

NOTES

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

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.

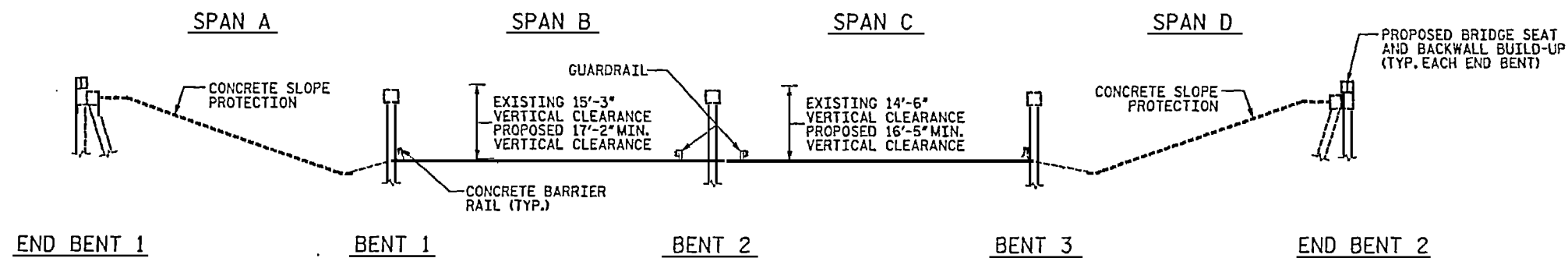
FOR MAINTENANCE AND PROTECTION OF TRAFFIC BENEATH BRIDGE, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

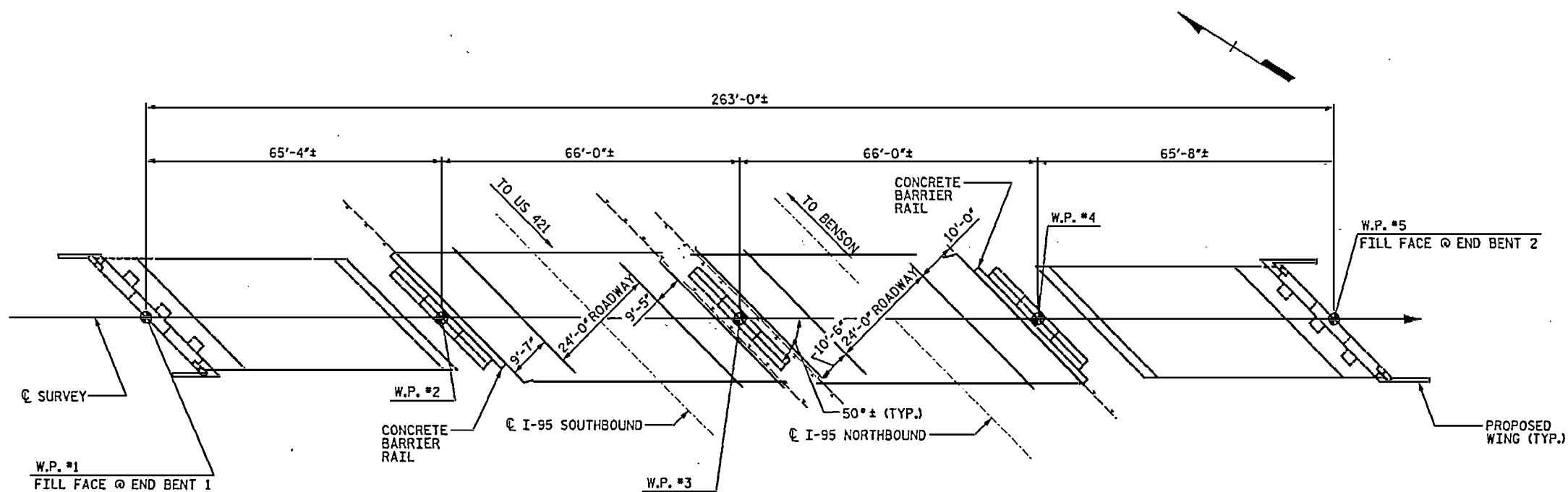
FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

ALL STRUCTURAL STEEL SHALL BE ASTM A36 MIN.

ALL WELDING SHALL BE IN ACCORDANCE WITH CURRENT AWS SPECIFICATIONS.



ELEVATION



PLAN

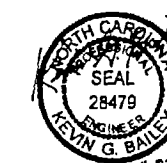
TOTAL BILL OF MATERIAL									
	PARTIAL REMOVAL OF EXISTING STRUCTURE	CLASS AA CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	STRUCURAL STEEL *	EPOXY RESIN INJECTION	EPOXY MORTAR REPAIRS	BRIDGE JACKING	EVAZOTE JOINT SEALS
	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	APPROX. LBS.	LINEAR FT.	SO. FT.	LUMP SUM	LUMP SUM
SUPERSTRUCTURE			LUMP SUM		17200	20		LUMP SUM	LUMP SUM
END BENT 1		18.1		2390	84	14	2		
BENT 1						12			
BENT 2						18			
BENT 3						2			
END BENT 2		18.1		2390	84	4			
TOTAL	LUMP SUM	36.2	LUMP SUM	4780	17,368	70	2	LUMP SUM	LUMP SUM

* INCLUDES WEIGHT OF ANCHOR BOLTS AND ANCHOR HARDWARE

PROJECT NO. B-5022
HARNETT COUNTY

BRIDGE: 81

MODIFICATION OF BRIDGE NO. 81



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
GENERAL DRAWING
BRIDGE OVER I-95
ON SR 1709
BETWEEN BENSON
AND US 421

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-35
1			3			TOTAL SHEETS 44
2			4			

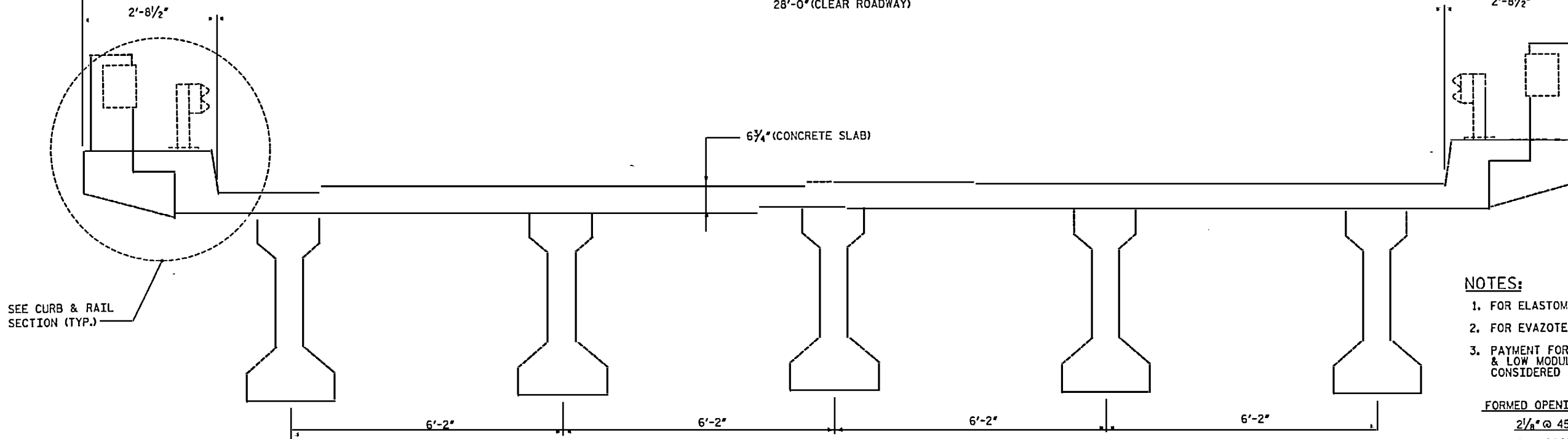
D-1810.35

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

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DRAWN BY: TRL DATE: 2-08
CHECKED BY: PEK DATE: 3-08

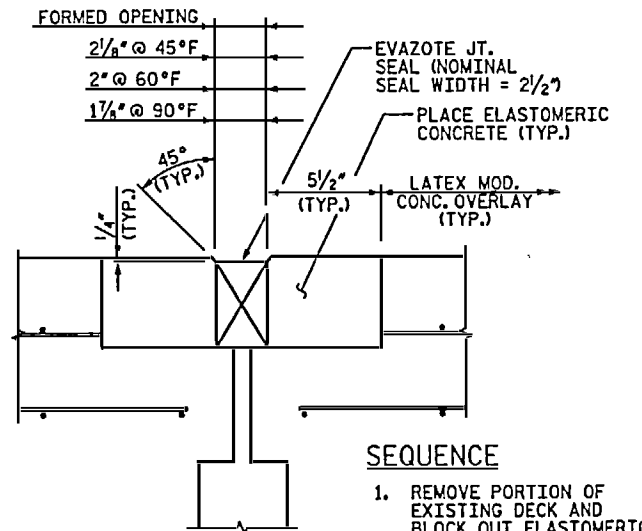
33'-5" (OUT TO OUT)
28'-0" (CLEAR ROADWAY)



SEE CURB & RAIL SECTION (TYP.)

NOTES:

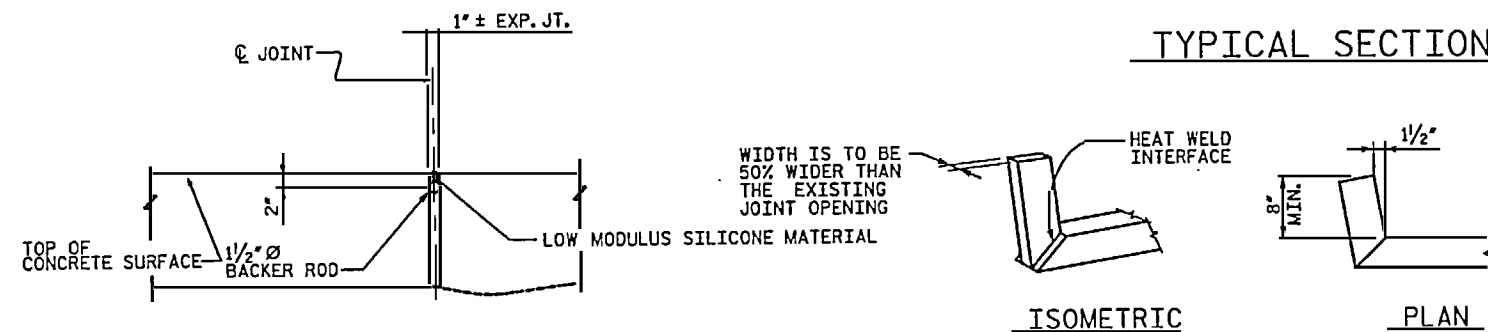
1. FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.
2. FOR EVAZOTE JOINT SEALS, SEE SPECIAL PROVISIONS.
3. PAYMENT FOR INSTALLATION OF THE 1/2" Ø BACKER ROD & LOW MODULUS SILICONE JOINT SEALER MATERIAL SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION OF THE BRIDGE.



