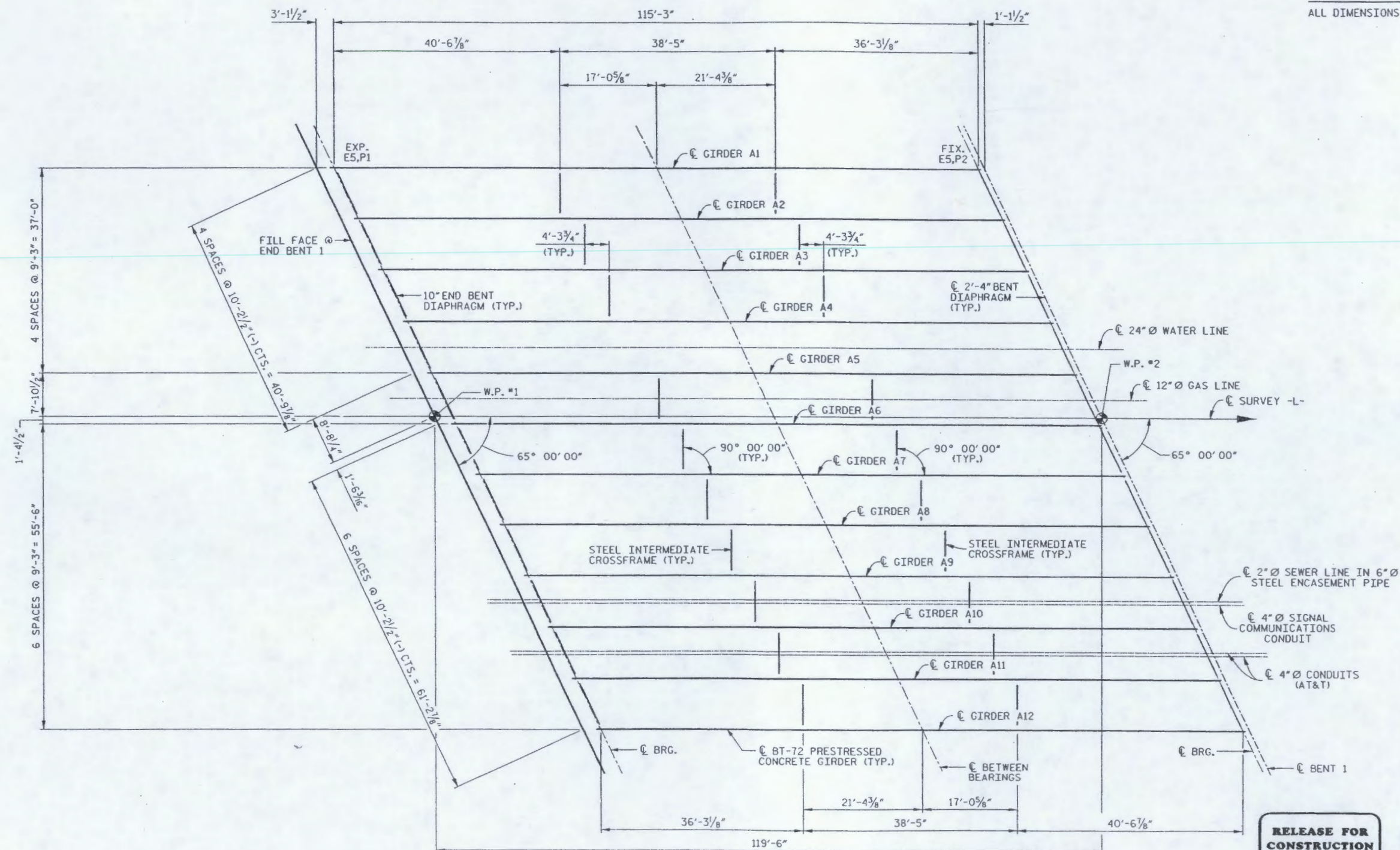
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
STRUCTURE DRAINAGE SYSTEM

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			

WilburSmith
421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601
DRAWN BY: K.E. LOFTON
CHECKED BY: T.M. HARRIS
DATE: 9-08
DATE: 9-08
DWG. No. S-22

NORTH CAROLINA
REGISTERED PROFESSIONAL ENGINEER
15299
THOMAS W. HARRIS
9-23-08

NOTES
ALL DIMENSIONS SHOWN ARE HORIZONTAL.



SPAN A

PROJECT NO. **R-2813B**
BUNCOMBE COUNTY
STATION: **43 + 72.00 -L-**

**RELEASE FOR
CONSTRUCTION
DATE: 5-2-08**

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

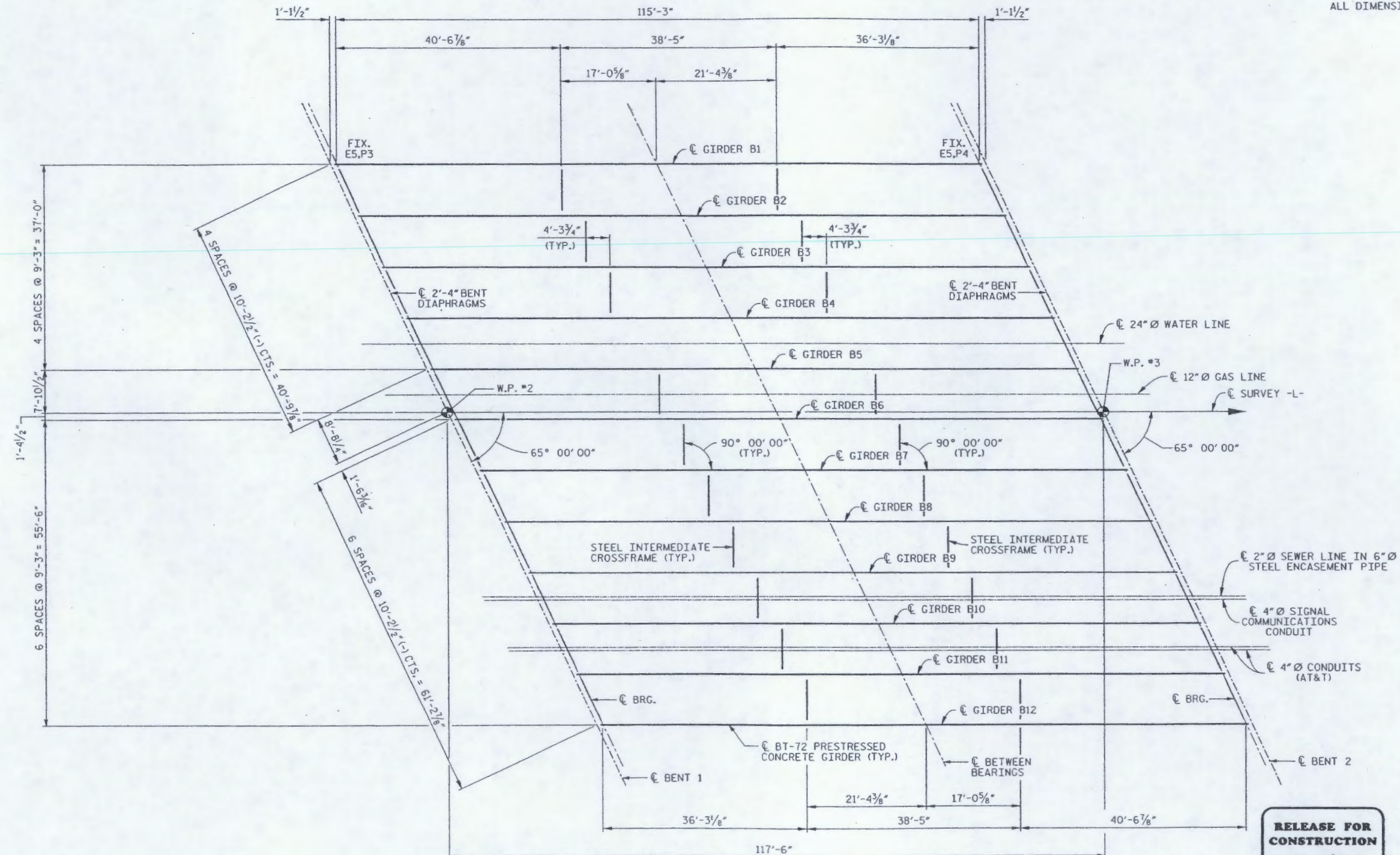
**SUPERSTRUCTURE
FRAMING PLAN
SPAN A**

WilburSmith
421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601
DRAWN BY: K.E. LOFTON DATE: 5-08 DWG. No. S-23
CHECKED BY: T.M. HARRIS DATE: 5-08



REVISIONS				SHEET No.			
No.	BY	DATE	No.	BY	DATE	TOTAL SHEETS	
1			3				
2			4				

NOTES
ALL DIMENSIONS SHOWN ARE HORIZONTAL.



PROJECT NO. **R-2813B**
BUNCOMBE COUNTY
STATION: **43 + 72.00 -L-**

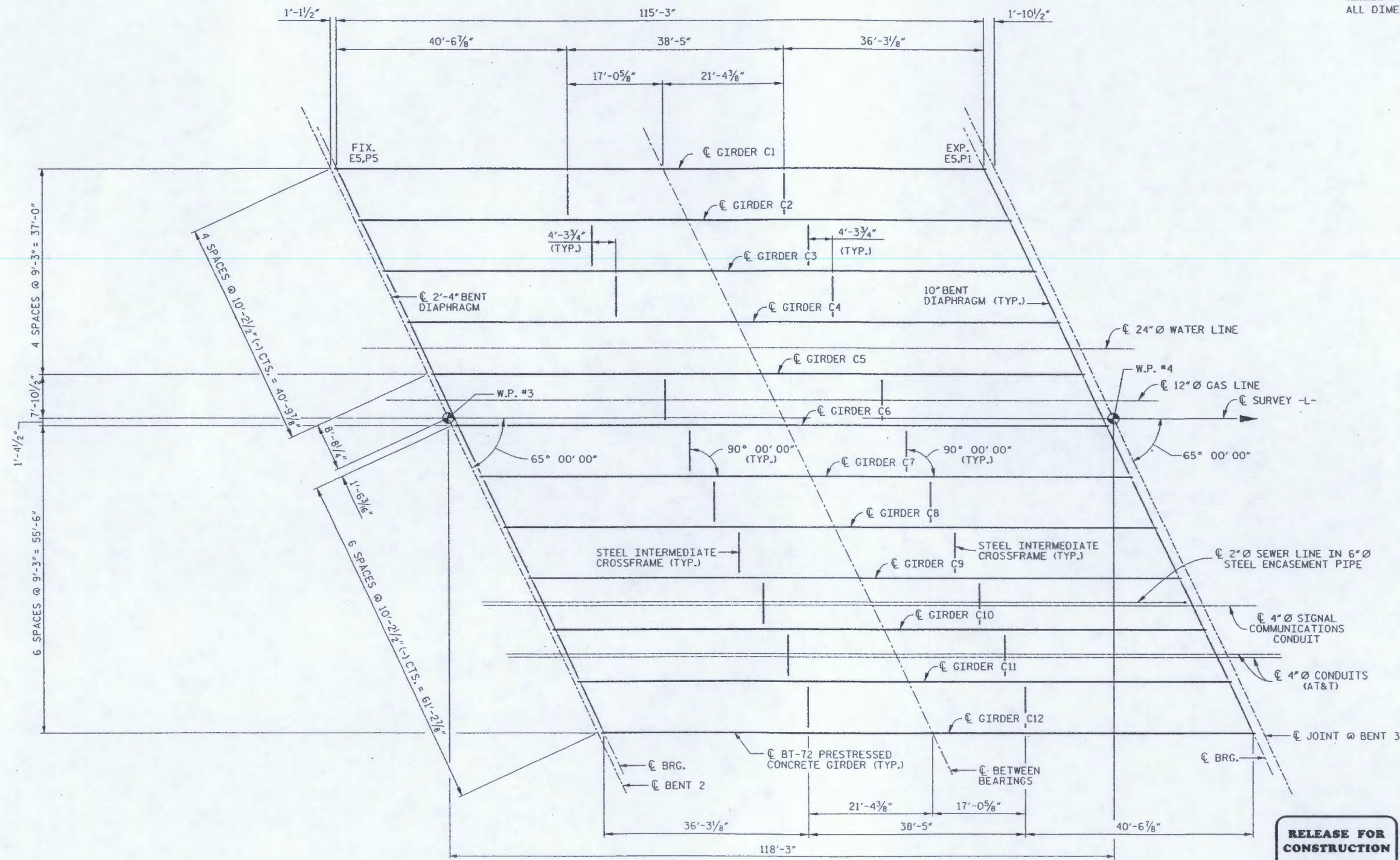
**RELEASE FOR
CONSTRUCTION**
DATE: **5-2-08**

STATE OF NORTH CAROLINA					
DEPARTMENT OF TRANSPORTATION					
RALEIGH					
SUPERSTRUCTURE					
FRAMING PLAN					
SPAN B					
REVISIONS					SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS

WilburSmith
421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601
DRAWN BY: **K.E. LOFTON** DATE: **5-08** DWG. No. **S-24**
CHECKED BY: **T.M. HARRIS** DATE: **5-08**

NORTH CAROLINA
PROFESSIONAL
ENGINEER
THOMAS M. HARRIS
15299
5-2-08

NOTES
ALL DIMENSIONS SHOWN ARE HORIZONTAL.



SPAN C

**RELEASE FOR
CONSTRUCTION**
DATE: 5-2-08

PROJECT NO. **R-2813B**
BUNCOMBE COUNTY
STATION: **43+72.00 -L-**

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			

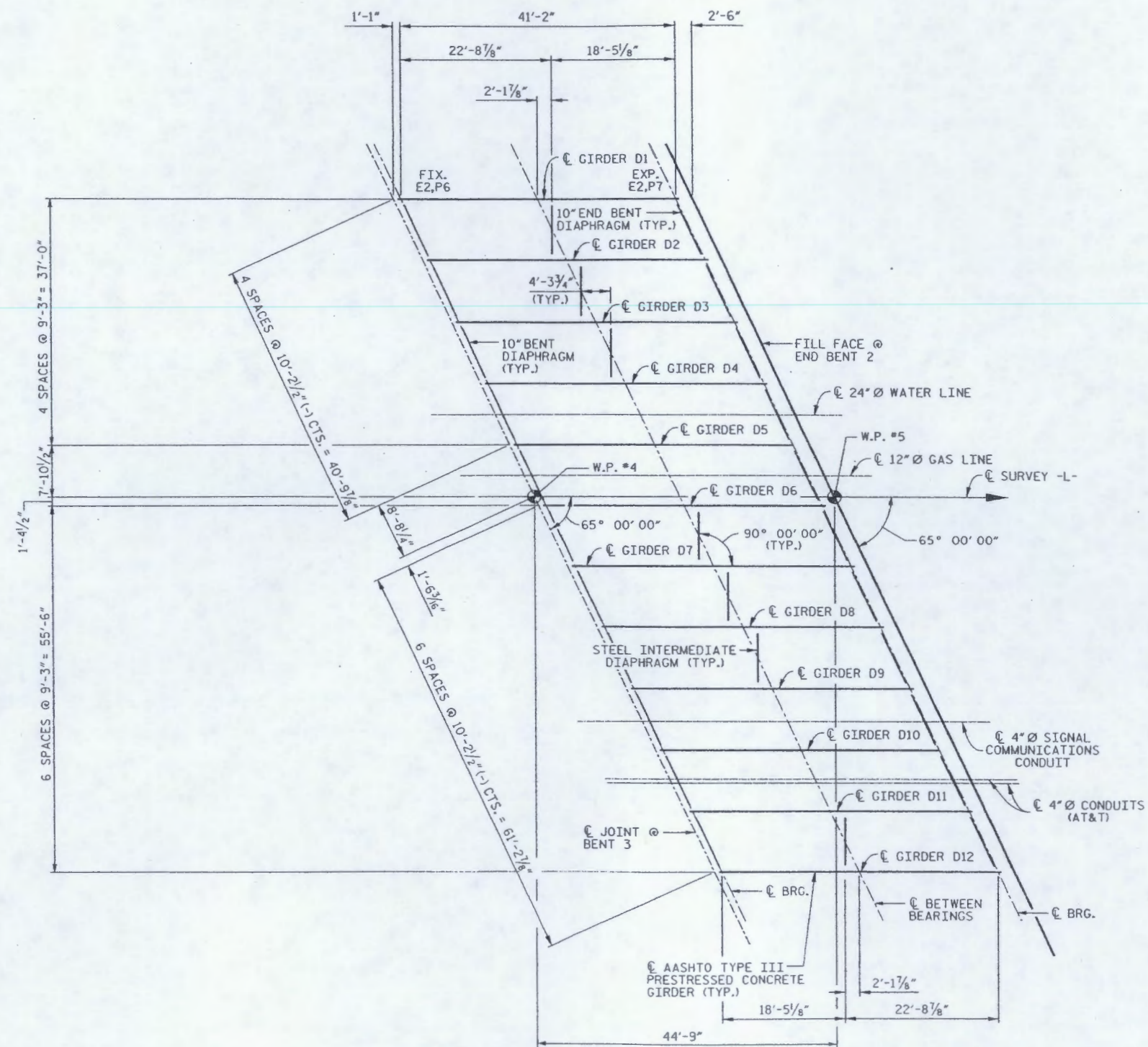
WilburSmith
421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601
DRAWN BY: K.E. LOFTON
CHECKED BY: T.M. HARRIS
DATE: 5-08
DATE: 5-08
DWG. No. S-25



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5/2/2008

NOTES

ALL DIMENSIONS SHOWN ARE HORIZONTAL.



SPAN D

PROJECT NO. R-2813B
BUNCOMBE COUNTY
 STATION: 43+72.00 -L-

RELEASE FOR
 CONSTRUCTION
 DATE: 5-2-08

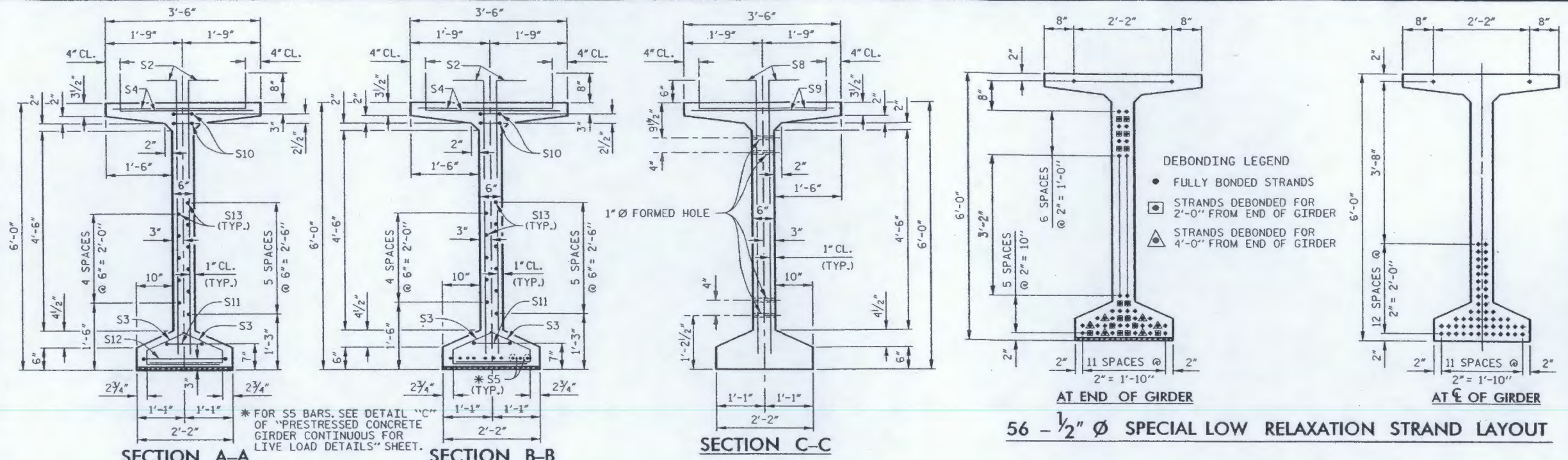


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

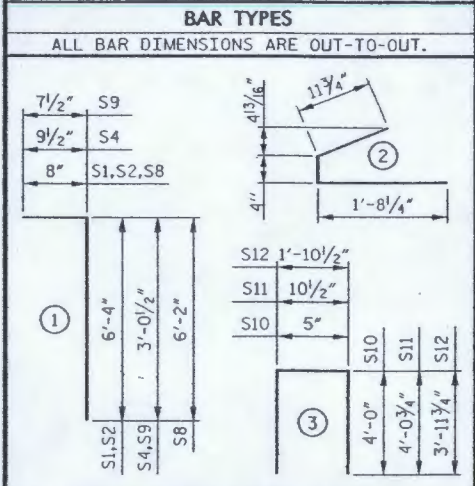
SUPERSTRUCTURE
 FRAMING PLAN
 SPAN D

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			

WilburSmith
 421 Fayetteville Street
 Suite 1303
 RALEIGH, N. C. 27601
 DRAWN BY: K.E. LOFTON DATE: 5-08 DWG. No. S-26
 CHECKED BY: T.M. HARRIS DATE: 5-08



1/2" Ø SPECIAL L. R. GRADE 270 STRANDS					
AREA (SQUARE INCHES)		ULTIMATE STRENGTH (LBS. PER STRAND)		APPLIED PRESTRESS (LBS. PER STRAND)	
0.167		45,100		33,820	
REINFORCING STEEL FOR ONE GIRDER					
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	128	#5	1	7'- 0"	935
S2	32	#6	1	7'- 0"	336
S3	160	#4	2	3'- 0"	321
S4	160	#5	1	3'- 10"	640
*S5	10	#5	STR	3'- 8"	38
S6	34	#5	STR	3'- 2"	112
S7	1	#3	STR	1'- 10"	1
S8	70	#5	1	6'- 10"	499
S9	70	#5	1	3'- 8"	268
S10	4	#4	3	8'- 5"	22
S11	2	#5	3	9'- 0"	19
S12	1	#5	3	9'- 10"	10
S13	22	#4	STR	4'- 0"	59
* NOTE: S5 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.					



QUANTITIES FOR ONE GIRDER			
	REINFORCING STEEL	8,000 PSI CONCRETE	1/2" Ø SPECIAL L.R. STRANDS
	LB.	C.Y.	No.
SPAN A	3,260	23.0	56
GIRDERS REQUIRED			
NUMBER	LENGTH	TOTAL LENGTH	
12	116'-8"	1400.000'	

PROJECT NO. **R-2813B**

BUNCOMBE COUNTY

STATION: **43+72.00 -L-**

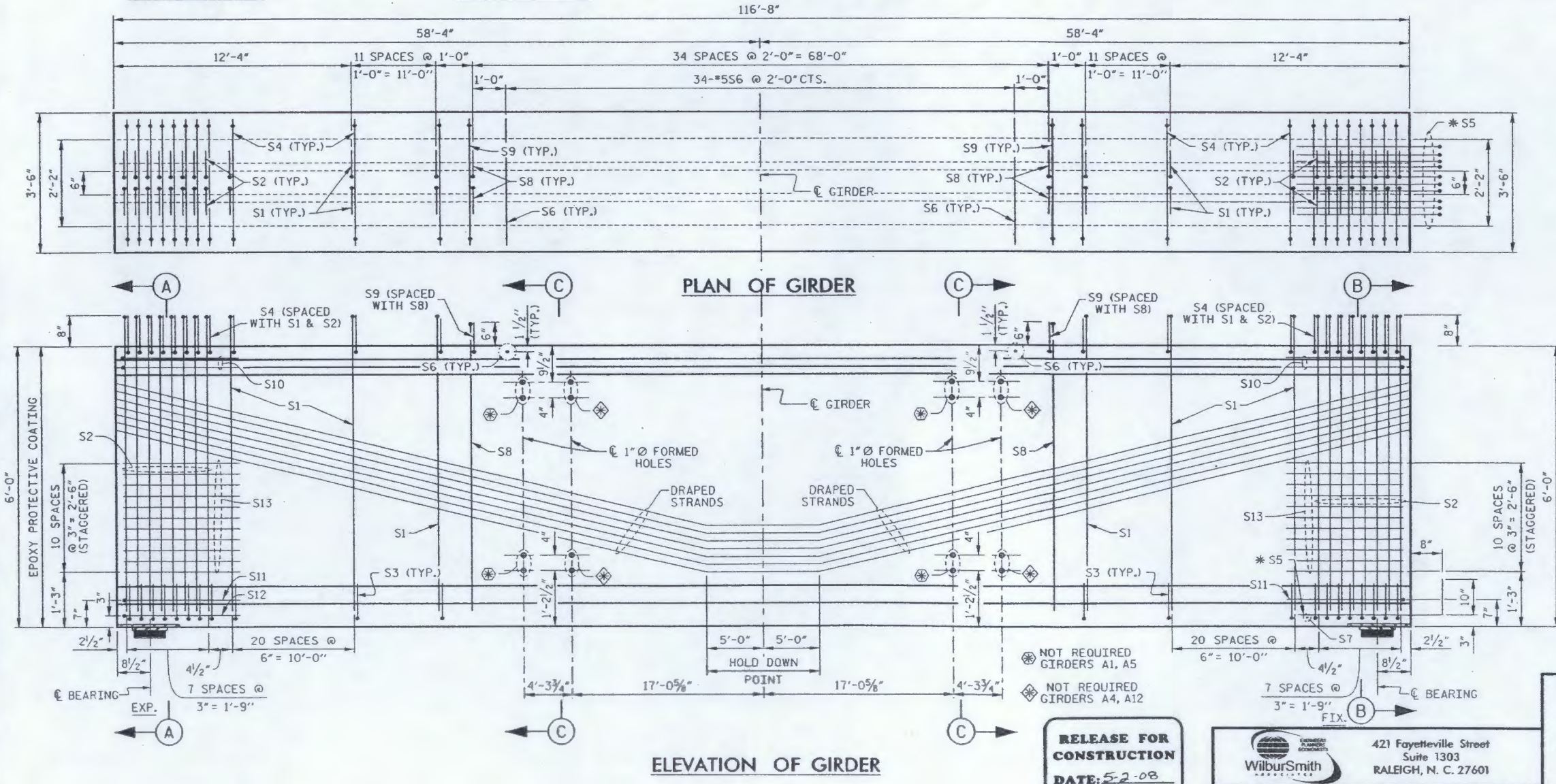
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

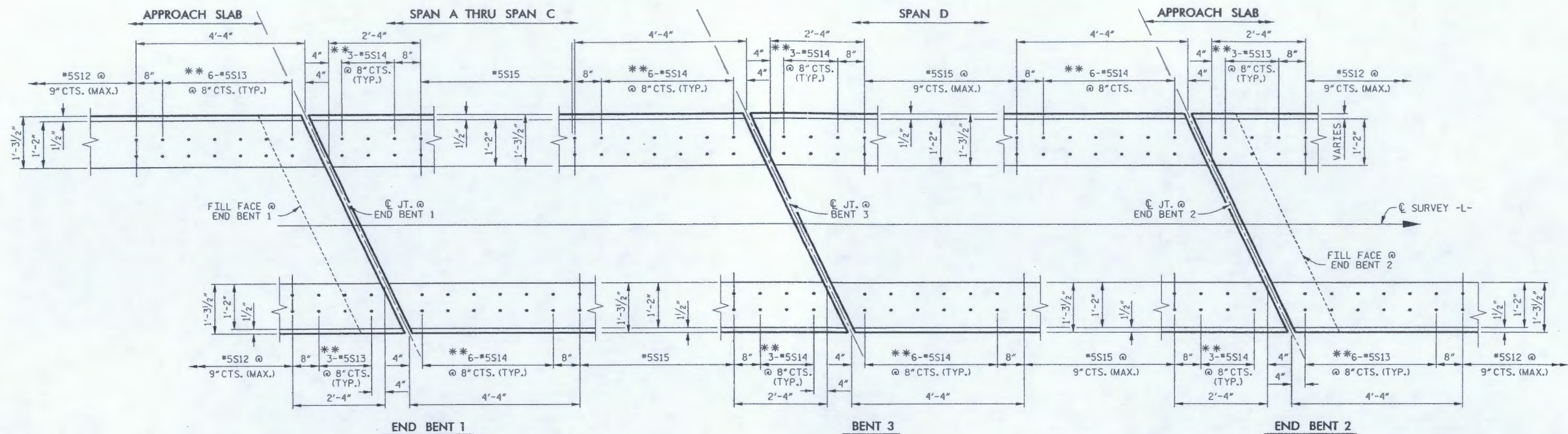
BT-72 PRESTRESSED CONCRETE GIRDER CONTINUOUS FOR LIVE LOAD - SPAN A

REVISIONS				SHEET No.	
No.	BY:	DATE:	No.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS

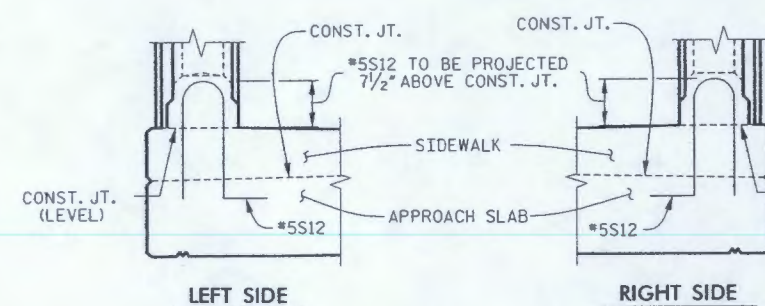


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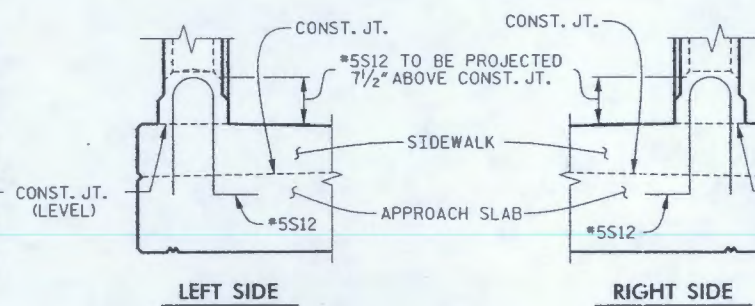
PLAN OF BRIDGE RAIL AT DECK JOINTS

**THE #5 "S" BARS ARE TO BE PLACED AFTER THE SAWING OF THE DECK SLAB AND PRIOR TO THE POURING OF THE SIDEWALK. THE HOLES SHALL BE DRILLED AND THE DOWELS GROUTED INTO PLACE.



