STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5021	1	

WBS NO.	F.A. PROJ. NO.	DESCRIPTION
41927.1.1	IMS-95-1 (76) 33	PE
41927.2.1		R/W & UTILITY
41927.3.1	IMS-095-1 (78) 33	CONSTRUCTION

TIP PROJECT: B-5021

CONTRACT: C202079

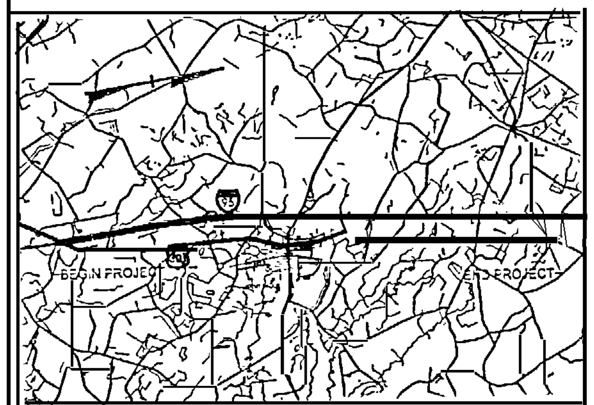
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ROBESON COUNTY

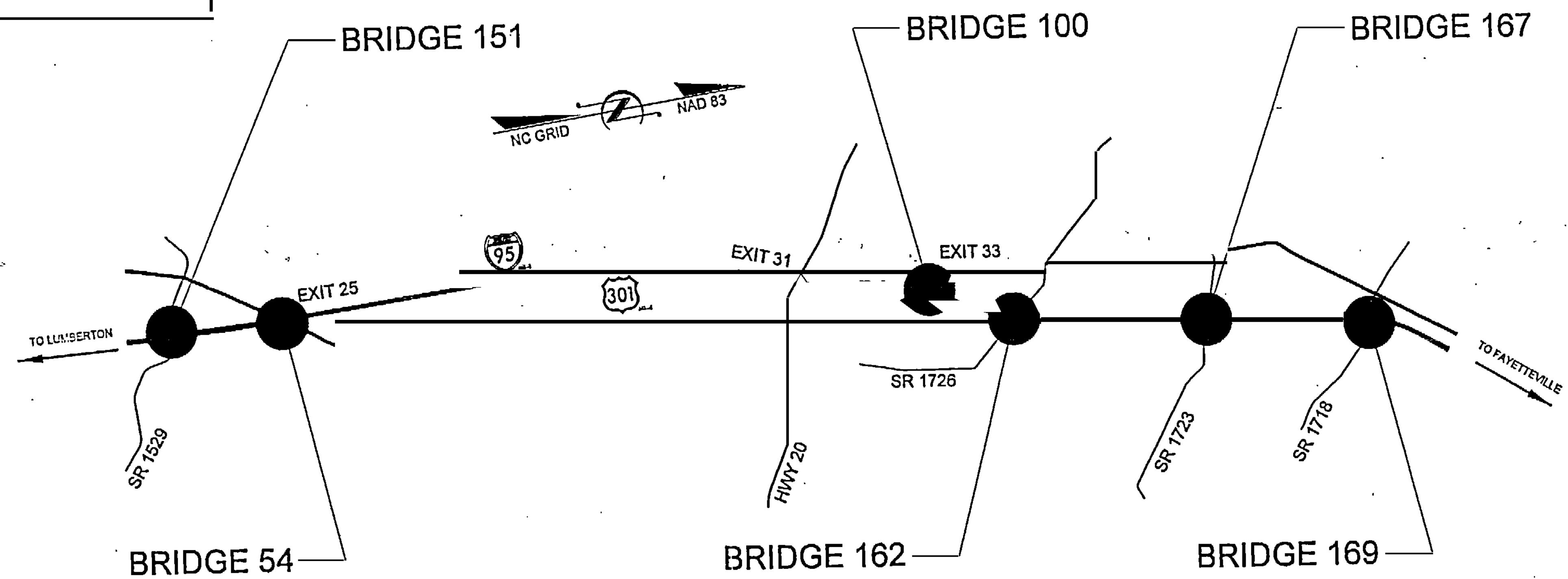
LOCATION: SPAN REPLACEMENTS ON BRIDGES 151, 162, 167, & 169
JACKING OF BRIDGES 54 & 100
LOCATED ALONG I-95

TYPE OF WORK: JACK STRUCTURES, SPAN REPLACEMENTS, GRADING, PAVING, AND DRAINAGE

See Sheets 1-9 For Bridge 151
See Sheets 10-19 For Bridge 54
See Sheets 20-29 For Bridge 100
See Sheets 30-43 For Bridge 162
See Sheets 44-53 For Bridge 167
See Sheets 54-62 For Bridge 169



VICINITY MAP



770167
41927.3.1
B-5021
12-10-09

STRUCTURES

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

V = 55 MPH

Prepared in the Office of:
STV/Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208
for the North Carolina Department of Transportation

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

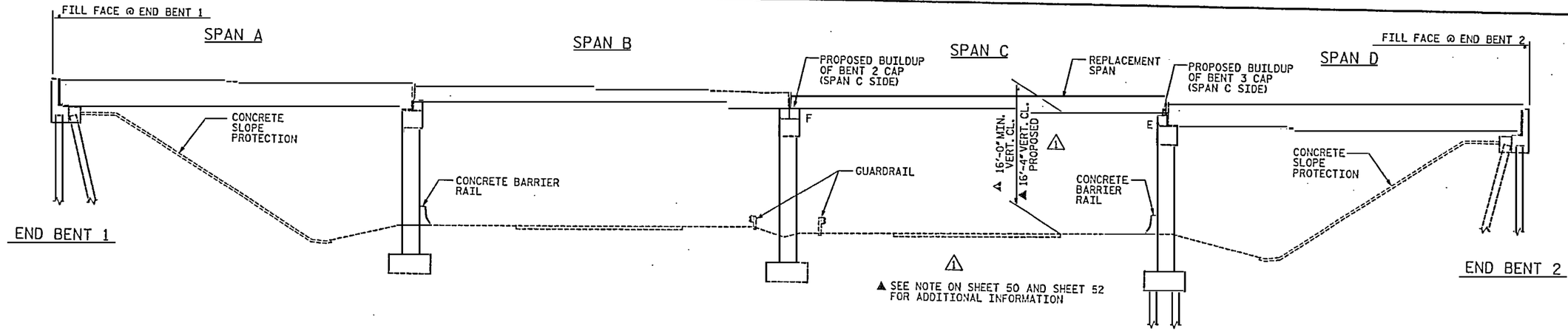
LETTING DATE:
JULY 15, 2008

MARK F. ROBBINS, P.E.
PROJECT ENGINEER

KEVIN G. BAILEY, P.E.
PROJECT DESIGN ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

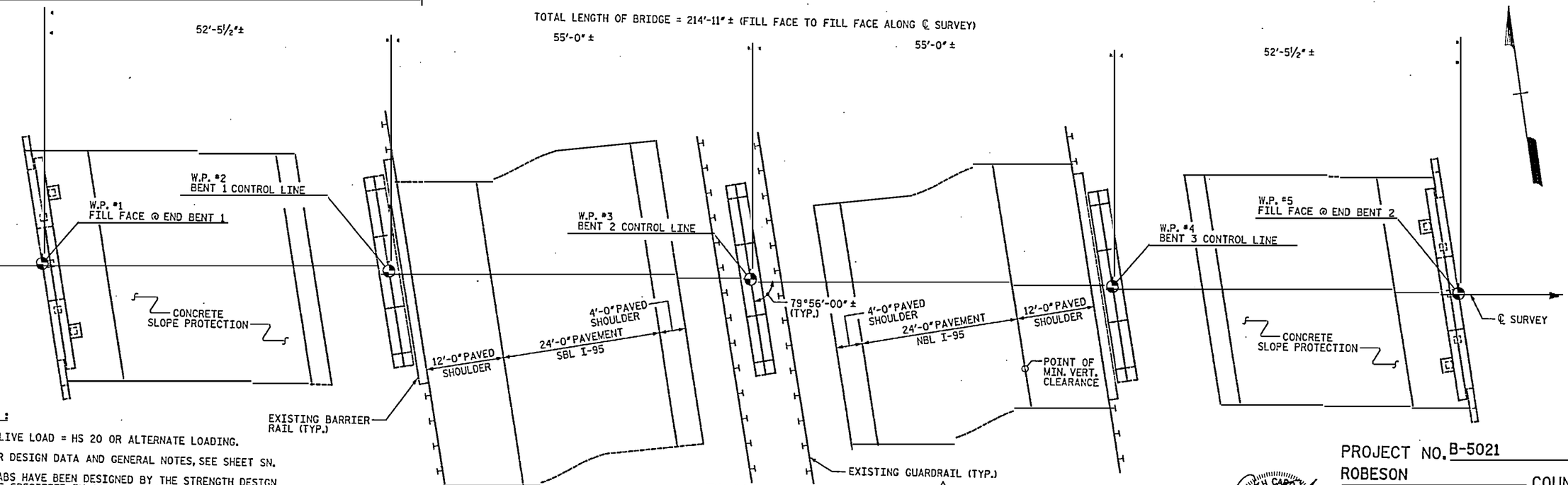


ALL DIMENSIONS IN THESE PLANS ARE BASED ON BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL VERIFY DIMENSIONS IN FIELD PRIOR TO CONSTRUCTION AND ANY FABRICATION. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES SUCH THAT NECESSARY ADJUSTMENTS BE MADE BY THE CONTRACTOR.

ELEVATION

SECTIONS AT BENTS AND END BENTS ARE AT RIGHT ANGLES

TOTAL LENGTH OF BRIDGE = 214'-11" ± (FILL FACE TO FILL FACE ALONG ℄ SURVEY)



PLAN

PILES AND COLUMNS NOT SHOWN IN PLAN VIEW FOR CLARITY

⚠1 TOTAL BILL OF MATERIAL

	PARTIAL REMOVAL OF EXISTING STRUCTURE	CLASS AA CONCRETE	REINFORCING STEEL	CONCRETE BRIDGE RAIL	ELASTOMERIC BEARINGS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS	EPOXY RESIN INJECTION
	LUMP SUM	CU. YDS.	LBS.	LIN. FT.	LUMP SUM	LIN. FT.	LIN. FT.
SUPERSTRUCTURE	LUMP SUM			109.75	LUMP SUM	493.88	
BENT 2		5.8	896				
BENT 3		4.4	797				80.0
TOTAL	LUMP SUM	10.2	1,693	109.75	LUMP SUM	493.88	80.0

⚠NOTES :

ASSUMED LIVE LOAD = HS 20 OR ALTERNATE LOADING.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.