SEQUENCE

1. REMOVE PORTION OF EXISTING DECK AND BLOCK OUT ELASTOMERIC AREA.
2. FORM JOINT AND POUR ELASTOMERIC CONCRETE.
3. REMOVE JOINT FORM.
4. INSTALL EVAZOTE JOINT

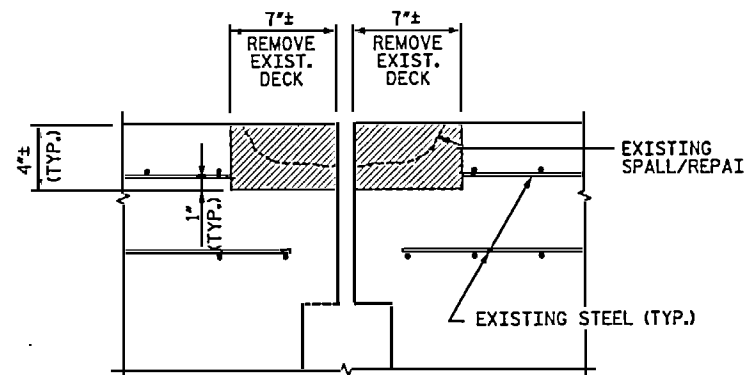
TYPICAL SECTION



TYPICAL JOINT REPLACEMENT (AT BENTS 1 & 2)

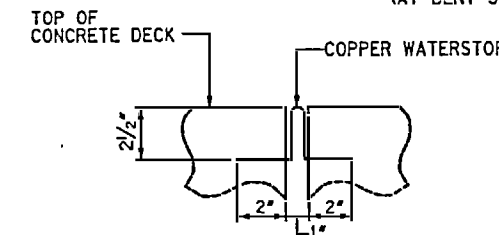
EVAZOTE JOINT DIRECTIONAL CHANGE DETAIL

HEAT WELD EVAZOTE MATERIAL PER MANUFACTURER'S RECOMMENDATIONS

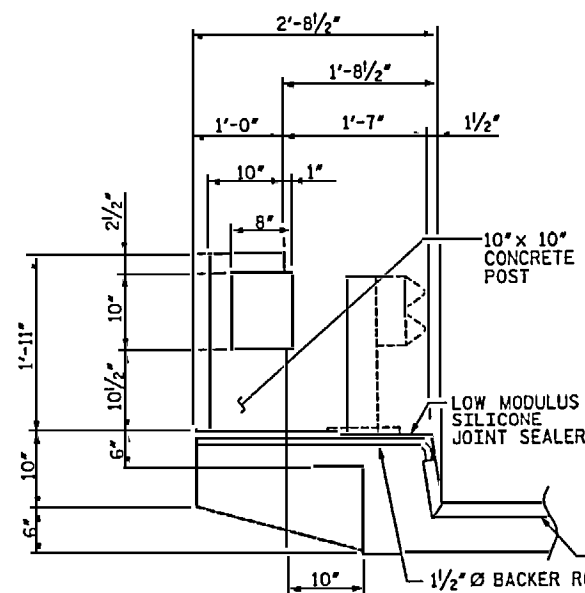


REMOVAL SECTION

JOINT REPAIR DETAIL (AT BENT 3)

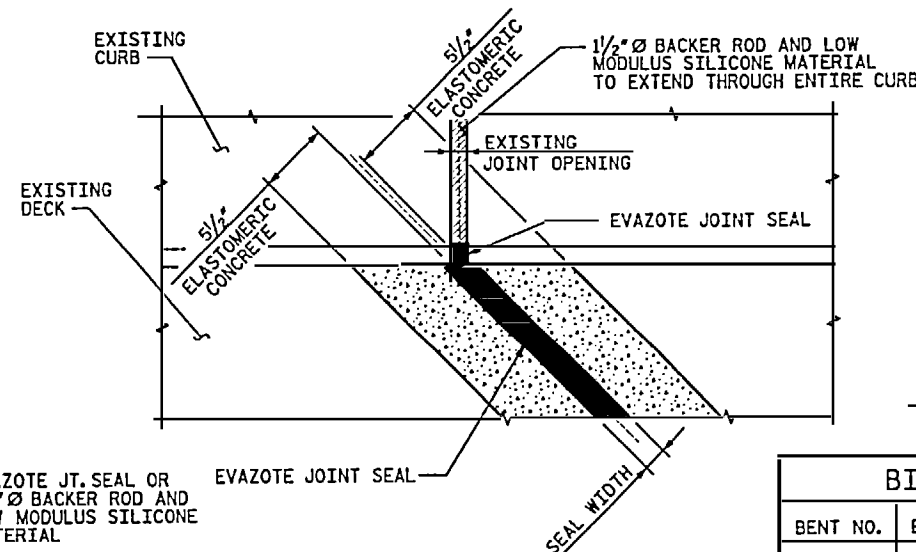


EXISTING EXPANSION JOINT DETAIL



CURB AND RAIL SECTION *

*PER SIDE, THERE ARE 9 POSTS PER SPAN
TOTAL RAIL LENGTH = 280'± PER SIDE
(EVAZOTE JOINT SEAL BENT 3)
(1/2" Ø BACKER ROD BENTS 1&2)



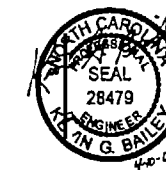
PLAN VIEW OF EVAZOTE JOINT @ GUTTERLINE

BILL OF MATERIAL	
BENT NO.	ELASTOMERIC CONCRETE (CU. FT.) *
3	11.2

*BASED ON MINIMUM BLOCKOUT SHOWN

NOTE: SEE APPROACH SLAB FOR ELASTOMERIC CONCRETE AT END BENTS

NOT TO SCALE



PROJECT NO. B-5022
HARNETT COUNTY
BRIDGE: 81

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RELIEF
EXISTING SUPERSTRUCTURE
TYPICAL SECTION

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-36
1			3			30%
2			4			44

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DRAWN BY: TRL DATE: 3-08
CHECKED BY: KGB DATE: 3-08

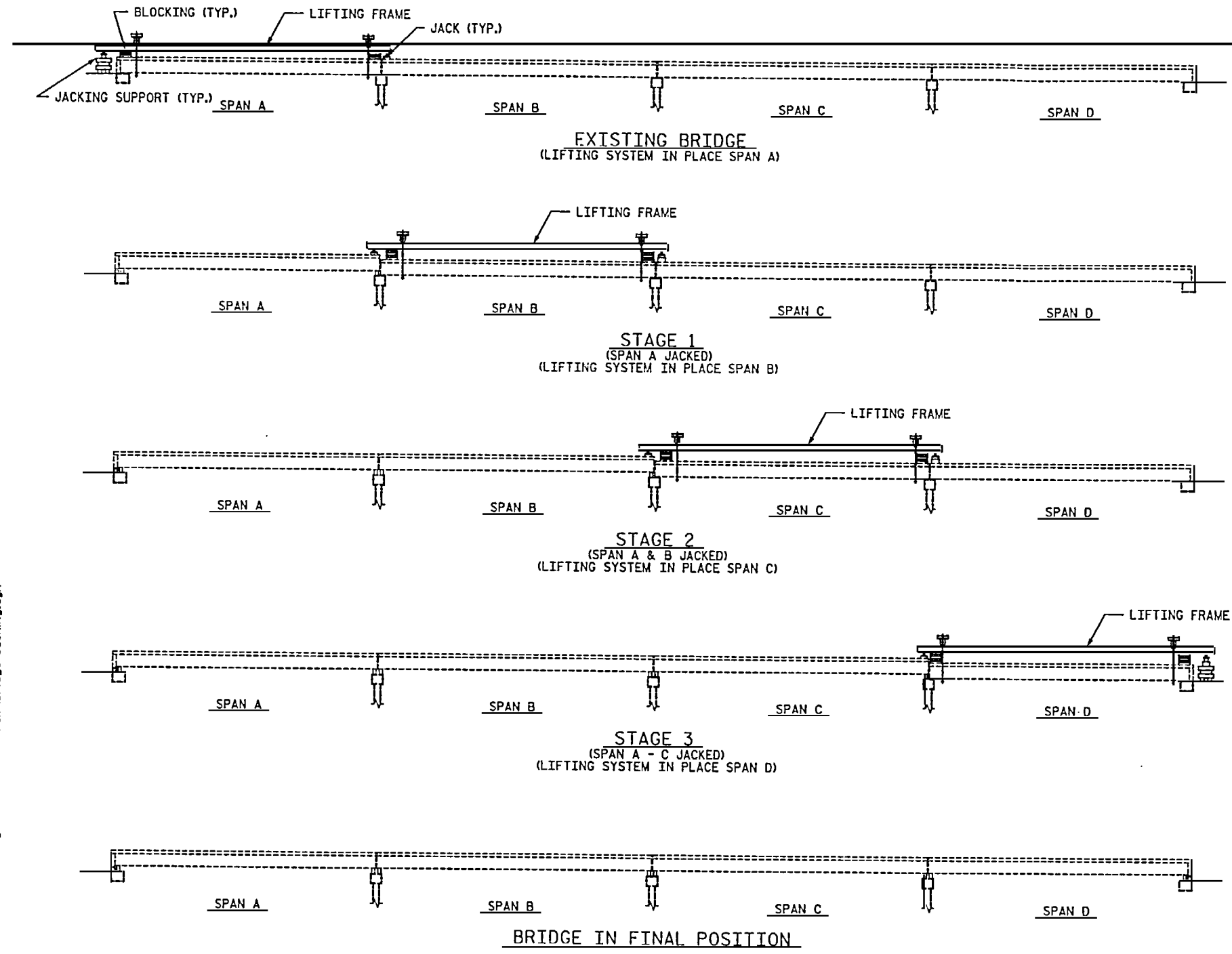
D-1810.36
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1000 West Morehead St., Ste. 200
Charlotte, NC 28208

NOTES:

1. THE CONTRACTOR SHALL JACK ALL BEAMS IN ANY ONE SPAN SIMULTANEOUSLY.
2. TRAFFIC SHALL NOT BE ALLOWED ON THE STRUCTURE UNTIL THE WORK REQUIRED BY THE CONTRACT DOCUMENTS IS COMPLETE.
3. PRIOR TO INSTALLING BEARING PEDESTALS AND NEW BEARINGS, CONTRACTOR SHALL MAKE ANY REPAIRS TO BENTS AS REQUIRED IN THE CONTRACT DOCUMENTS.
4. CONTRACTOR SHALL SUBMIT JACKING PLANS AND CALCULATIONS SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA FOR REVIEW AND APPROVAL PRIOR TO MATERIAL PURCHASE OR FABRICATION OF JACKING SYSTEM.
5. FOR ADDITIONAL INFORMATION ON JACKING SEE SPECIAL PROVISION "BRIDGE JACKING".
6. LIFTING FRAME SHALL EXTEND BEYOND THE LENGTH OF THE LIFTED SPAN AND PROVIDE BEARINGS AT THE SAME LOCATION AS THE ADJACENT GIRDER BEARINGS.
7. CONTRACTOR SHALL SHIM BRIDGE SPAN DURING JACKING SUCH THAT THE MAXIMUM UNSHIMMED LIFT IS 1".
8. CONTRACTOR SHALL PROVIDE SPAN LIFT POINTS AS CLOSE AS POSSIBLE TO THE FACE OF BENT CAP.
9. HYDRAULIC SYSTEM SHALL BE CONNECTED SUCH THAT ALL JACKS LIFT SIMULTANEOUSLY.
10. CONTRACTOR SHALL DESIGN LIFTING SYSTEM SUCH THAT HORIZONTAL POSITION OF THE LIFTED SPAN CAN BE MAINTAINED.