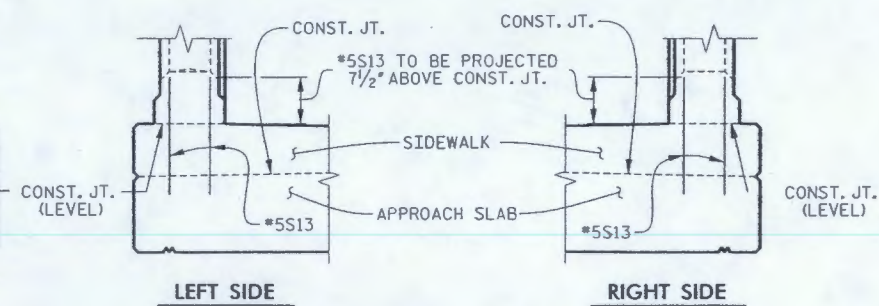
TYPICAL SECTION THRU PILASTER AT END OF APPROACH SLAB

REINFORCING STEEL IN APPROACH SLAB
AND PILASTER NOT SHOWN FOR CLARITY.



TYPICAL SECTION THRU RAIL ON APPROACH SLAB

REINFORCING STEEL IN APPROACH SLAB
AND PILASTER NOT SHOWN FOR CLARITY.



TYPICAL SECTION THRU PILASTER AT END BENTS ON APPROACH SLAB

REINFORCING STEEL IN APPROACH SLAB
AND PILASTER NOT SHOWN FOR CLARITY.

**RELEASE FOR
CONSTRUCTION**
DATE: 9-23-08

WilburSmith
421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601
DRAWN BY: K.E. LOFTON DATE: 9-08 DWG. No. S-46
CHECKED BY: T.M. HARRIS DATE: 9-08

NORTH CAROLINA
PROFESSIONAL
ENGINEER
THOMAS M. HARRIS
13299
9-23-08

PROJECT NO. R-2813B
BUNCOMBE COUNTY
STATION: 43 + 72.00 -L-

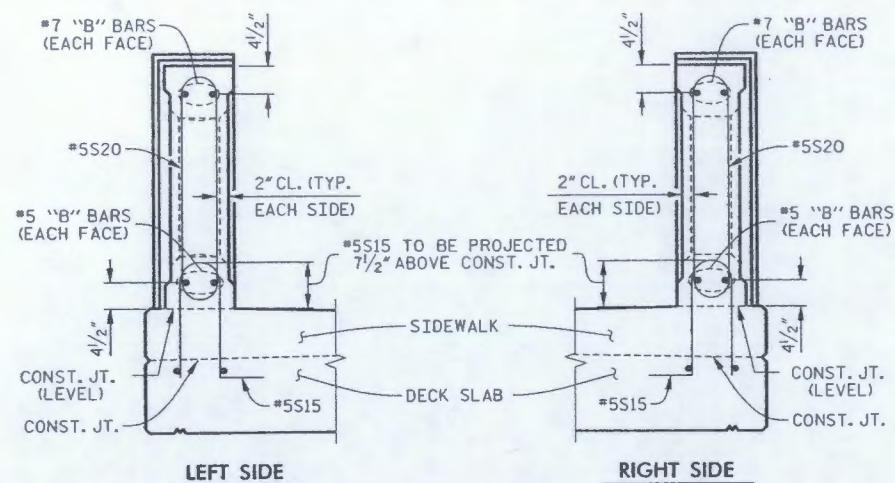
SHEET 9 OF 11

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

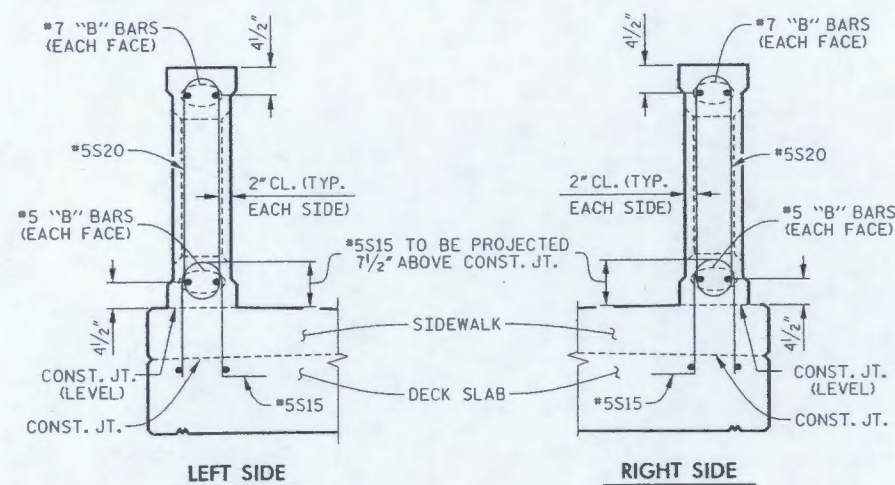
SUPERSTRUCTURE

TEXAS TYPE C411
BRIDGE RAIL

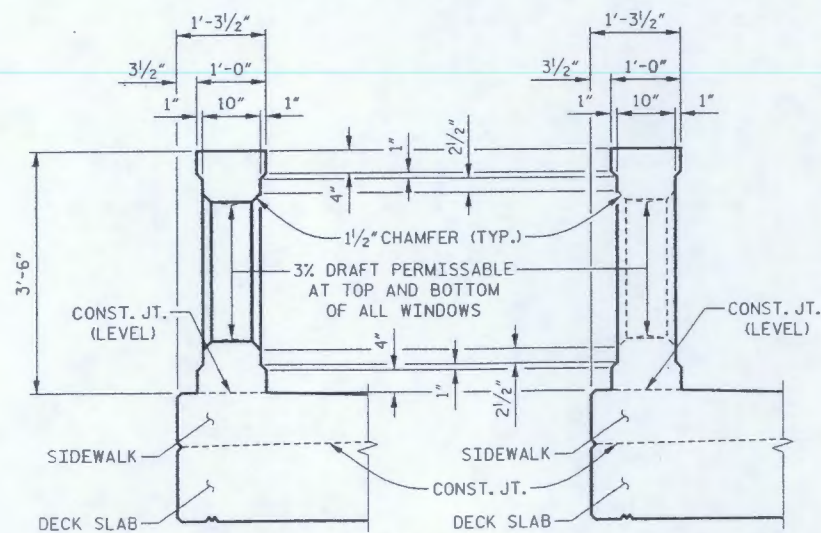
REVISIONS				SHEET No.	
No.	BY:	DATE:	No.	BY:	DATE:
1			3		
2			4		
				TOTAL SHEETS	



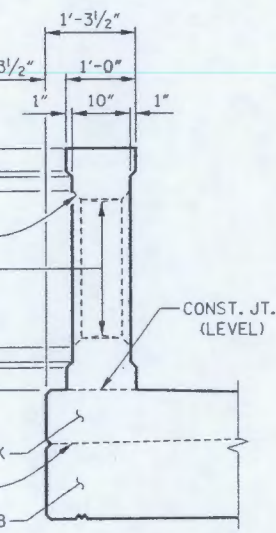
TYPICAL SECTION THRU PILASTER



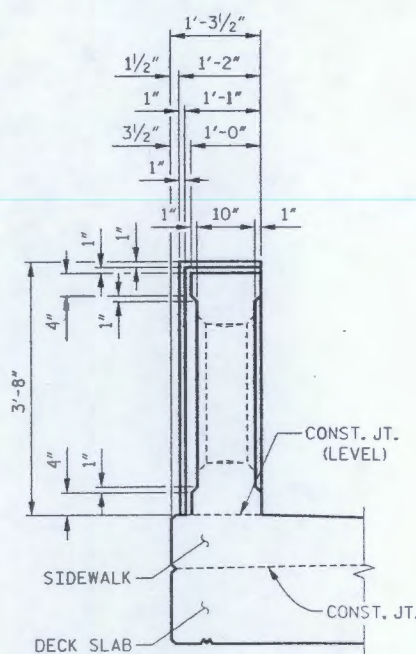
TYPICAL SECTION THRU RAILS



TYPICAL SECTION THRU WINDOW OPENINGS

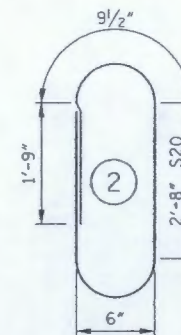
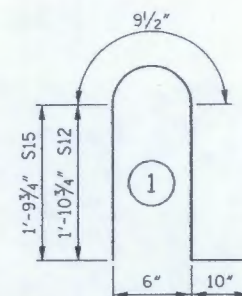


TYPICAL SECTION THRU RAILS



TYPICAL SECTION THRU PILASTER AT END BENTS AND BENTS

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

FOR TEXAS TYPE C411 BRIDGE RAIL ONLY

BAR	No.	SIZE	TYPE	LENGTH	WEIGHT
*B17	16	#7	STR	15'-6"	507
*B18	16	#5	STR	14'-3"	238
*B19	36	#7	STR	43'-4"	3189
*B20	36	#5	STR	41'-8"	1565
*B21	8	#7	STR	24'-8"	403
*B22	8	#5	STR	23'-5"	195
*S12	120	#5	1	5'-5"	678
*S13	36	#5	STR	2'-1"	78
*S14	72	#5	STR	1'-10"	138
*S15	927	#5	1	5'-3"	5076
*S20	1210	#5	2	8'-8"	10938

*EPOXY COATED REINFORCING STEEL 23,005 LBS.

CLASS AA CONCRETE 77.4 CU. YDS.

TEXAS TYPE C411 BRIDGE RAIL 895.4 LIN. FT.

PROJECT NO. R-2813B
BUNCOMBE COUNTY
STATION: 43 + 72.00 -L-

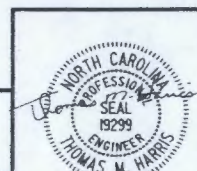
SHEET 10 OF 11

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

TEXAS TYPE C411
BRIDGE RAIL

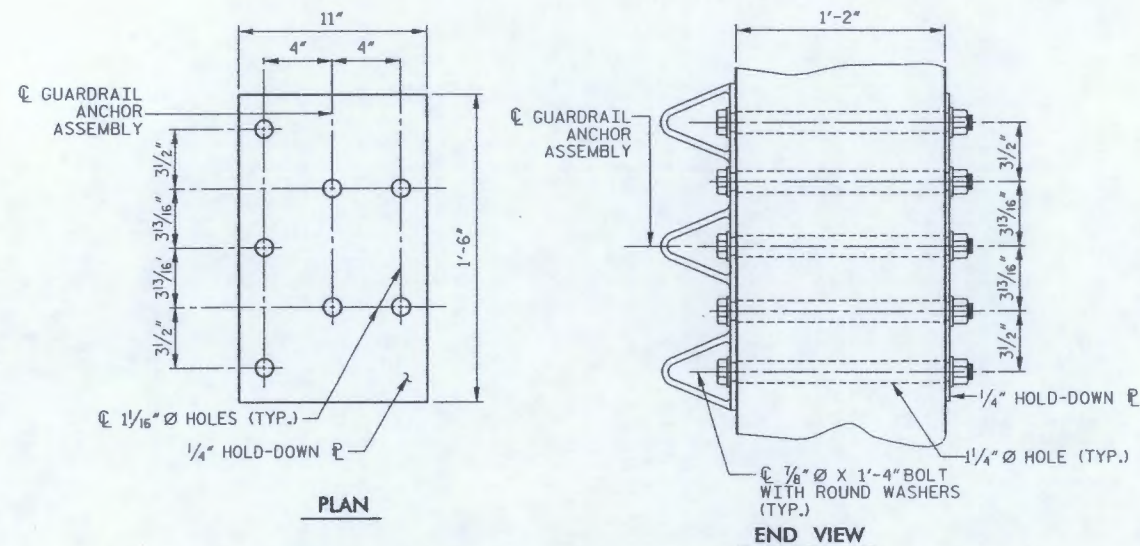
RELEASE FOR
CONSTRUCTION
DATE: 9-23-08



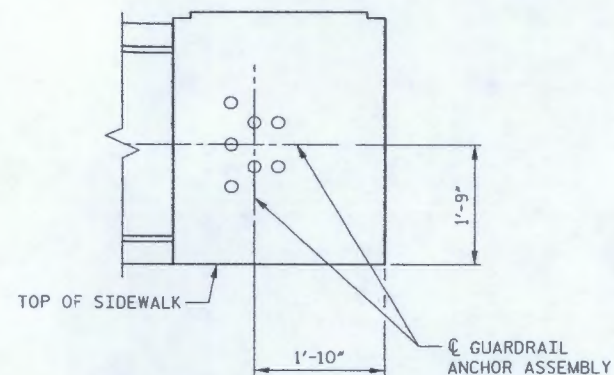
421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601

DRAWN BY: K.E. LOFTON DATE: 9-08 DWG. No. S-47
CHECKED BY: T.M. HARRIS DATE: 9-08

REVISIONS				SHEET No.
No.	BY	DATE	No.	DATE
1			3	
2			4	



GUARDRAIL ANCHOR ASSEMBLY DETAILS



NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 7 - 3/8" Ø BOLTS WITH NUTS AND WASHERS.

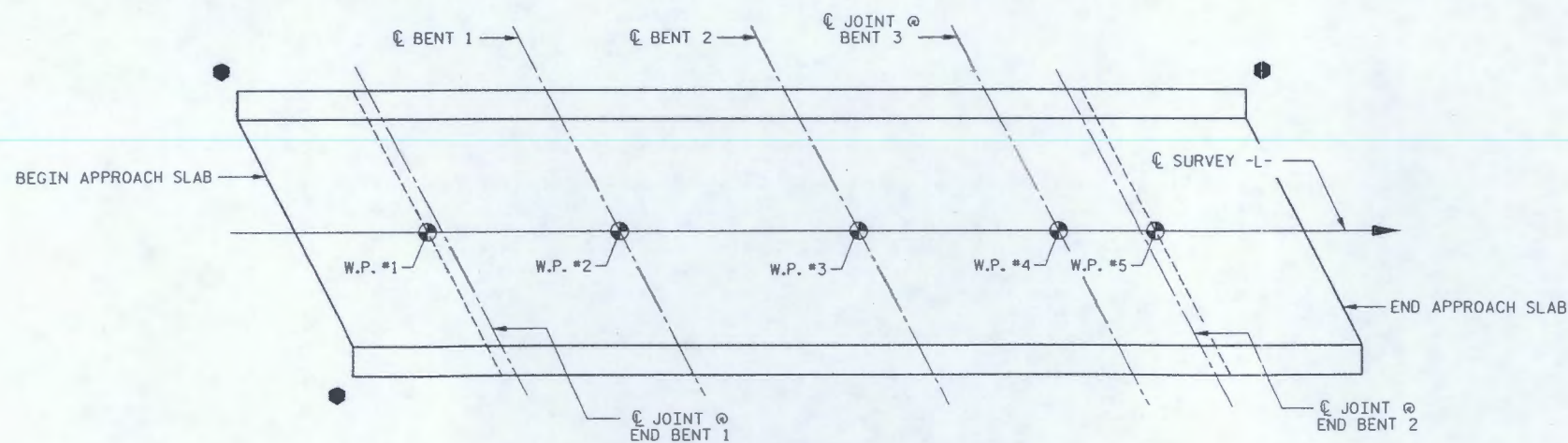
THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. 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 3/8" 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.

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

THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE PILASTER TO CLEAR ASSEMBLY BOLTS.

THE 1/4" 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.



PROJECT NO. **R-2813B**

BUNCOMBE COUNTY

STATION: **43+72.00 -L-**

SHEET 11 OF 11

RELEASE FOR CONSTRUCTION
DATE: **9-23-08**

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

TEXAS TYPE C411
BRIDGE RAIL

WilburSmith
421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601

DRAWN BY: **K.E. LOFTON** DATE: **9-08**
CHECKED BY: **T.M. HARRIS** DATE: **9-08**

DWG. No. **S-48**

PROFESSIONAL ENGINEER
THOMAS M. HARRIS
19299

REVISIONS				SHEET No.	
No.	BY	DATE	No.	BY	DATE
1			3		
2			4		
				TOTAL SHEETS	

GROOVING BRIDGE FLOORS	
	SQ. FT.
APPROACH SLABS	4,206
BRIDGE DECK	30,930
TOTAL	38,901

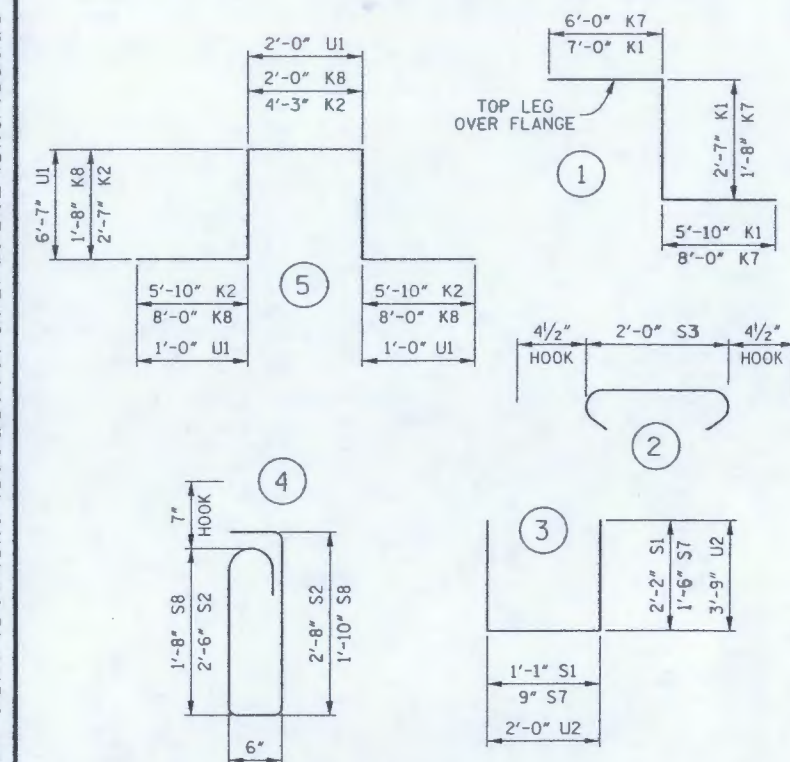
SUPERSTRUCTURE REINFORCING STEEL
LENGTHS ARE BASED ON THE FOLLOWING
MINIMUM SPLICE LENGTHS

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"			6'-0"
#8	6'-10"	4'-7"			

SPANS A, B AND C

BAR	No.	SIZE	TYPE	LENGTH	WEIGHT	BAR	No.	SIZE	TYPE	LENGTH	WEIGHT	BAR	No.	SIZE	TYPE	LENGTH	WEIGHT
*A1	1034	#5	STR	56'-8"	61113	*A168	2	#5	STR	26'-8"	56	A247	2	#5	STR	52'-11"	110
*A101	4	#5	STR	56'-6"	236	*A169	2	#5	STR	25'-5"	53	A248	2	#5	STR	51'-8"	108
*A102	4	#5	STR	55'-11"	233	*A170	2	#5	STR	24'-2"	50	A249	2	#5	STR	50'-5"	105
*A103	4	#5	STR	55'-3"	231	*A171	2	#5	STR	22'-11"	48	A250	2	#5	STR	49'-2"	103
*A104	4	#5	STR	54'-8"	228	*A172	2	#5	STR	21'-8"	45	A251	2	#5	STR	47'-11"	100
*A105	4	#5	STR	54'-0"	225	*A173	2	#5	STR	20'-5"	43	A252	2	#5	STR	46'-8"	97
*A106	4	#5	STR	53'-5"	223	*A174	2	#5	STR	19'-2"	40	A253	2	#5	STR	45'-5"	95
*A107	4	#5	STR	52'-9"	220	*A175	2	#5	STR	17'-11"	37	A254	2	#5	STR	44'-2"	92
*A108	4	#5	STR	52'-2"	218	*A176	2	#5	STR	16'-8"	35	A255	2	#5	STR	42'-11"	90
*A109	4	#5	STR	51'-6"	215	*A177	2	#5	STR	15'-5"	32	A256	2	#5	STR	41'-8"	87
*A110	4	#5	STR	50'-11"	212	*A178	2	#5	STR	14'-2"	30	A257	2	#5	STR	40'-5"	84
*A111	4	#5	STR	50'-3"	210	*A179	2	#5	STR	12'-11"	27	A258	2	#5	STR	39'-2"	82
*A112	4	#5	STR	49'-8"	207	*A180	2	#5	STR	11'-8"	24	A259	2	#5	STR	37'-11"	79
*A113	4	#5	STR	49'-0"	204	*A181	2	#5	STR	10'-5"	22	A260	2	#5	STR	36'-8"	76
*A114	4	#5	STR	48'-5"	202	*A182	2	#5	STR	9'-2"	19	A261	2	#5	STR	35'-5"	74
*A115	4	#5	STR	47'-9"	199	*A183	2	#5	STR	7'-11"	17	A262	2	#5	STR	34'-2"	71
*A116	4	#5	STR	47'-2"	197	*A184	2	#5	STR	6'-8"	14	A263	2	#5	STR	32'-11"	69
*A117	4	#5	STR	46'-6"	194	*A185	2	#5	STR	5'-5"	11	A264	2	#5	STR	31'-8"	66
*A118	4	#5	STR	45'-11"	192	*A186	2	#5	STR	4'-2"	9	A265	2	#5	STR	30'-5"	63
*A119	4	#5	STR	45'-3"	189	*A187	2	#5	STR	2'-11"	6	A266	2	#5	STR	29'-2"	61
*A120	4	#5	STR	44'-8"	186							A267	2	#5	STR	27'-11"	58
*A121	4	#5	STR	44'-0"	184	A2	1034	#5	STR	56'-8"	61113	A268	2	#5	STR	26'-8"	56
*A122	4	#5	STR	43'-5"	181	A201	4	#5	STR	56'-6"	236	A269	2	#5	STR	25'-5"	53
*A123	4	#5	STR	42'-9"	178	A202	4	#5	STR	55'-11"	233	A270	2	#5	STR	24'-2"	50
*A124	4	#5	STR	42'-2"	176	A203	4	#5	STR	55'-3"	231	A271	2	#5	STR	22'-11"	48
*A125	4	#5	STR	41'-6"	173	A204	4	#5	STR	54'-8"	228	A272	2	#5	STR	21'-8"	45
*A126	4	#5	STR	40'-11"	171	A205	4	#5	STR	54'-0"	225	A273	2	#5	STR	20'-5"	43
*A127	4	#5	STR	40'-3"	168	A206	4	#5	STR	53'-5"	223	A274	2	#5	STR	19'-2"	40
*A128	4	#5	STR	39'-8"	165	A207	4	#5	STR	52'-9"	220	A275	2	#5	STR	17'-11"	37
*A129	4	#5	STR	39'-0"	163	A208	4	#5	STR	52'-2"	218	A276	2	#5	STR	16'-8"	35
*A130	4	#5	STR	38'-5"	160	A209	4	#5	STR	51'-6"	215	A277	2	#5	STR	15'-5"	32
*A131	4	#5	STR	37'-9"	157	A210	4	#5	STR	50'-11"	212	A278	2	#5	STR	14'-2"	30
*A132	4	#5	STR	37'-2"	155	A211	4	#5	STR	50'-3"	210	A279	2	#5	STR	12'-11"	27
*A133	4	#5	STR	36'-6"	152	A212	4	#5	STR	49'-8"	207	A280	2	#5	STR	11'-8"	24
*A134	4	#5	STR	35'-11"	150	A213	4	#5	STR	49'-0"	204	A281	2	#5	STR	10'-5"	22
*A135	4	#5	STR	35'-3"	147	A214	4	#5	STR	48'-5"	202	A282	2	#5	STR	9'-2"	19
*A136	4	#5	STR	34'-8"	145	A215	4	#5	STR	47'-9"	199	A283	2	#5	STR	7'-11"	17
*A137	4	#5	STR	34'-0"	142	A216	4	#5	STR	47'-2"	197	A284	2	#5	STR	6'-8"	14
*A138	4	#5	STR	33'-5"	139	A217	4	#5	STR	46'-6"	194	A285	2	#5	STR	5'-5"	11
*A139	4	#5	STR	32'-9"	137	A218	4	#5	STR	45'-11"	192	A286	2	#5	STR	4'-2"	9
*A140	4	#5	STR	32'-2"	134	A219	4	#5	STR	45'-3"	189	A287	2	#5	STR	2'-11"	6
*A141	4	#5	STR	31'-6"	131	A220	4	#5	STR	44'-8"	186						
*A142	4	#5	STR	29'-2"	123	A221	4	#5	STR	44'-0"	184	*B1	462	#4	STR	28'-0"	8641
*A143	2	#5	STR	57'-11"	121	A222	4	#5	STR	43'-5"	181	*B2	462	#5	STR	29'-0"	13974
*A144	2	#5	STR	56'-8"	118	A223	4	#5	STR	42'-9"	178	*B3	432	#5	STR	36'-0"	16221
*A145	2	#5	STR	55'-5"	116	A224	4	#5	STR	42'-2"	176	*B4	154	#4	STR	21'-3"	2186
*A146	2	#5	STR	54'-2"	113	A225	4	#5	STR	41'-6"	173	B5	854	#5	STR	52'-9"	46986
*A147	2	#5	STR	52'-11"	110	A226	4	#5	STR	40'-11"	171						
*A148	2	#5	STR	51'-8"	108	A227	4	#5	STR	40'-3"	168	*G1	6	#5	STR	42'-5"	265
*A149	2	#5	STR	50'-5"	105	A228	4	#5	STR	39'-8"	165	*K1	8	#8	1	15'-5"	329
*A150	2	#5	STR	49'-2"	103	A229	4	#5	STR	39'-0"	163	*K2	40	#8	5	21'-1"	2252
*A151	2	#5	STR	47'-11"	100	A230	4	#5	STR	38'-5"	160	*K3	66	#6	STR	5'-11"	587
*A152	2	#5	STR	46'-8"	97	A231	4	#5	STR	37'-9"	157	K4	88	#4	STR	5'-11"	348
*A153	2	#5	STR	45'-5"	95	A232	4	#5	STR	37'-2"	155	K5	220	#4	STR	9'-0"	1323
*A154	2	#5	STR	44'-2"	92	A233	4	#5	STR	36'-6"	152	K6	56	#4	STR	29'-8"	1110
*A155	2	#5	STR	42'-11"	90	A234	4	#5	STR	35'-11"	150						
*A156	2	#5	STR	41'-8"	87	A235	4	#5	STR	35'-3"	147	*S1	154	#4	3	5'-5"	557
*A157	2	#5	STR	40'-5"	84	A236	4	#5	STR	34'-8"	145	*S2	154	#5	4	6'-9"	1084
*A158	2	#5	STR	39'-2"	82	A237	4	#5	STR	34'-0"	142	*S3	1144	#4	2	2'-9"	2102
*A159	2	#5	STR	37'-11"	79	A238	4	#5	STR	33'-5"	139						
*A160	2	#5	STR	36'-8"	76	A239	4	#5	STR	32'-9"	137	*U1	154	#4	5	17'-2"	1766
*A161	2	#5	STR	35'-5"	74	A240	4	#5	STR	32'-2"	134	*U2	44	#4	3	9'-6"	279
*A162	2	#5	STR	34'-2"	71	A241	4	#5	STR	31'-6"	131						
*A163	2	#5	STR	32'-11"	69	A242	2	#5	STR	59'-2"	123						
*A164	2	#5	STR	31'-8"	66	A243	2	#5	STR	57'-11"	121						
*A165	2	#5	STR	30'-5"	63	A244	2	#5	STR	56'-8"	118						
*A166	2	#5	STR	29'-2"	61	A245	2	#5	STR	55'-5"	116						
*A167	2	#5	STR	27'-11"	58	A246	2	#5	STR	54'-2"	113						

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

TOTAL SUPERSTRUCTURE QUANTITIES

	REINFORCING STEEL	EPOXY COATED REINFORCING STEEL	CLASS "AA" CONCRETE
	LBS.	LBS.	CU. YDS.
SPANS A,B AND C	122,472	120,780	1416.3
SPAN D	15,332	16,944	162.8
** TOTAL	137,804	137,724	1579.1

**QUANTITIES FOR CONCRETE SIDEWALK ARE NOT INCLUDED.
SEE "CONCRETE SIDEWALK" SHEET FOR DETAILS.

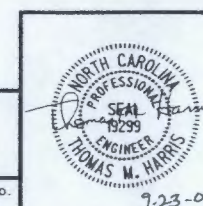
QUANTITIES FOR CONCRETE MEDIAN ARE NOT INCLUDED.
SEE "CONCRETE MEDIAN" SHEET FOR DETAILS.