CORED SLABS HAVE BEEN DESIGNED BY THE STRENGTH DESIGN METHOD AS SPECIFIED IN AASHTO STANDARD SPECIFICATIONS.

SPAN C OF THE EXISTING STRUCTURE CONSISTING OF 55'-0" PRESTRESSED CONCRETE GIRDERS, 24'-0" CLEAR ROADWAY WIDTH, REINFORCED CONCRETE DECK SHALL BE REMOVED. FOR PARTIAL REMOVAL OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

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

⚠1 REVISION #1: REVISED PER REVIEW COMMENTS
BY: TJT DATE: 5-08
CH'KD BY: KGB DATE: 5-08

DRAWN BY : LCH DATE : 2-08
CHECKED BY : TBQ DATE : 3-08

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029429 ENGINEER JASON T. GREGSON 5/5/08

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 18165 ENGINEER MARK F. ROBBINS 5/5/08

D-1809.44

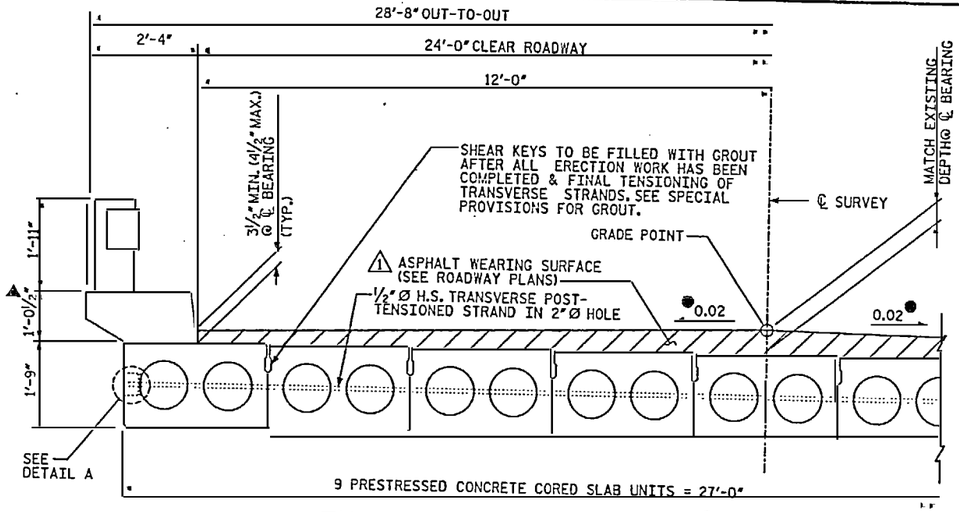
STV/Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208

PROJECT NO. B-5021
ROBESON COUNTY
BRIDGE: 167
MODIFICATION OF BRIDGE NO. 167

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING BRIDGE OVER I-95 ON SR 1723

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-44
1	STV	5-08	3			TOTAL SHEETS
2			4			62

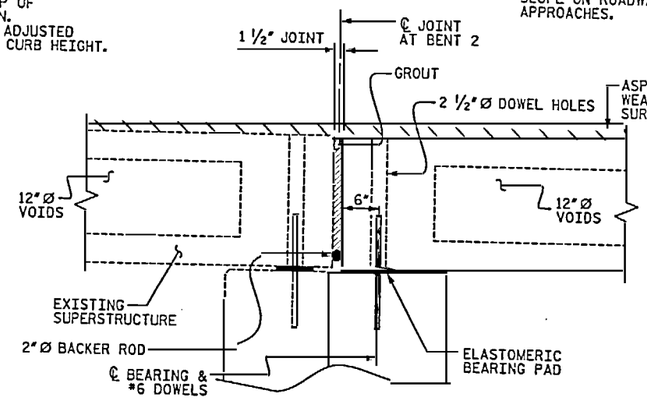


TYPICAL HALF SECTION

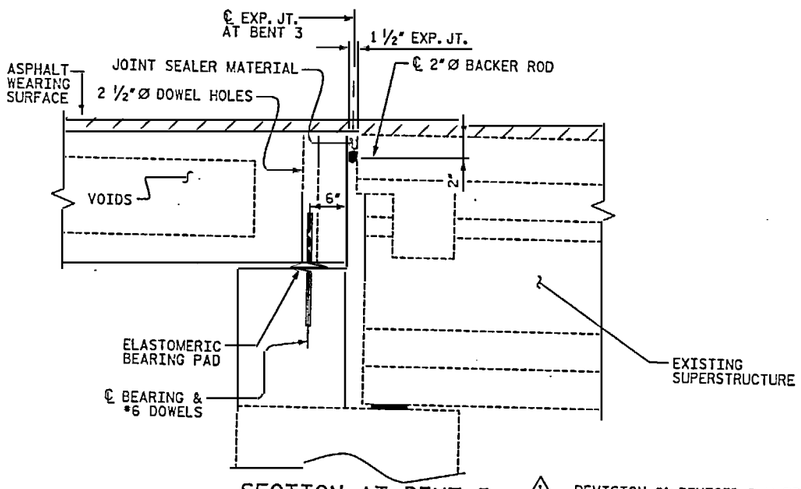
(BRIDGE SYMMETRIC ABOUT ℄ SURVEY)

▲CURB HEIGHT MAY NEED TO BE ADJUSTED TO MATCH TOP OF CURB IN ADJACENT SPAN. REINFORCING SHALL BE ADJUSTED TO MATCH THE REVISED CURB HEIGHT.

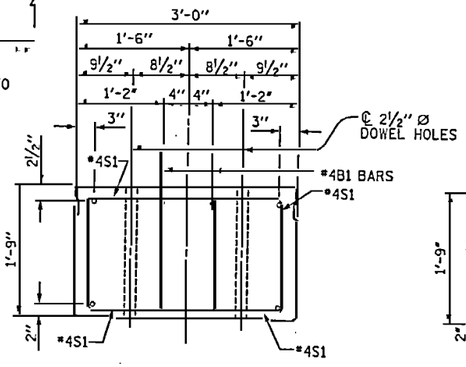
●CONTRACTOR SHALL MAKE A SMOOTH TRANSITION TO MATCH EXISTING CROSS SLOPE ON ROADWAY APPROACHES.



SECTION AT BENT 2



SECTION AT BENT 3

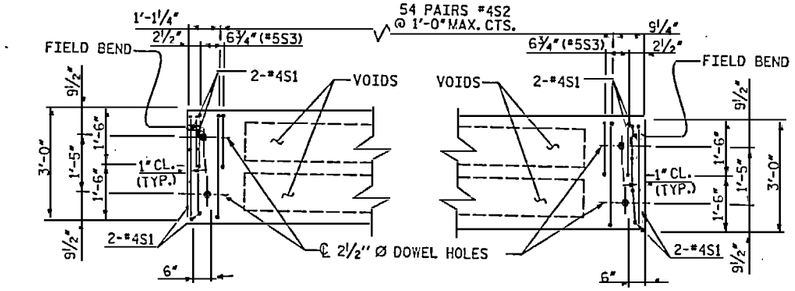


SLAB END ELEVATION

SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES.

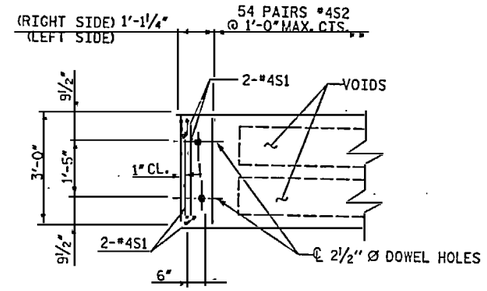
INTERIOR SLAB SECTION SHOWN, EXTERIOR SLAB SECTION SIMILAR EXCEPT SHEAR KEY LOCATION.

STRAND LAYOUT NOT SHOWN.



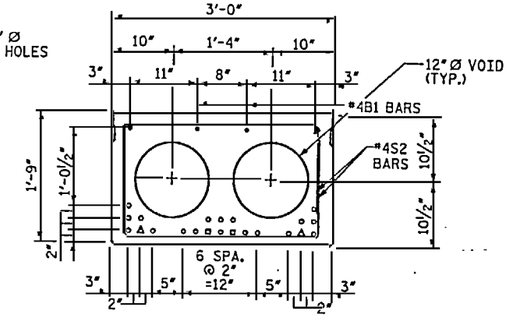
PART PLAN EXTERIOR SLAB SECTION

(LEFT SIDE SHOWN, RIGHT SIDE SIMILAR BY SYMMETRY)



PART PLAN INTERIOR SLAB SECTION

(FAR END SHOWN, NEAR END SIMILAR BY SYMMETRY)



INTERIOR SLAB SECTION

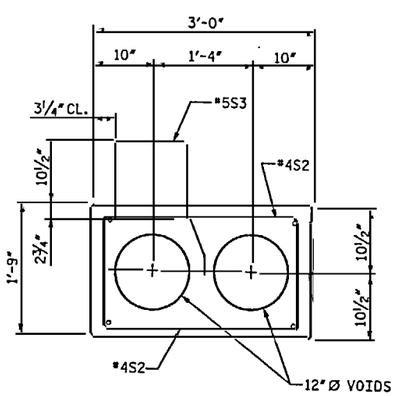
(24 TOTAL STRANDS REQUIRED)

○ DENOTES ½" Ø L.R. STRANDS

△ DENOTES SHEATHED STRAND. BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 4'-0" FROM END OF SLAB.

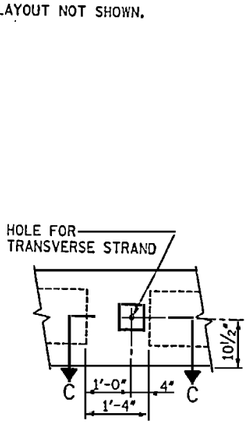
▣ DENOTES SHEATHED STRAND. BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 6'-0" FROM END OF SLAB.

SEE STANDARD SPECIFICATIONS ARTICLE 1078-7.

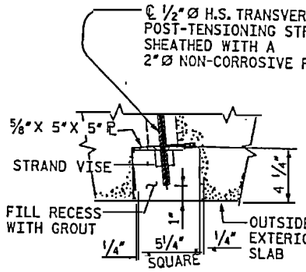


EXTERIOR SLAB SECTION

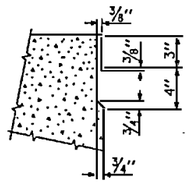
(FOR PRESTRESSED STRAND AND #4B1 BAR LAYOUT, SEE INTERIOR SLAB SECTION)



ELEVATION VIEW



SECTION C-C



SHEAR KEY DETAIL

NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLAB

⚠ NOTE: ASPHALT WEARING SURFACE IS INCLUDED IN THE QUANTITIES ON THE ROADWAY PLANS.