CONSTRUCTION SEQUENCE:

1. CONSTRUCT JACKING SUPPORT AT END BENT. CONTRACTOR SHALL MAKE SURE CURTAIN WALL IS FULLY DETACHED FROM END BENT CAP, WINGS, AND FILL.
2. CONSTRUCT THE LIFTING FRAME (FOR SPAN A) MAKING SURE SYSTEM IS LEVEL. INSTALL BLOCKING AS NECESSARY.
3. LIFT SPAN A TO REQUIRED ELEVATION AND INSTALL BEARING PEDESTALS AND NEW BEARINGS. PRIOR TO INSTALLING BEARING PEDESTALS AND NEW BEARINGS, CONTRACTOR SHALL MAKE ANY REPAIRS TO BENTS AS REQUIRED IN THE CONTRACT DOCUMENTS.
4. CONSTRUCT END BENT AND BENT MODIFICATIONS AS SHOWN IN THE CONTRACT DOCUMENTS. END BENT MODIFICATIONS NECESSARY TO ANCHOR THE SPAN SHALL BE COMPLETED PRIOR TO PROCEEDING.
5. SHIFT LIFT SYSTEM TO SPAN B AND REPEAT STEPS 2 THROUGH 4.
6. SHIFT LIFT SYSTEM TO SPAN C AND REPEAT STEPS 2 THROUGH 4.
7. SHIFT LIFT SYSTEM TO SPAN D AND REPEAT STEPS 1 THROUGH 4.
8. FINISH REMAINING REPAIRS AND MODIFICATIONS AS INDICATED IN CONTRACT DOCUMENTS. REMOVE TRAFFIC CONTROL MEASURES AND OPEN BRIDGE TO TRAFFIC.



JACKING SEQUENCE FOR BRIDGE 81

PROJECT NO. B-5022
 HARNETT COUNTY
 BRIDGE: 81



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BRIDGE JACKING SEQUENCE

DRAWN BY: TJT DATE: 3-08
 CHECKED BY: KGB DATE: 3-08

D-1810.37

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 Charlotte, NC 28208

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	5-37
1			3			TOTAL SHEETS
2			4			44

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NOTES

THE EXISTING ANCHOR BOLTS SHALL BE CUT FLUSH WITH THE EXISTING TOP OF CAP, ANCHOR BOLTS SHALL BE DRILLED AND ADHESIVELY ANCHORED INTO THE EXISTING CAP. CONTRACTOR SHALL CORE DRILL THE EXISTING ANCHOR BOLTS USING A CORE BIT WITH INSIDE DIAMETER MATCHING THAT OF THE EXISTING ANCHOR BOLT DIAMETER. THE ANCHOR BOLT HOLES IN THE PROPOSED TOP AND BOTTOM PLATE DETAIL SHALL MATCH THE ANCHOR BOLT HOLES IN THE EXISTING BEAMS. THIS MATCH SHALL FACILITATE THE PROPER ALIGNMENT OF THE PEDESTAL. THE ANCHOR BOLT LENGTH IS BASED ON AN 12" EMBEDMENT INTO THE EXISTING CAP AND MAY BE ADJUSTED BASED ON THE MINIMUM EMBEDMENT SPECIFIED BY THE MANUFACTURER OF THE EPOXY ADHESIVE BONDING SYSTEM. FOR ADHESIVELY ANCHORED ANCHOR BOLTS, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL FIELD VERIFY PROPOSED ANCHOR BOLT LOCATIONS PRIOR TO FABRICATION OF THE TOP AND BOTTOM PLATES FOR THE PROPOSED PEDESTALS.

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

THE PROPOSED PEDESTAL HEIGHT ASSUMES THAT THE TOTAL HEIGHT OF THE EXISTING BEARING ASSEMBLIES IS 2 1/2". THE CONTRACTOR SHALL MEASURE THE HEIGHT OF ALL BEARING ASSEMBLIES AND ADJUST THE HEIGHT OF THE PROPOSED PEDESTALS ACCORDINGLY.

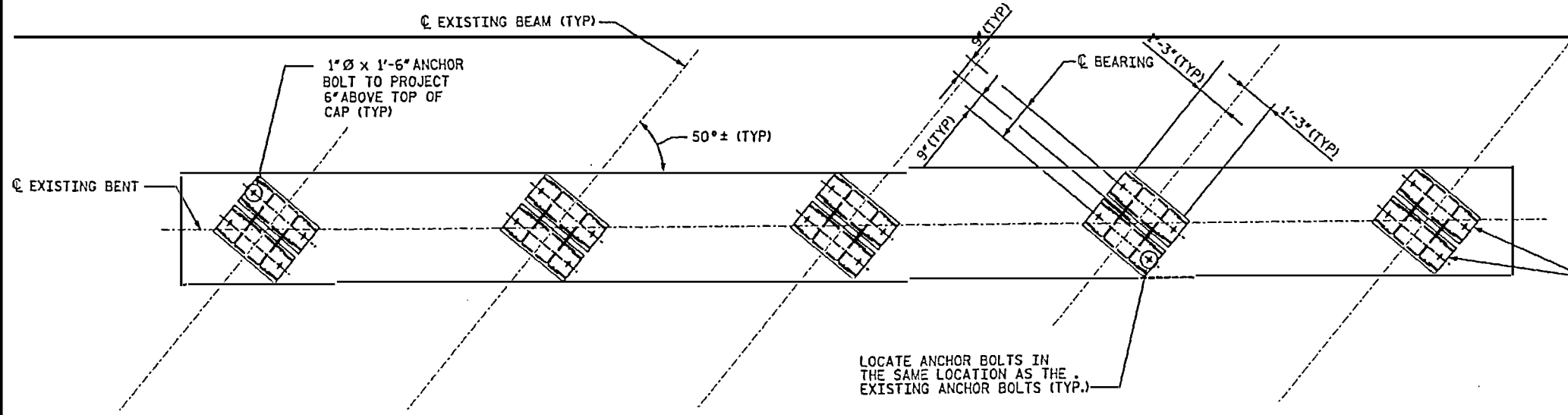
CONTRACTOR SHALL CLIP PLATES AS NECESSARY TO PREVENT PROJECTION BEYOND BENT CAP.

ALL THREADS OF BOLTS/ANCHOR BOLTS SHALL BE BURRED AFTER TIGHTENING NUTS.

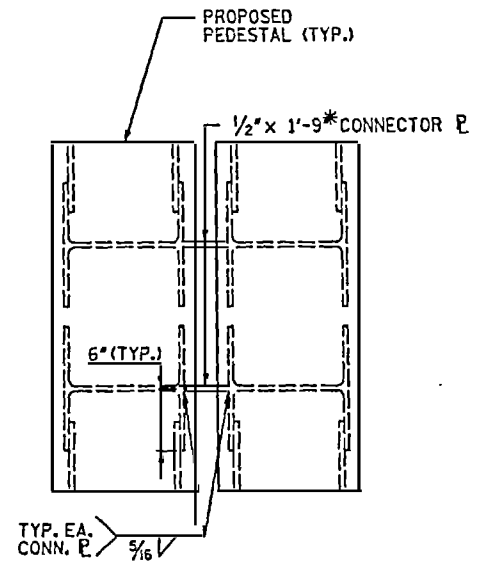
1" Ø BOLTS IN TOP PLATE SHALL CONFORM TO ASTM A325.

1" Ø ANCHOR BOLTS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. CONTRACTOR SHALL VERIFY ANCHOR BOLT DIAMETER AND ADJUST AS NECESSARY TO MATCH EXISTING ANCHOR BOLT DIAMETER.

PROPOSED PEDESTALS SHALL BE GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS. AREAS TO BE WELDED SHALL BE REPAIRED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

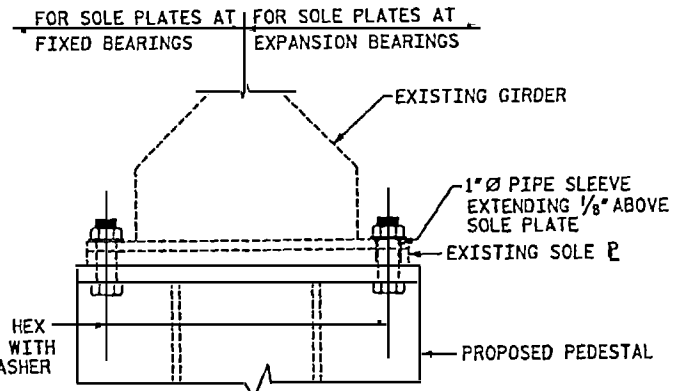
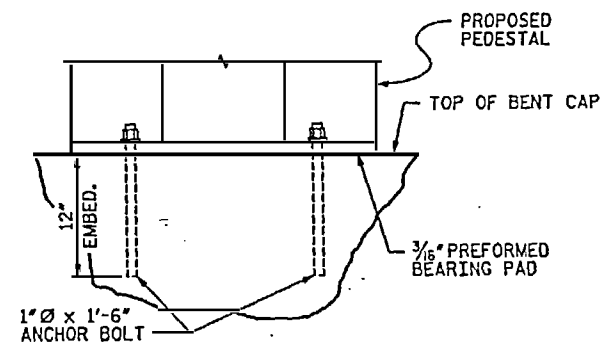