QUANTITIES FOR TEXAS TYPE C411 BRIDGE RAIL ARE NOT
INCLUDED. SEE "TEXAS TYPE C411 BRIDGE RAIL" SHEET
FOR DETAILS.

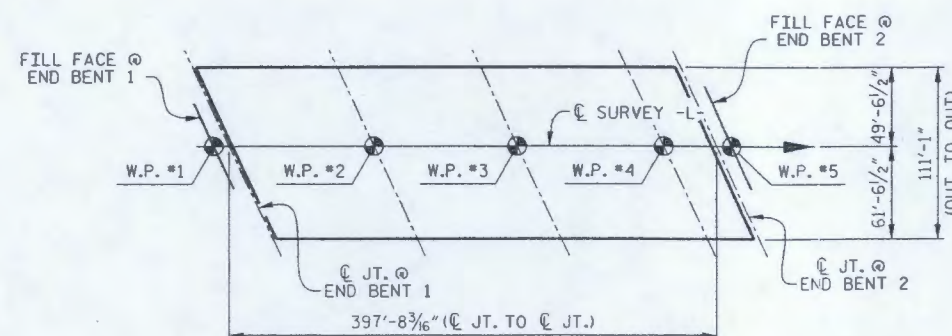
PROJECT NO. **R-2813B**
BUNCOMBE COUNTY
STATION: **43 + 72.00 -L-**

SHEET 1 OF 2

RELEASE FOR
CONSTRUCTION
DATE: 9-23-08



421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601
DWG. No. **S-49**



LAYOUT FOR COMPUTING AREA OF
REINFORCED CONCRETE DECK SLAB

(44,176 SQ. FT.)

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
BILL OF MATERIAL

REVISIONS				SHEET No.
No.	BY:	DATE:	DATE:	
1			3	TOTAL SHEETS
2			4	

NOTE

FOR BAR TYPES, SEE SHEET 1 OF 2.

**RELEASE FOR
CONSTRUCTION**
DATE: 9-23-08

PROJECT NO. R-2813B
BUNCOMBE COUNTY
 STATION: 43+72.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

BILL OF MATERIAL

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			

 ENGINEERS
PLANNERS
ECONOMISTS

WilburSmith
INC.

421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601

DRAWN BY : <u>K.E. LOFTON</u>	DATE : <u>9-08</u>	DWG. No. S-50
CHECKED BY : <u>T.M. HARRIS</u>	DATE : <u>9-08</u>	

BILL OF MATERIAL											
APPROACH SLAB @ END BENT 1						APPROACH SLAB @ END BENT 2					
BAR	No.	SIZE	TYPE	LENGTH	WEIGHT	BAR	No.	SIZE	TYPE	LENGTH	WEIGHT
*A1	125	#4	STR	26'-2"	2185	*A1	125	#4	STR	26'-2"	2185
A2	130	#4	STR	26'-0"	2258	A2	130	#4	STR	26'-0"	2258
*B1	218	#5	STR	23'-7"	5362	*B1	218	#5	STR	23'-7"	5362
B2	218	#6	STR	24'-7"	8049	B2	218	#6	STR	24'-7"	8049
*B3	8	#5	STR	13'-11"	116	*B3	8	#5	STR	13'-11"	116
B4	8	#6	STR	13'-11"	167	B4	8	#6	STR	13'-11"	167
REINFORCING STEEL				10,474 LBS.		REINFORCING STEEL				10,474 LBS.	
*EPOXY COATED REINFORCING STEEL				7,663 LBS.		*EPOXY COATED REINFORCING STEEL				7,663 LBS.	
CLASS "AA" CONCRETE				104.9 CU. YDS.		CLASS "AA" CONCRETE				104.9 CU. YDS.	

NOTE: QUANTITIES FOR CONCRETE MEDIAN, SIDEWALK AND TEXAS TYPE C411 BRIDGE RAIL NOT INCLUDED.

NOTES

APPROACH SLAB SHALL NOT BE CONSTRUCTED PRIOR TO COMPLETION OF THE BRIDGE DECK.

FOR REINFORCED BRIDGE APPROACH FILL INCLUDING FABRIC, IMPERMEABLE GEOMEMBRANE, 4" Ø DRAINAGE PIPE, #78M STONE, AND SELECT MATERIAL, SEE ROADWAY PLANS.

AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

THE 6" COMP. A.B.C. SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB AND SHALL EXTEND 1'-0" OUTSIDE EACH EDGE OF THE APPROACH SLAB.

THE CONTRACTOR MAY USE 4" TYPE B-25.0B ASPHALT CONCRETE BASE COURSE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE BASE COURSE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB.

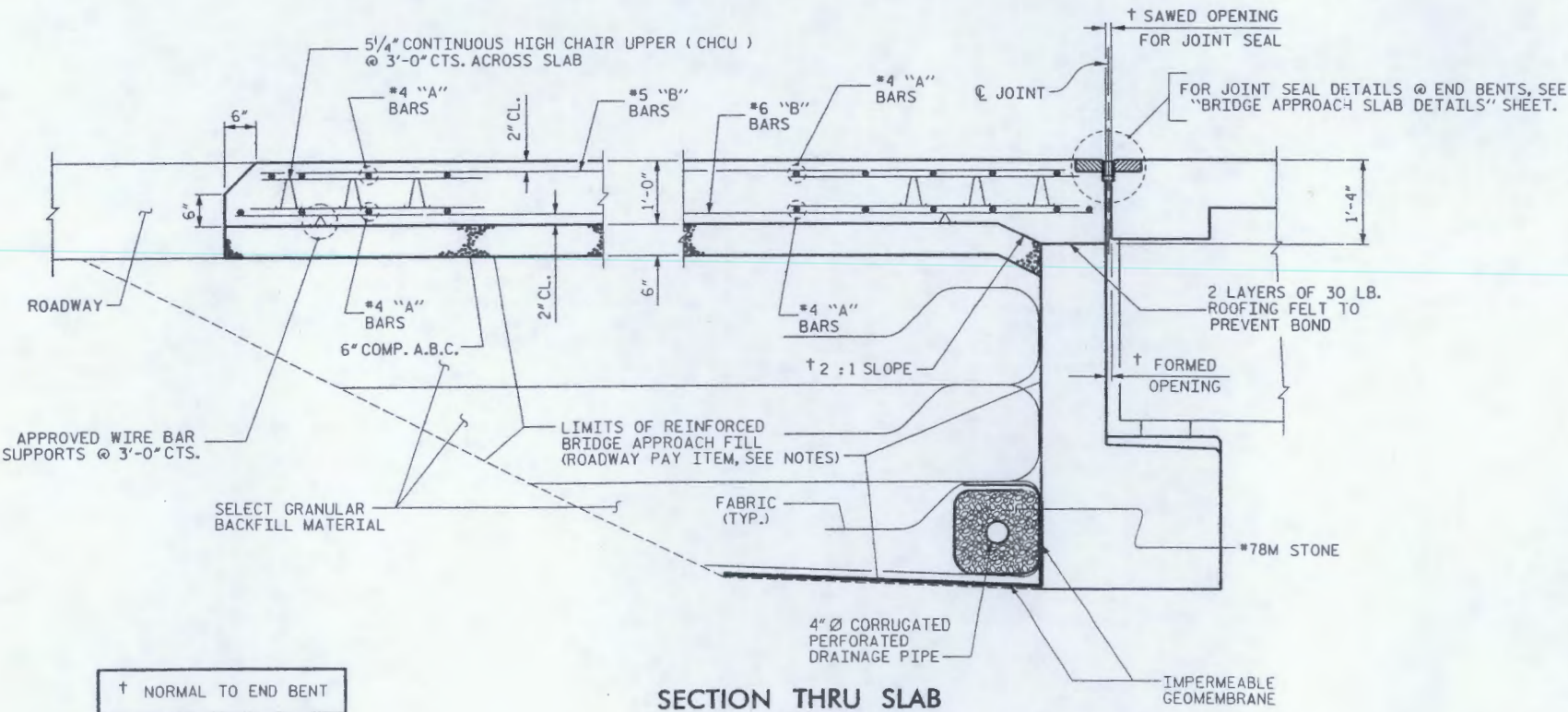
THE CONTRACTOR MAY USE 5" CLASS "A" CONCRETE BASE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE CONCRETE BASE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB. THE CONCRETE SHALL BE FINISHED TO A SMOOTH SURFACE AND A LAYER OF 30 LB ROOFING FELT SHALL BE PLACED BETWEEN THE CONCRETE BASE AND THE APPROACH SLAB TO PREVENT BOND. THE APPROACH SLAB SHALL NOT BE CAST UNTIL THE CONCRETE BASE HAS REACHED AN AGE OF THREE CURING DAYS.

WITH EVAZOTE JOINT SEAL

FOR EVAZOTE JOINT SEALS, SEE SPECIAL PROVISIONS.

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE EVAZOTE JOINT SEAL SHALL BE 3/8" @ END BENT 1 AND 2 1/2" @ END BENT 2.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.



PROJECT NO. R-2813B
BUNCOMBE COUNTY
STATION: 43+72.00 -L-

SHEET 1 OF 4

RELEASE FOR
CONSTRUCTION
DATE: 9-23-08

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
BRIDGE APPROACH SLAB
FOR FLEXIBLE PAVEMENT

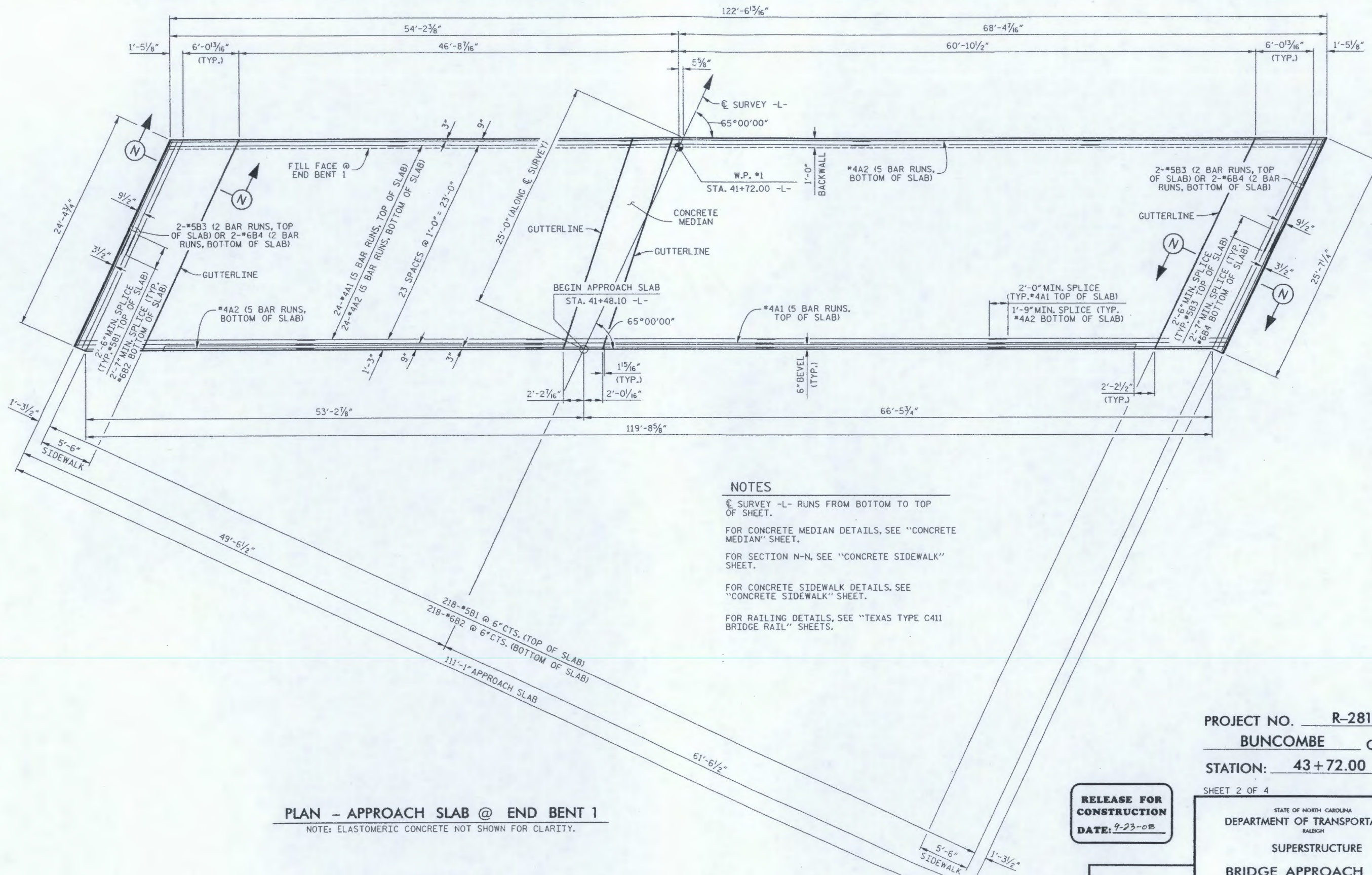


421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601
DRAWN BY: K.E. LOFTON DATE: 9-08 DWG. No. S-69
CHECKED BY: T.M. HARRIS DATE: 9-08

ASSEMBLED BY: K.E. LOFTON DATE: 08-08
CHECKED BY: T.M. HARRIS DATE: 08-08
DRAWN BY: EEM 3/95 REV. 7/10/01 LES/RDR
CHECKED BY: VAP 3/95 REV. 5/1/03R RWN/JTE
REV. 5/1/06 TLA/GM

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			

STD. No. BAS4



NOTES

- CL SURVEY -L- RUNS FROM BOTTOM TO TOP OF SHEET.
- FOR CONCRETE MEDIAN DETAILS, SEE "CONCRETE MEDIAN" SHEET.
- FOR SECTION N-N, SEE "CONCRETE SIDEWALK" SHEET.
- FOR CONCRETE SIDEWALK DETAILS, SEE "CONCRETE SIDEWALK" SHEET.
- FOR RAILING DETAILS, SEE "TEXAS TYPE C411 BRIDGE RAIL" SHEETS.

PLAN - APPROACH SLAB @ END BENT 1

NOTE: ELASTOMERIC CONCRETE NOT SHOWN FOR CLARITY.

PROJECT NO. R-2813B
BUNCOMBE COUNTY
 STATION: 43 + 72.00 -L-

SHEET 2 OF 4

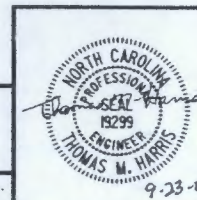
**RELEASE FOR
CONSTRUCTION**
 DATE: 9-23-08

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 BRIDGE APPROACH SLAB
 AT END BENT 1

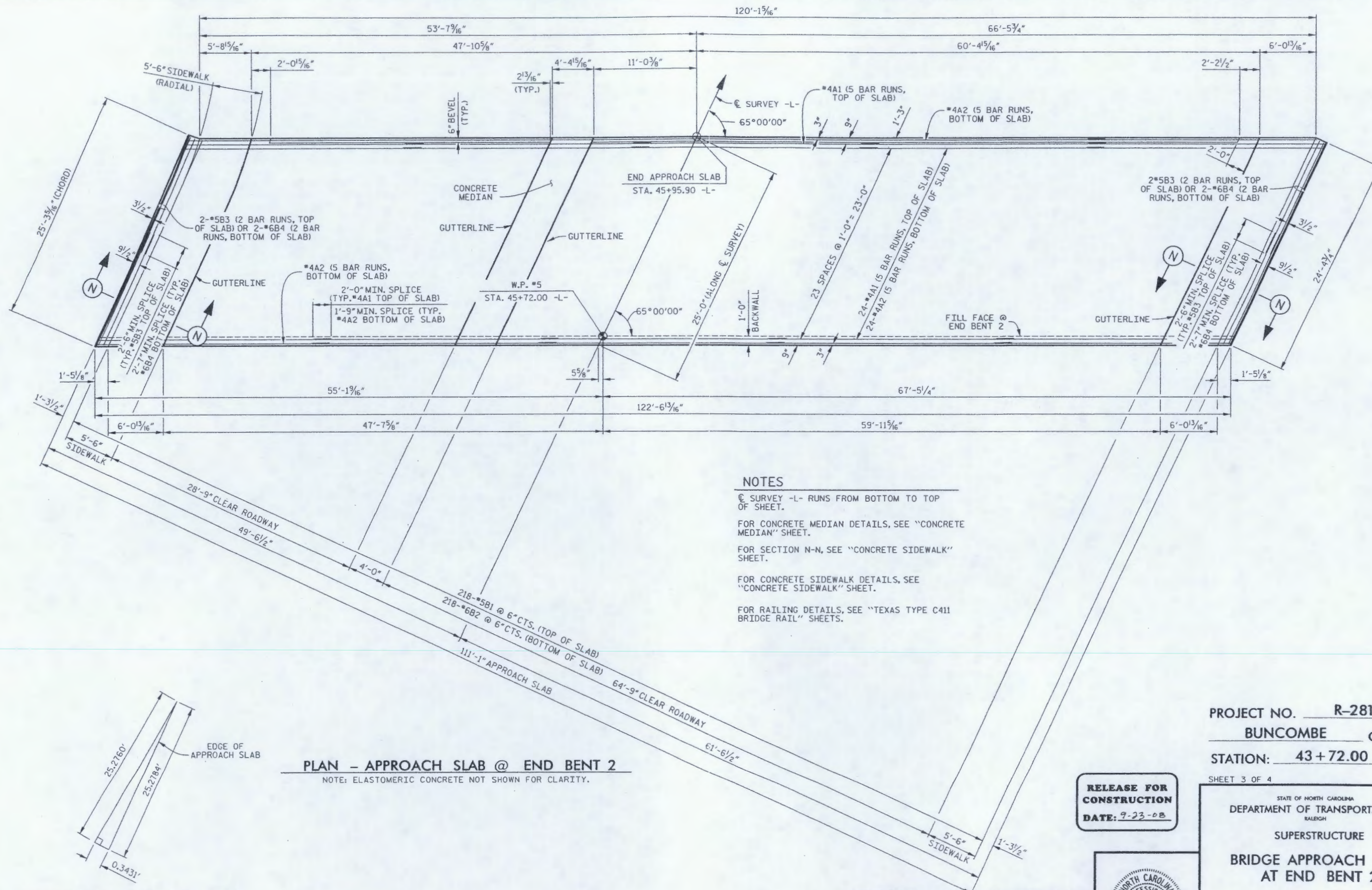
421 Fayetteville Street
 Suite 1303
 RALEIGH, N. C. 27601

DRAWN BY: K.E. LOFTON DATE: 9-08
 CHECKED BY: T.M. HARRIS DATE: 9-08

DWG. No. S-70



REVISIONS				SHEET No.
No.	BY:	DATE:	DATE:	
1			3	TOTAL SHEETS
2			4	



NOTES

- $\odot$ SURVEY -L- RUNS FROM BOTTOM TO TOP OF SHEET.
- FOR CONCRETE MEDIAN DETAILS, SEE "CONCRETE MEDIAN" SHEET.
- FOR SECTION N-N, SEE "CONCRETE SIDEWALK" SHEET.
- FOR CONCRETE SIDEWALK DETAILS, SEE "CONCRETE SIDEWALK" SHEET.
- FOR RAILING DETAILS, SEE "TEXAS TYPE C411 BRIDGE RAIL" SHEETS.

PLAN - APPROACH SLAB @ END BENT 2

NOTE: ELASTOMERIC CONCRETE NOT SHOWN FOR CLARITY.

LAYOUT DETAIL FOR LEFT EDGE

PROJECT NO. **R-2813B**

BUNCOMBE COUNTY

STATION: **43 + 72.00 -L-**

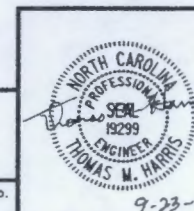
SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

BRIDGE APPROACH SLAB
AT END BENT 2

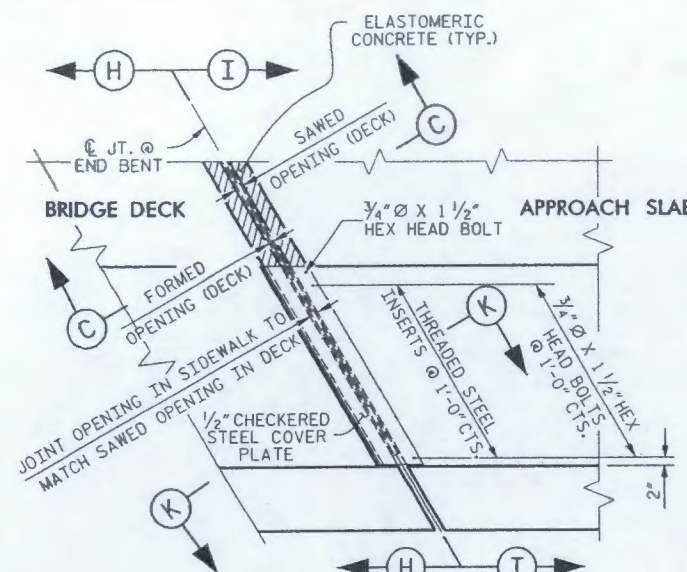
**RELEASE FOR
CONSTRUCTION**
DATE: **9-23-08**



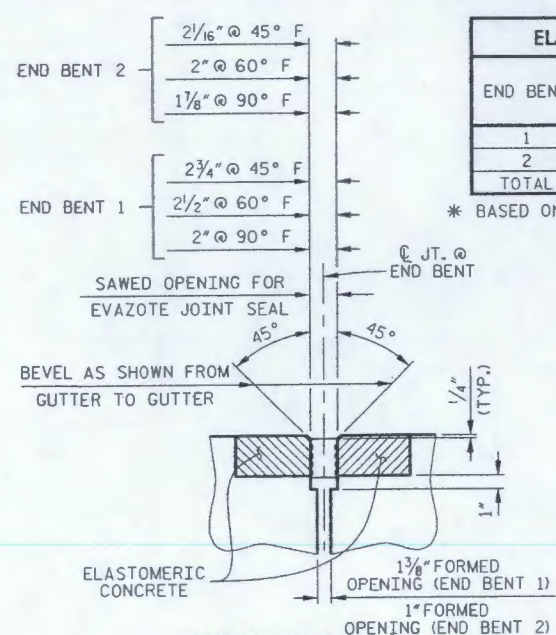
WilburSmith
421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601

DRAWN BY: **K.E. LOFTON** DATE: **9-08** DWG. No. **S-71**
CHECKED BY: **T.M. HARRIS** DATE: **9-08**

REVISIONS						SHEET No.
No.	BY	DATE	No.	BY	DATE	
1			3			TOTAL SHEETS
2			4			

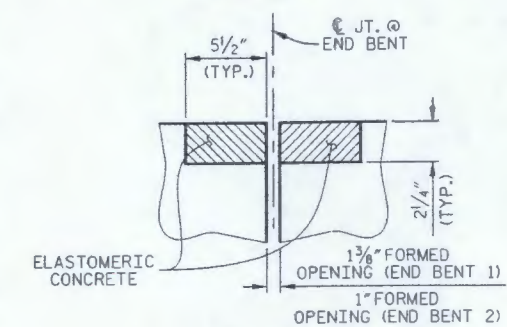


PLAN VIEW OF EVAZOTE JOINT SEAL @ END BENT FOR SIDEWALK



SECTION C-C

EVAZOTE JOINT SEAL END BENT (EXPANSION)



SECTION C-C

EVAZOTE JOINT SEAL END BENT (PRE-SAWED ELASTOMERIC CONCRETE DIMENSIONS)

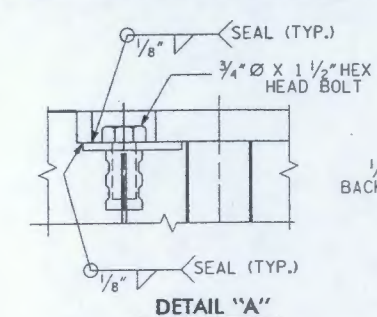
ELASTOMERIC CONCRETE	
END BENT	ELASTOMERIC CONCRETE * (CU. FT.)
1	20.6
2	20.6
TOTAL	41.2

* BASED ON THE MINIMUM BLOCKOUT SHOWN.

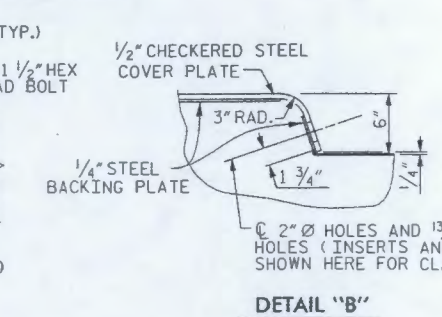
NOTES

THE STEEL PLATES SHALL CONFORM TO AASHTO M270 GRADE 36 OR APPROVED EQUAL. AFTER FABRICATION, THE PLATES SHALL BE COMMERCIALY BLAST CLEANED AND COATED WITH A MINIMUM THICKNESS OF 4 MILS (DRY) OF ZINC RICH PAINT IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. AT THE CONTRACTORS OPTION, THESE SURFACES MAY BE METALLIZED TO A MINIMUM THICKNESS OF 6 MILS. SEE SPECIAL PROVISIONS FOR THERMAL SPRAYED COATINGS (METALLIZATION).

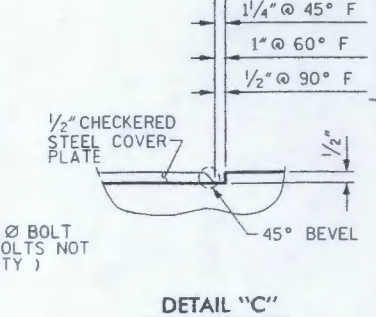
THE 3/4" DIAMETER HEX HEAD BOLTS SHALL CONFORM TO ASTM F593 ALLOY 304 STAINLESS STEEL.



DETAIL "A"

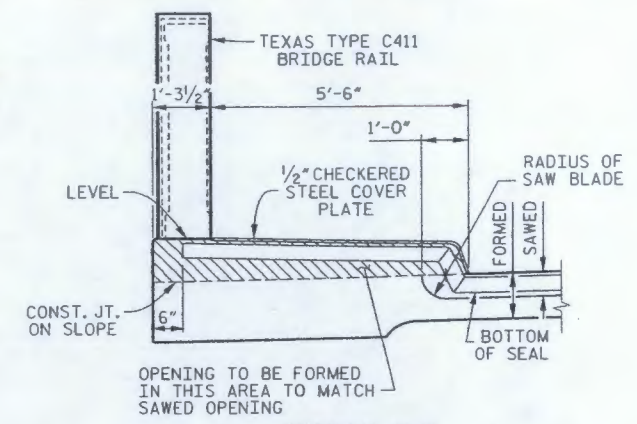


DETAIL "B"



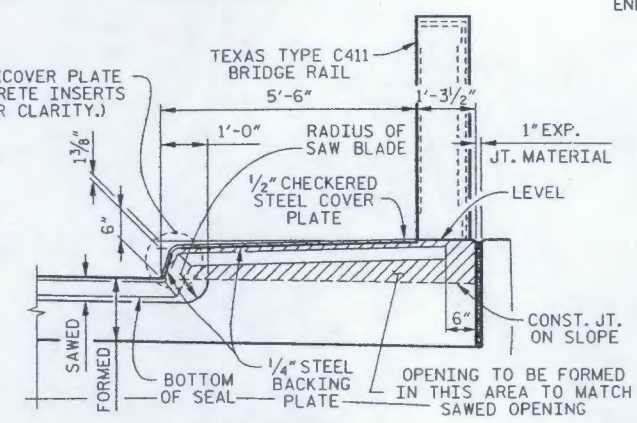
DETAIL "C"

JOINT SEAL DETAILS @ END BENT

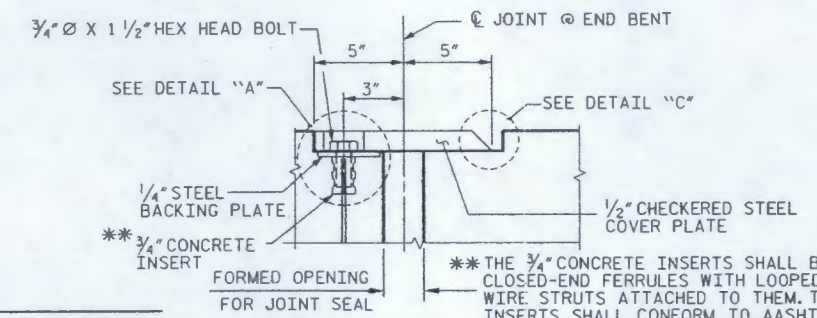


SECTION H-H

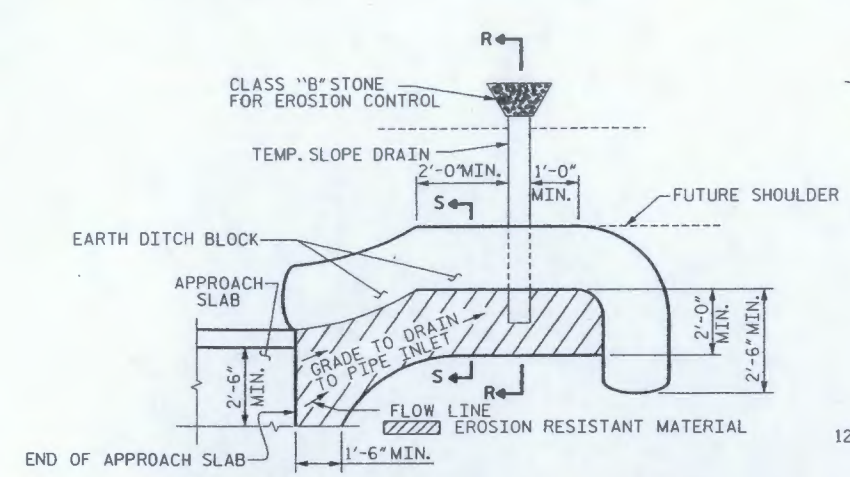
SEE DETAIL "B" (COVER PLATE BOLTS AND CONCRETE INSERTS NOT SHOWN FOR CLARITY.)