PROJECT NO. B-5021

ROBESON COUNTY

BRIDGE: 167

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

3'-0" X 1'-9" PRESTRESSED CORED SLAB

DRAWN BY : LGH DATE : 2-08
CHECKED BY : TBQ DATE : 2-08

⚠ REVISION #1: REVISED PER REVIEW COMMENTS
BY: TJT DATE: 5-08
CH'KD BY: KGB DATE: 5-08

DETAIL A

GROUTED RECESS AT END OF POST-TENSIONED STRAND CORED SLABS

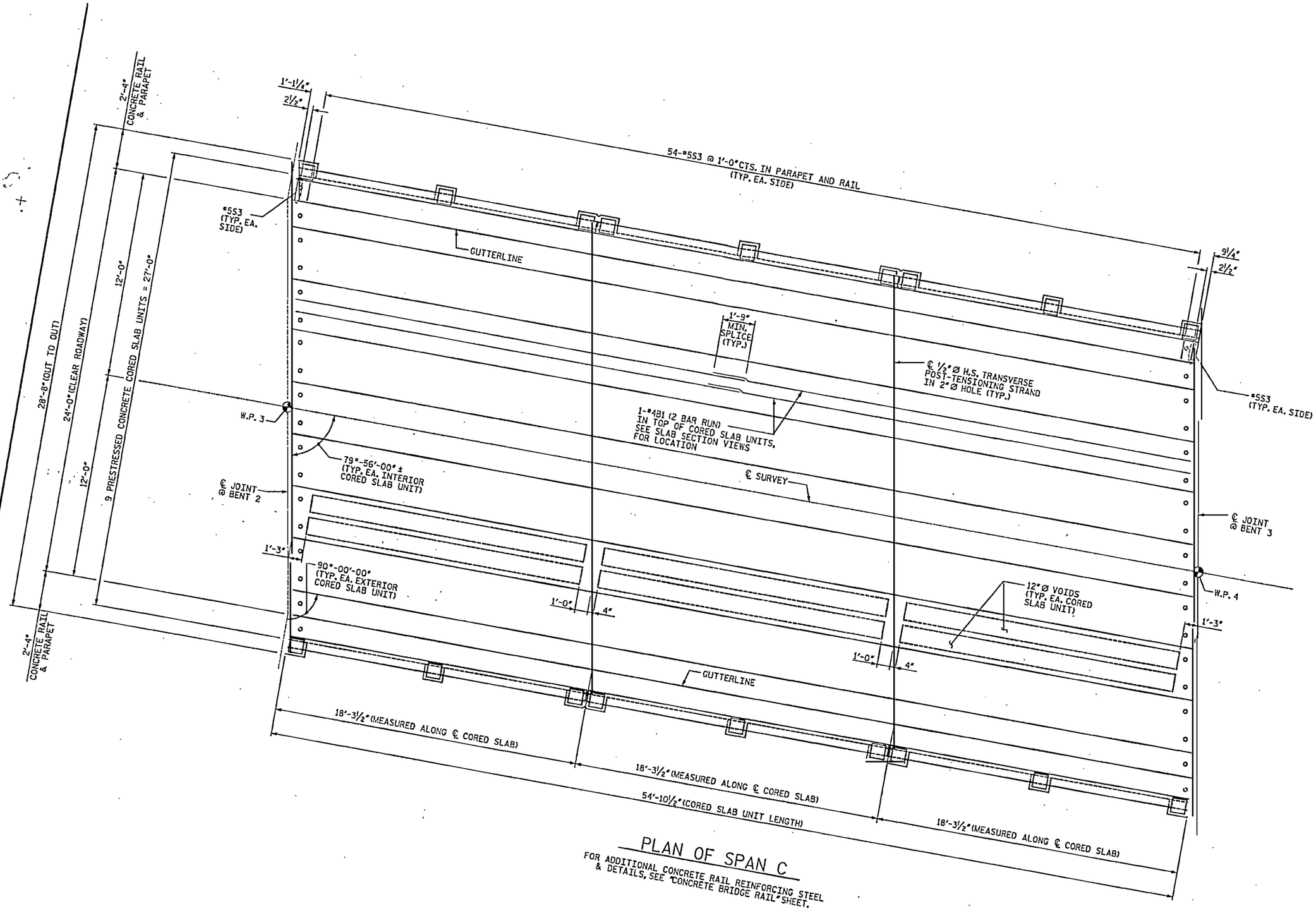
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029429 ENGINEER JASON T. GREGSON 5/5/08

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 18165 ENGINEER MARK F. ROBBINS 5/5/08

D-1809.45

STV/Ralph Whitehead Associates, Inc.
1000 West Morehead St. Ste. 200
Charlotte, NC 28208

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5-45
1	STV	5-08	3			TOTAL SHEETS
2			4			62



PLAN OF SPAN C

FOR ADDITIONAL CONCRETE RAIL REINFORCING STEEL & DETAILS, SEE "CONCRETE BRIDGE RAIL" SHEET.

DRAWN BY : LGH
CHECKED BY : TBQ — DATE : 2-08 — DATE : 3-08

NORTH CAROLINA PROFESSIONAL SEAL 029429 ENGINEER JASON T. GROOM — 4/10/08

NORTH CAROLINA PROFESSIONAL SEAL 18165 ENGINEER MARK F. ROBBINS — 4-10-08

D-1809.46

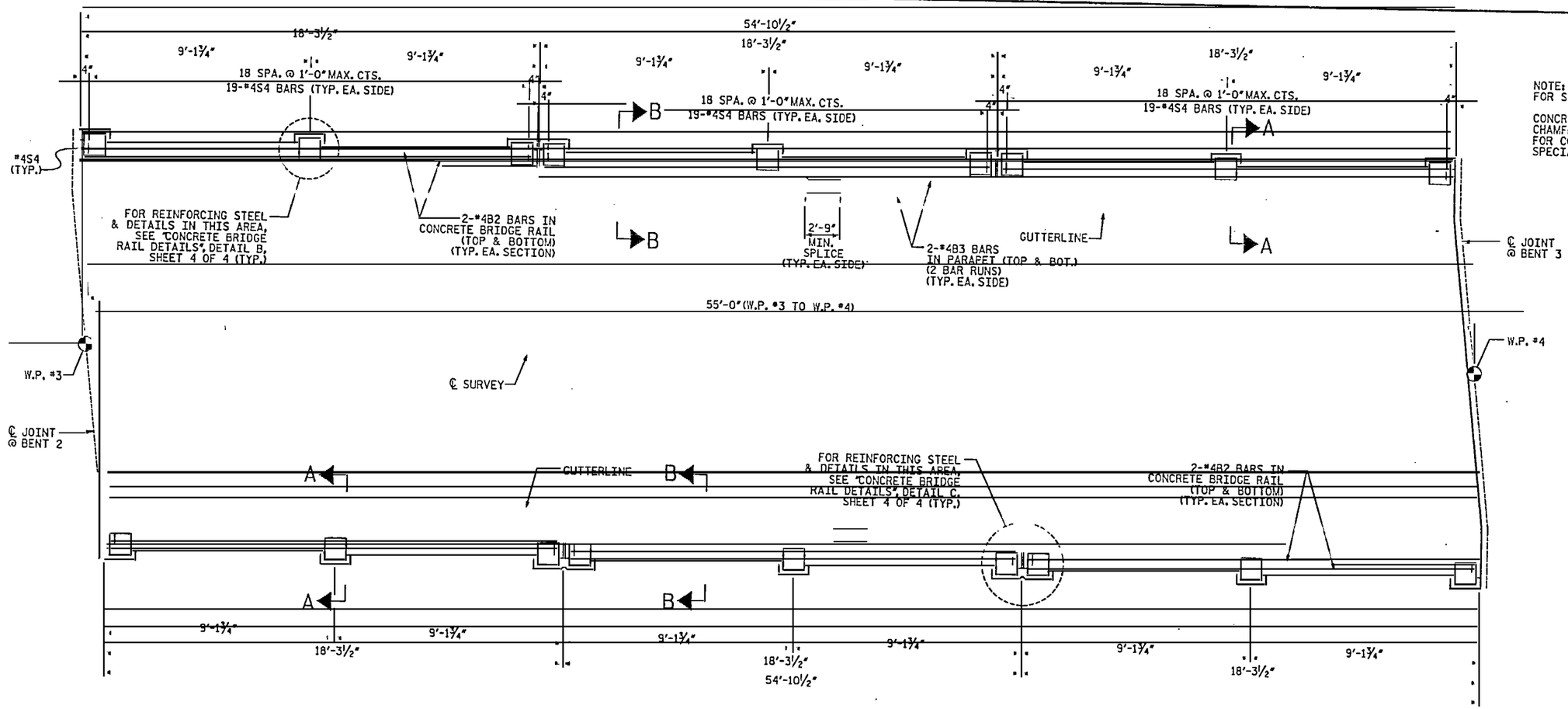
STV/Ralph Whitehead Associates, Inc.
1000 West Morehead St. Ste. 200
Charlotte, NC 28208

PROJECT NO. B-5021
ROBESON COUNTY
BRIDGE: 167
SHEET 2 OF 4

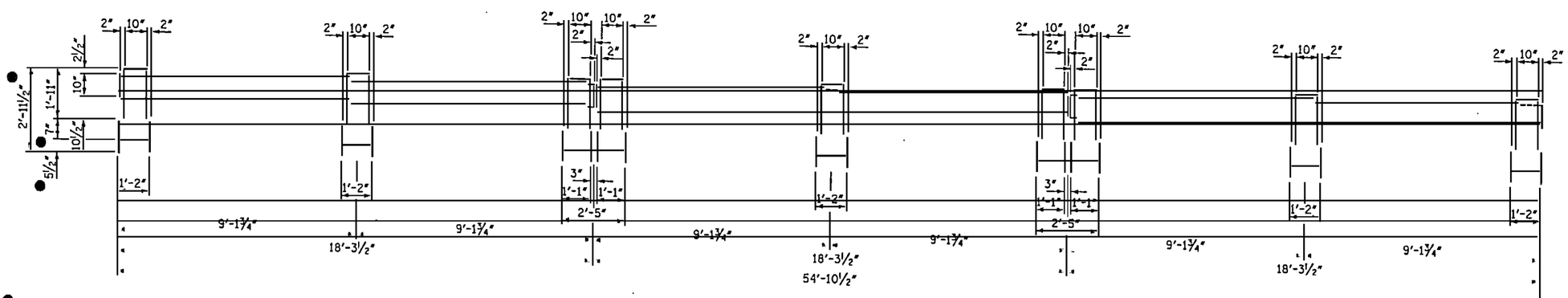
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
PLAN OF SPAN C

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5-46
1			3			TOTAL SHEETS
2			4			62



PLAN



ELEVATION

(EXTERIOR OF RIGHT SIDE RAIL SHOWN, LEFT SIDE SIMILAR)

● DIMENSION MAY NEED TO BE ADJUSTED TO MATCH TOP OF RAIL IN ADJACENT SPANS. REINFORCING SHALL BE ADJUSTED TO MATCH THE REVISED RAIL HEIGHT.