PLAN OF EXISTING BENT



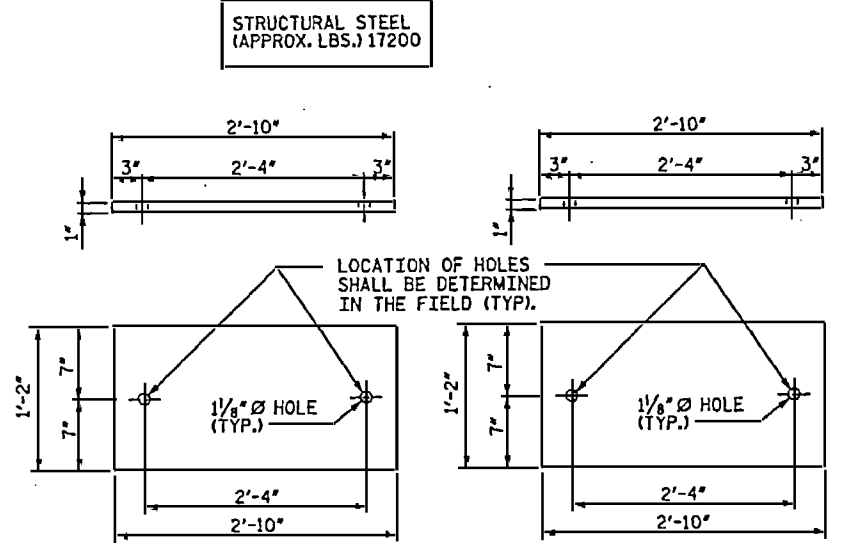
PEDESTAL ATTACHMENT DETAIL

(CONNECTOR PLATES SHALL BE INSTALLED AFTER BEARING ASSEMBLIES HAVE BEEN INSTALLED)

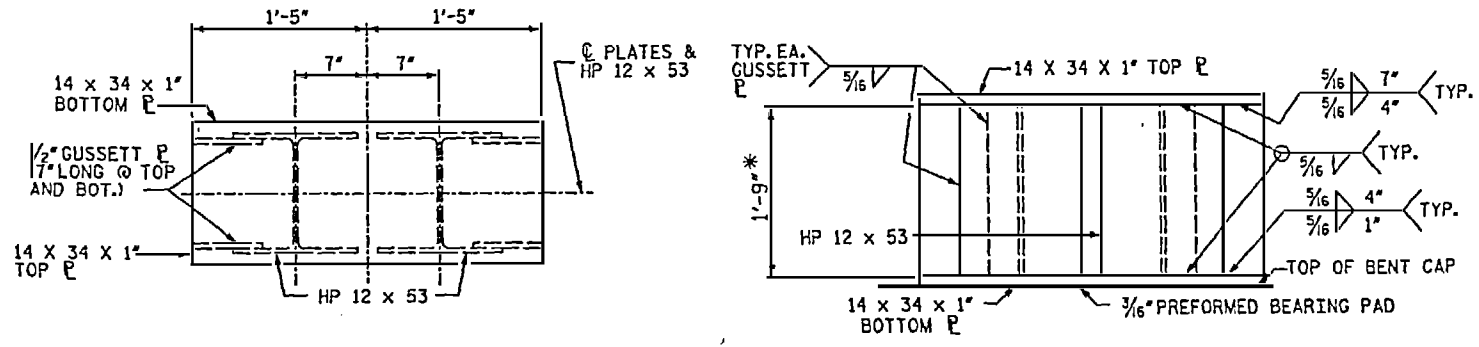


BEARING ATTACHMENT DETAIL

(CONTRACTOR SHALL VERIFY BOLT DIMENSION AND ADJUST HOLE DIAMETER AS NECESSARY PRIOR TO PEDESTAL FABRICATION)

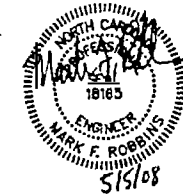


PROPOSED TOP AND BOTTOM PLATE DETAILS



PEDESTAL DETAILS

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



PROJECT NO. B-5022
 HARNETT COUNTY
 BRIDGE: 81

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 INTERIOR BENT
 BEARING MODIFICATIONS

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

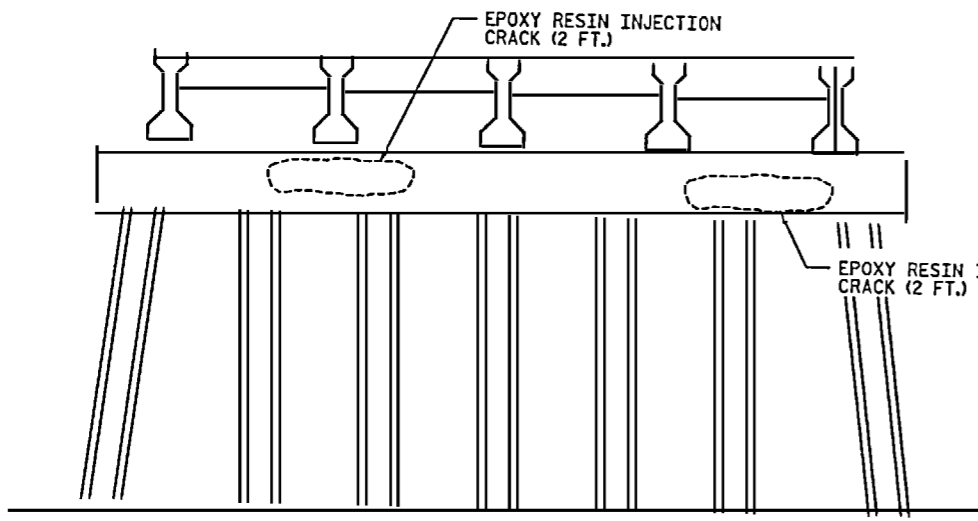
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 Charlotte, NC 28206

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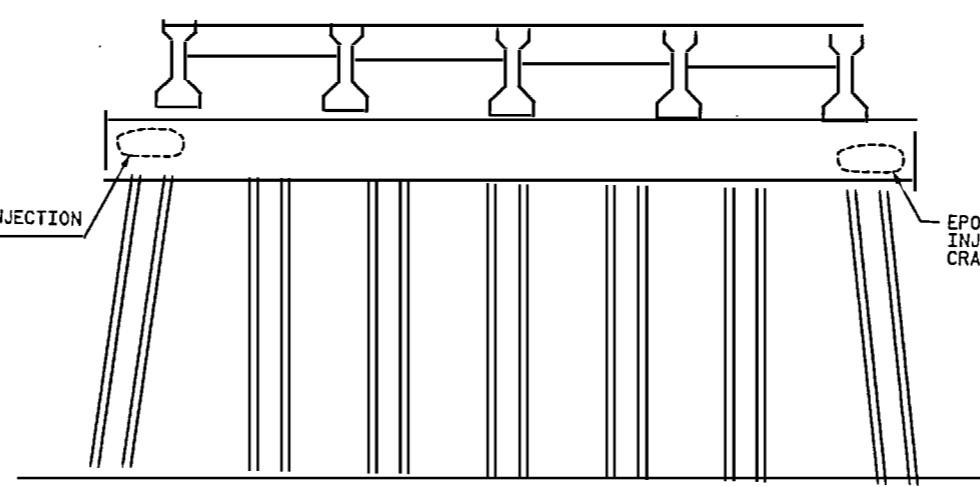
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DRAWN BY: TRL DATE: 3-08
 CHECKED BY: KGB DATE: 3-08

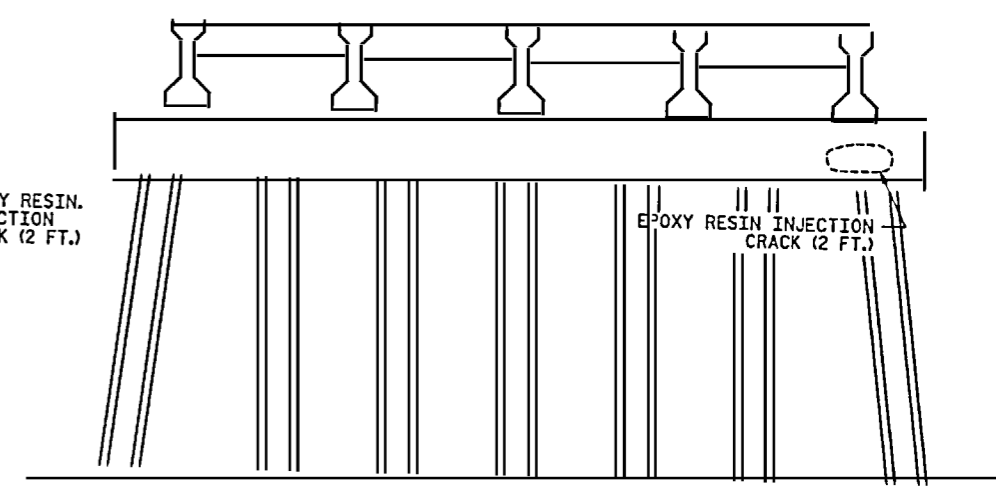
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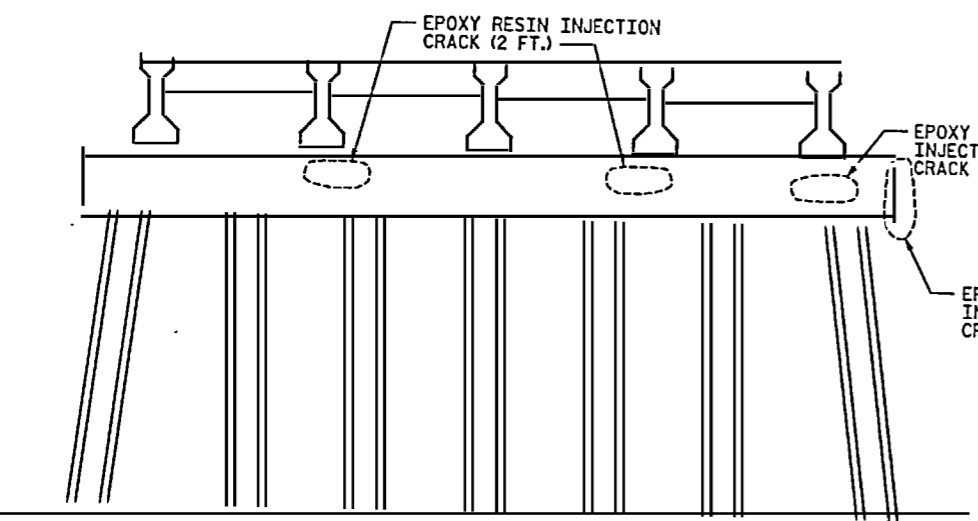
BENT 1 ELEVATION
(LOOKING WEST)