SECTION I-I



SECTION K-K

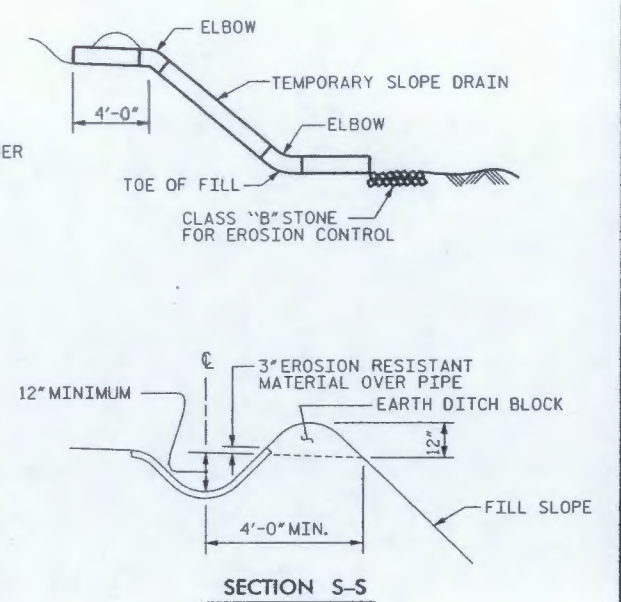


PLAN VIEW

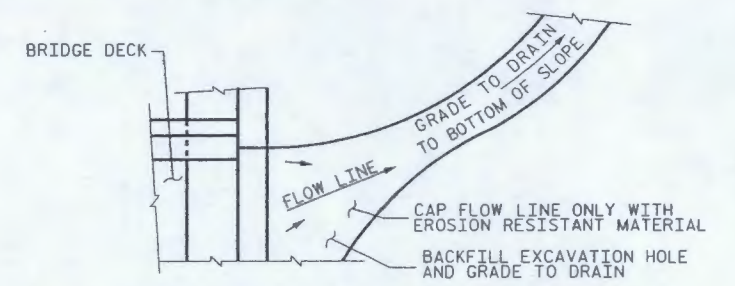
TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 2" DEPTH, 2) EROSION CONTROL MAT, OR 3) CONCRETE, AS DIRECTED BY THE ENGINEER. THE SLOPE DRAIN SHALL CONSIST OF A NON-PERFORATED TEMPORARY DRAINAGE PIPE, 12 INCHES IN DIAMETER.



SECTION S-S



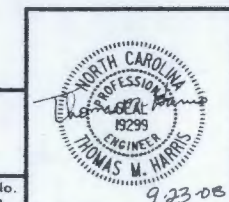
NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT TO THE STRUCTURE. THE CONTRACTOR WILL BE REQUIRED TO REMOVE THESE MATERIALS PRIOR TO CONSTRUCTION OF THE APPROACH SLAB.

TEMPORARY DRAINAGE DETAIL

PROJECT NO. **R-2813B**
BUNCOMBE COUNTY
 STATION: **43 + 72.00 -L-**

SHEET 4 OF 4

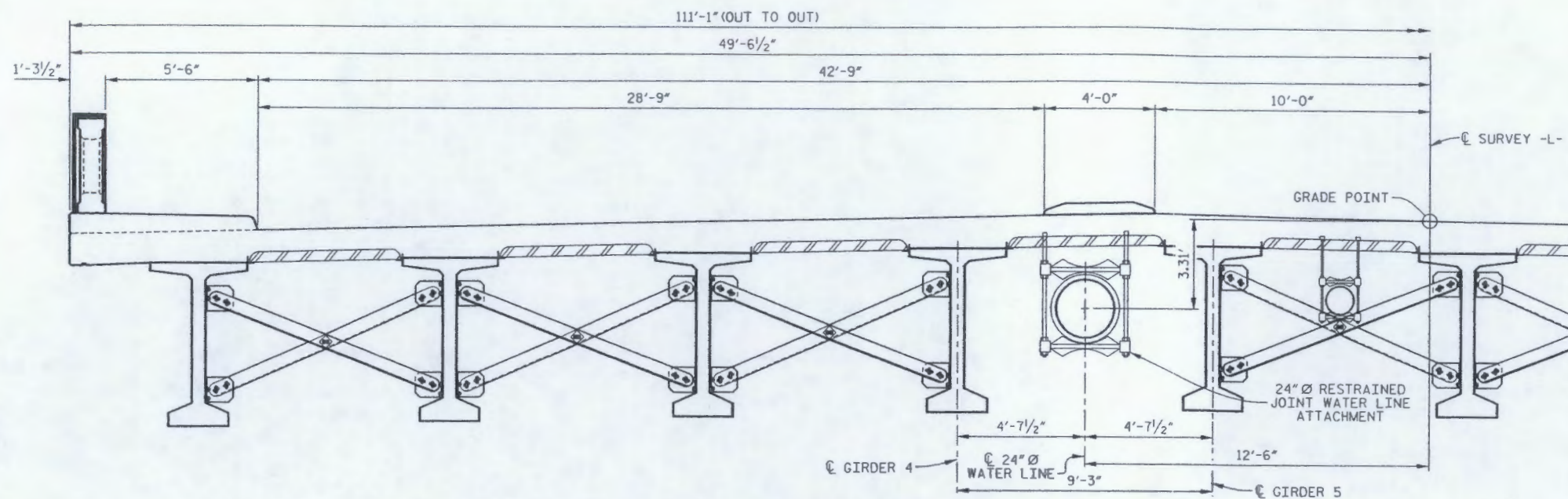
RELEASE FOR CONSTRUCTION
 DATE: **9-23-08**



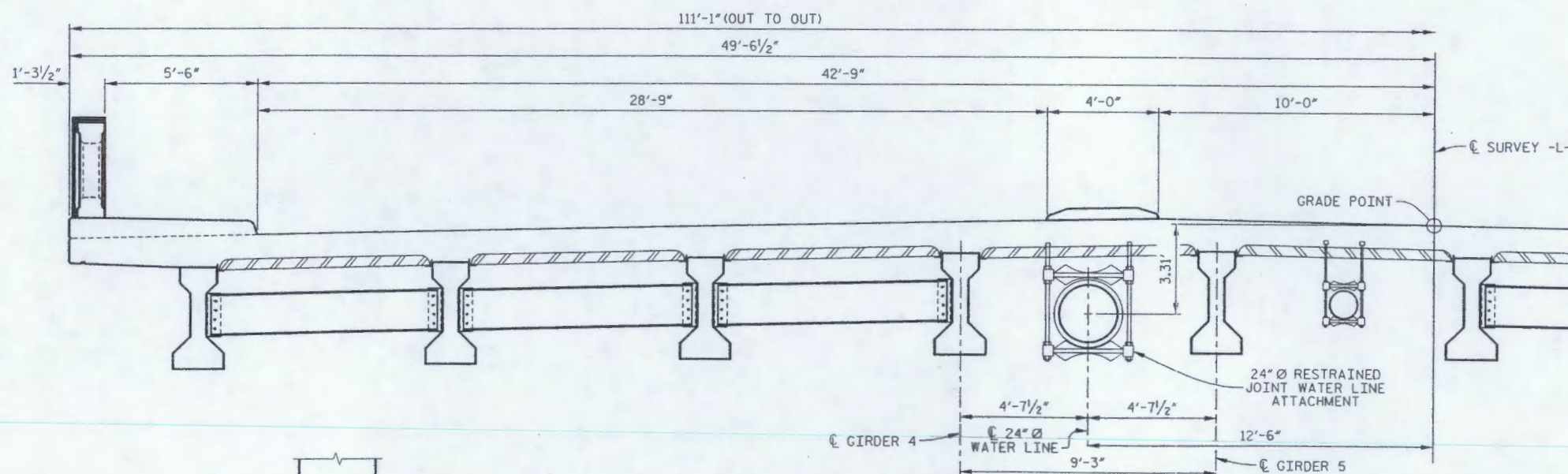
WilburSmith
 421 Fayetteville Street
 Suite 1303
 RALEIGH, N. C. 27601
 DRAWN BY: **K.E. LOFTON** DATE: **9-08**
 CHECKED BY: **T.M. HARRIS** DATE: **9-08**
 DWG. No. **S-72**

STATE OF NORTH CAROLINA						SHEET No.	
DEPARTMENT OF TRANSPORTATION							
RALEIGH							
STANDARD							
BRIDGE APPROACH							
SLAB DETAILS							
REVISIONS							
No.	BY:	DATE:	No.	BY:	DATE:		
1			3			TOTAL SHEETS	
2			4				

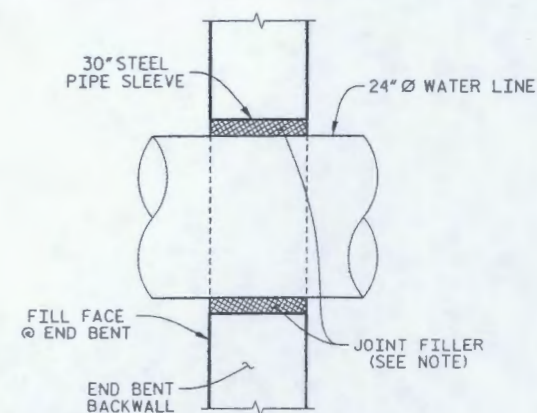
STD. No. BAS10



HALF SECTION - SPANS A, B AND C



HALF SECTION - SPAN D



SECTION THRU BACKWALL

CENTER UTILITY IN BLOCKOUT AND FILL ANNULAR SPACE AROUND UTILITY PIPE WITH JOINT FILLER IN ACCORDANCE WITH STANDARD SPECIFICATION ARTICLE 1028-1.

NOTES

FOR WATER LINE ATTACHMENT, SEE SPECIAL PROVISIONS.

FOR WATER MAIN CONSTRUCTION, SEE UTILITY SPECIAL PROVISIONS.

PROJECT NO. R-2813B

BUNCOMBE COUNTY

STATION: 43+72.00 -L-

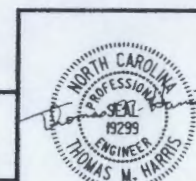
SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

24" Ø WATER LINE
ATTACHMENT

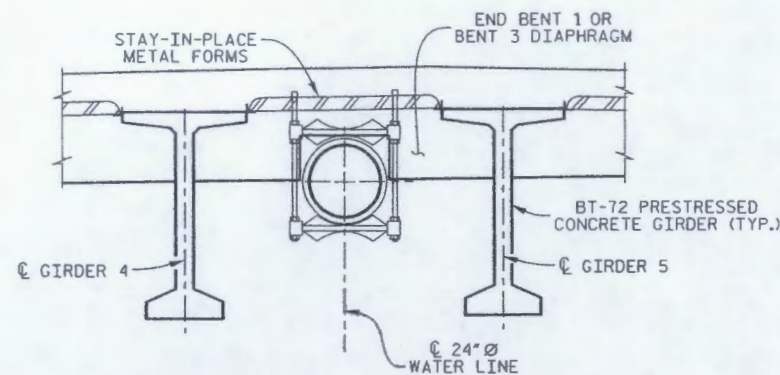
RELEASE FOR
CONSTRUCTION
DATE: 9-23-08



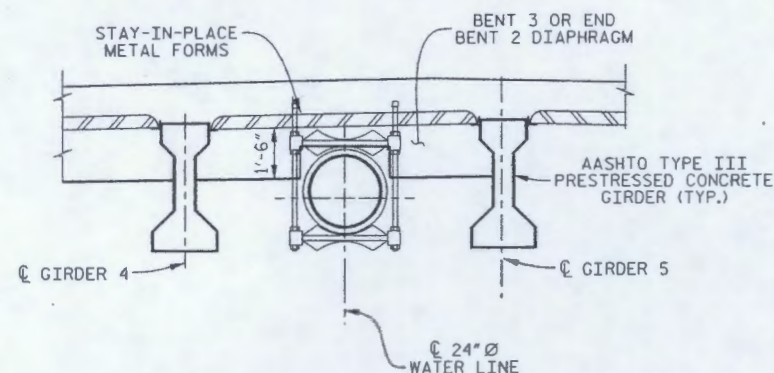
421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601

DRAWN BY: K.E. LOFTON DATE: 9-08 DWG. No. S-73
CHECKED BY: T.M. HARRIS DATE: 9-08

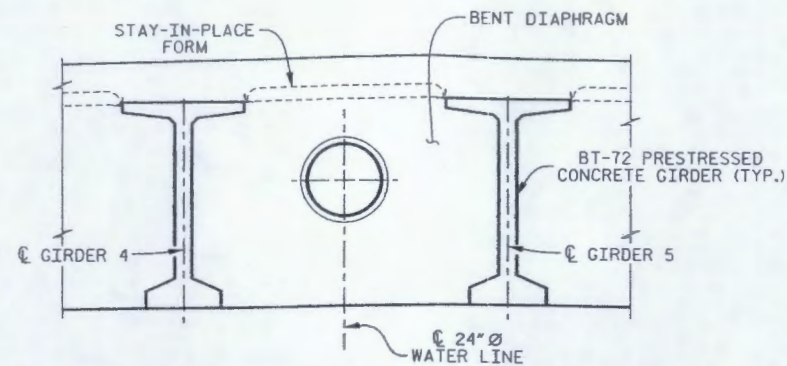
REVISIONS				SHEET No.	
No.	BY	DATE	No.	BY	DATE
1			3		
2			4		
				TOTAL SHEETS	



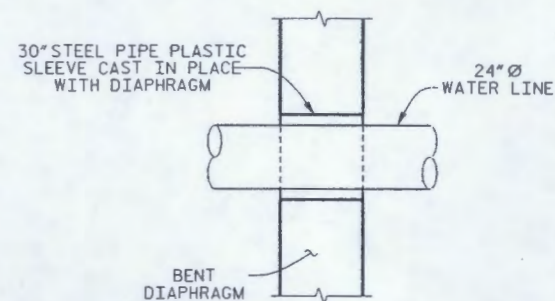
**TYPICAL SECTION AT END BENT 1
AND BENT 3 DIAPHRAGM**



**TYPICAL SECTION AT BENT 3
AND END BENT 1 DIAPHRAGM**



**TYPICAL SECTION AT BENT 1
AND BENT 2 DIAPHRAGM**

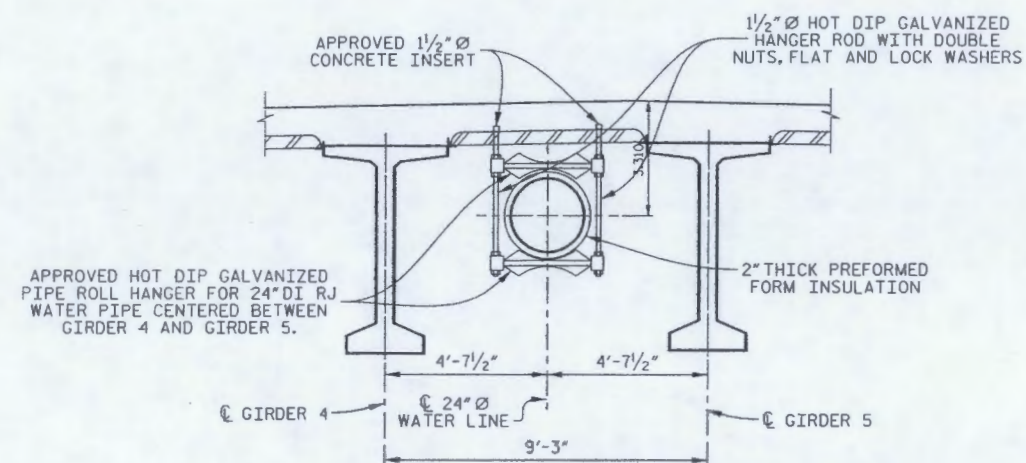


**DETAIL OF PIPE THRU
BENT 1 AND 2 DIAPHRAGM**

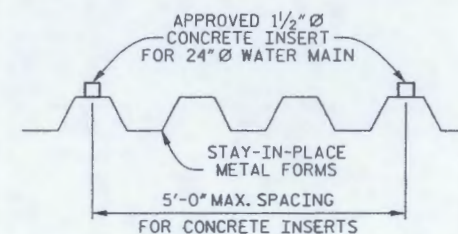
NOTES

FOR DIAPHRAGM DETAILS, SEE "TYPICAL SECTION DETAILS" SHEETS.

30" STEEL PIPE SLEEVE TO BE FLUSH WITH BOTH FACES OF DIAPHRAGM. FIELD BEND REINFORCING STEEL AS NECESSARY TO PROVIDE FOR SLEEVE. SLEEVE SHALL BE PLACED PARALLEL TO GIRDERS.



PIPE ROLL TYPE HANGER FOR 24" Ø WATER LINE



NOTES

INSERTS SHALL BE LOCATED IN THE HIGH PART OF THE STAY-IN-PLACE METAL FORMS.

EXACT SPACING MAY VARY IN ORDER TO AVOID LOCATING INSERTS ON SLOPING OR LOW SURFACE OF FORM.

CONCRETE INSERTS SHALL BE OF AN APPROVED TYPE HAVING A MINIMUM WORKING LOAD TENSION CAPACITY OF 13.8 KIPS.

DETAIL OF INSERT LOCATIONS WITH STAY-IN-PLACE METAL FORMS

PROJECT NO. **R-2813B**

BUNCOMBE COUNTY

STATION: **43 + 72.00 -L-**

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

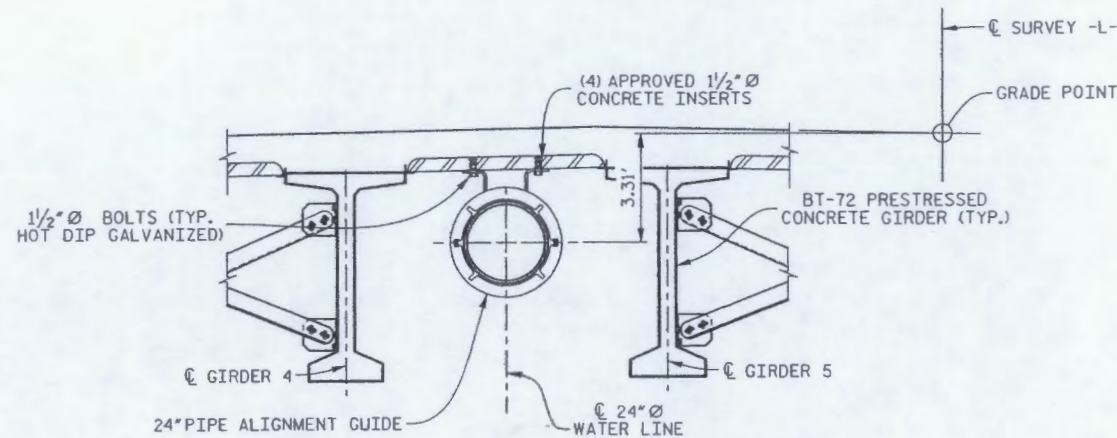
**24" Ø WATER LINE
ATTACHMENT**

**RELEASE FOR
CONSTRUCTION
DATE: 9-23-08**

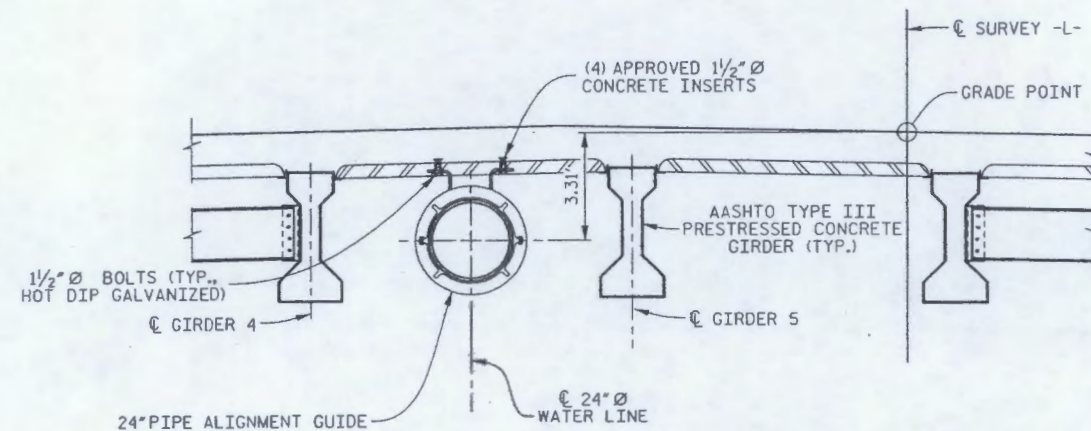
WilburSmith
421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601
DRAWN BY: K.E. LOFTON DATE: 9-08 DWG. No. S-74
CHECKED BY: T.M. HARRIS DATE: 9-08

**NORTH CAROLINA
REGISTERED PROFESSIONAL ENGINEER
19299
THOMAS M. HARRIS**

REVISIONS				SHEET No.
No.	BY:	DATE:	REVISION:	
1			3	TOTAL SHEETS
2			4	

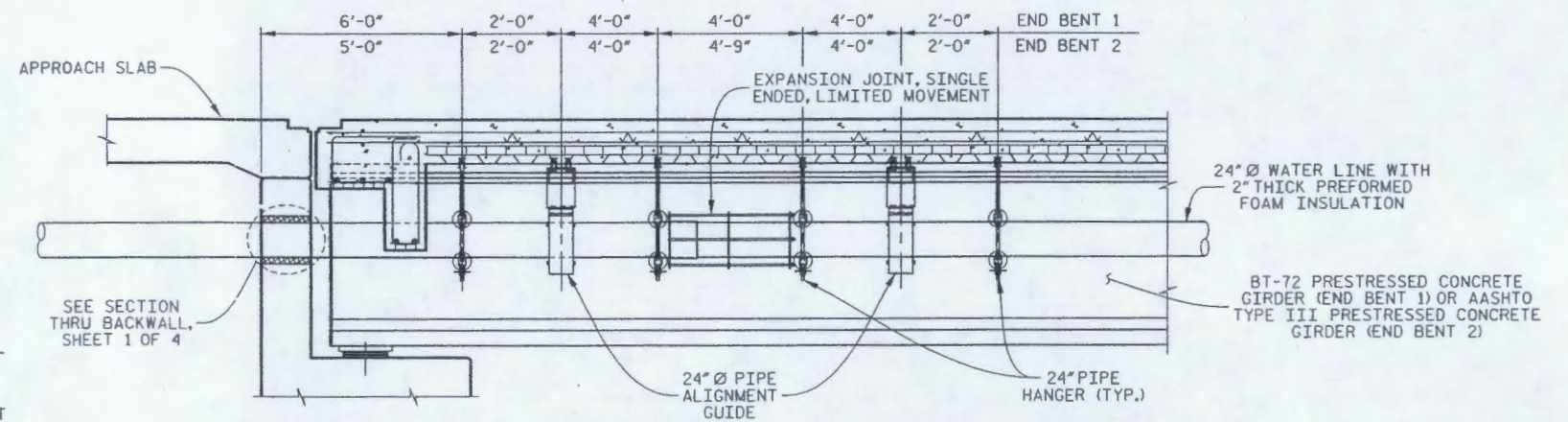


SPAN A



SPAN D

TYPICAL SECTION WITH ALIGNMENT
GUIDE FOR 24" Ø WATER MAIN



END BENT WITH EXPANSION JOINT

PROJECT NO. R-2813B
BUNCOMBE COUNTY
 STATION: 43 + 72.00 -L-

SHEET 3 OF 4

RELEASE FOR
CONSTRUCTION
DATE: 9-23-08

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

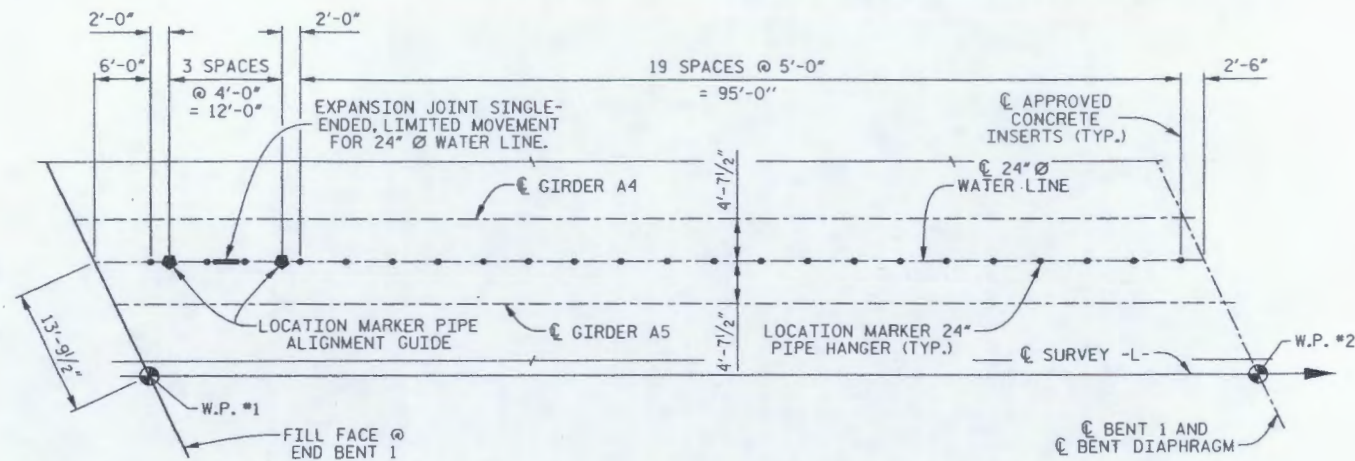
24" Ø WATER LINE
ATTACHMENT

421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601

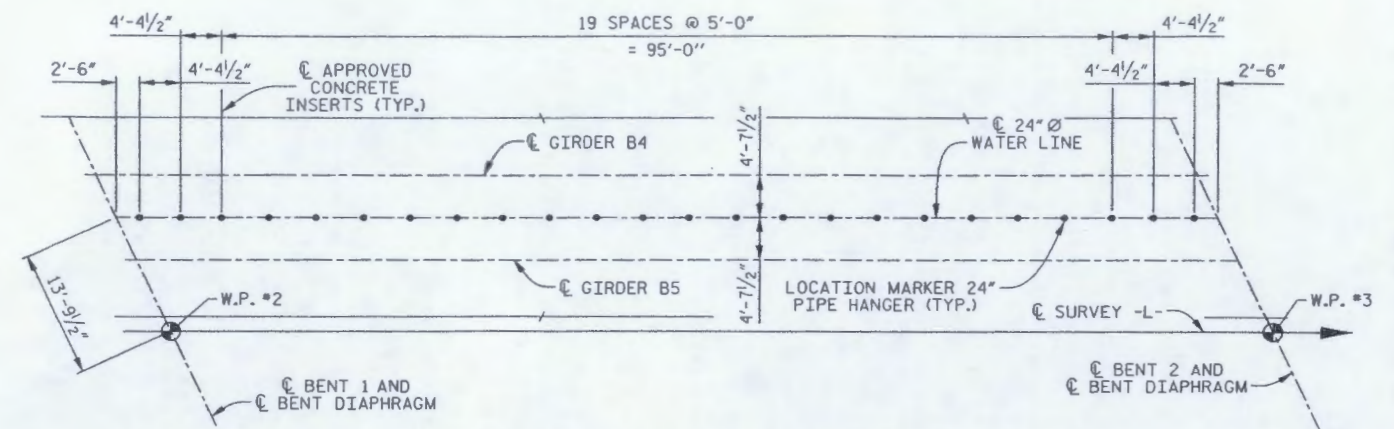
DRAWN BY: K.E. LOFTON DATE: 9-08 DWG. No. S-75
 CHECKED BY: T.M. HARRIS DATE: 9-08



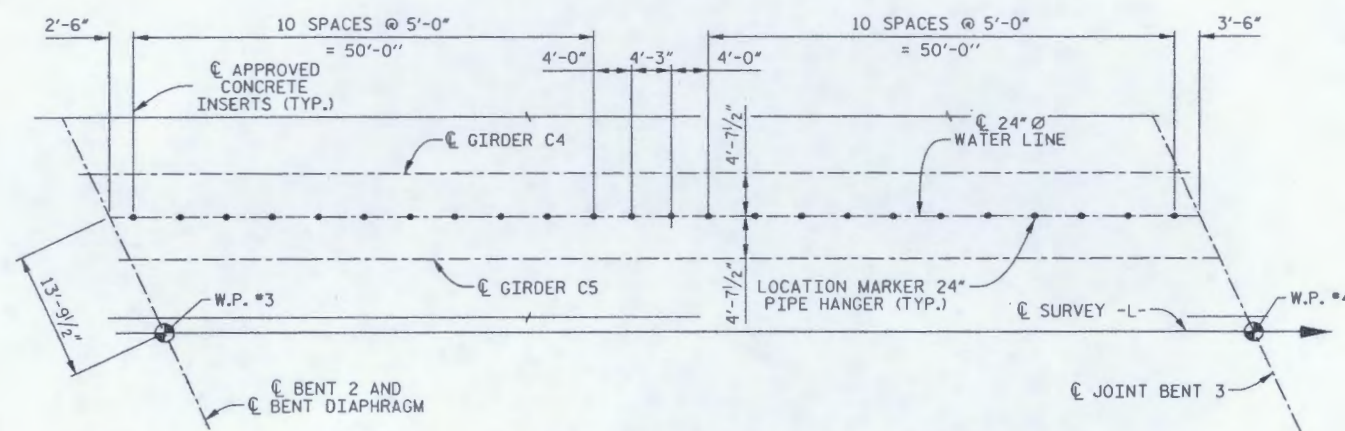
REVISIONS				SHEET No.
No.	BY:	DATE:	DATE:	
1				TOTAL SHEETS
2				



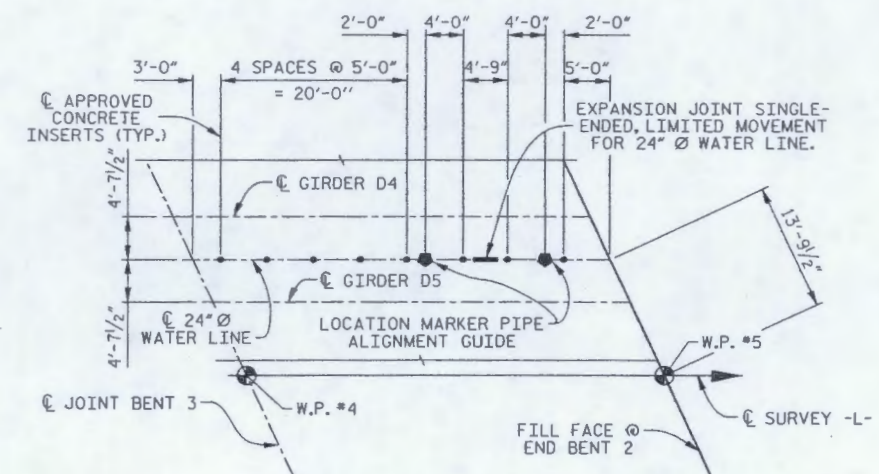
PLAN OF SPAN A



PLAN OF SPAN B



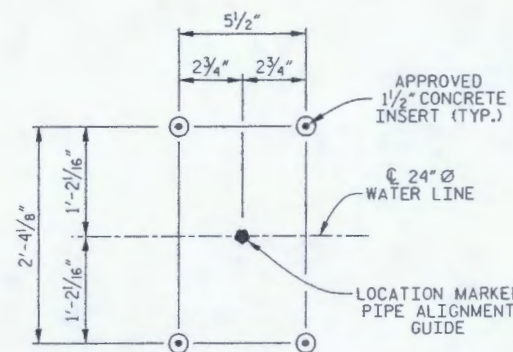
PLAN OF SPAN C



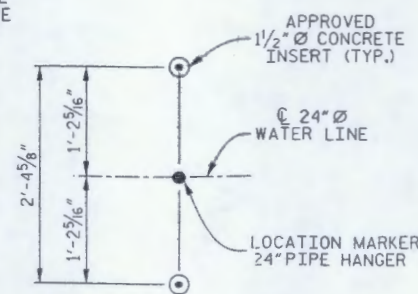
PLAN OF SPAN D

NOTE

DIMENSIONS SHOWN ARE BASED ON ANVIL INTERNATIONAL PIPE ROLL AND ALIGNMENT GUIDE. CONTRACTOR SHALL ADJUST THESE DIMENSION BASED ON THE ACTUAL PIPE ROLL AND ALIGNMENT GUIDE USED.