NOTE:
FOR SECTION VIEWS, SEE SHEET 4 OF 4.

CONCRETE BRIDGE RAIL SHALL BE CHAMFERED TO MATCH EXISTING RAIL. FOR CONCRETE BRIDGE RAIL, SEE SPECIAL PROVISIONS.

NORTH CAROLINA PROFESSIONAL SEAL 025429 ENGINEER JASON T. GRIGSON 4/10/08

NORTH CAROLINA PROFESSIONAL SEAL 18165 ENGINEER MARK F. ROBBINS 4/10/08

PROJECT NO. B-5021

ROBESON COUNTY

BRIDGE: 167

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

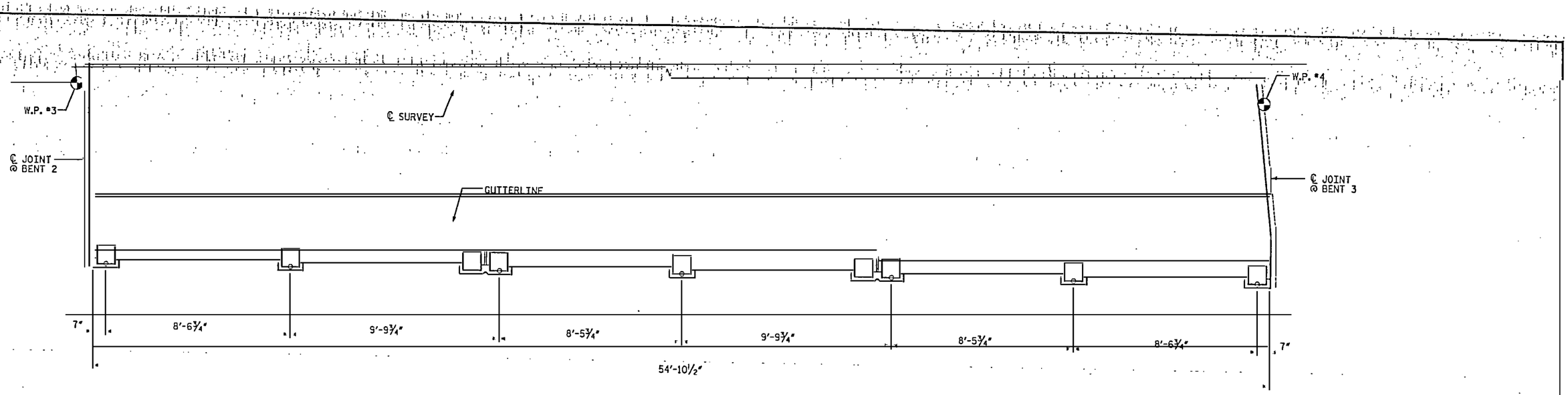
SUPERSTRUCTURE CONCRETE BRIDGE RAIL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-47
1			3			TOTAL SHEETS
2			4			62

DRAWN BY : TRL DATE : 1-08
CHECKED BY : TBQ DATE : 3-08

D-1809.47

STV/ Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208



PLAN

(RIGHT SIDE SHOWN, LEFT SIDE SYMMETRICAL)

THE INTENT IS FOR THE CONTRACTOR TO RE-USE THE FENCE POSTS, FENCE FABRIC, AND BRACKETS FROM THE EXISTING SPAN AND TO MOUNT THEM TO THE NEW POSTS IN A SIMILAR FASHION AS SPAN B. THE DIMENSIONS PROVIDED ON THIS SHEET SHALL BE VERIFIED BY THE CONTRACTOR TO ENSURE THAT NO CONFLICTS EXIST PRIOR TO ANY WORK ASSOCIATED WITH THE INSTALLATION OF THE FENCE BEGINS.

NOTES:

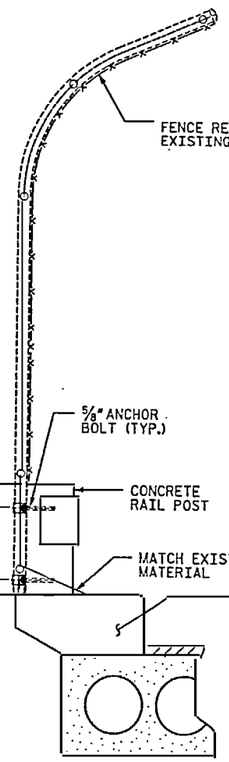
MATERIAL FOR ANCHOR BOLTS SHALL CONFORM TO ASTM A307. NUTS AND WASHERS SHALL CONFORM TO ASTM A563 AND ASTM F844 RESPECTIVELY. ANCHOR BOLTS SHALL BE EMBEDDED 7" IN CONCRETE.

FOR SETTING ANCHOR BOLTS, THE CONTRACTOR SHALL USE AN ADHESIVE BONDING SYSTEM WITH 7" EMBEDMENT. SEE SPECIAL PROVISIONS FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS. LEVEL 1 TESTING MAY BE REQUIRED AT THE DISCRETION OF THE ENGINEER. ADHESIVE ANCHOR SYSTEM SHALL HAVE A MINIMUM YIELD STRENGTH OF 4.5 KIPS.

GALVANIZE STEEL PARTS AND HARDWARE IN ACCORDANCE WITH ARTICLE 1076 OF THE STANDARD SPECIFICATIONS AS REQUIRED BY THE ENGINEER.

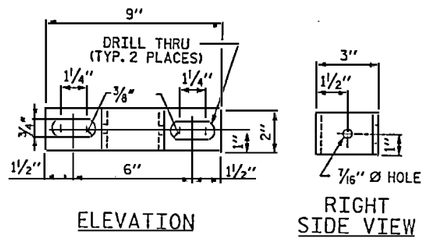
WELDING SHALL BE DONE IN ACCORDANCE WITH ARTICLE 1072-20 OF THE STANDARD SPECIFICATIONS.

IF A NEW BRACKET IS REQUIRED TO BE FABRICATED, THE CONTRACTOR SHALL VERIFY THAT THE BRACKET DETAILS SHOWN ON THIS SHEET MATCH THE DIMENSIONS OF THE BRACKETS THAT ARE USED ON SPAN B.



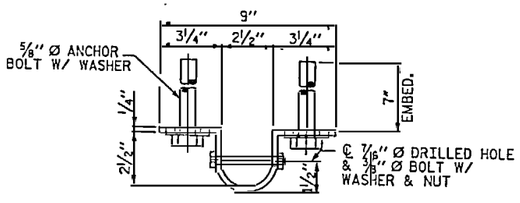
SECTION THRU FENCE

* SECURE TO VERTICAL WOVEN WIRE FENCE AND CURB WITH A MINIMUM OF 4 ATTACHMENTS BETWEEN RAIL POSTS TO MATCH DETAIL IN SPAN B.



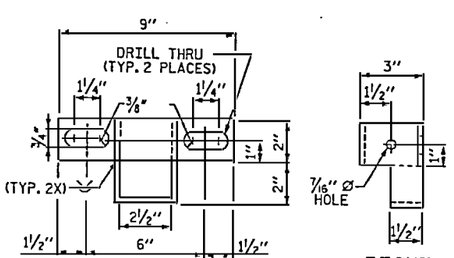
ELEVATION

RIGHT SIDE VIEW



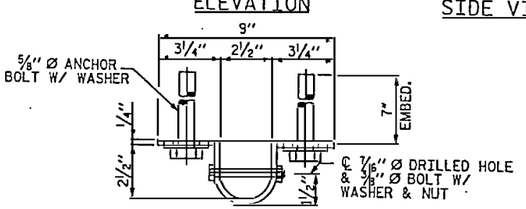
PLAN

TOP POST BRACKET



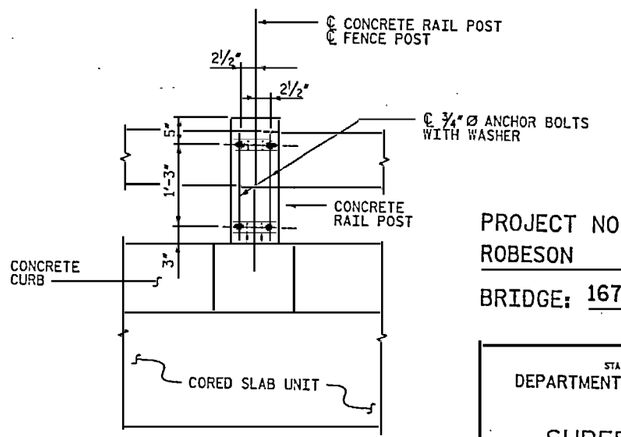
ELEVATION

RIGHT SIDE VIEW



PLAN

BOTTOM POST BRACKET



BOLT SETTING DETAIL

PROJECT NO. B-5021

ROBESON COUNTY

BRIDGE: 167

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE BRIDGE MOUNTED CHAIN LINK FENCE DETAILS

DRAWN BY : TRL DATE : 2-09

CHECKED BY : PEK DATE : 2-09

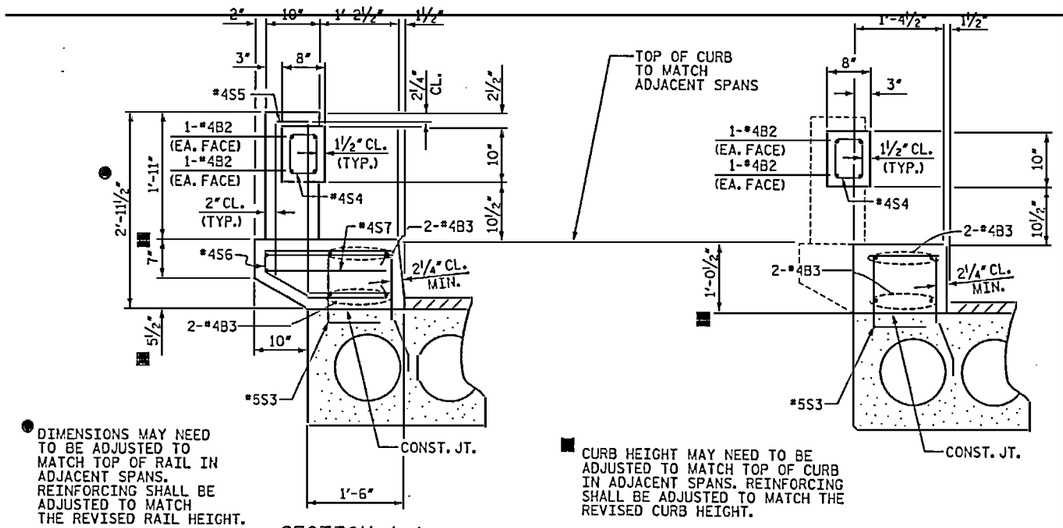
⚠1 REVISION #1: ADDED SHEET. D-1809.47A
BY: TRL 02/09
CHK. BY: JTG 02/09

STV/ Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	47A
1	PEK	2/09	3			TOTAL SHEETS
2			4			G2

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029429 ENGINEER JASON T. GRISCOM 2/12/09

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 18165 ENGINEER MARK F. ROBBINS 2/12/09



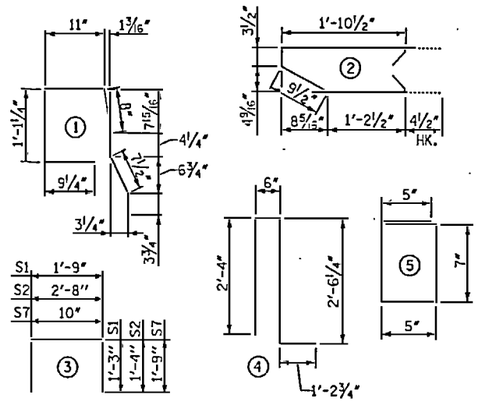
● DIMENSIONS MAY NEED TO BE ADJUSTED TO MATCH TOP OF RAIL IN ADJACENT SPANS. REINFORCING SHALL BE ADJUSTED TO MATCH THE REVISED RAIL HEIGHT.