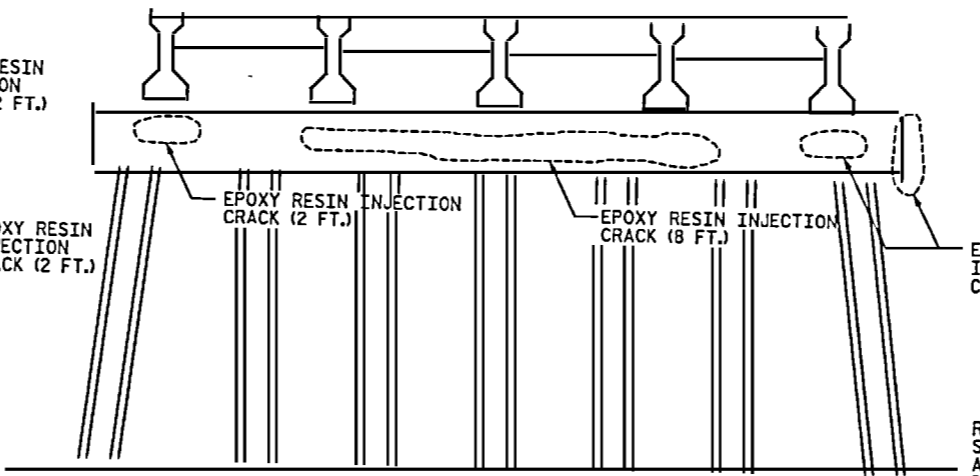
BENT 2 ELEVATION
(LOOKING WEST)



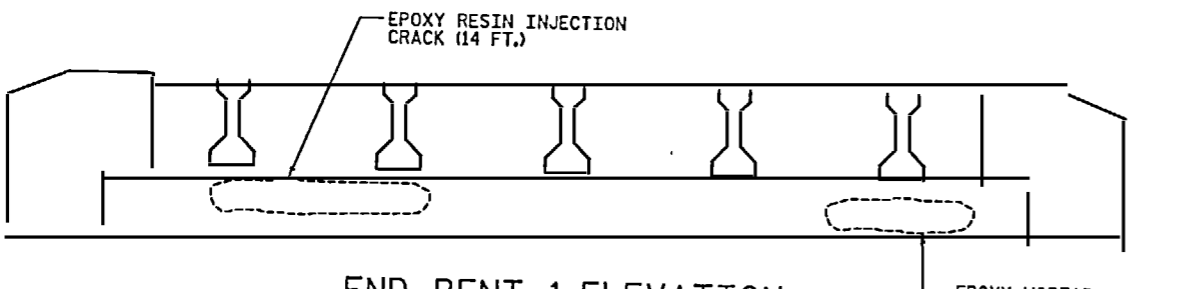
BENT 3 ELEVATION
(LOOKING WEST)



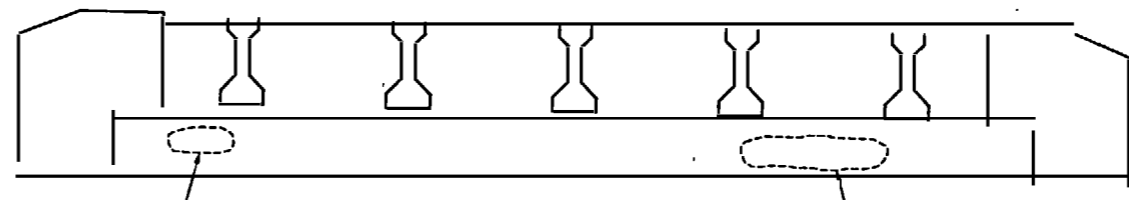
BENT 1 ELEVATION
(LOOKING EAST)



BENT 2 ELEVATION
(LOOKING EAST)



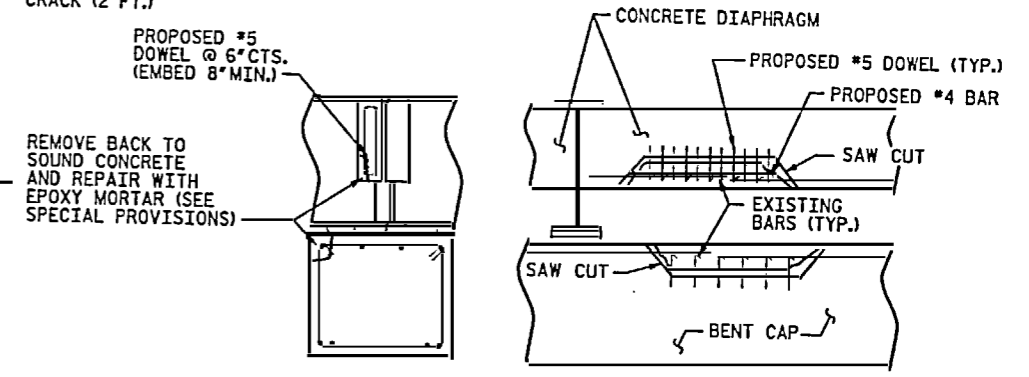
END BENT 1 ELEVATION
(FACING END BENT)



END BENT 2 ELEVATION
(FACING END BENT)

NOTES:

1. REPAIRS SHALL BE IMPLEMENTED WHEN BRIDGE IS RAISED ABOVE REPAIR.
2. BLOCKING SHALL NOT BE POSITIONED OVER REPAIR UNTIL REPAIR HAS CURED.
3. SAWCUT 1/4" - 1/2" DEEP AROUND ALL SPALLS.
4. FOR EPOXY RESIN INJECTION CRACKS, SEE SPECIAL PROVISIONS.
5. FOR EPOXY MORTAR REPAIR, SEE SPECIAL PROVISIONS.



TYPICAL BENT AND DIAPHRAGM REPAIR DETAIL

PROJECT NO. B-5022
 HARNETT COUNTY
 BRIDGE: 81

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUBSTRUCTURE
REPAIRS**



D-1810.39

STV/Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28206

REVISIONS					SHEET NO. S-39
NO.	BY	DATE	NO.	DATE	
1			3		TOTAL SHEETS 44
2			4		

DRAWN BY: KGB DATE: 3-08
 CHECKED BY: PEK DATE: 3-08

NOTES

DIMENSIONS ARE BASED ON BEST AVAILABLE INFORMATION. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS PRIOR TO CONSTRUCTION.

PORTIONS OF EXISTING END BENT SHOWN IN CROSS-HATCHED AREAS SHALL BE REMOVED.

VERTICAL AND HORIZONTAL REINFORCING STEEL EXTENDING FROM THE END BENT CAP INTO THE EXISTING EARWALLS SHALL BE CLEANED AND STRAIGHTENED. CUT EXISTING REINFORCING STEEL TO MAINTAIN REQUIRED CONCRETE COVER. MINIMUM 14" EXTENSION INTO THE PROPOSED WINGWALL.

BARs DAMAGED DURING THE CONCRETE REMOVAL SHALL BE REPLACED BY #6 DOWELS SECURED IN THE EXISTING END BENT CAP WITH EPOXY ADHESIVE AT NO ADDITIONAL PAYMENT.

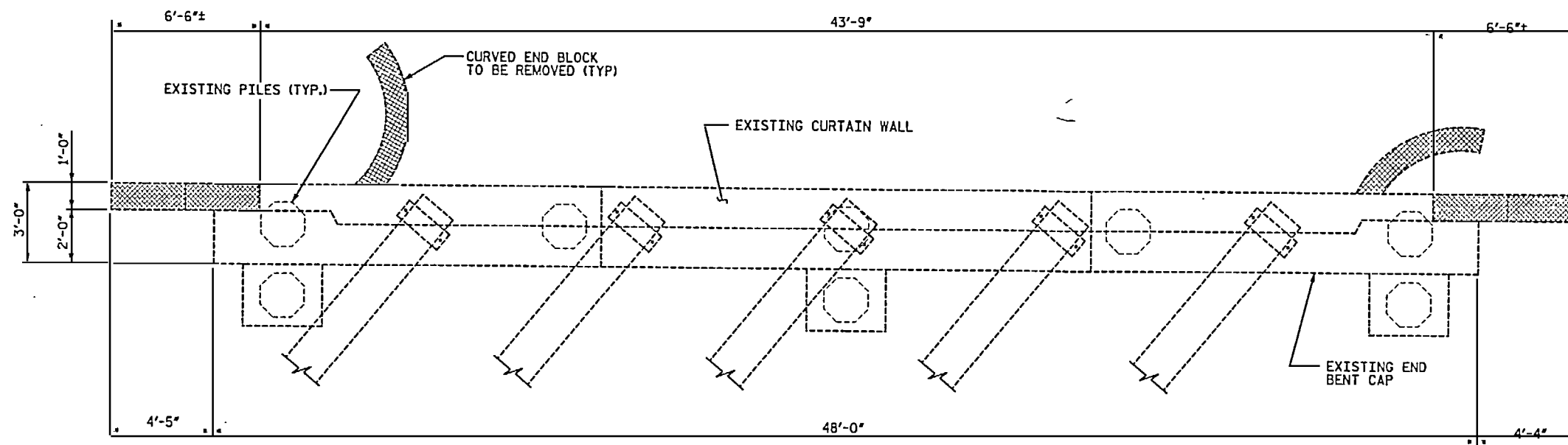
THE #6 DOWEL LENGTH SHALL BE BASED ON A 9" EMBEDMENT INTO EXISTING CONCRETE AND MAY BE ADJUSTED BASED ON THE MINIMUM EMBEDMENT SPECIFIED BY THE MANUFACTURER OF THE EPOXY ADHESIVE BONDING SYSTEM. SEE SPECIAL PROVISION FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS.

EXISTING ANCHOR BOLTS ARE TO BE CUT FLUSH WITH THE EXISTING TOP OF CAP.

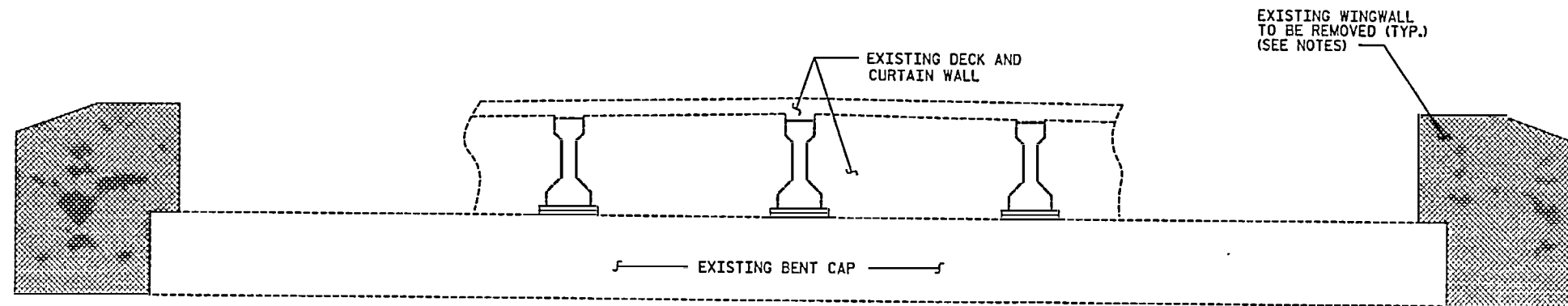
THE EXISTING CURTAIN WALL CONCRETE AROUND ANCHOR BOLTS AND BEARING ASSEMBLIES SHALL BE REMOVED, USING HAND TOOLS, AS NECESSARY TO FREE ANCHOR BOLTS AND BEARING ASSEMBLIES. THE CONTRACTOR SHALL EXERCISE CARE DURING THE REMOVAL OF EXISTING CONCRETE TO INSURE THAT EXISTING GIRDERS, BEARING ASSEMBLIES AND CURTAIN WALL STEEL REMAIN UNDAMAGED.