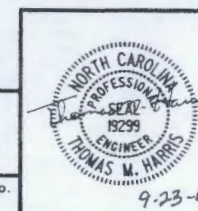
ALIGNMENT GUIDE INSERT LOCATION DETAIL



HANGER INSERT LOCATION DETAIL

RELEASE FOR
CONSTRUCTION
DATE: 9-23-08

421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601
DRAWN BY: K.E. LOFTON DATE: 9-08
CHECKED BY: T.M. HARRIS DATE: 9-08
DWG. No. S-76



PROJECT NO. R-2813B
BUNCOMBE COUNTY
STATION: 43+72.00 -L-

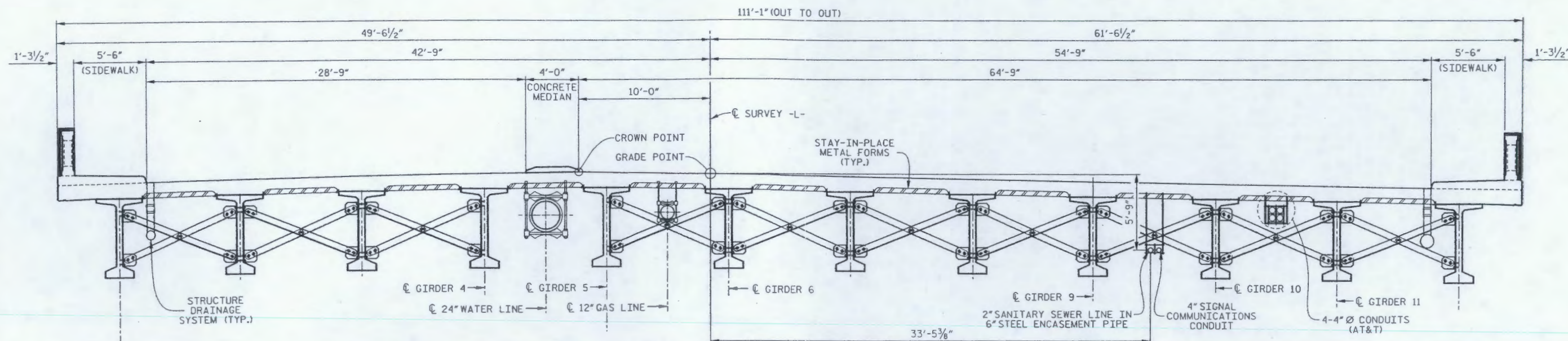
SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

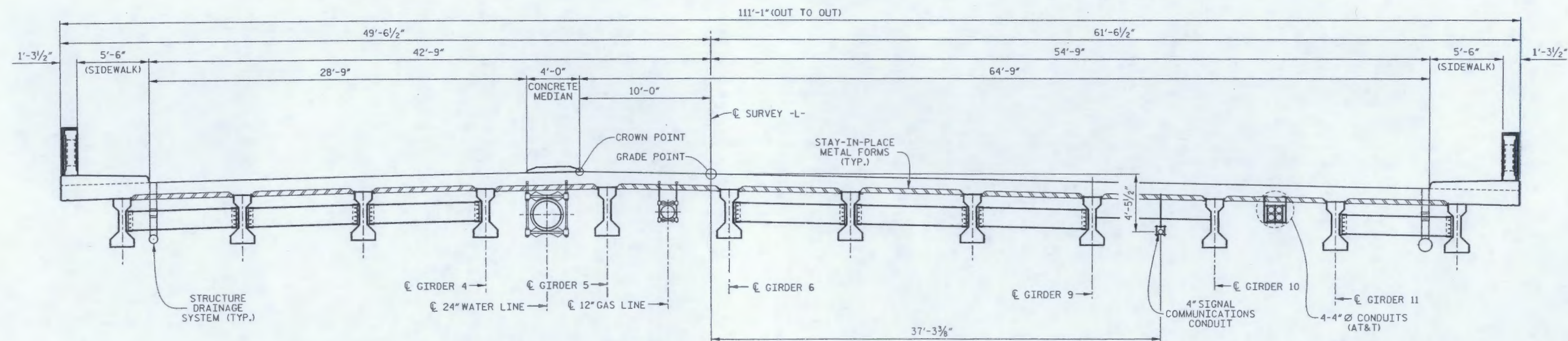
SUPERSTRUCTURE

24" Ø WATER LINE
ATTACHMENT

REVISIONS				SHEET No.			
No.	BY:	DATE:	No.	BY:	DATE:	TOTAL SHEETS	
1			3				
2			4				



SPANS A, B AND C



SPAN D

PROJECT NO. R-2813B
BUNCOMBE COUNTY
 STATION: 43 + 72.00 -L-

SHEET 1 OF 4

RELEASE FOR
 CONSTRUCTION
 DATE: 9-23-08

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

UTILITY
 ATTACHMENT DETAILS
 2" SEWER LINE AND 4" SIGNAL
 COMMUNICATIONS CONDUIT

421 Fayetteville Street
 Suite 1303
 RALEIGH, N. C. 27601

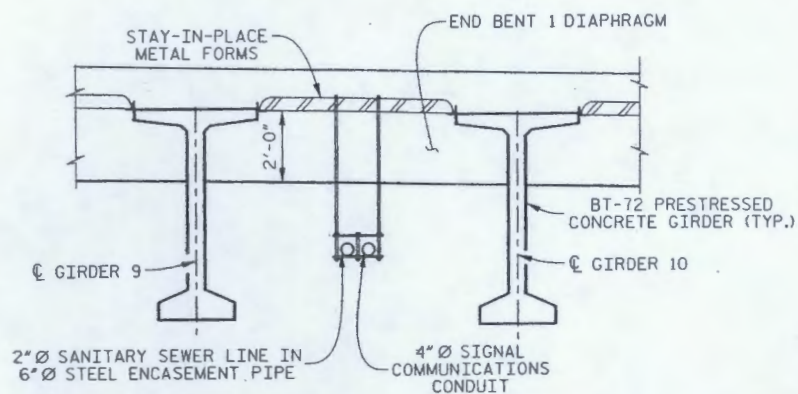
WILBURSMITH
 ENGINEERS
 PLANNERS
 ECONOMISTS

DRAWN BY: K.E. LOFTON DATE: 9-08
 CHECKED BY: T.M. HARRIS DATE: 9-08

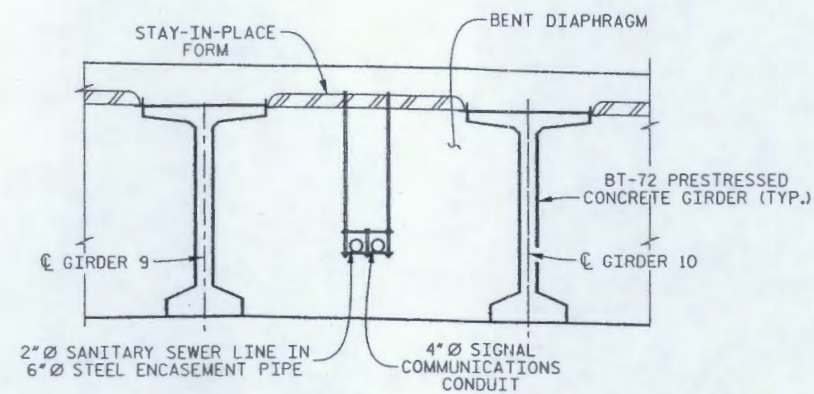
DWG. No.
 S-77

STATE OF NORTH CAROLINA
 PROFESSIONAL ENGINEER
 SEAL
 19299
 ENGINEER
 THOMAS W. HARRIS
 9-23-08

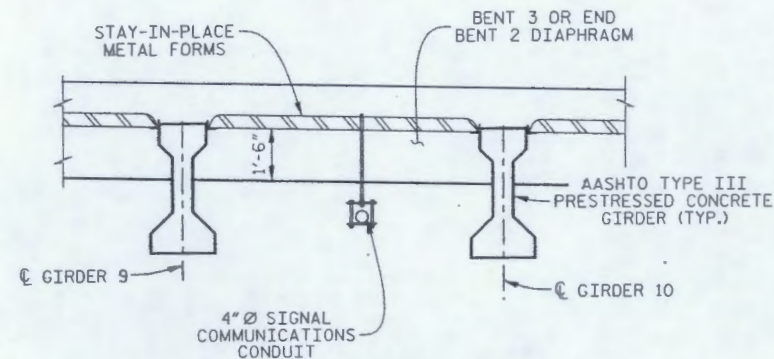
REVISIONS				SHEET No.	
No.	BY:	DATE:	No.	DATE:	TOTAL SHEETS
1			3		
2			4		



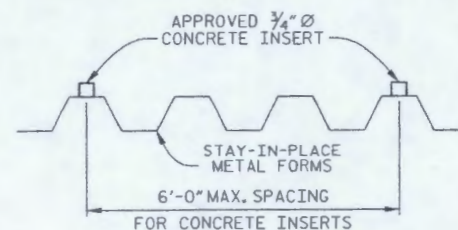
TYPICAL SECTION AT END BENT 1 DIAPHRAGM



TYPICAL SECTION AT BENT 1
AND BENT 2 DIAPHRAGM



TYPICAL SECTION AT BENT 3
AND END BENT 2 DIAPHRAGM



DETAIL OF INSERT LOCATIONS WITH STAY-IN-PLACE METAL FORMS

NOTES

INSERTS SHALL BE LOCATED IN THE HIGH PART OF THE STAY-IN-PLACE METAL FORMS.

EXACT SPACING MAY VARY IN ORDER TO AVOID LOCATING INSERTS ON SLOPING OR LOW SURFACE OF FORM.

CONCRETE INSERTS SHALL BE OF AN APPROVED TYPE HAVING A MINIMUM WORKING LOAD TENSION CAPACITY OF 2.5 KIPS.

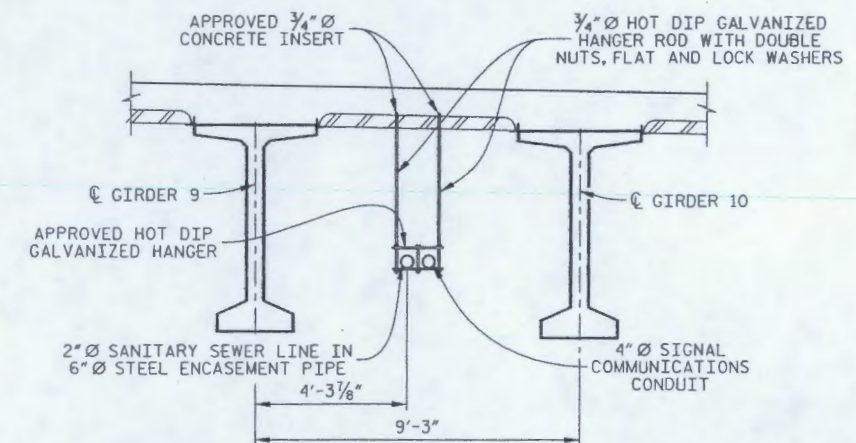
NOTES

FOR DIAPHRAGM DETAILS, SEE "TYPICAL SECTION DETAILS" SHEETS.

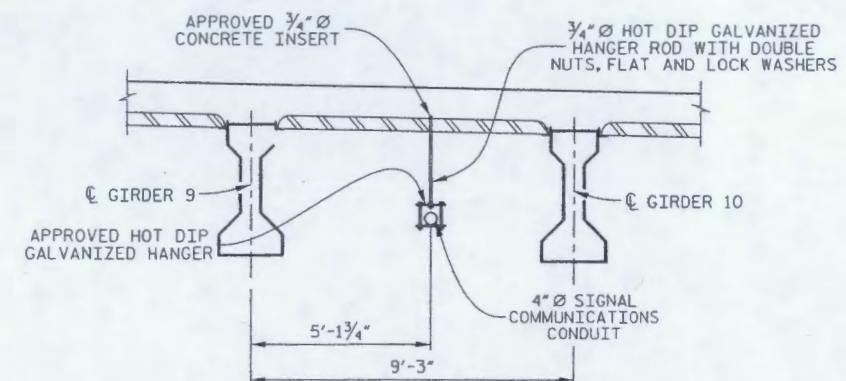
8" STEEL PIPE SLEEVE TO BE FLUSH WITH BOTH FACES OF DIAPHRAGM. FIELD BEND REINFORCING STEEL AS NECESSARY TO PROVIDE FOR SLEEVE. SLEEVE SHALL BE PLACED PARALLEL TO GIRDERS.

FOR SANITARY SEWER FORCE MAIN AND SIGNAL COMMUNICATIONS CONDUIT ATTACHMENT, SEE SPECIAL PROVISIONS.

FOR 2" SEWER LINE ATTACHMENT TO BENT 3, SEE UTILITY PLANS.



TYPICAL HANGER - SPANS A, B AND C



TYPICAL HANGER - SPAN D

PROJECT NO. R-2813B
BUNCOMBE COUNTY
 STATION: 43+72.00 -L-

SHEET 2 OF 4

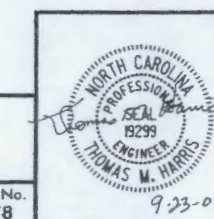
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

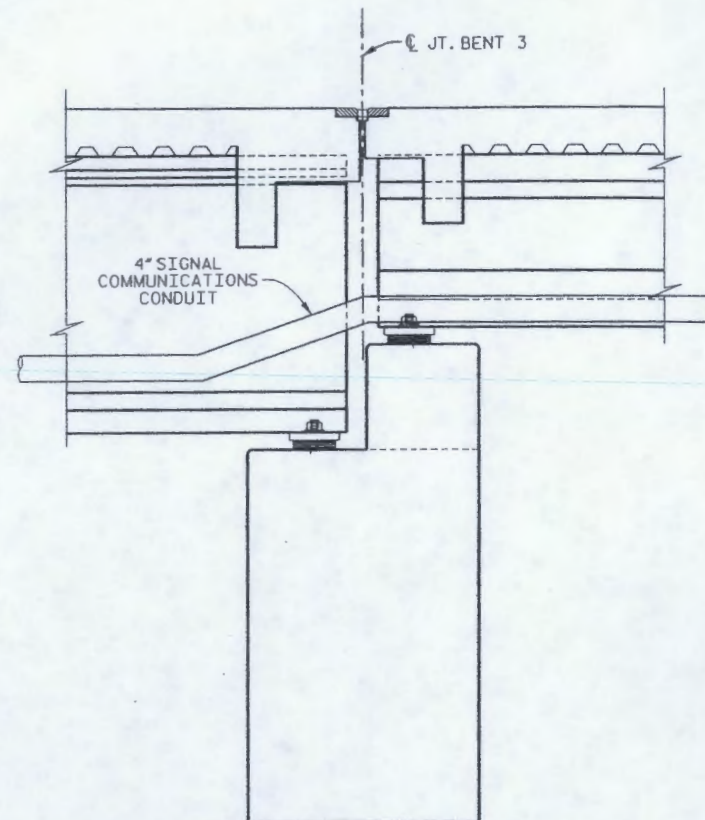
UTILITY
 ATTACHMENT DETAILS
 2" SEWER LINE AND 4" SIGNAL
 COMMUNICATIONS CONDUIT

REVISIONS				SHEET No.
No.	BY	DATE	DATE	
1			3	TOTAL SHEETS
2			4	

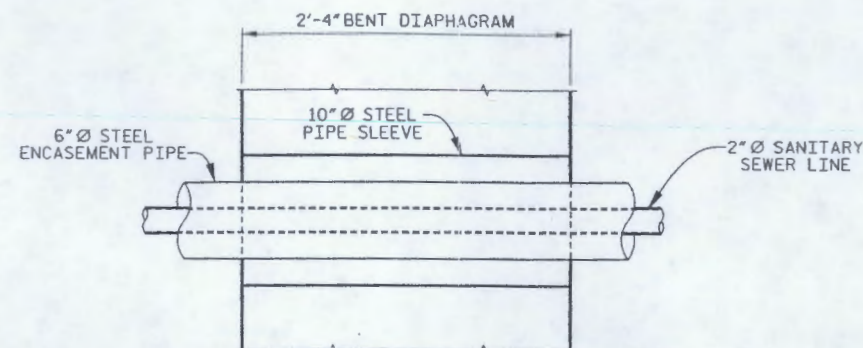
WilburSmith
 ENGINEERS PLANNERS ARCHITECTS
 421 Fayetteville Street
 Suite 1303
 RALEIGH, N. C. 27601

DRAWN BY: K.E. LOFTON DATE: 9-08 DWG. No. S-78
 CHECKED BY: T.M. HARRIS DATE: 9-08

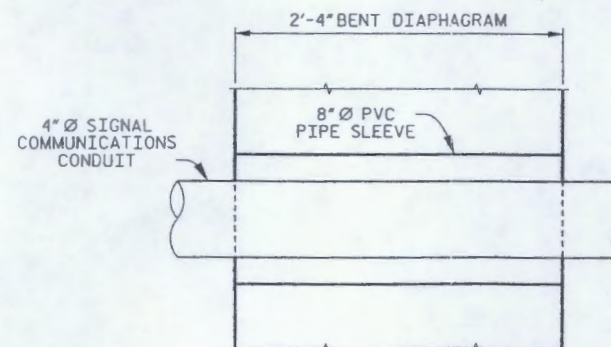




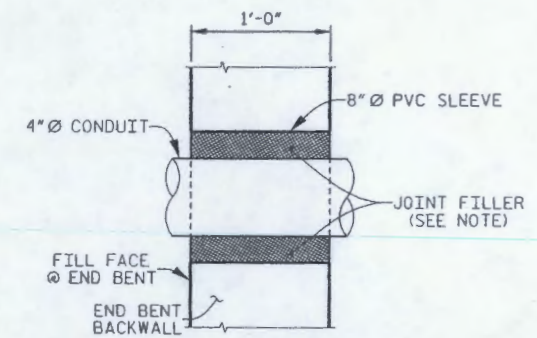
CONDUIT TRANSITION @ BENT 3



SECTION THRU BENT DIAPHRAGM
2" Ø SANITARY SEWER LINE



SECTION THRU BENT DIAPHRAGM
4" SIGNAL COMMUNICATIONS CONDUIT



SECTION THRU BACKWALL
4" SIGNAL COMMUNICATIONS CONDUIT

CENTER UTILITY IN BLOCKOUT AND FILL ANNULAR SPACE AROUND UTILITY PIPE WITH JOINT FILLER IN ACCORDANCE WITH STANDARD SPECIFICATION ARTICLE 1028-1.

FOR SECTION THRU BACKWALL FOR 2" Ø SANITARY SEWER LINE, SEE UTILITY PLANS.

PROJECT NO. R-2813B
BUNCOMBE COUNTY
STATION: 43 + 72.00 -L-

SHEET 3 OF 4

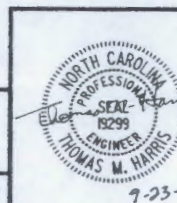
**RELEASE FOR
CONSTRUCTION**
DATE: 9-23-08

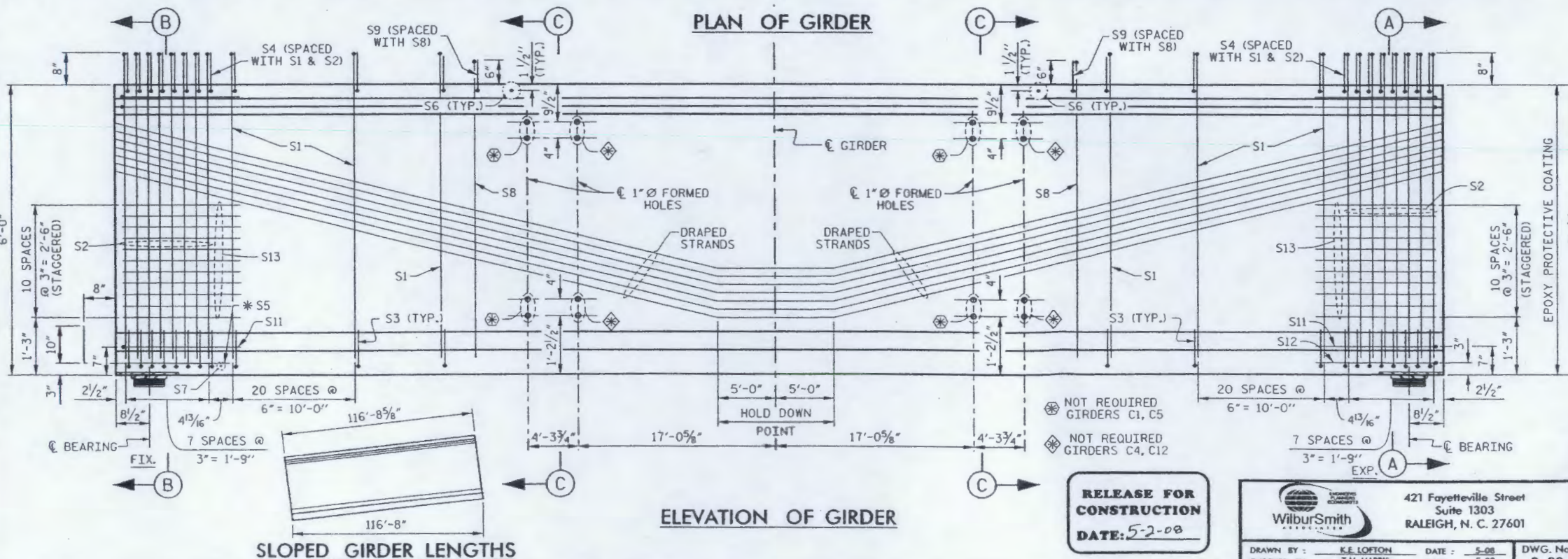
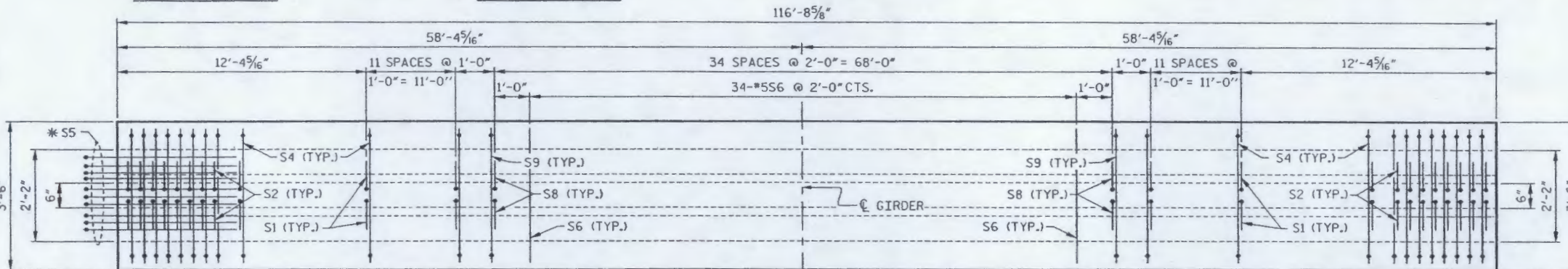
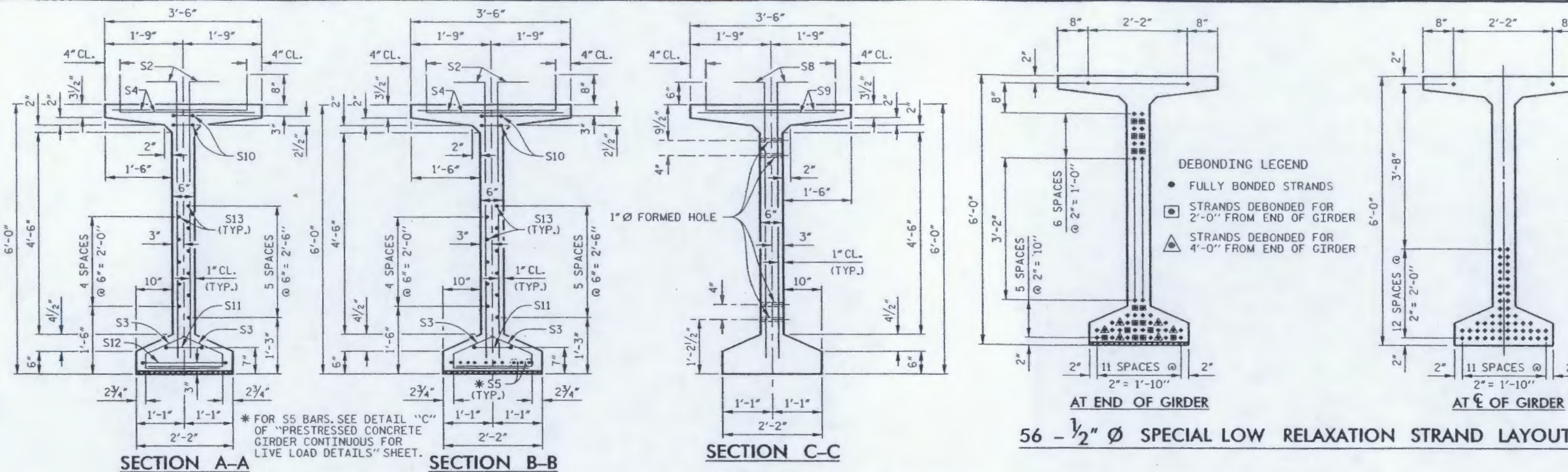
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**UTILITY
ATTACHMENT DETAILS**
2" SEWER LINE AND 4" SIGNAL
COMMUNICATIONS CONDUIT

REVISIONS				SHEET No.	
No.	BY:	DATE:	No.	BY:	DATE:
1			3		
2			4		
				TOTAL SHEETS	

WilburSmith
421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601
DRAWN BY: K.E. LOFTON DATE: 9-08 DWG. No. S-79
CHECKED BY: T.M. HARRIS DATE: 9-08





1/2" Ø SPECIAL
L. R. GRADE 270 STRANDS

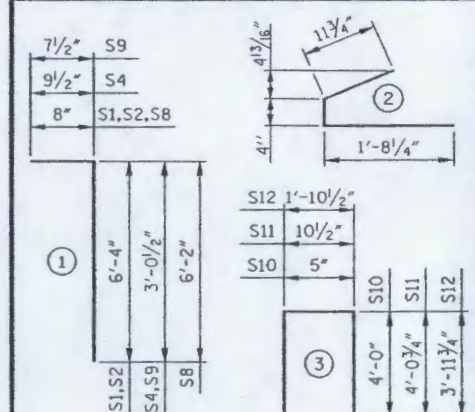
AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.167	45,100	33,820

REINFORCING STEEL FOR ONE GIRDER					
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	128	#5	1	7'-0"	935
S2	32	#6	1	7'-0"	336
S3	160	#4	2	3'-0"	321
S4	160	#5	1	3'-10"	640
*S5	10	#5	STR	3'-8"	38
S6	34	#5	STR	3'-2"	112
S7	1	#3	STR	1'-10"	1
S8	70	#5	1	6'-10"	499
S9	70	#5	1	3'-8"	268
S10	4	#4	3	8'-5"	22
S11	2	#5	3	9'-0"	19
S12	1	#5	3	9'-10"	10
S13	22	#4	STR	4'-0"	59

* NOTE: S5 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT.



QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL	8,000 PSI CONCRETE	1/2" Ø SPECIAL L.R. STRANDS
	LB.	C.Y.	No.
SPAN C	3,260	23.0	56

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
12	116'-8 5/8"	1400.625'

PROJECT NO. **R-2813B**
BUNCOMBE COUNTY
 STATION: **43+72.00 -L-**

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE

**BT-72 PRESTRESSED CONCRETE
 GIRDER CONTINUOUS FOR
 LIVE LOAD - SPAN C**

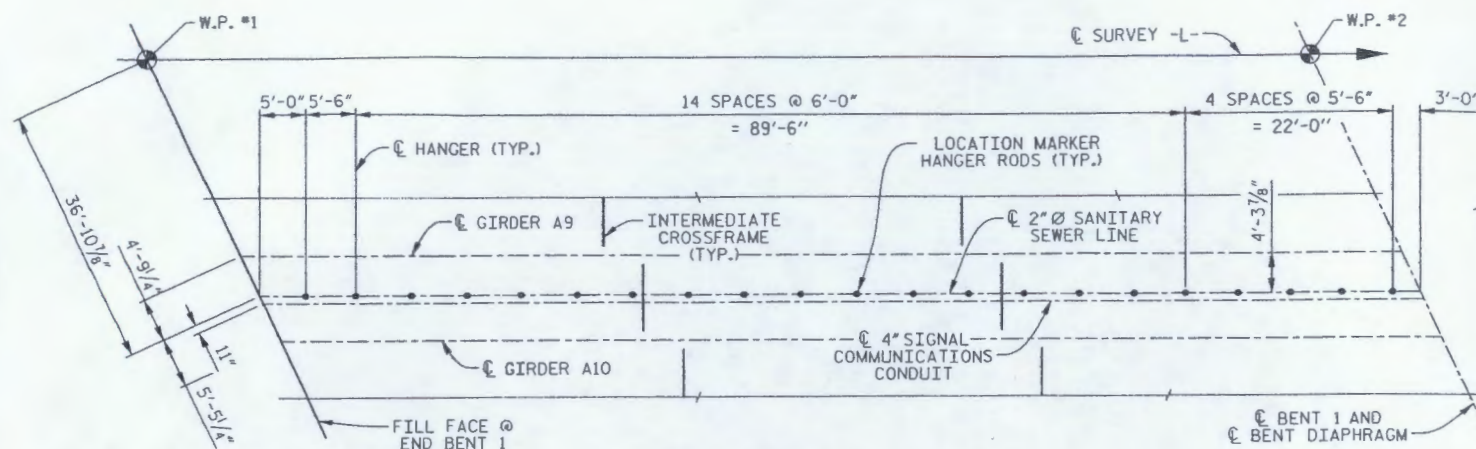
REVISIONS				SHEET No.
No.	BY:	DATE	BY:	
1			3	
2			4	

**RELEASE FOR
 CONSTRUCTION
 DATE: 5-2-08**

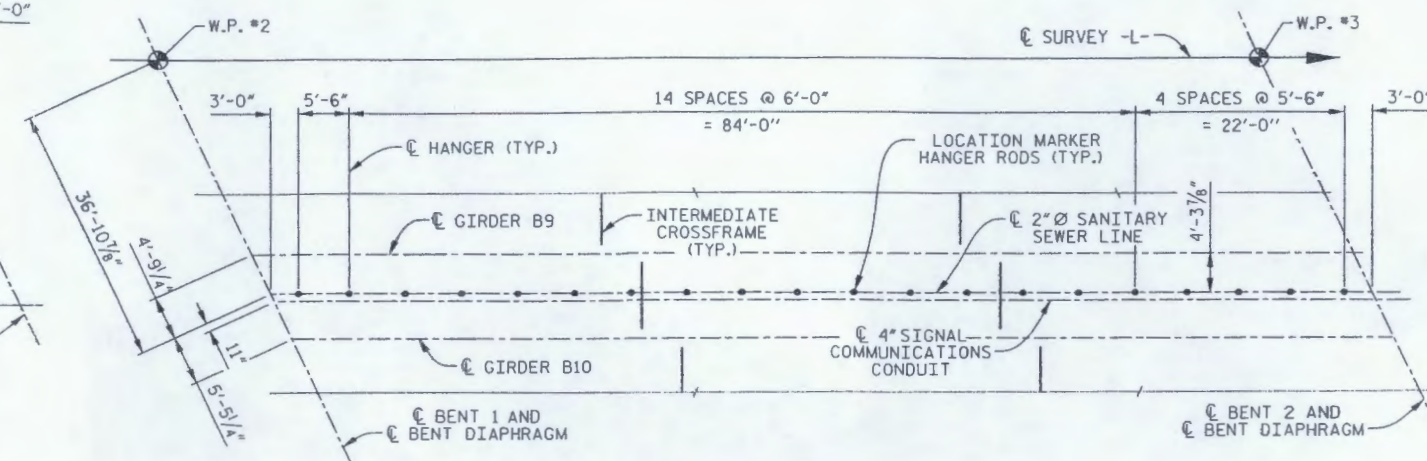
WilburSmith
 421 Fayetteville Street
 Suite 1303
 RALEIGH, N. C. 27601
 DRAWN BY: K.E. LOFTON DATE: 5-08
 CHECKED BY: T.M. HARRIS DATE: 5-08
 DWG. No. **S-29**

**NORTH CAROLINA
 PROFESSIONAL
 ENGINEER
 THOMAS W. HARRIS**

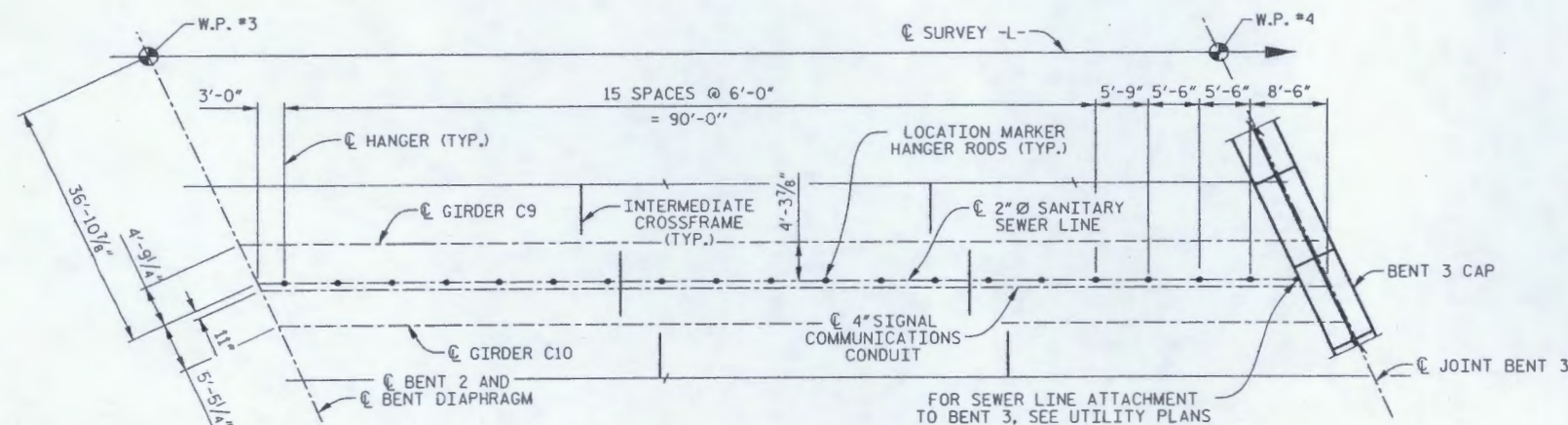
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 5/2/2008



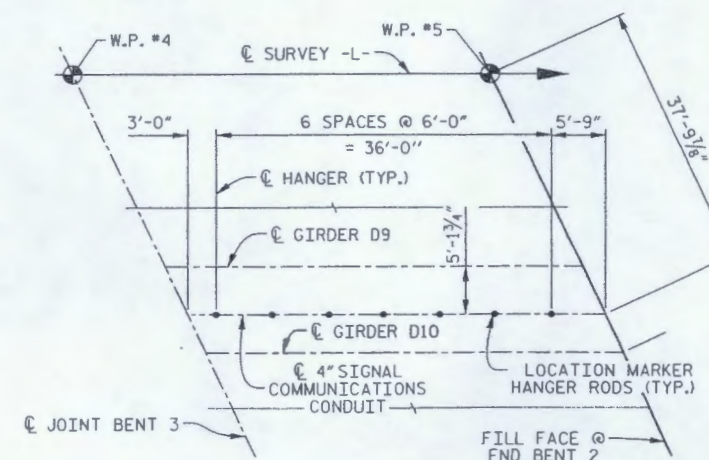
PLAN OF SPAN A



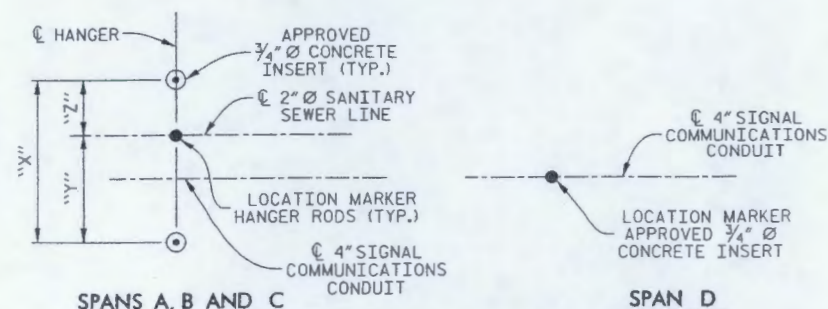
PLAN OF SPAN B



PLAN OF SPAN C



PLAN OF SPAN D

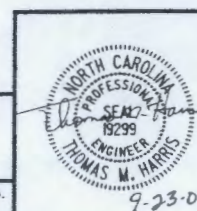


HANGER INSERT LOCATION DETAIL

DIMENSIONS "X", "Y" AND "Z" ARE A FUNCTION OF THE HANGER AND SHALL BE DETERMINED BY THE CONTRACTOR AFTER SELECTING A HANGER.

RELEASE FOR
CONSTRUCTION
DATE: 9-23-08

WilburSmith
421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601
DRAWN BY: K.E. LOFTON DATE: 9-08
CHECKED BY: T.M. HARRIS DATE: 9-08
DWG. No. S-80



PROJECT NO. R-2813B
BUNCOMBE COUNTY
STATION: 43+72.00 -L-
SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

UTILITY
ATTACHMENT DETAILS
2" SEWER LINE AND 4" SIGNAL
COMMUNICATIONS CONDUIT

REVISIONS				SHEET No.	
No.	BY	DATE	No.	BY	DATE
1			3		
2			4		
				TOTAL SHEETS	

1/2" Ø SPECIAL L. R. GRADE 270 STRANDS

AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.167	45,100	33,820

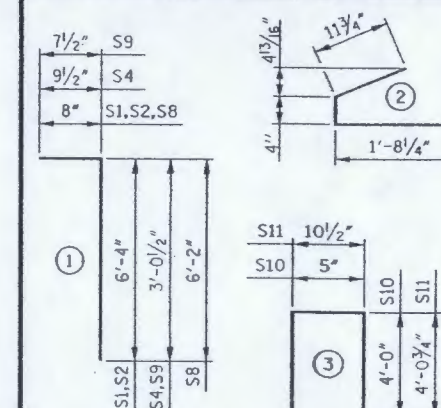
REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	128	#5	1	7'-0"	935
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* NOTE: S5 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT.



QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL	8,000 PSI CONCRETE	1/2" Ø SPECIAL L. R. STRANDS
	LB.	C.Y.	No.
SPAN B	3,288	23.0	56

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
12	116'-8 3/8"	1400.375'

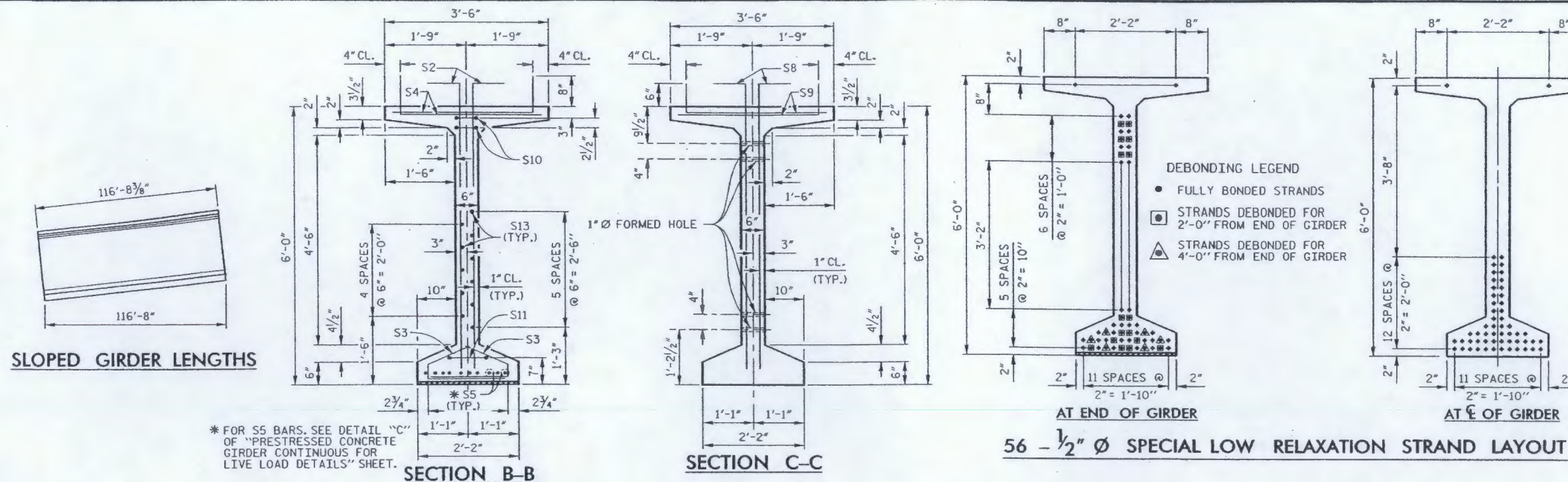
PROJECT NO. **R-2813B**
BUNCOMBE COUNTY
 STATION: **43+72.00 -L-**

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALPH

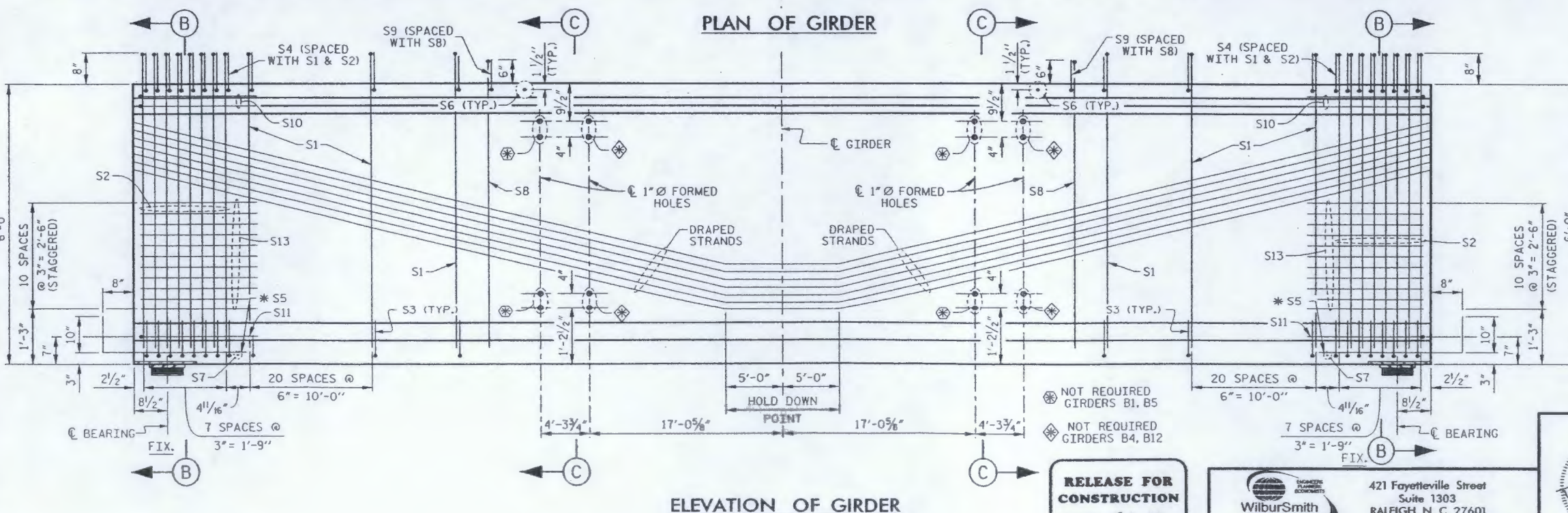
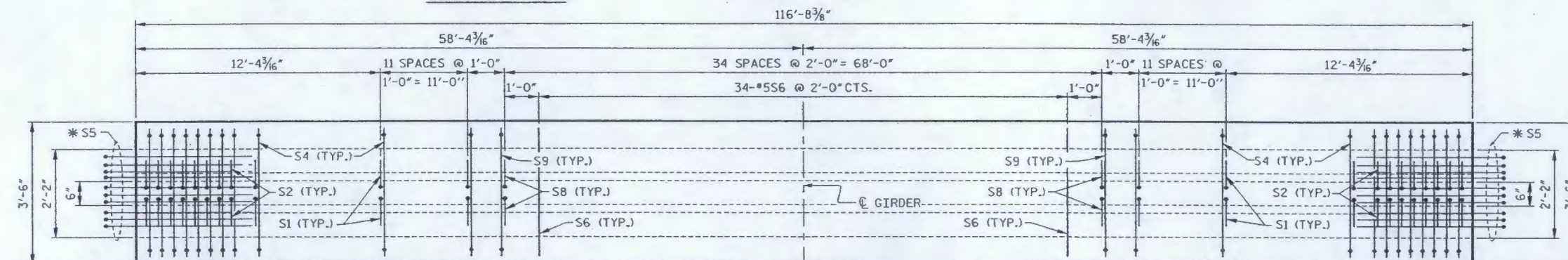
SUPERSTRUCTURE

**BT-72 PRESTRESSED CONCRETE
 GIRDER CONTINUOUS FOR
 LIVE LOAD - SPAN B**

REVISIONS				SHEET No.	
No.	BY	DATE	No.	BY	DATE
1			3		
2			4		

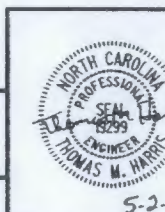


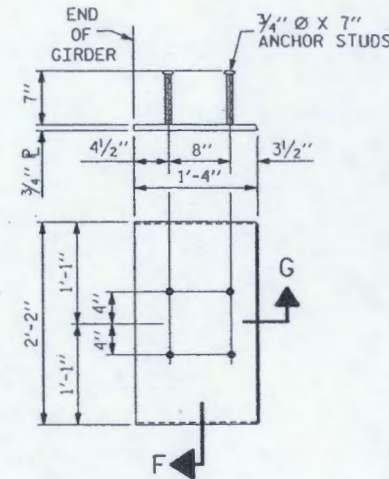
56 - 1/2" Ø SPECIAL LOW RELAXATION STRAND LAYOUT



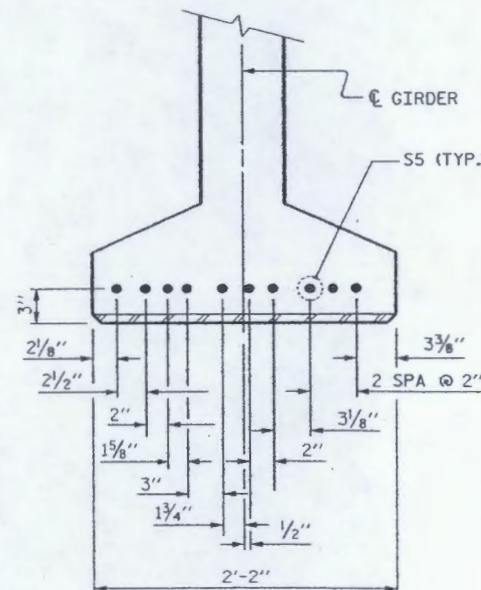
RELEASE FOR
 CONSTRUCTION
 DATE: 5-2-08

421 Fayetteville Street
 Suite 1303
 RALEIGH, N. C. 27601
 DWG. No. S-28

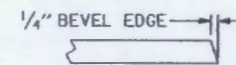




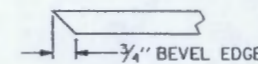
EMBEDDED PLATE "B-1"
DETAILS FOR 72" BULB TEES
 (2 REQUIRED PER GIRDER)



DETAIL "C"
 (FOR 72" BULB TEES)



SECTION "G"



SECTION "F"
 (SEE NOTES)

NOTES

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE SPECIAL LOW-RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL SHALL BE GRADE 60.

APPLY EPOXY PROTECTIVE COATING TO END OF GIRDER SURFACES INDICATED IN ELEVATION VIEW. FOR EPOXY PROTECTIVE COATING, SEE SPECIAL PROVISIONS.

EMBEDDED PLATE "B-1" SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. BEVEL EDGES OF PLATE "B-1" TO GIVE CLOSE FIT BUT NOT TIGHT FIT TO STEEL CASTING FORM.

ANCHOR STUDS SHALL CONFORM TO AASHTO M169 GRADES 1010 THROUGH 1020 OR APPROVED EQUAL, AND SHALL MEET THE TYPE "B" REQUIREMENTS OF SUBSECTION 7.3 OF THE ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE.

AT ENDS OF GIRDERS TO BE EMBEDDED IN CONCRETE DIAPHRAGMS, PRESTRESSING STRANDS MAY EXTEND A MAXIMUM OF 2" BEYOND THE GIRDER ENDS. OTHERWISE, PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE GIRDER ENDS.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE GIRDER SHALL BE DONE WHEN CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 7000 PSI.

DEPENDING ON THE TYPE OF SYSTEM USED TO SUPPORT THE DECK SLAB FORMS, PRESET ANCHORS MAY BE NECESSARY IN THE PRESTRESSED CONCRETE GIRDER.

THE TOP SURFACE OF THE GIRDER, EXCLUDING THE OUTSIDE 4", SHALL BE RAKED TO A DEPTH OF 1/4".

WHEN DRAPED STRANDS ARE DETAILED, THE LONGITUDINAL LOCATION OF THE HOLD DOWN DEVICES SHALL BE WITHIN 6" OF THE LOCATION SHOWN AND THE CENTER OF GRAVITY OF THE GROUP OF DRAPED STRANDS SHALL BE LOCATED WITHIN 1/2" OF THE THEORETICAL LOCATION SHOWN.

A 2" x 2" CHAMFER IS ALLOWED AT THE INTERSECTION OF THE WEB AND THE BOTTOM FLANGE OF THE 72" BULB TEES.

FOR VERTICAL CRACKS IN PRESTRESSED CONCRETE GIRDERS PRIOR TO DETENSIONING, SEE SPECIAL PROVISIONS.

FOR CRACK REPAIR OF PRESTRESSED CONCRETE GIRDERS, SEE SPECIAL PROVISIONS.

THE CONTRACTOR HAS THE OPTION TO PROVIDE, AT NO ADDITIONAL COST TO THE DEPARTMENT, 2 ADDITIONAL STRANDS AT THE TOP OF THE GIRDER TO FACILITATE TYING OF THE REINFORCING STEEL. THESE STRANDS SHALL BE PULLED TO A LOAD OF 4500 lbs.

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

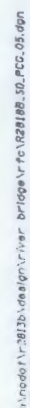
PROJECT NO. **R-2813B**
BUNCOMBE COUNTY
 STATION: **43+72.00 -L-**

**RELEASE FOR
 CONSTRUCTION**
 DATE: **5-2-08**

WilburSmith
 421 Fayetteville Street
 Suite 1303
 RALEIGH, N. C. 27601
 DRAWN BY: **K.E. LOFTON** DATE: **5-08** DWG. No. **S-30**
 CHECKED BY: **TAL HARRIS** DATE: **5-08**



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE					
PRESTRESSED CONCRETE GIRDER CONTINUOUS FOR LIVE LOAD DETAILS					
REVISIONS					
No.	BY:	DATE:	No.	BY:	DATE:
1			3		
2			4		
					SHEET No.
					TOTAL SHEETS



STRUCTURAL STEEL NOTES

ALL INTERMEDIATE DIAPHRAGM STEEL, CONNECTOR PLATES AND PLATE WASHERS SHALL BE AASHTO M270 GRADE 50 OR APPROVED EQUAL.

TENSION ON THE AASHTO M164 BOLTS THROUGH THE CHANNEL MEMBER SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH ARTICLE 440-8 OF THE STANDARD SPECIFICATIONS.

TENSION ON THE AASHTO M164 BOLTS THROUGH THE GIRDER WEB SHALL BE SNUG TIGHTENED FOLLOWED BY AN ADDITIONAL 1/4 TURN.

THE CHANNELS, ANGLES, WASHERS, PLATE WASHERS, AND DIRECT TENSION INDICATORS SHALL BE GALVANIZED OR METALLIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.

FOR METALLIZATION, APPLY AN 8 MIL THICK 99.99 PERCENT ZINC (W-Zn-1) THERMAL SPRAYED COATING WITH A 0.5 MIL THICK SEAL COAT TO ALL STEEL DIAPHRAGM SURFACES IN ACCORDANCE WITH THE THERMAL SPRAYED COATINGS SPECIAL PROVISIONS AND SECTION 442 OF THE STANDARD SPECIFICATIONS.

GALVANIZE THE HIGH STRENGTH BOLTS, NUTS, AND WASHERS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR HIGH STRENGTH BOLTS, SEE SPECIAL PROVISIONS.

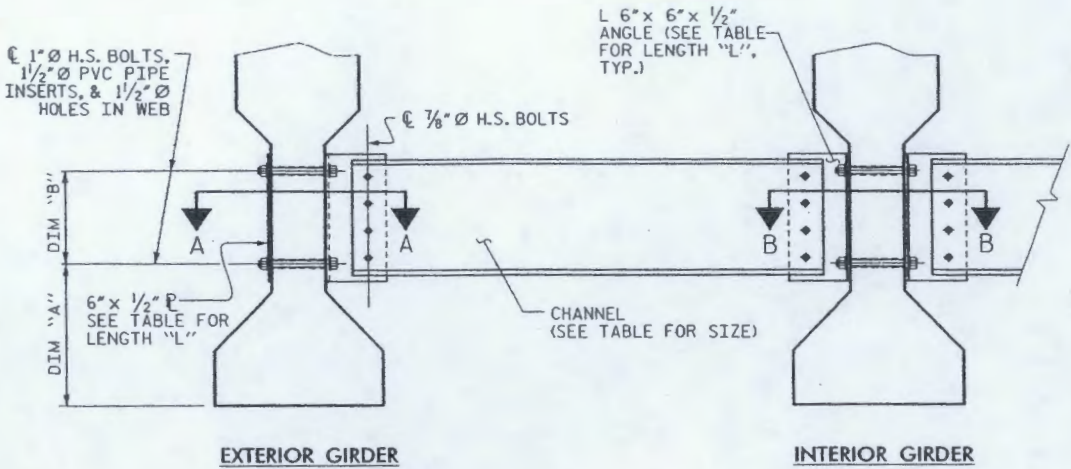
USE A MINIMUM 7/16" THICK PLATE WASHER WITH STANDARD HOLES UNDER EACH BOLT HEAD AND NUT. THE PLATE WASHERS SHALL HAVE SUFFICIENT SIZE TO COVER THE HOLES AFTER INSTALLATION. DIRECT TENSION INDICATORS ARE TO BE USED IN CONJUNCTION WITH THE PLATE WASHERS.

PROVIDE SUFFICIENT LENGTH OF ALL BOLTS TO ACCOMMODATE WASHERS, DIRECT TENSION INDICATORS, THE THICKNESS OF CONNECTING MEMBER PLUS AT LEAST 1/4" PROJECTION BEYOND THE NUT. INTERMEDIATE DIAPHRAGM ASSEMBLY SHALL COMPLY WITH SECTION 1072 OF THE STANDARD SPECIFICATIONS.