SECTION A-A

■ CURB HEIGHT MAY NEED TO BE ADJUSTED TO MATCH TOP OF CURB IN ADJACENT SPANS. REINFORCING SHALL BE ADJUSTED TO MATCH THE REVISED CURB HEIGHT.

SECTION B-B

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR ONE CORED SLAB SECTION

BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT LENGTH	EXTERIOR UNIT WEIGHT	INTERIOR UNIT LENGTH	INTERIOR UNIT WEIGHT
B1	4	#4	STR	28'-1"	75	28'-1"	75
S1	16	#4	3	4'-3"	45	4'-3"	45
S2	108	#4	3	5'-4"	385	5'-4"	385
✱ S3	56	#5	1	4'-9"	277		
REINFORCING STEEL					505 LBS.		505 LBS.
✱EPOXY COATED REINFORCING STEEL					277 LBS.		
6000 P.S.I. CONCRETE					7.7 CY		7.7 CY
½" Ø L.R. STRANDS	No.				24		24

NOTES

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE 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 CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.

RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.

THE 2½"Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH GROUT. THE 2½"Ø DOWEL HOLES AT EXPANSION ENDS OF SLAB SECTIONS SHALL BE FILLED WITH JOINT SEALER MATERIAL TO 1½" ABOVE THE TOP OF DOWELS AND THEN FILLED WITH GROUT.

THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF TYPE SL LOW MODULUS SILICONE SEALANT. THE 2"Ø BACKER ROD SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS. PAYMENT FOR JOINT SEALER MATERIAL SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION OF THE BRIDGE.

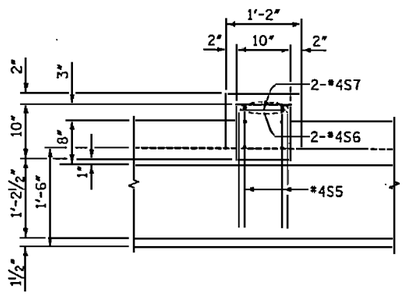
WHEN CORED SLABS ARE CAST, A POSITIVE HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDEWAYS. THIS SYSTEM SHALL BE DESIGNED TO BE LEFT IN PLACE UNTIL THE CONCRETE HAS REACHED RELEASE STRENGTH. AT LEAST THREE WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 4800 PSI.

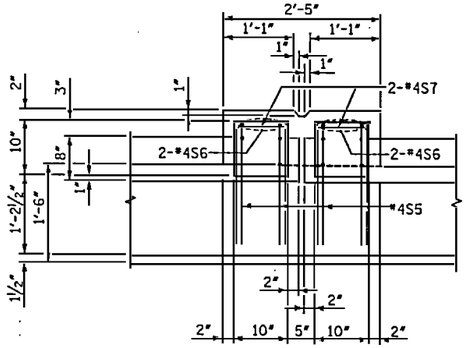
ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED. PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

VERTICAL GROOVED CONTRACTION JOINTS, ½" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BRIDGE RAIL AND 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 AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

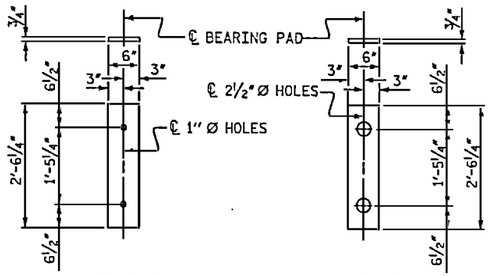


DETAIL B



DETAIL C

CONCRETE BRIDGE RAIL DETAILS



ELASTOMERIC BEARING DETAILS

DEAD LOAD DEFLECTION AND CAMBER

	3'-0" x 1'-9" ½"Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1¼"
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD✱✱	⅜"
FINAL CAMBER	1½"

✱✱ INCLUDES FUTURE WEARING SURFACE

BILL OF MATERIAL FOR CONCRETE BRIDGE RAIL AND PARAPET

BAR	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
✱B2	24	#4	STR	17'-10"	286
✱B3	16	#4	STR	28'-8"	306
✱S4	114	#4	5	2'-5"	184
✱S5	36	#4	4	6'-7"	158
✱S6	36	#4	2	4'-11"	118
✱S7	36	#4	3	4'-4"	104
✱EPOXY COATED REINFORCING STEEL					1,156 LBS.
CLASS AA CONCRETE					9.8 CY
TOTAL LIN. FT. OF CONCRETE BARRIER RAIL					109'-9"

CORED SLABS REQUIRED

	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	54'-10½"	109'-9"
INTERIOR C.S.	7	54'-10½"	384'-1½"
TOTAL	9		493'-10½"

GRADE 270 STRANDS

	½"Ø L.R.
AREA (SQUARE INCHES)	0.153
ULTIMATE STRENGTH (LBS. PER STRAND)	41,300
APPLIED PRESTRESS (LBS. PER STRAND)	30,980

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

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

DRAWN BY : TRL DATE : 1-08
CHECKED BY : TBQ DATE : 3-08

4/10/2008

PROJECT NO. B-5021
ROBESON COUNTY
BRIDGE: 167
SHEET 4 OF 4

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029429 ENGINEER JASON T. GROSS 4/10/08

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 18165 ENGINEER MARK F. ROBBINS 4/10/08

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE CONCRETE BRIDGE RAIL DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-48
1			3			TOTAL SHEETS
2			4			62

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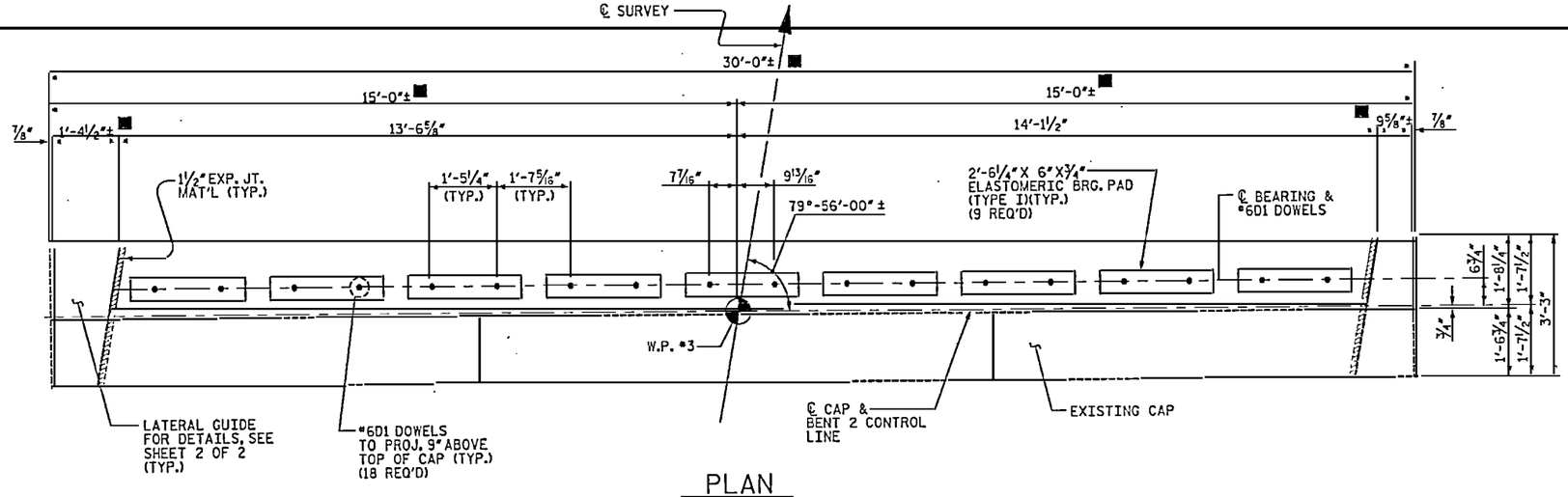
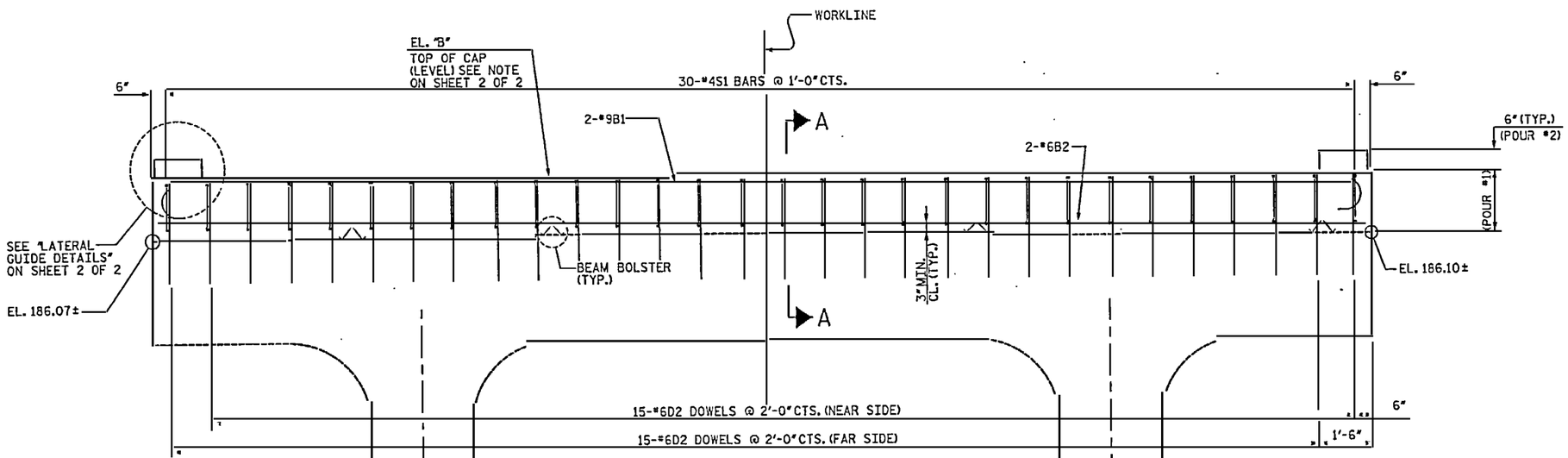
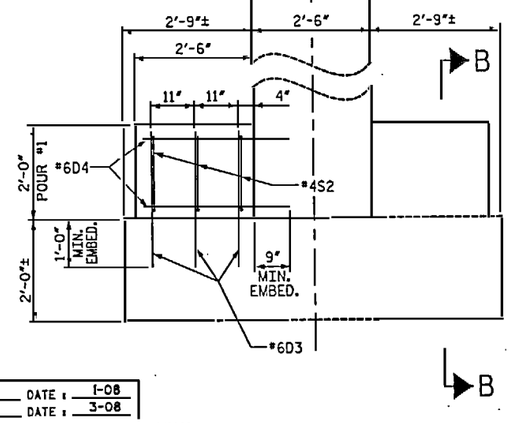