CONTRACTOR SHALL REMOVE EXISTING APPROACH SLAB BRACKET AS NECESSARY TO ACCOMMODATE PROPOSED APPROACH SLAB BRACKET. EXISTING APPROACH SLAB BRACKET NOT SHOWN FOR CLARITY.

ALL WORK ON THIS SHEET WILL BE PAID FOR UNDER THE LUMP SUM BID PRICE FOR PARTIAL REMOVAL OF EXISTING STRUCTURE.



PLAN OF EXISTING CAP
END BENT 2 SHOWN, END BENT 1 SIMILAR



ELEVATION OF EXISTING CAP
END BENT 2 SHOWN, END BENT 1 SIMILAR
CURVED END BLOCK NOT SHOWN

PROJECT NO. B-5022
HARNETT COUNTY

BRIDGE: 81

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
BUREAU

SUBSTRUCTURE
END BENT
CONCRETE REMOVAL



REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	5-40
1			3			TOTAL SHEETS
2			4			44

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Charlotte, NC 28208

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DRAWN BY : TRL DATE : 3-08
CHECKED BY : PEK DATE : 3-08

NOTES

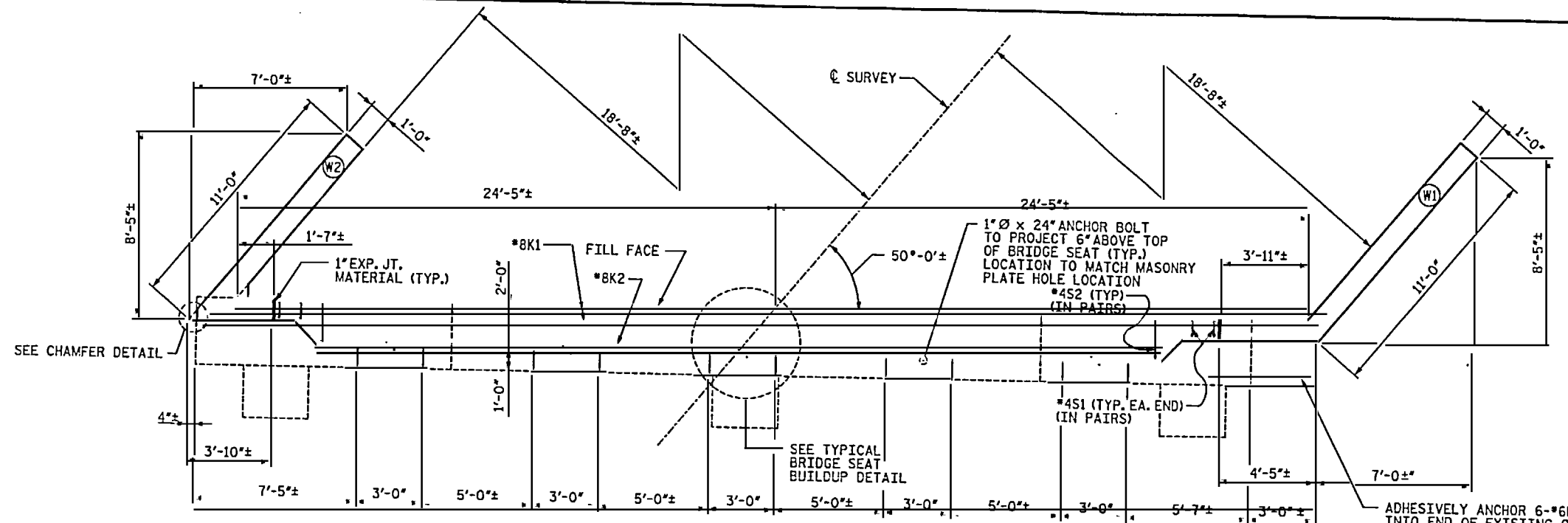
THE #6D1 & #4K2 BARS SHALL BE SECURED IN EXISTING CONCRETE WITH EPOXY ADHESIVE. FOR ADHESIVELY ANCHORED BOLTS AND DOWELS, SEE SPECIAL PROVISIONS.

THE VERTICAL LEG LENGTH OF THE #6D1, #4K3, & #4V2 BARS IS BASED ON A 9" EMBEDMENT INTO EXISTING CONCRETE AND MAY BE ADJUSTED BASED ON THE MINIMUM EMBEDMENT SPECIFIED BY THE MANUFACTURER OF THE EPOXY ADHESIVE BONDING SYSTEM.

THE AREAS OF THE CURTAIN WALL AROUND ANCHOR BOLTS AND BEARING ASSEMBLIES PREVIOUSLY REMOVED SHALL BE RECAST TO PRODUCE SMOOTH, STRAIGHT FINISHED SURFACES USING CLASS AA CONCRETE.

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

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

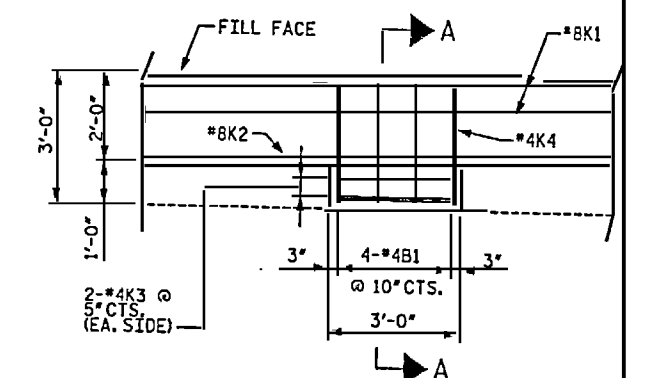


PLAN OF CAP MODIFICATION
(END BENT 2 SHOWN, END BENT 1 SIMILAR)

NOTE: DIMENSIONS ARE BASED ON BEST AVAILABLE INFORMATION. VERIFY DIMENSIONS IN FIELD AND ADJUST AS NECESSARY SUCH THAT THE 3'-0" BRIDGE SEAT BUILDUP IS CENTERED ABOUT ANCHOR BOLTS.

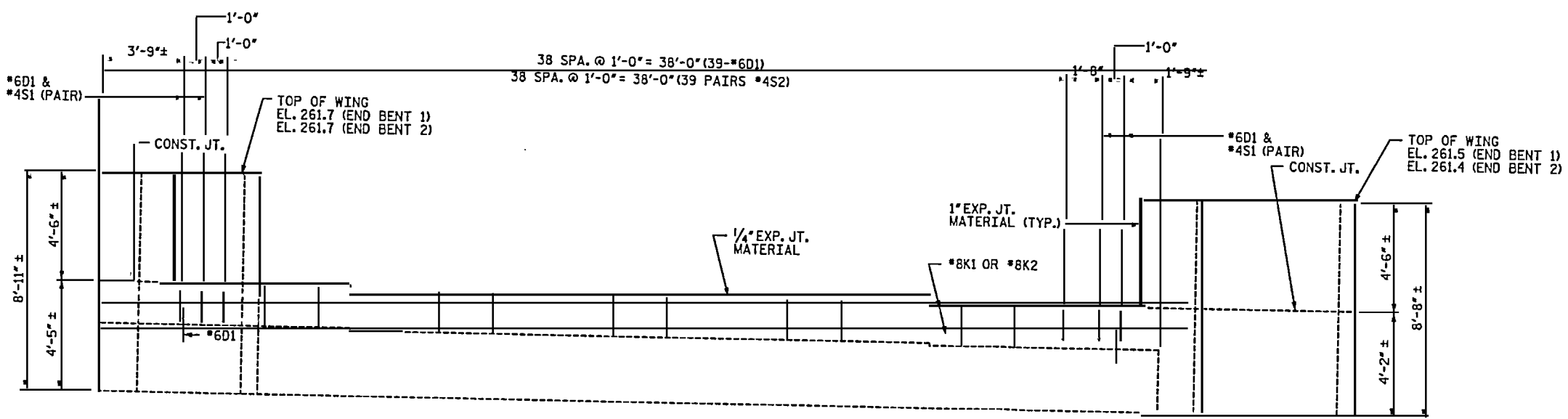
CONTRACTOR SHALL VERIFY ANCHOR BOLT DIAMETER AND ADJUST AS NECESSARY TO MATCH EXISTING ANCHOR BOLT DIAMETER.

ADHESIVELY ANCHOR 6-#6D2 INTO END OF EXISTING CAP FOR CAP EXTENSION. D2 BARS ARE TO BE EQUALLY SPACED AT END OF EXISTING CAP WITH 6" CLEAR FROM EDGES OF CAP. EMBEDMENT PER MANUFACTURER'S RECOMMENDATIONS.