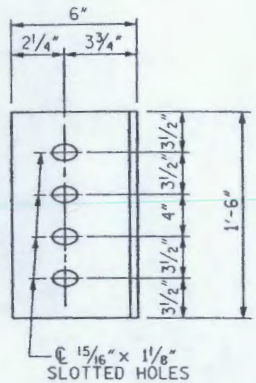
CONTRACTOR SHALL SUBMIT TWO SETS OF WORKING DRAWINGS FOR THE INTERMEDIATE DIAPHRAGM ASSEMBLY FOR REVIEW, COMMENTS AND ACCEPTANCE. AFTER REVIEW, COMMENTS, AND ACCEPTANCE, SUBMIT SEVEN SETS FOR DISTRIBUTION.

IN THE EXTERIOR BAYS, TEMPORARY STRUTS SHALL BE PLACED BETWEEN PRESTRESSED GIRDERS ADJACENT TO THE STEEL DIAPHRAGMS. STRUTS SHALL REMAIN IN PLACE 3 DAYS AFTER CONCRETE IS PLACED. ALL AASHTO M164 H.S. BOLTS SHALL BE FULLY TIGHTENED AFTER THE STRUTS HAVE BEEN REMOVED.

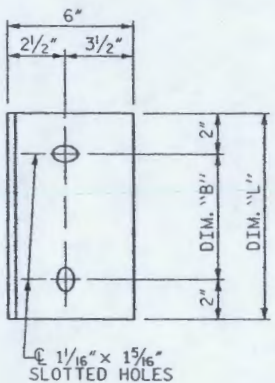
TABLE				
GIRDER TYPE	CHANNEL SIZE	DIM "A"	DIM "B"	DIM "L"
III	MC 18 x 42.7	1'-5"	1'-2"	1'-6"



PART SECTION AT INTERMEDIATE DIAPHRAGM
(TYPE III GIRDER SHOWN)



DIAPHRAGM FACE
(TYPE III OR TYPE IV GDR.)



WEB FACE

CONNECTOR PLATE DETAILS

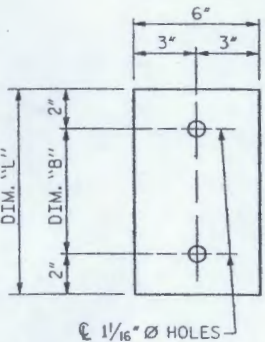
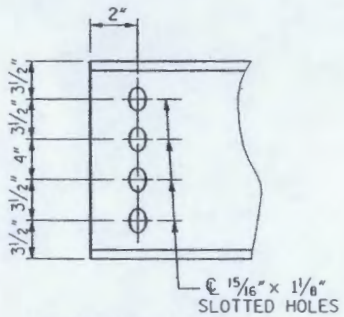
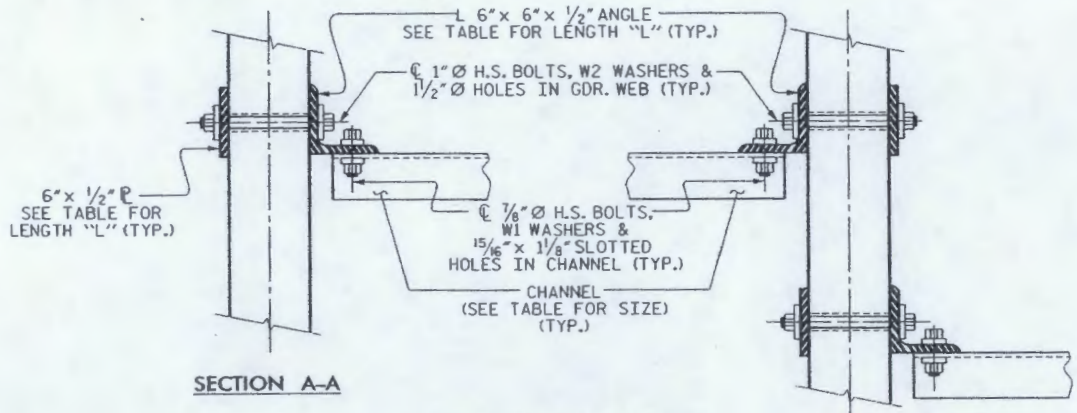


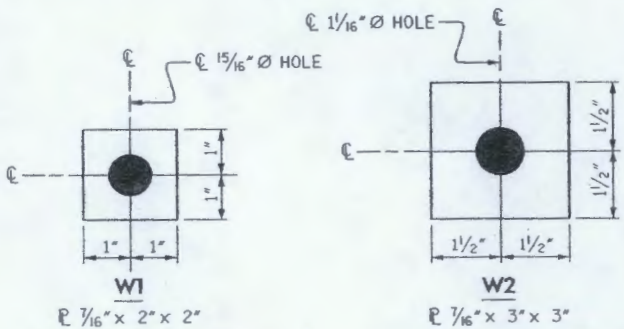
PLATE DETAILS



CHANNEL END
(TYPE III OR TYPE IV GDR.)



CONNECTION DETAILS
(FOR SKEW < 70° OR SKEW > 110°)



USE WITH 7/8" HEAVY HEX NUTS & DIRECT TENSION INDICATOR WASHERS AT DIAPHRAGM CHANNEL TO CONNECTOR PLATE CONNECTIONS.

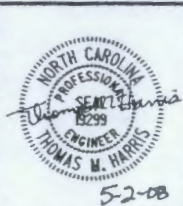
USE WITH 1" HEAVY HEX NUTS AT CONNECTOR PLATE TO GIRDER CONNECTIONS.

WASHER DETAILS

ASSEMBLED BY :	K.E. LOFTON	DATE :	3-08
CHECKED BY :	T.M. HARRIS	DATE :	3-08
DRAWN BY :	T.L.A.	6/05	ADDED 10/21/05
CHECKED BY :	VC	6/05	

DRAWN BY : K.E. LOFTON		DATE : 3-08		DWG. No. S-33	
CHECKED BY : T.M. HARRIS		DATE : 3-08			

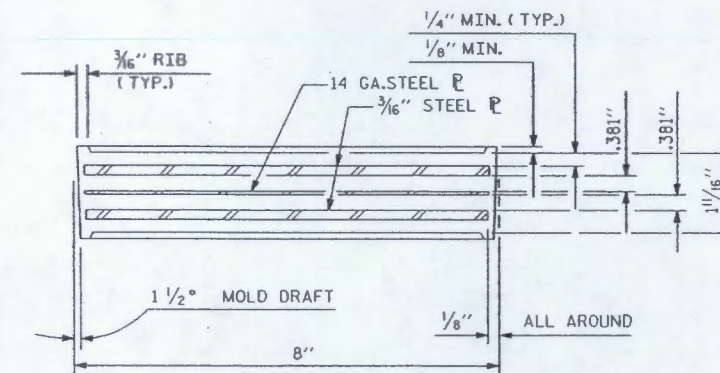
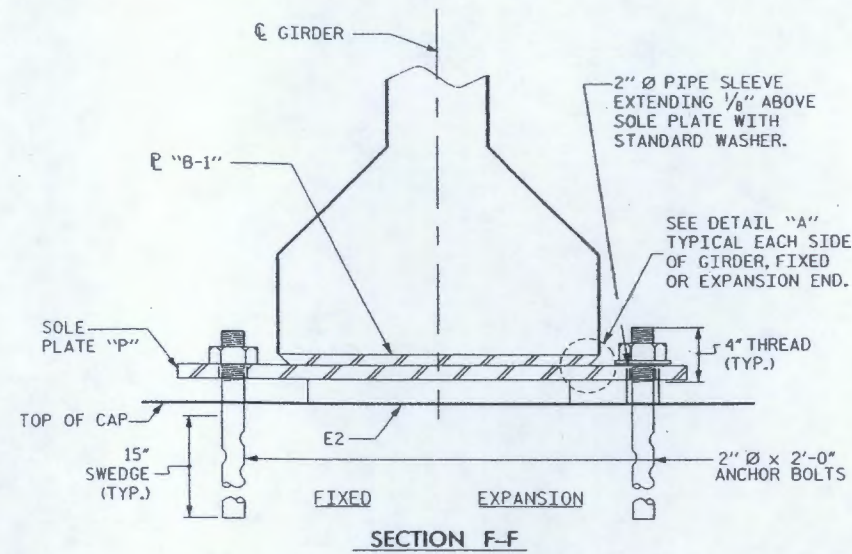
RELEASE FOR
CONSTRUCTION
DATE: 5-2-08



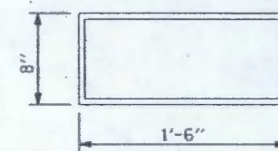
PROJECT NO. R-2813B
BUNCOMBE COUNTY
STATION: 43+72.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
INTERMEDIATE STEEL
DIAPHRAGMS FOR TYPE III
PRESTRESSED CONCRETE GIRDERS

REVISIONS				SHEET No.	
No.	BY	DATE	No.	BY	DATE
1			3		
2			4		

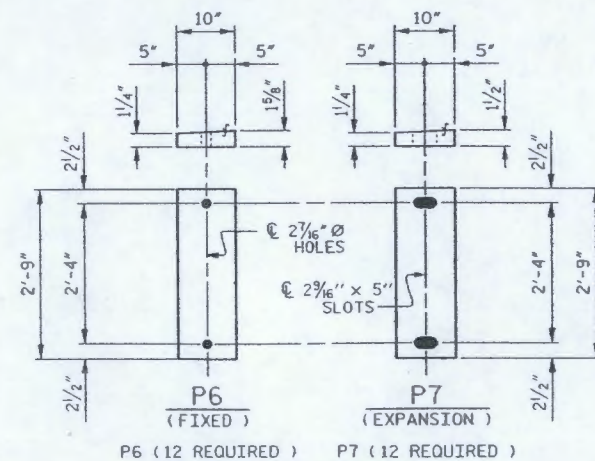


TYPICAL SECTION OF ELASTOMERIC BEARINGS

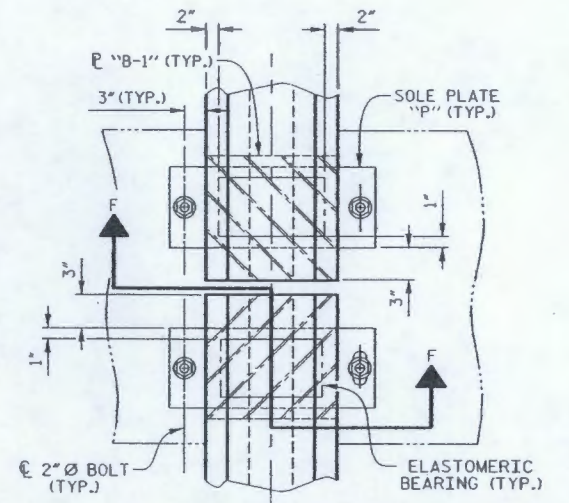


PLAN VIEW OF ELASTOMERIC BEARING

TYPE III



SOLE PLATE DETAILS ("P")



TYPICAL HALF-PLAN
(SHOWING FIXED BEARING)

TYPICAL HALF-PLAN
(SHOWING EXPANSION BEARING)

LOAD RATINGS	
45" PCG - TYPE III	MAX. D.L. + L.L. 115 K

RELEASE FOR CONSTRUCTION
DATE: 5-2-08

WilburSmith
421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601
DRAWN BY: K.E. LOFTON
CHECKED BY: T.M. HARRIS
DATE: 5-08
DATE: 5-08
DWG. No. S-35

NORTH CAROLINA
REGISTERED PROFESSIONAL ENGINEER
THOMAS M. HARRIS
5-2-08

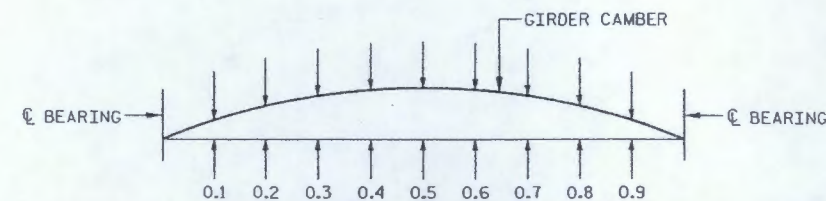
PROJECT NO. **R-2813B**
BUNCOMBE COUNTY
STATION: **43+72.00 -L-**

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
**ELASTOMERIC BEARING DETAILS
PRESTRESSED CONCRETE GIRDER
SUPERSTRUCTURE**

REVISIONS				SHEET No.	
No.	BY	DATE	No.	BY	DATE
1			3		
2			4		

ASSEMBLED BY: K.E. LOFTON DATE: 3-08
CHECKED BY: T.M. HARRIS DATE: 3-08
DRAWN BY: WJH 8/89
CHECKED BY: CRK 8/89
REV. 8/16/99 RWW/LES
REV. 10/17/00 RWW/LES
REV. 7/10/01 RWW/LES



GIRDERS CAMBER AND DEFLECTIONS

CAMBER AND DEAD LOAD DEFLECTIONS											
	SPAN A - SPAN B - SPAN C										
	℄ BRG.	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	℄ BRG.
GIRDERS 1 AND 12											
CAMBER (GIRDER ALONE IN PLACE)	↓ 0.000	0.145	0.257	0.337	0.387	0.404	0.387	0.337	0.257	0.145	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. *	↓ 0.000	-0.052	-0.102	-0.142	-0.164	-0.173	-0.164	-0.142	-0.102	-0.052	0.000
FINAL CAMBER	↓ 0	1/8"	17/8"	23/8"	211/16"	23/4"	211/16"	23/8"	17/8"	1/8"	0
GIRDERS 2, 3, 4, 5, 10 AND 11											
CAMBER (GIRDER ALONE IN PLACE)	↓ 0.000	0.145	0.257	0.337	0.387	0.404	0.387	0.337	0.257	0.145	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. *	↓ 0.000	-0.050	-0.097	-0.134	-0.158	-0.166	-0.158	-0.134	-0.097	-0.050	0.000
FINAL CAMBER	↓ 0	1/8"	15/16"	27/16"	23/4"	27/8"	23/4"	27/16"	15/16"	1/8"	0
GIRDERS 6, 7, 8 AND 9											
CAMBER (GIRDER ALONE IN PLACE)	↓ 0.000	0.145	0.257	0.337	0.387	0.404	0.387	0.337	0.257	0.145	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. *	↓ 0.000	-0.043	-0.084	-0.116	-0.137	-0.144	-0.137	-0.116	-0.084	-0.043	0.000
FINAL CAMBER	↓ 0	1/4"	27/16"	25/8"	3"	31/8"	3"	25/8"	27/16"	1/4"	0

* INCLUDES FUTURE WEARING SURFACE
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT
"FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

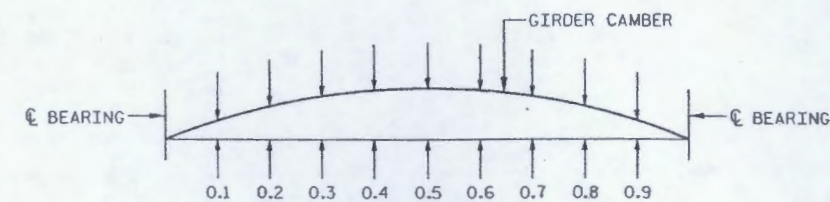
PROJECT NO. R-2813B
BUNCOMBE COUNTY
STATION: 43 + 72.00 -L-

RELEASE FOR
CONSTRUCTION
DATE: 5-2-08

WilburSmith
421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601
DRAWN BY: K.E. LOFTON DATE: 5-08 DWG. No. S-36
CHECKED BY: T.M. HARRIS DATE: 5-08

NORTH CAROLINA
REGISTERED PROFESSIONAL ENGINEER
13299
THOMAS M. HARRIS
5-2-08

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH											
SUPERSTRUCTURE											
CAMBER AND DEAD LOAD DEFLECTIONS (SPAN A - SPAN B - SPAN C)											
REVISIONS											
No.	BY:	DATE:	No.	BY:	DATE:	SHEET No.					
1			3			TOTAL SHEETS					
2			4								



GIRDER CAMBER AND DEFLECTIONS

CAMBER AND DEAD LOAD DEFLECTIONS												
	SPAN D											
GIRDERS 1 THRU 12	℄ BRG.	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	℄ BRG.	
CAMBER (GIRDER ALONE IN PLACE)	†	0.000	0.019	0.030	0.038	0.043	0.045	0.043	0.038	0.030	0.019	0.000
DEFLECTION DUE TO SUPERIMPOSED D.L. *	†	0.000	-0.004	-0.008	-0.011	-0.013	-0.014	-0.013	-0.011	-0.008	-0.004	0.000
FINAL CAMBER	†	0	3/16"	1/4"	5/16"	3/8"	3/8"	5/16"	1/4"	3/16"	0	

* INCLUDES FUTURE WEARING SURFACE

ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT
"FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

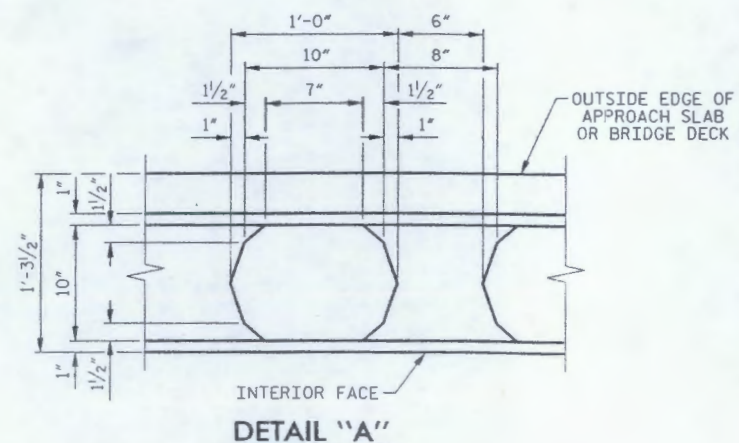
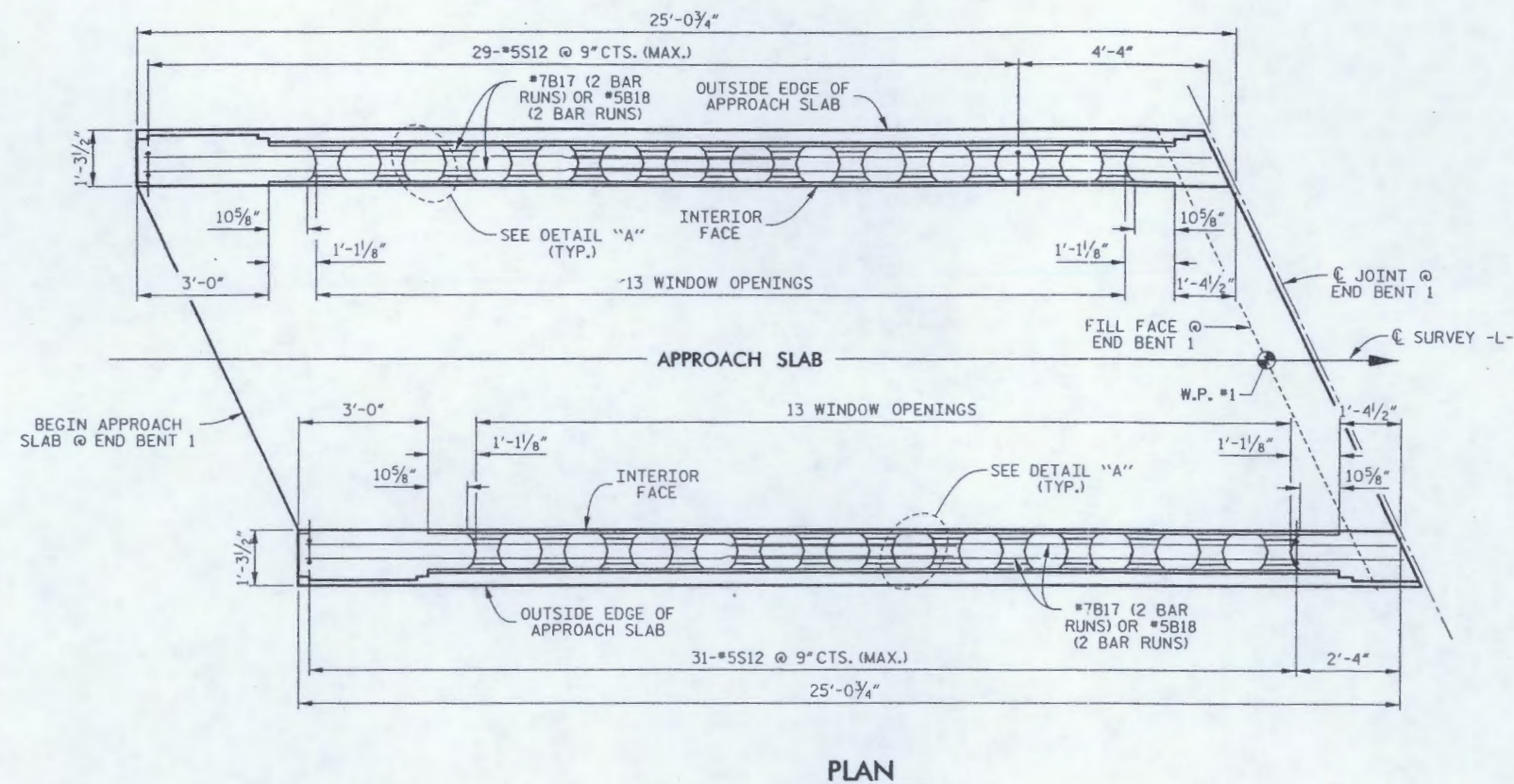
PROJECT NO. R-2813B
BUNCOMBE COUNTY
 STATION: 43+72.00 -L-

RELEASE FOR
CONSTRUCTION
DATE: 5-2-08

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH			
SUPERSTRUCTURE			
CAMBER AND DEAD LOAD DEFLECTIONS (SPAN D)			
REVISIONS			
No.	BY:	DATE:	No.
1			3
2			4
SHEET No.			TOTAL SHEETS

		421 Fayetteville Street Suite 1303 RALEIGH, N. C. 27601	
DRAWN BY:	K.E. LOFTON	DATE:	5-08
CHECKED BY:	T.M. HARRIS	DATE:	5-08
DWG. No.		S-37	

NORTH CAROLINA PROFESSIONAL ENGINEER 13299 THOMAS M. HARRIS	
5-2-08	



NOTES

FOR TEXAS TYPE C411 BRIDGE RAIL, SEE SPECIAL PROVISIONS.

TEXAS TYPE C411 BRIDGE RAIL SHALL NOT BE CAST UNTIL ALL SIDEWALK CONCRETE HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

ALL REINFORCING STEEL IN TEXAS TYPE C411 BRIDGE RAIL SHALL BE EPOXY COATED.

ALL DISTANCES ARE ALONG INTERIOR FACE OF TEXAS TYPE C411 BRIDGE RAIL.

*5S13 AND *5S14 BARS SHALL BE INSTALLED, USING AN ADHESIVE ANCHORING SYSTEM, AFTER SAWING THE JOINT. THE YIELD LOAD FOR THE *5S13 AND *5S14 BARS IS 18.6 KIPS. FIELD TESTING FOR THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS.

FOR MINIMUM SPLICE LENGTHS, SEE "SUPERSTRUCTURE BILL OF MATERIAL" SHEET 1 OF 2.

FOR APPROACH SLAB DETAILS, SEE "BRIDGE APPROACH SLAB" SHEETS.

PROJECT NO. R-2813B

BUNCOMBE COUNTY

STATION: 43+72.00 -L-

SHEET 1 OF 11

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

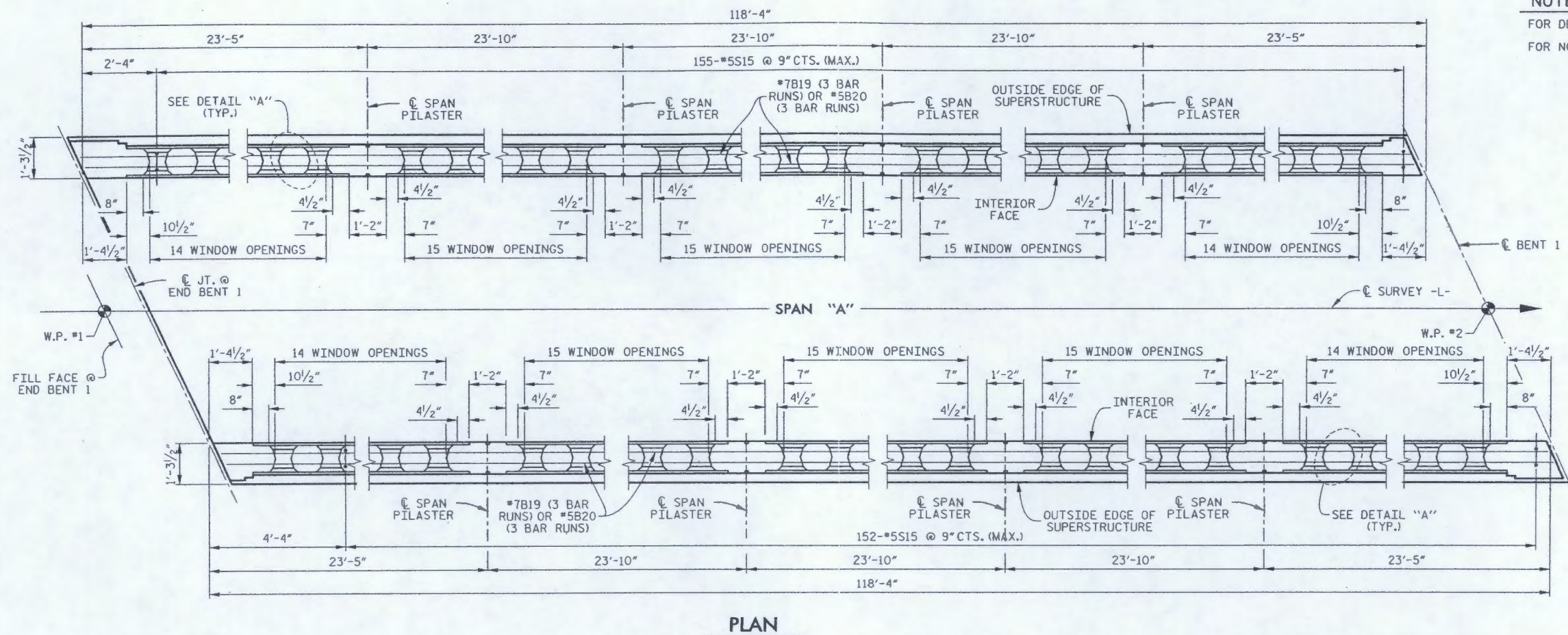
TEXAS TYPE C411
BRIDGE RAIL

RELEASE FOR
CONSTRUCTION
DATE: 9-23-08

PROFESSIONAL
ENGINEER
THOMAS M. HARRIS
19299
9-23-08

421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601
DRAWN BY: K.E. LOFTON DATE: 9-08 DWG. No. S-38
CHECKED BY: T.M. HARRIS DATE: 9-08

REVISIONS				SHEET No.	
No.	BY:	DATE:	No.	BY:	DATE:
1			3		
2			4		
				TOTAL SHEETS	



NOTES

FOR DETAIL "A", SEE SHEET 1 OF 11.
FOR NOTES, SEE SHEET 1 OF 11.

PLAN

PROJECT NO. R-2813B
BUNCOMBE COUNTY
STATION: 43 + 72.00 -L-

SHEET 2 OF 11

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

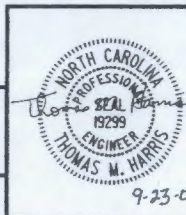
SUPERSTRUCTURE

TEXAS TYPE C411
BRIDGE RAIL

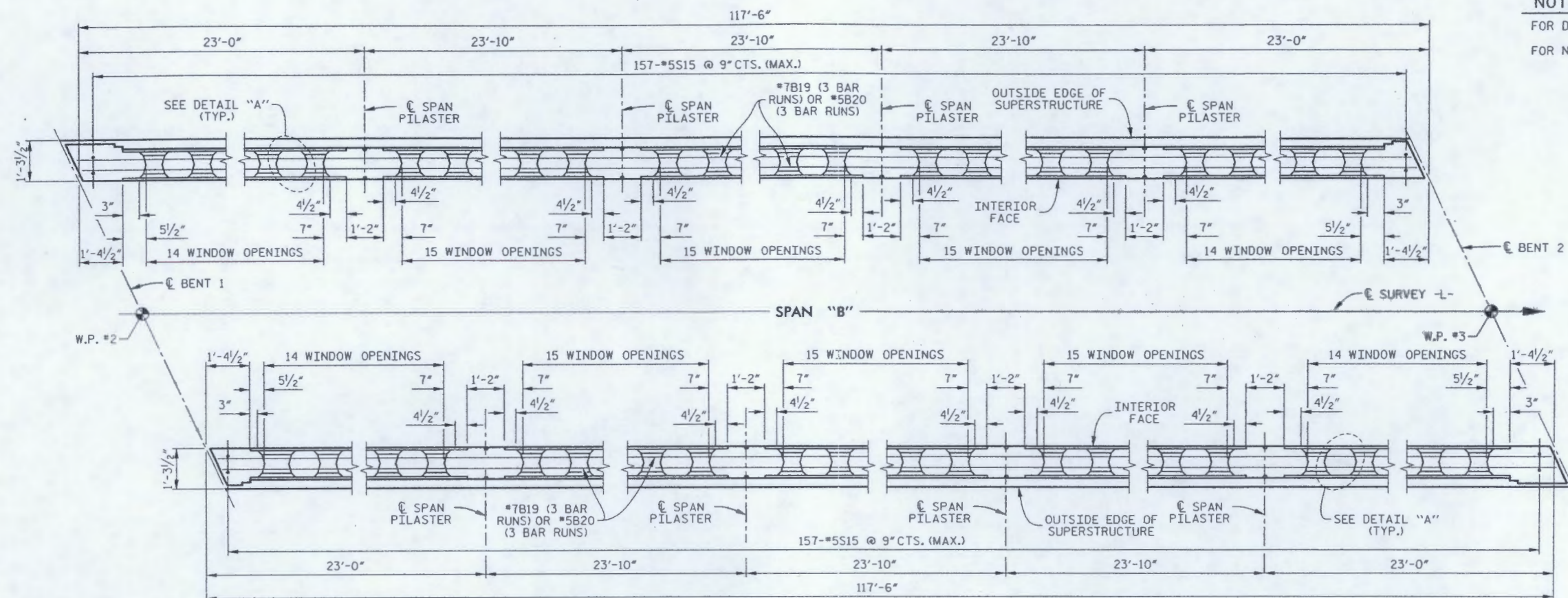
RELEASE FOR
CONSTRUCTION
DATE: 9-23-08

421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601

DRAWN BY: K.E. LOFTON DATE: 9-08
CHECKED BY: T.M. HARRIS DATE: 9-08
DWG. No. S-39



REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			



PLAN

NOTES

FOR DETAIL "A", SEE SHEET 1 OF 11.