PLAN





NOTE: DIMENSIONS AND REINFORCING SHOWN FOR FOOTING STIFFENER IS THE SAME IN ALL STIFFENERS.

ELEVATION
(LOOKING UPSTATION)

NOTES

REINFORCING STEEL MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.

ALL ELEVATIONS ARE TO BE VERIFIED BY THE ENGINEER.

A HIGH EARLY STRENGTH PORTLAND CEMENT CONCRETE SHALL BE USED TO ACHIEVE A MINIMUM COMPRESSIVE STRENGTH OF 5000 PSI PRIOR TO PLACING CORED SLAB UNITS. SEE STANDARD SPECIFICATION SECTION 1000 FOR DETAILS.

⚠ #6D2, #6D3, AND #6D4 DOWELS SHALL BE ADHESIVELY ANCHORED USING AN APPROVED ADHESIVE CONSIDERING LOAD RESISTANCE, IN-SERVICE AND INSTALLATION TEMPERATURE, AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS, AND CREEP. ANCHORS SHALL BE INSTALLED TO THE MINIMUM EMBEDMENT DEPTHS AS SHOWN ON PLANS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE DOWEL IS 26 KIPS. FOR ADHESIVELY ANCHORED DOWELS, SEE SPECIAL PROVISIONS.

■ DIMENSIONS AND ELEVATIONS ARE BASED ON AS-BUILT DIMENSIONS AND FIELD SURVEY INFORMATION. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS PRIOR TO CONSTRUCTION. REINFORCING AND CONCRETE CAP EXTENSIONS SHALL BE ADJUSTED TO MATCH FIELD VERIFIED DIMENSIONS PROVIDED THAT THE OUT-TO-OUT DIMENSIONS REMAIN AS DETAILED.

⚠ REVISION #1: REVISED PER REVIEW COMMENTS
BY: TJT DATE: 5-08
CH'KD BY: KGB DATE: 5-08

DRAWN BY : TRL DATE : 1-08
CHECKED BY : TBQ DATE : 3-08

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1000 West Morehead St., Ste. 200
Charlotte, NC 28208

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029429 JASON T. GIBSON 5/5/08

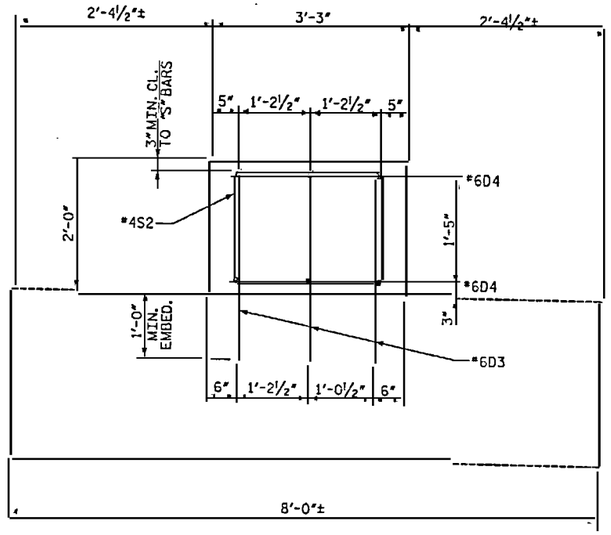
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 18165 MARK F. ROBBINS 5/5/08

PROJECT NO. B-5021
ROBESON COUNTY
BRIDGE: 167
SHEET 1 OF 2

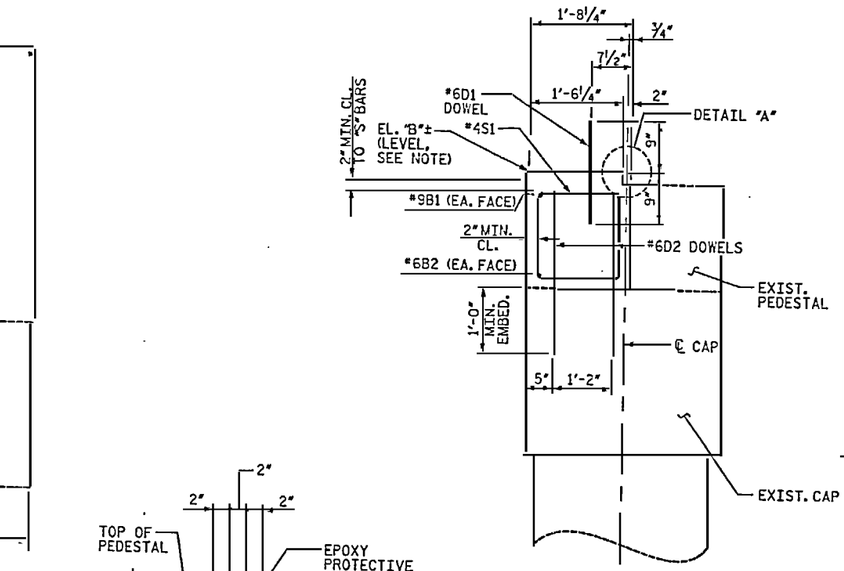
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 2

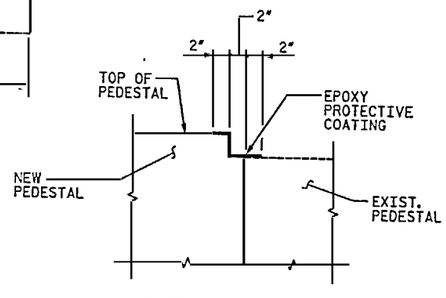
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-49
1	STV	5-08	3			TOTAL SHEETS
2			4			G2



SECTION B-B



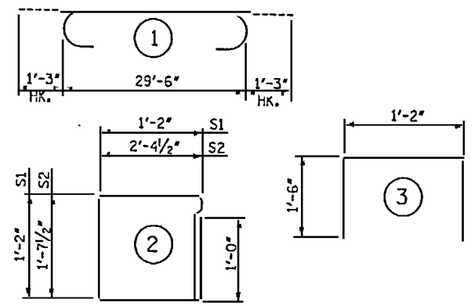
SECTION A-A



DETAIL "A"

NOTE: THE TOP SURFACES OF THE NEW AND EXISTING PEDESTAL SHALL BE CURED A MINIMUM OF 2" FROM THE COLD JOINT IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

BAR TYPES



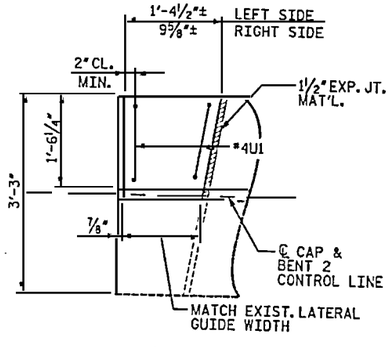
ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

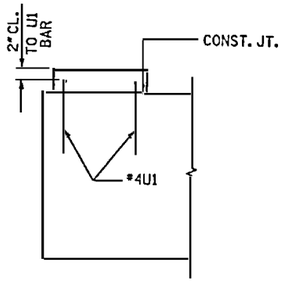
BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	2	9	(1)	32'-0"	218
B2	2	6	STR.	29'-6"	89
D1	18	6	STR.	1'-6"	41
D2	30	6	STR.	2'-0"	90
D3	36	6	STR.	2'-9"	149
D4	24	6	STR.	3'-0"	108
S1	30	4	(2)	5'-9"	115
S2	12	4	(2)	9'-4"	75
U1	4	4	(3)	4'-2"	11
REINFORCING STEEL				LBS.	896
CLASS AA CONCRETE BREAKDOWN					
POUR 1 (CAP & FOOTING) CY					5.7
POUR 2 (LATERAL GUIDE) CY					0.1
TOTAL				CY	5.8

NOTE:
DIMENSIONS AND ELEVATIONS SHOWN ARE FROM BEST INFORMATION AVAILABLE. CONTRACTOR SHALL MAKE ADJUSTMENTS TO PEDESTAL EL. "B" TO MAINTAIN 3½" (4½" MAX.) ASPHALT WEARING SURFACE @ ℄ BEARING, MATCH EL. "D", AND TO MAINTAIN THE 16'-0" MIN. VERTICAL CLEARANCE. IF ANY ELEVATIONS ARE MODIFIED, THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING THE REINFORCING TO FIT THE PEDESTAL HEIGHT.