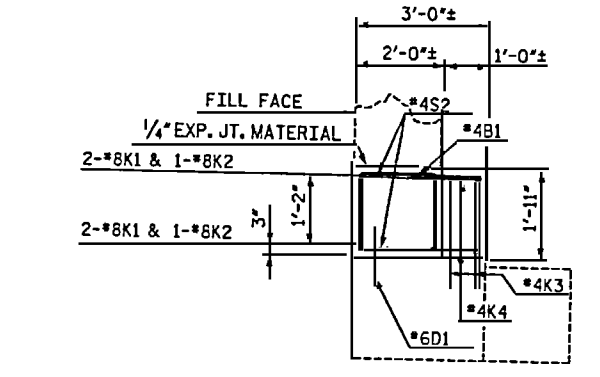


TYPICAL BRIDGE SEAT BUILDUP

*4S1 STIRRUPS & #6D1 DOWELS NOT SHOWN FOR CLARITY

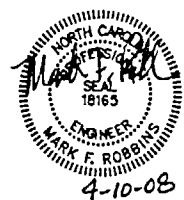


ELEVATION OF CAP MODIFICATION
(END BENT 2 SHOWN, END BENT 1 SIMILAR)

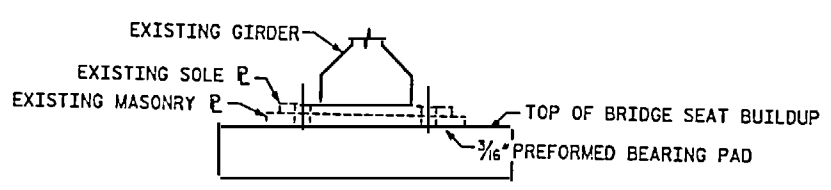


SECTION A-A

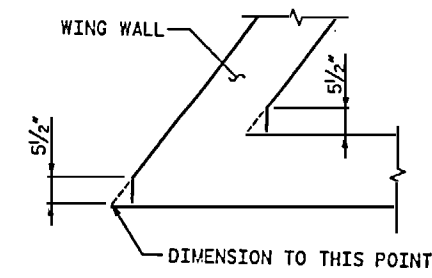
PROJECT NO. B-5022
HARNETT COUNTY
BRIDGE: 81
SHEET 2 OF 4



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH		SUBSTRUCTURE END BENT CAP MODIFICATIONS	
REVISIONS			
NO.	BY	DATE	NO.
1		3	
2		4	
SHEET NO. 5-41			TOTAL 44



TYPICAL BEARING ASSEMBLY
END BENTS 1 & 2



CHAMFER DETAIL

DRAWN BY: TJT DATE: 3-08
CHECKED BY: KGB DATE: 3-08

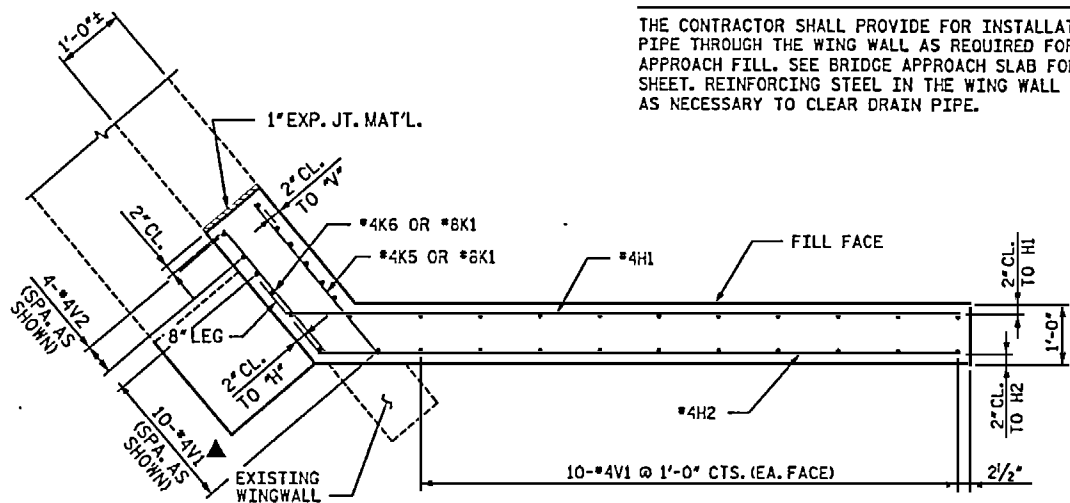
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Charlotte, NC 28208

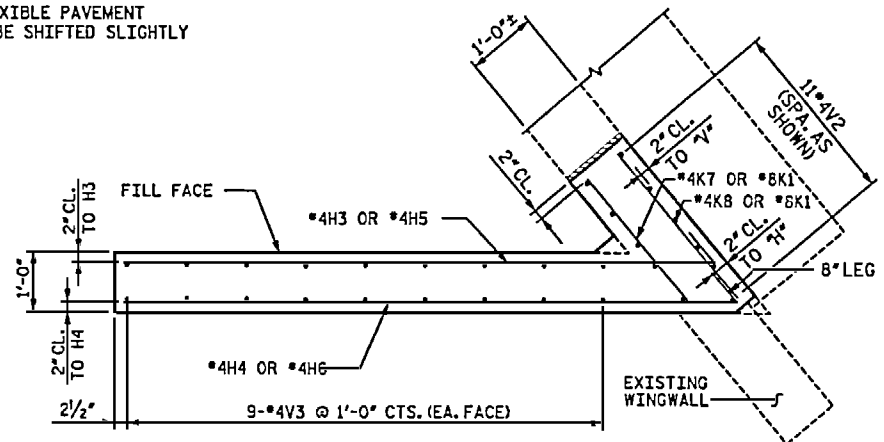
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NOTES

THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILL. SEE BRIDGE APPROACH SLAB FOR FLEXIBLE PAVEMENT SHEET. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR DRAIN PIPE.



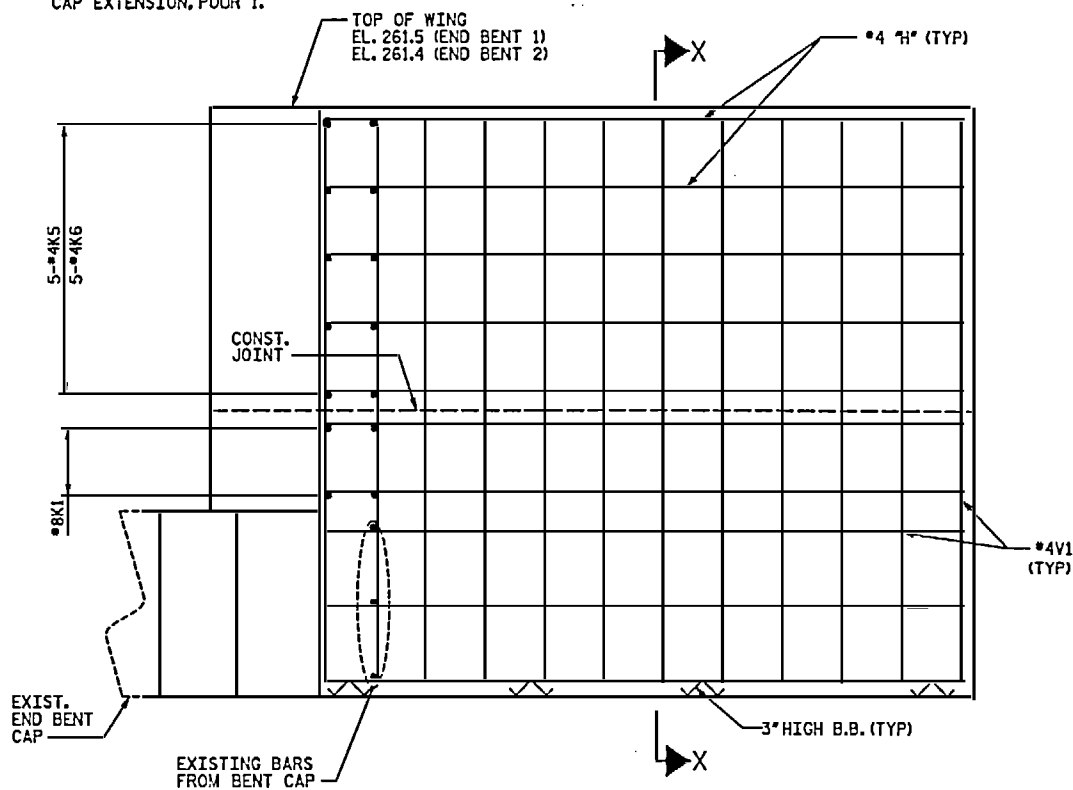
PLAN OF RIGHT WING - W1



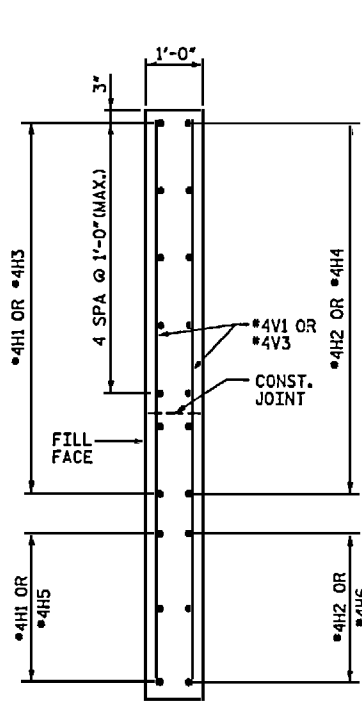
PLAN OF LEFT WING - W2

NOTE: #4V2 BARS SHALL BE EPOXIED INTO EXISTING BENT CAP.

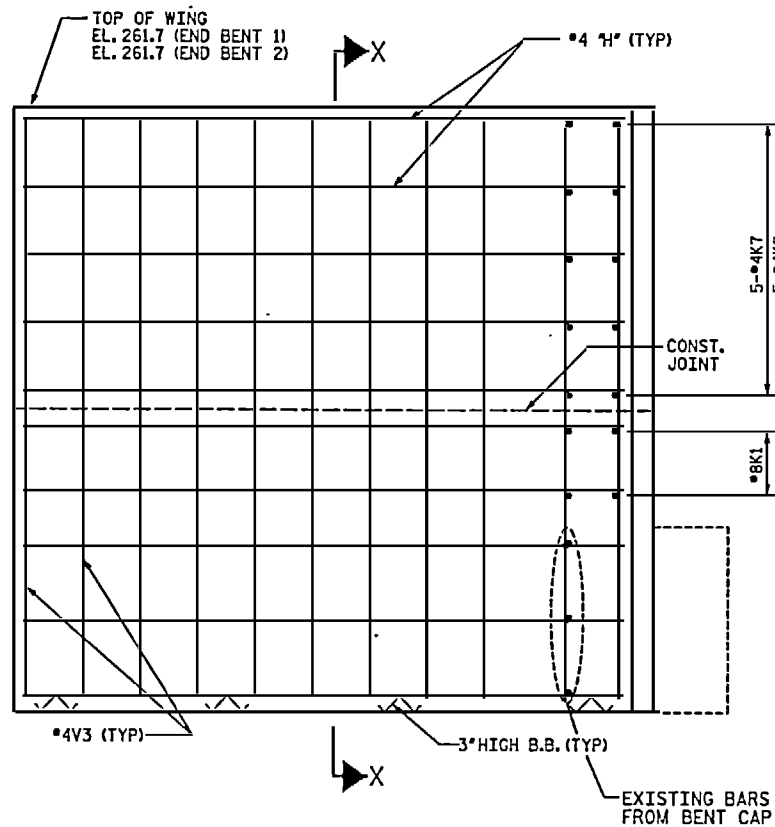
#4V1 BARS SHALL BE CAST WITH PROPOSED END BENT CAP EXTENSION, POUR 1.