FOR NOTES, SEE SHEET 1 OF 11.

PROJECT NO. R-2813B

BUNCOMBE COUNTY

STATION: 43+72.00 -L-

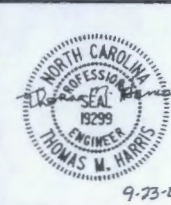
SHEET 3 OF 11

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

TEXAS TYPE C411
BRIDGE RAIL

RELEASE FOR
CONSTRUCTION
DATE: 9-23-08

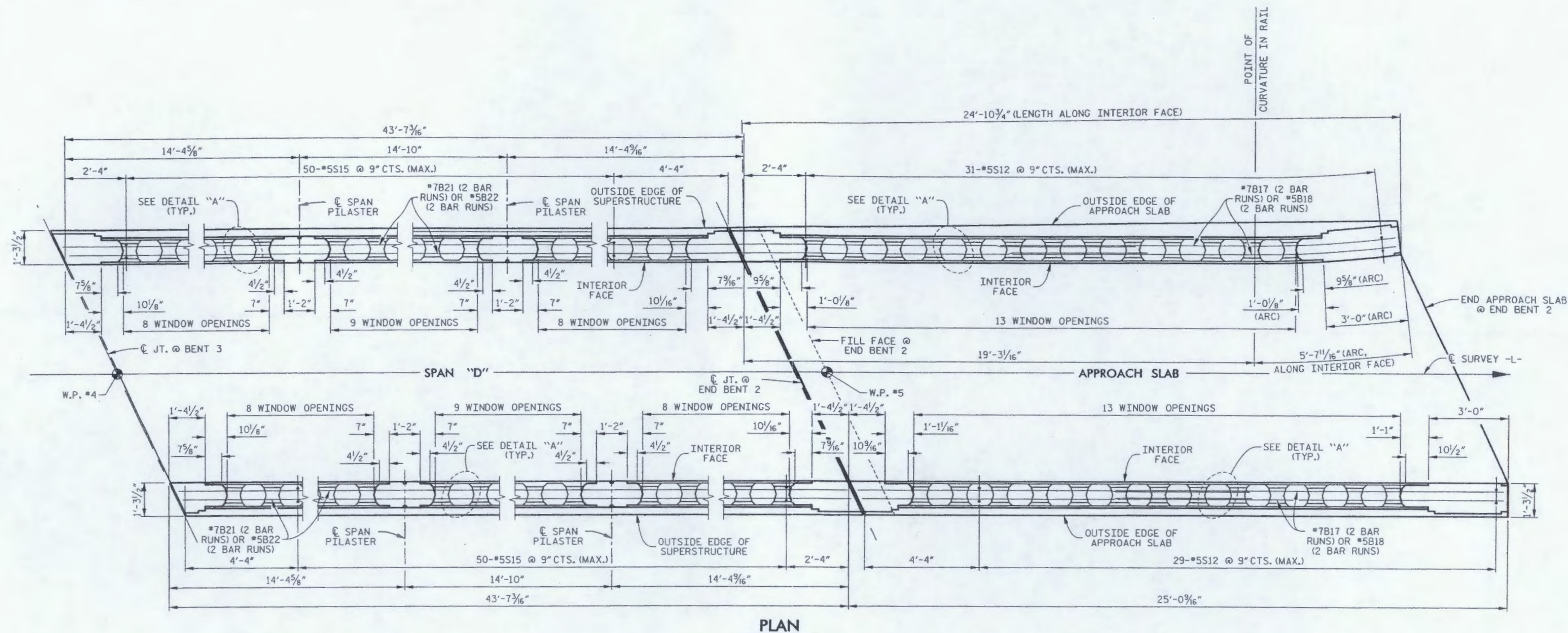


421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601

WILBURSMITH
ENGINEERS

DRAWN BY: K.E. LOFTON DATE: 9-08 DWG. No. S-40
CHECKED BY: T.M. HARRIS DATE: 9-08

REVISIONS				SHEET No.			
No.	BY	DATE	No.	BY	DATE	TOTAL	SHEETS
1			3				
2			4				



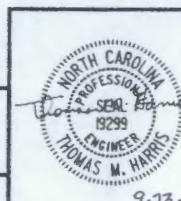
PLAN

PROJECT NO. R-2813B
BUNCOMBE COUNTY
 STATION: 43 + 72.00 -L-

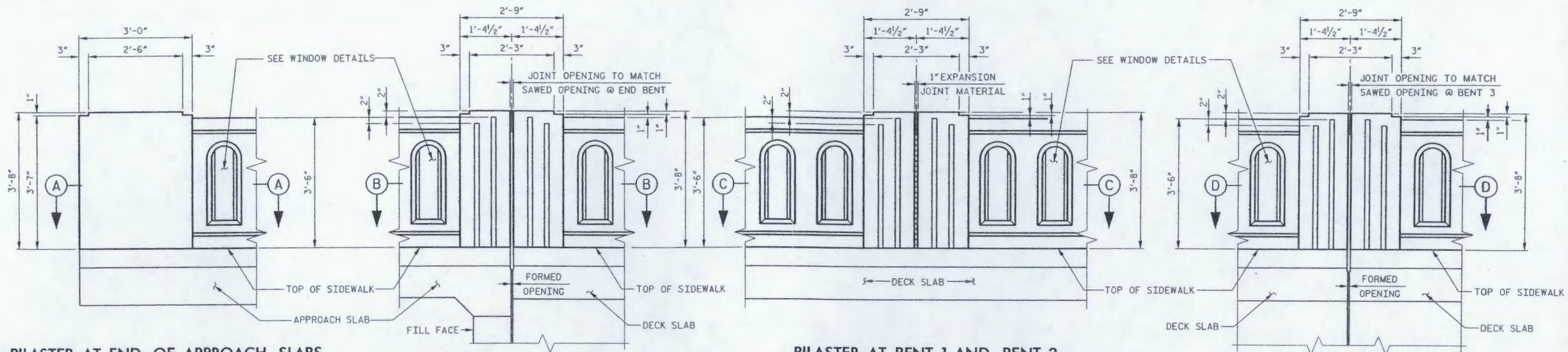
SHEET 5 OF 11

**RELEASE FOR
CONSTRUCTION**
 DATE: 9-23-08

WilburSmith
 ENGINEERS
 421 Fayetteville Street
 Suite 1303
 RALEIGH, N. C. 27601
 DRAWN BY: K.E. LOFTON DATE: 9-08 DWG. No. S-42
 CHECKED BY: T.M. HARRIS DATE: 9-08



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE					
TEXAS TYPE C411 BRIDGE RAIL					
REVISIONS					
No.	BY	DATE	No.	BY	DATE
1			3		
2			4		
SHEET No.					TOTAL SHEETS



PILASTER AT END OF APPROACH SLABS

LEFT SIDE SHOWN, RIGHT SIDE SIMILAR, FOR SECTION A-A, SEE SHEET 7 OF 11 (4 REQUIRED).

PILASTER AT END BENTS

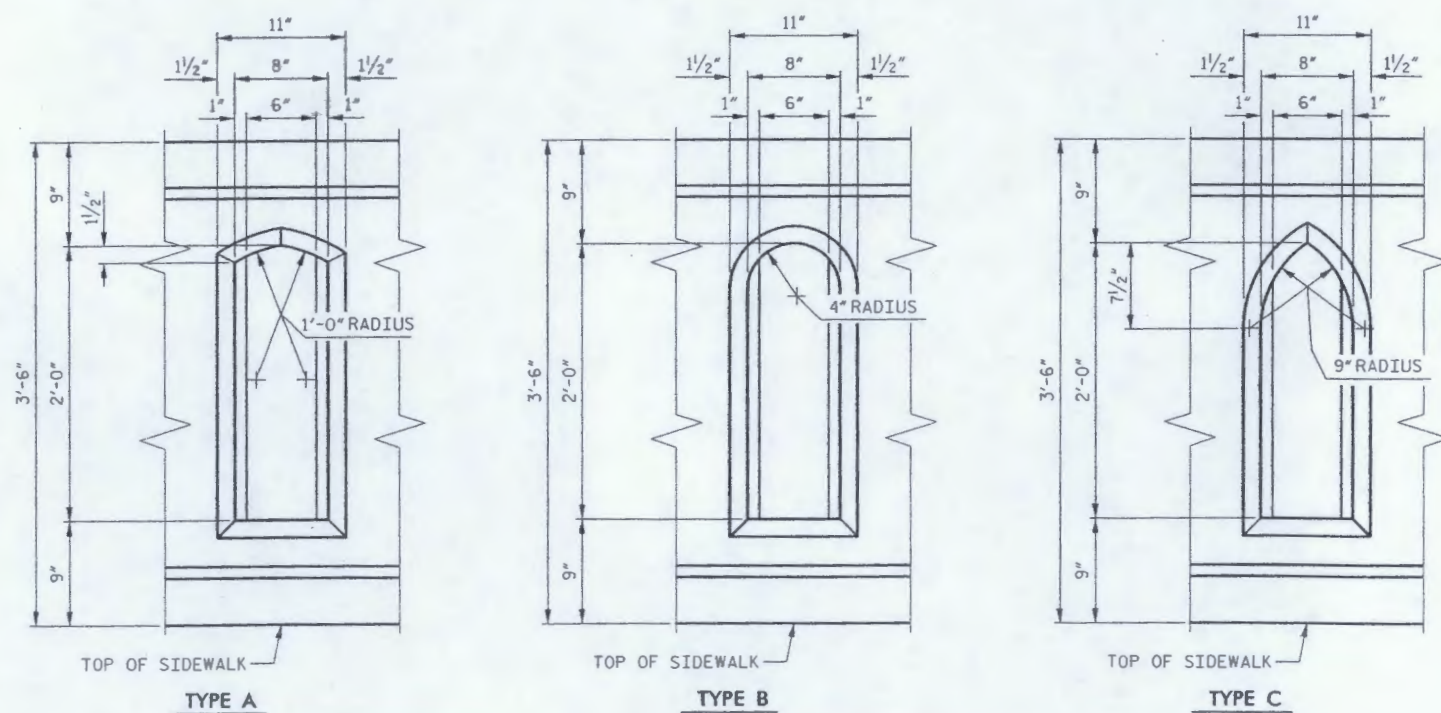
END BENT 1 LEFT SIDE SHOWN, END BENT 2 AND RIGHT SIDE SIMILAR, FOR SECTION B-B, SEE SHEET 7 OF 11 (4 REQUIRED).

PILASTER AT BENT 1 AND BENT 2

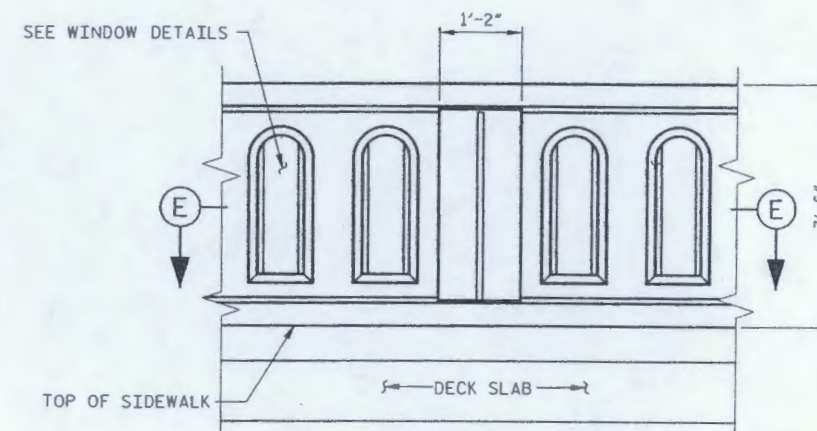
LEFT SIDE SHOWN, RIGHT SIDE SIMILAR, FOR SECTION C-C SEE SHEET 7 OF 11 (4 REQUIRED).

PILASTER AT BENT 3

LEFT SIDE SHOWN, RIGHT SIDE SIMILAR, FOR SECTION D-D, SEE SHEET 8 OF 11 (2 REQUIRED).



WINDOW DETAILS



PILASTER FOR SPANS

LEFT SIDE SHOWN, RIGHT SIDE SIMILAR, FOR SECTION E-E, SEE SHEET 8 OF 11 (28 REQUIRED).

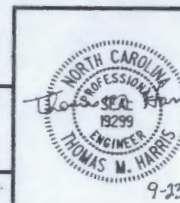
NOTE

RAIL DETAILS SHOW TYPE B WINDOW. CONTRACTOR HAS THE OPTION TO INSTALL TYPE A, B OR C WINDOW.

PROJECT NO. R-2813B
BUNCOMBE COUNTY
 STATION: 43 + 72.00 -L-

SHEET 6 OF 11

**RELEASE FOR
CONSTRUCTION**
 DATE: 9-23-08



WilburSmith
 421 Fayetteville Street
 Suite 1303
 RALEIGH, N. C. 27601
 DRAWN BY: K.E. LOFTON DATE: 9-08 DWG. No. S-43
 CHECKED BY: T.M. HARRIS DATE: 9-08

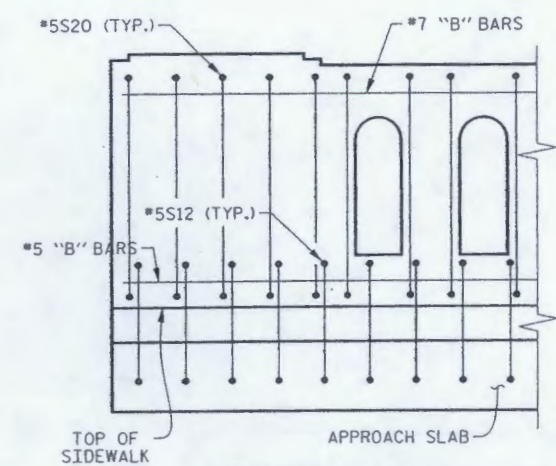
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE

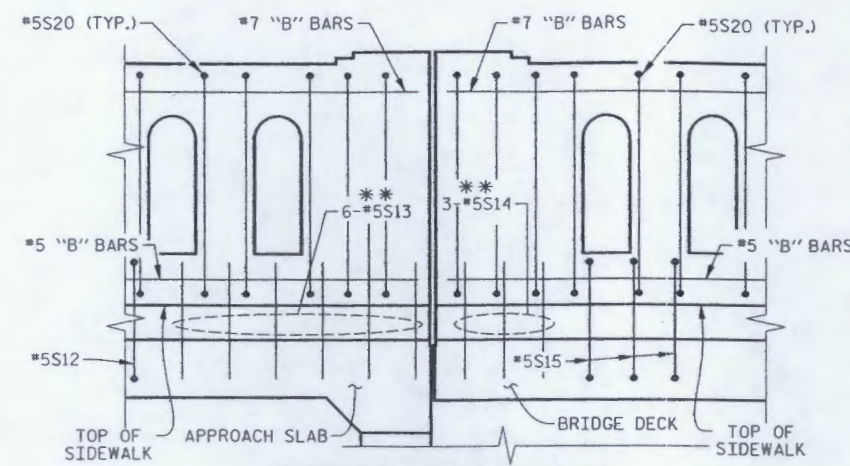
TEXAS TYPE C411
 BRIDGE RAIL

REVISIONS						SHEET No.
No.	BY	DATE	No.	BY	DATE	
1			3			TOTAL SHEETS
2			4			

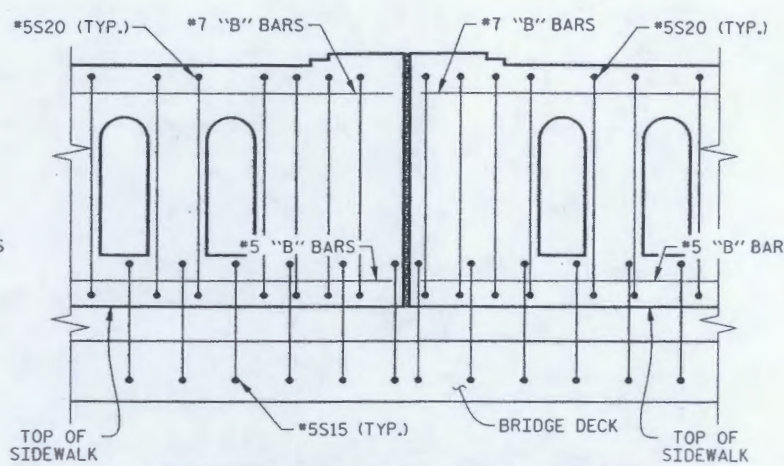
** THE #5 "S" BARS ARE TO BE PLACED AFTER THE SAWING OF THE DECK SLAB AND PRIOR TO THE POURING OF THE SIDEWALK. THE HOLES SHALL BE DRILLED AND THE DOWELS GROUTED INTO PLACE.



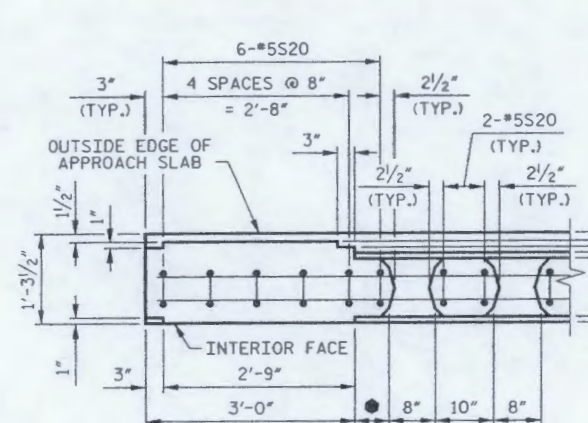
**PILASTER AT END
OF APPROACH SLABS**
LEFT SIDE SHOWN, RIGHT SIDE
SIMILAR. (4 REQUIRED)



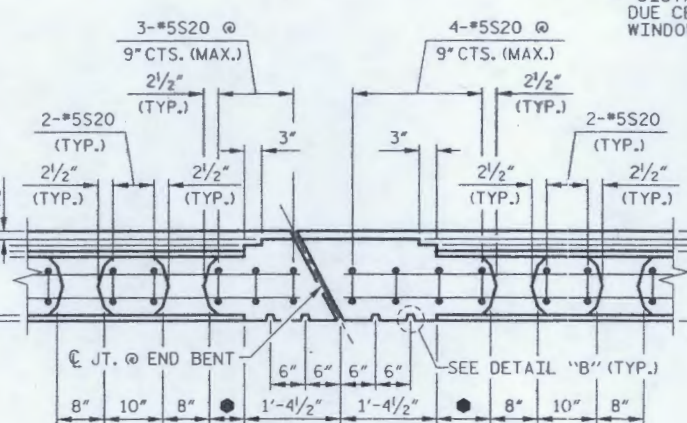
PILASTER AT END BENTS
END BENT 1, LEFT SIDE SHOWN, END BENT 2
AND RIGHT SIDE SIMILAR. (4 REQUIRED)



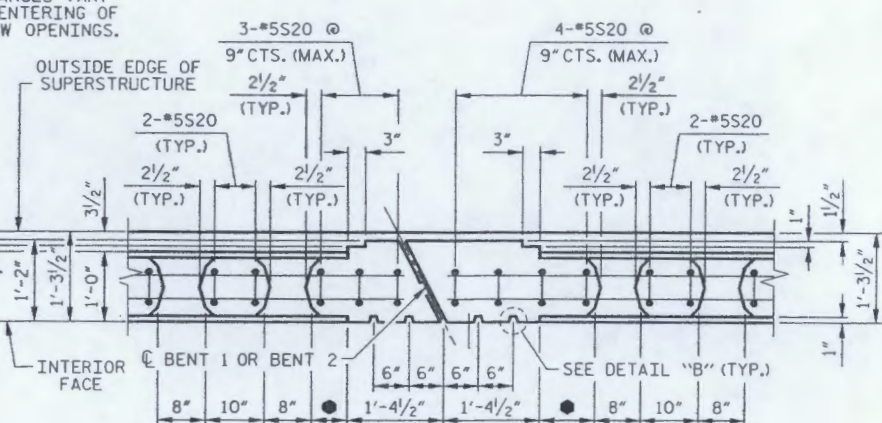
PILASTER AT BENT 1 AND BENT 2
LEFT SIDE SHOWN, RIGHT SIDE SIMILAR. (4 REQUIRED)



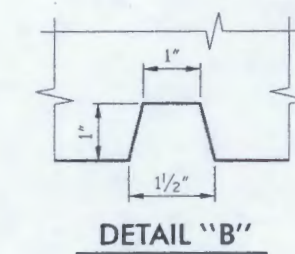
SECTION A-A
LEFT SIDE SHOWN, RIGHT SIDE
SIMILAR. (4 REQUIRED)



SECTION B-B
END BENT 1, LEFT SIDE SHOWN, END BENT 2
AND RIGHT SIDE SIMILAR. (4 REQUIRED)



SECTION C-C
LEFT SIDE SHOWN, RIGHT SIDE
SIMILAR. (4 REQUIRED)



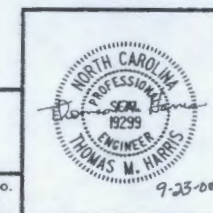
• DISTANCES VARY
DUE CENTERING OF
WINDOW OPENINGS.

PROJECT NO. **R-2813B**
BUNCOMBE COUNTY
STATION: **43 + 72.00 -L-**

SHEET 7 OF 11

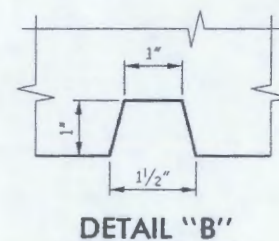
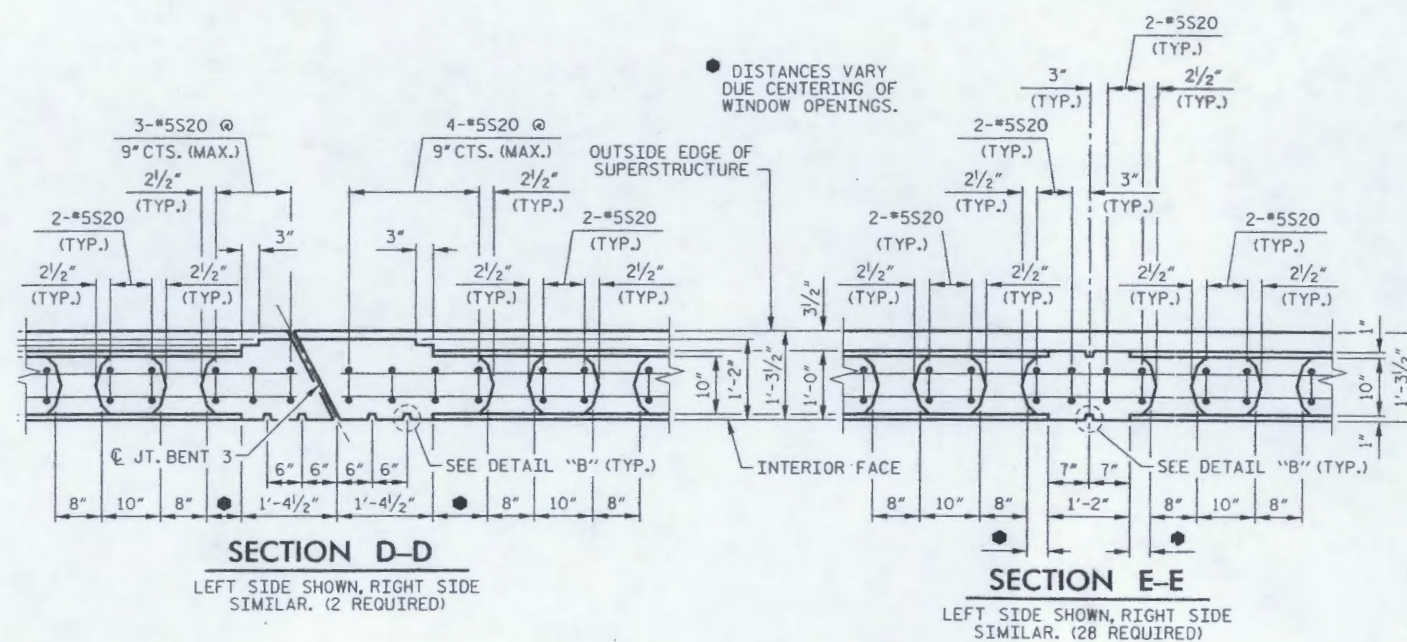
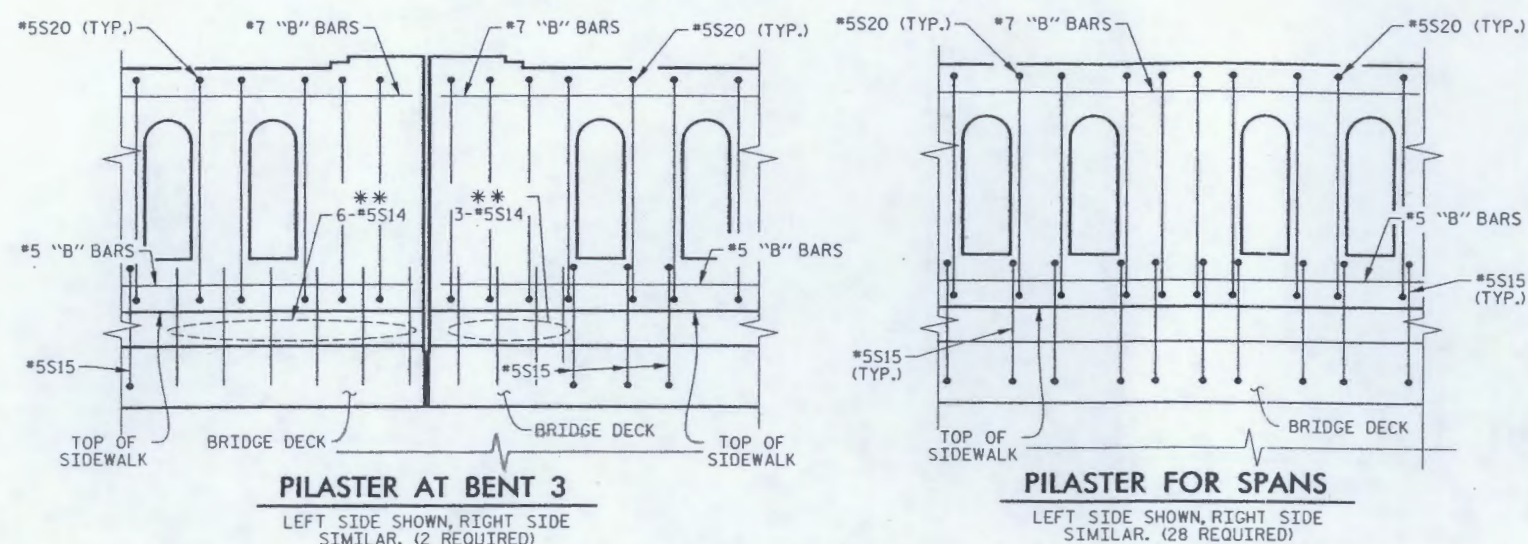
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE					
TEXAS TYPE C411 BRIDGE RAIL					
REVISIONS					
No.	BY	DATE	No.	BY	DATE
1			3		
2			4		
					SHEET No.
					TOTAL SHEETS

**RELEASE FOR
CONSTRUCTION**
DATE: 9-23-08



WilburSmith
421 Fayetteville Street
Suite 1303
RALEIGH, N. C. 27601
DRAWN BY: K.E. LOFTON DATE: 9-08 DWG. No. S-44
CHECKED BY: T.M. HARRIS DATE: 9-08

s:\ncd01\2813B\Design\Rail\Rail\Bridges\WFC\2813B_S0_T08.D7.dgn 9/18/2008



PROJECT NO. R-2813B
BUNCOMBE COUNTY
 STATION: 43 + 72.00 -L-

SHEET 8 OF 11

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

TEXAS TYPE C411
BRIDGE RAIL

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

RELEASE FOR
CONSTRUCTION
DATE: 9-23-08