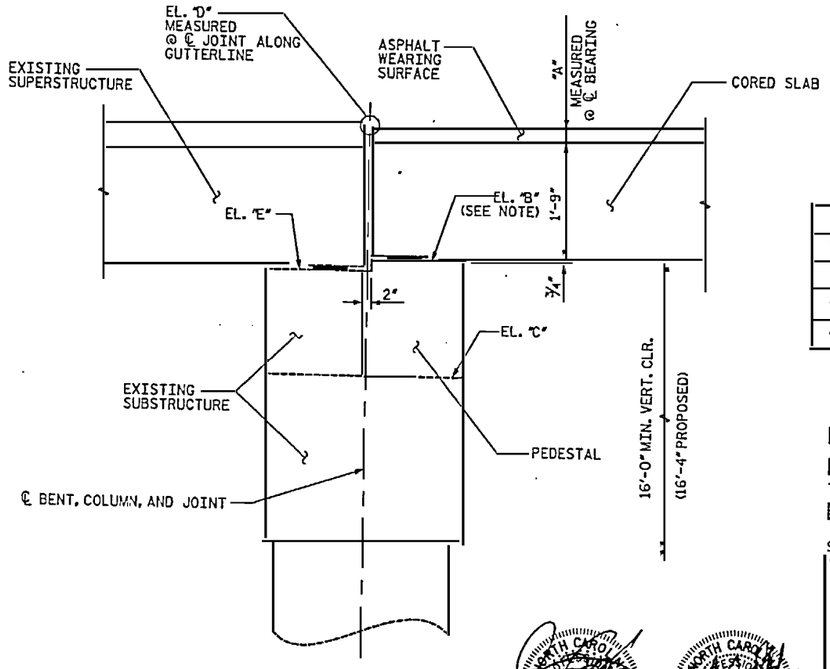


PLAN



ELEVATION

LATERAL GUIDE DETAILS
(LEFT SIDE SHOWN, RIGHT SIDE SIMILAR)



PEDESTAL HEIGHT

"A"	3½"
"B"	187.86
"C"	186.08
"D"	189.96
"E"	187.71

PROJECT NO. B-5021
ROBESON COUNTY
BRIDGE: 167
SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 2

DRAWN BY : TRL DATE : 1-08
CHECKED BY : TBQ DATE : 3-08

4/10/2008

D-1809.50

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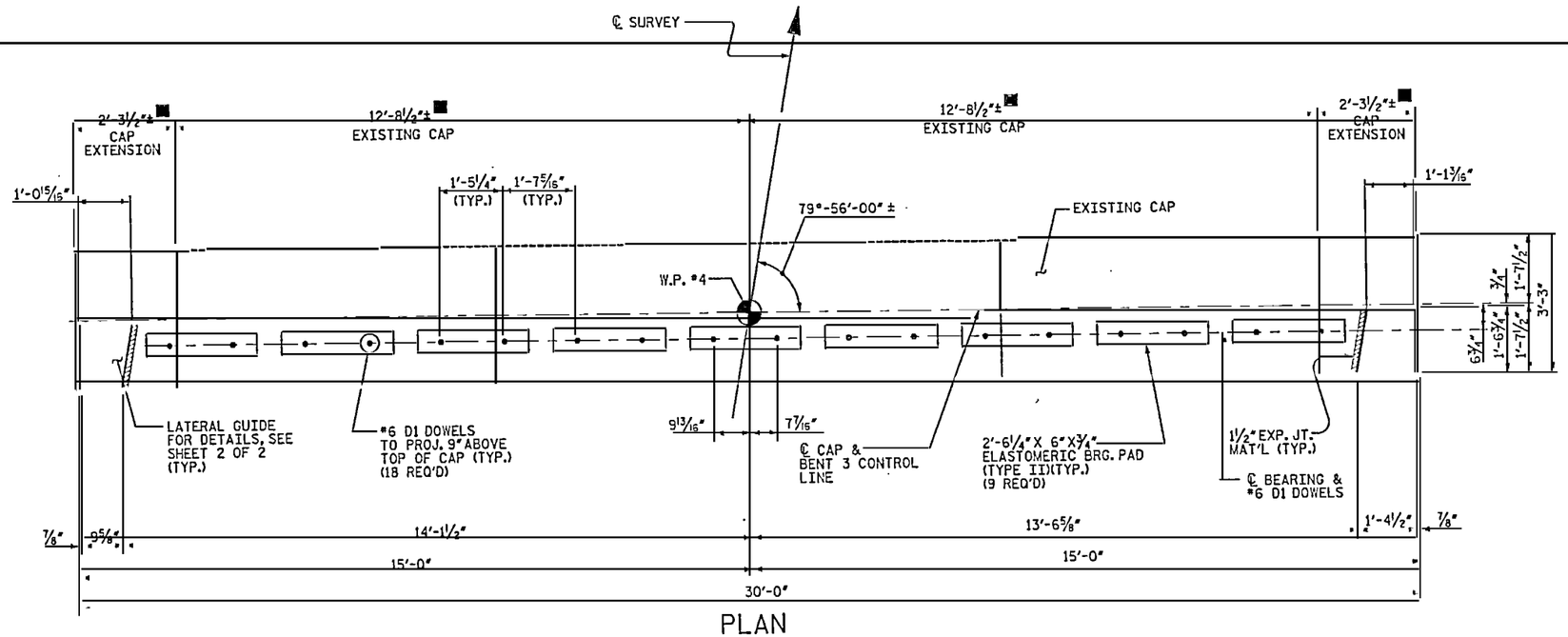
1000 West Morehead St., Ste. 200
Charlotte, NC 28208

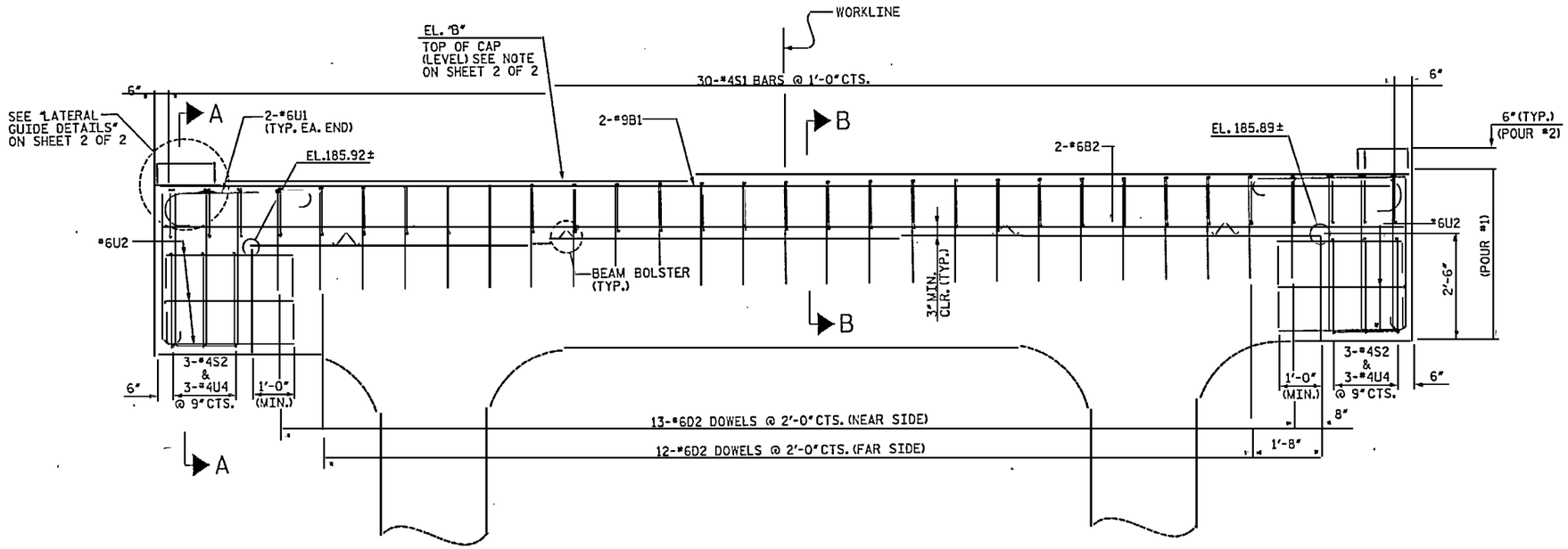
REVISIONS

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

SHEET NO. S-50
TOTAL SHEETS 67



PLAN



ELEVATION

(LOOKING UPSTATION)

NOTES

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⚠1 #6D2 AND #6U2 DOWELS SHALL BE ADHESIVELY ANCHORED USING AN APPROVED ADHESIVE CONSIDERING LOAD RESISTANCE, IN-SERVICE AND INSTALLATION TEMPERATURE, AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS, AND CREEP. ANCHORS SHALL BE INSTALLED TO THE MINIMUM EMBEDMENT DEPTHS AS SHOWN ON PLANS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE DOWEL IS 26 KIPS. FOR ADHESIVELY ANCHORED DOWELS, SEE SPECIAL PROVISIONS.

■ DIMENSIONS AND ELEVATIONS ARE BASED ON AS-BUILT DIMENSIONS AND FIELD SURVEY INFORMATION. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS PRIOR TO CONSTRUCTION. REINFORCING AND CONCRETE CAP EXTENSIONS SHALL BE ADJUSTED TO MATCH FIELD VERIFIED DIMENSIONS PROVIDED THAT THE OUT-TO-OUT DIMENSIONS REMAIN AS DETAILED.

⚠1 REVISION #1: REVISED PER REVIEW COMMENTS
BY: TJT DATE: 5-08
CH'KD BY: KGB DATE: 5-08

DRAWN BY : TRL DATE : 1-08
CHECKED BY : TBQ DATE : 3-08

5/2/2008

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Charlotte, NC 28208

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029429 ENGINEER JASON T. GIBSON 5/5/08

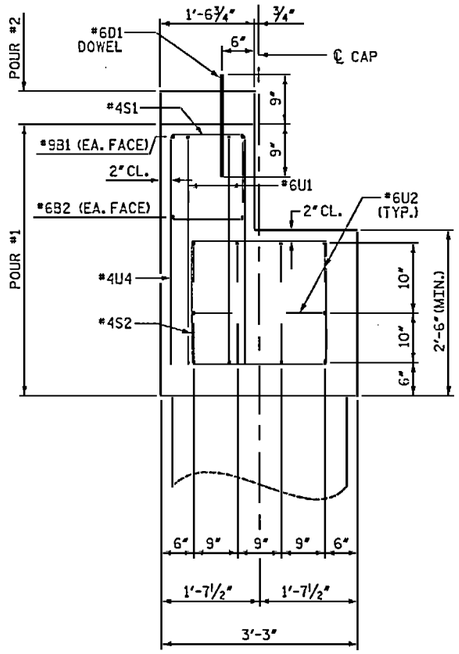
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 18165 ENGINEER MARK F. ROBBINS 5/5/08

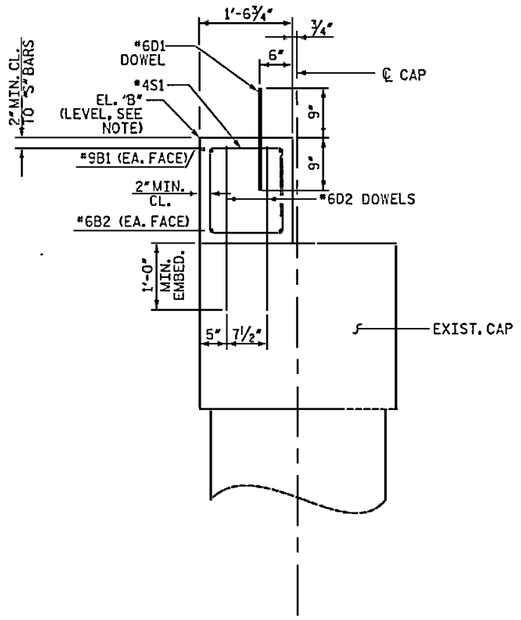
PROJECT NO. B-5021
ROBESON COUNTY
BRIDGE: 167
SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 3

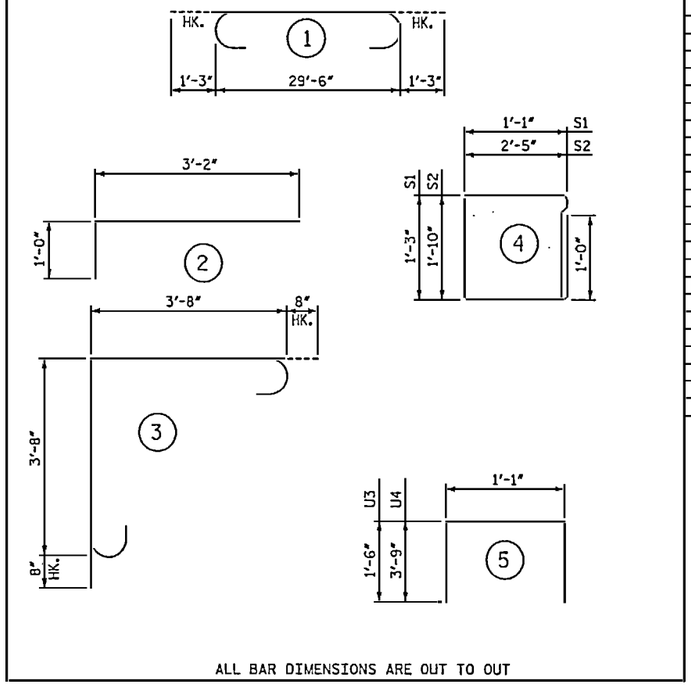
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-51
1	STV	5-08	3			TOTAL SHEETS
2			4			62





SECTION B-B

BAR TYPES



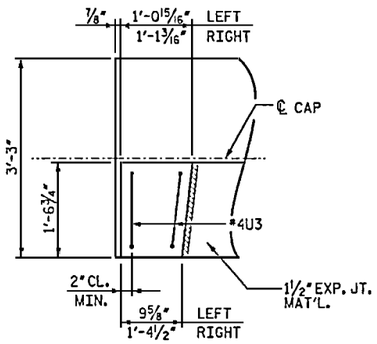
ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

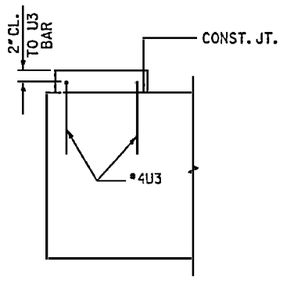
BENT 3

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	2	9	(1)	32'-0"	218
B2	2	6	STR.	29'-6"	87
D1	18	6	STR.	1'-6"	41
D2	25	6	STR.	2'-0"	75
S1	30	4	(4)	5'-8"	114
S2	6	4	(4)	9'-6"	38
U1	4	6	(3)	8'-8"	52
U2	20	6	(2)	4'-2"	125
U3	4	4	(5)	4'-1"	11
U4	6	4	(5)	8'-7"	34
REINFORCING STEEL				LBS.	797
CLASS AA CONCRETE BREAKDOWN					
POUR 1 (CAP)				CY	4.3
POUR 2 (LATERAL GUIDE)				CY	0.1
TOTAL				CY	4.4

SECTION A-A



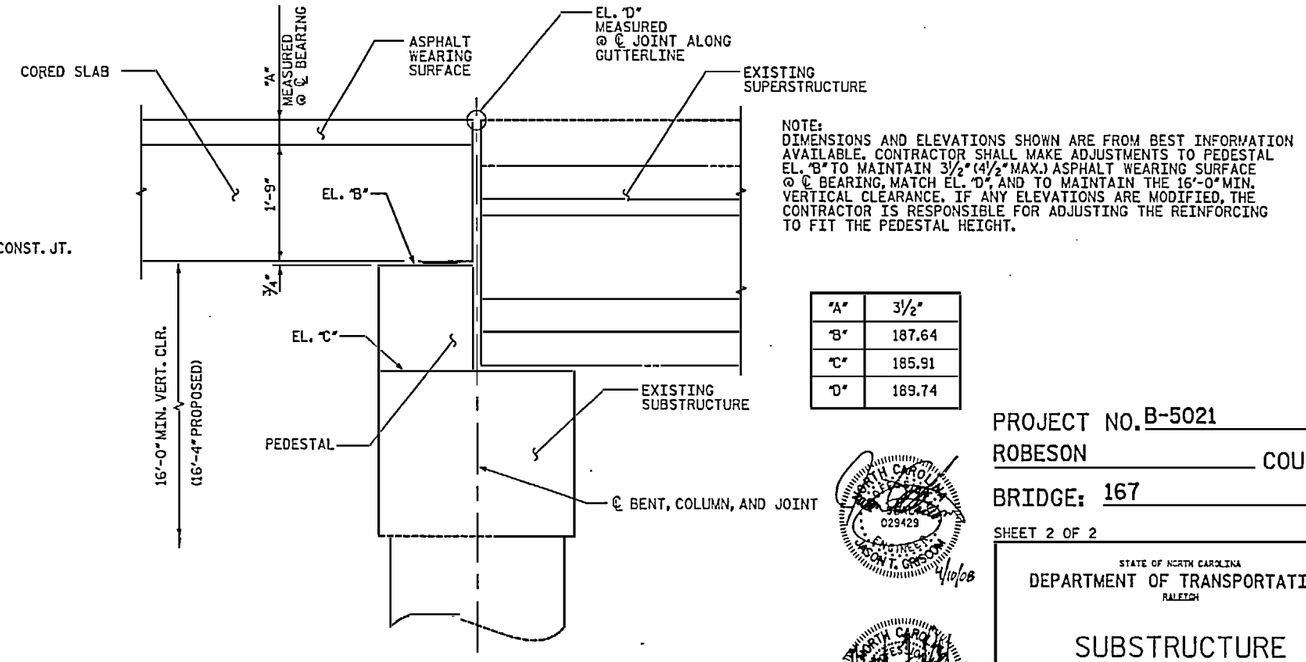
PLAN



ELEVATION

LATERAL GUIDE DETAILS

(LEFT SIDE SHOWN, RIGHT SIDE SIMILAR)



NOTE:
DIMENSIONS AND ELEVATIONS SHOWN ARE FROM BEST INFORMATION AVAILABLE. CONTRACTOR SHALL MAKE ADJUSTMENTS TO PEDESTAL EL. "B" TO MAINTAIN 3½" (4½" MAX.) ASPHALT WEARING SURFACE @ ℄ BEARING, MATCH EL. "D", AND TO MAINTAIN THE 16'-0" MIN. VERTICAL CLEARANCE. IF ANY ELEVATIONS ARE MODIFIED, THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING THE REINFORCING TO FIT THE PEDESTAL HEIGHT.

"A"	3½"
"B"	187.64
"C"	185.91
"D"	189.74

PEDESTAL HEIGHT

PROJECT NO. B-5021

ROBESON COUNTY

BRIDGE: 167

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 3

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-52
1			3			TOTAL SHEETS
2			4			62

D-1809.52

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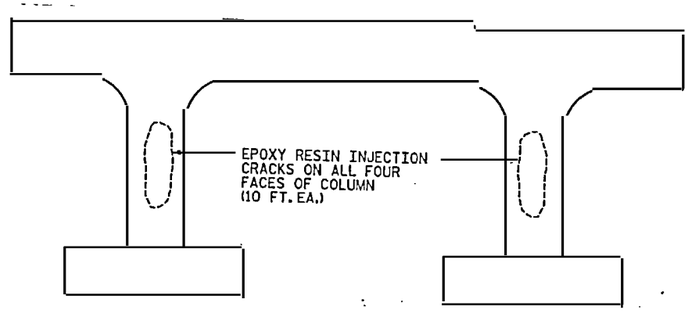
1000 West Morehead St., Ste. 200
Charlotte, NC 28208

DRAWN BY : TRL DATE : 1-08
CHECKED BY : TBQ DATE : 3-08

4/10/2008

NOTES:
1. REPAIRS SHALL BE IMPLEMENTED DURING SPAN C REPLACEMENT.
2. FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.



BENT 3 ELEVATION
(LOOKING EAST)

N:\PROJ\25134\B502\Bridge 167\Ustation\Finals\substructure repairs.dgn
timothy.townsend 4/10/2008 11:32:44 AM

DRAWN BY : JAD DATE : 3-08
CHECKED BY : JTG DATE : 3-08

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 023429 ENGINEER JASON T. GRISSOM 4/10/08

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 18165 ENGINEER MARK F. ROBBINS 4/10/08

D-1809.53

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1000 West Morehead St. Ste. 200
Charlotte, NC 28208

PROJECT NO. B-5021
ROBESON COUNTY
BRIDGE: 167

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE REPAIRS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-53
1			3			TOTAL SHEETS
2			4			62

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2002 STANDARD SPECIFICATIONS "FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

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

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

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

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

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED WITH THE EXCEPTION OF #2 BARS WHICH MAY BE FABRICATED FROM COLD DRAWN STEEL WIRE. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

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

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8"Ø SHEAR STUDS FOR THE ¾"Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8"Ø STUDS FOR 4 - 3/4"Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8"Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4"Ø STUDS. BASED ON THE RATIO OF 3 - 7/8"Ø STUDS FOR 4 - 3/4"Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

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

PLACEMENT OF BEAM OR GIRDER MEMBERS ON TRUCKS FOR HAULING SHALL BE DONE IN COMPLIANCE WITH LIMITS SHOWN ON SKETCHES PROVIDED TO THE MATERIALS AND TEST UNIT APPROVED BY THE STRUCTURE DESIGN UNIT DATED MAY 8, 1991. THESE SKETCHES PRIMARILY LIMIT THE UNSUPPORTED CANTILEVER LENGTH OF MEMBERS. WHEN THE CONTRACTOR WISHES TO PLACE MEMBERS ON TRUCKS NOT IN ACCORDANCE WITH THESE LIMITS, TO SHIP BY RAIL, TO ATTACH SHIPPING RESTRAINTS TO THE MEMBERS OR TO INVERT MEMBERS, HE SHALL SUBMIT A SKETCH FOR APPROVAL PRIOR TO SHIPPING. SEE ALSO ARTICLE 1072-11.

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

HANDRAILS AND POSTS:

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

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

SPECIAL NOTES:

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

ENGLISH

JANUARY, 1990

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