ELEVATION OF RIGHT WING



SECTION X-X

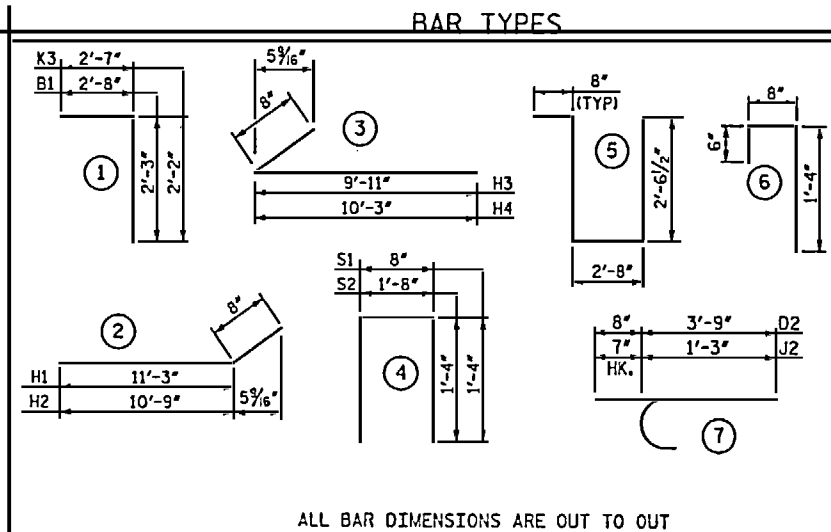


ELEVATION OF LEFT WING

REINFORCING FOR TURNED BACK WINGS
(END BENT 2 SHOWN, END BENT 1 SIMILAR)

NOTE: CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT #4 BARS IN THE CAP AND WINGS ARE DETAILED WITH 3'-0" ADDITIONAL LENGTH. CONTRACTOR SHALL CUT BARS AS NECESSARY IN FIELD.

H5 AND H6 BARS SHALL BE EPOXIED INTO EXISTING BENT CAP, FIELD BEND AS NECESSARY.



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL
FOR ONE END BENT
(2 REQ'D)

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	20	#4	1	4'-11"	66
D1	43	#6	STR	1'-6"	97
D2	12	#6	7	4'-5"	80
H1	10	#4	2	11'-11"	80
H2	10	#4	2	11'-5"	76
H3	7	#4	3	10'-7"	50
H4	7	#4	3	10'-11"	51
H5	3	#4	STR	9'-10"	20
H6	3	#4	STR	10'-4"	21
J1	39	#5	6	2'-6"	102
J2	39	#5	7	1'-10"	75
K1	4	#8	STR	53'-10"	575
K2	2	#8	STR	41'-7"	222
K3	20	#4	1	4'-9"	64
K4	10	#4	5	9'-1"	61
K5	5	#4	STR	7'-8"	26
K6	5	#4	STR	7'-2"	24
K7	5	#4	STR	5'-8"	19
K8	5	#4	STR	6'-0"	20
K9	2	#5	STR	38'-8"	81
S1	8	#4	4	3'-4"	18
S2	78	#4	4	4'-4"	226
V1	30	#4	STR	8'-6"	170
V2	15	#4	STR	6'-8"	67
V3	18	#4	STR	8'-3"	99
REINFORCING STEEL				LBS.	2390

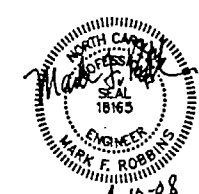
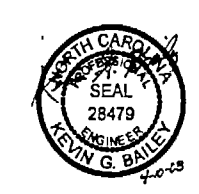
PROJECT NO. B-5022
HARNETT COUNTY

BRIDGE: 81

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

SUBSTRUCTURE
END BENT
WINGWALL MODIFICATIONS



CLASS AA CONCRETE BREAKDOWN FOR ONE END BENT (2 REQ'D)

POUR	DESCRIPTION	C. Y.	WT.
POUR 1	CAP AND LOWER WINGWALLS	11.5	
POUR 2	BRIDGE SEATS AND UPPER WINGWALLS	5.5	
POUR 3	APPROACH SLAB BRACKETS	1.1	
CLASS AA CONCRETE		18.1	

DRAWN BY: TJT DATE: 3-08
CHECKED BY: KGB DATE: 3-08

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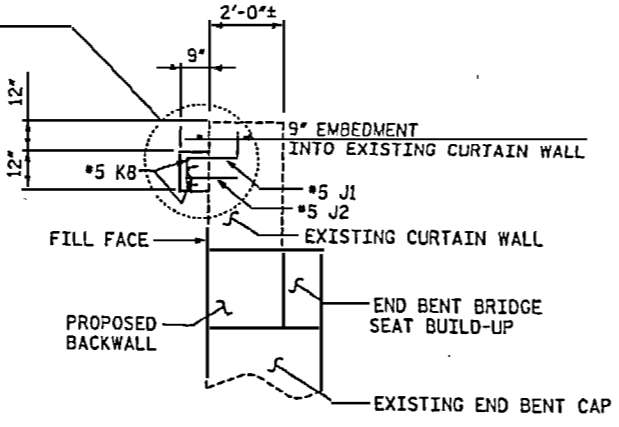
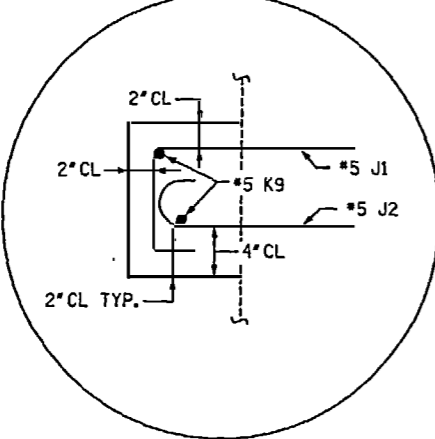
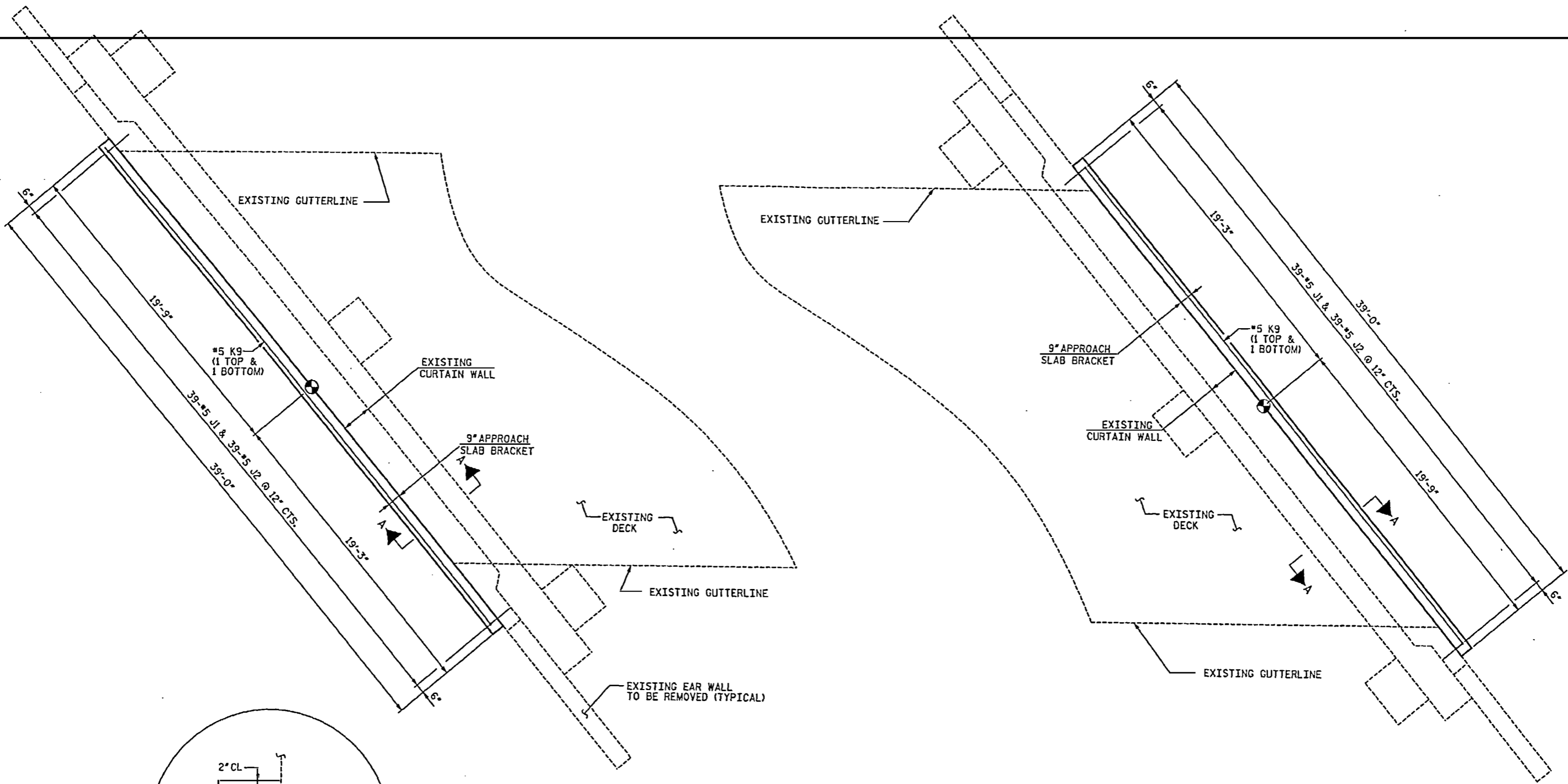
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REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	5-42
1			3			TOTAL SHEETS
2			4			44

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PLACEMENT OF APPROACH SLAB BRACKETS

(PROPOSED WING WALLS OMITTED FOR CLARITY)

NOTES

- THE #5J1 AND #5J2 BARS SHALL BE SECURED INTO THE EXISTING CONCRETE WITH EPOXY ADHESIVE.
- THE LEG LENGTH OF THE #5J1 AND #5J2 BAR IS BASED ON A 9" EMBEDMENT INTO THE EXISTING CONCRETE AND MAY BE ADJUSTED BASED ON THE MINIMUM EMBEDMENT SPECIFIED BY THE MANUFACTURER OF THE EPOXY ADHESIVE BONDING SYSTEM.
- INSTALL #5J2 BARS AND THEN INSTALL #5J1 BARS TO ALLOW FOR BAR ROTATION DURING INSTALLATION.
- #5J1 AND #5J2 BARS SHALL BE EPOXIED INTO EXISTING CURTAIN WALL AS DETAILED. THE COST OF DRILLING IN AND EPOXYING THE #5J1 AND #5J2 BARS SHALL BE CONSIDERED INCIDENTAL AND INCLUDED IN THE COST OF THE REINFORCING STEEL.
- FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE D-1810.43 SPECIAL PROVISIONS.



PROJECT NO. B-5022
 HARNETT COUNTY
 BRIDGE: 81
 SHEET 4 OF 4

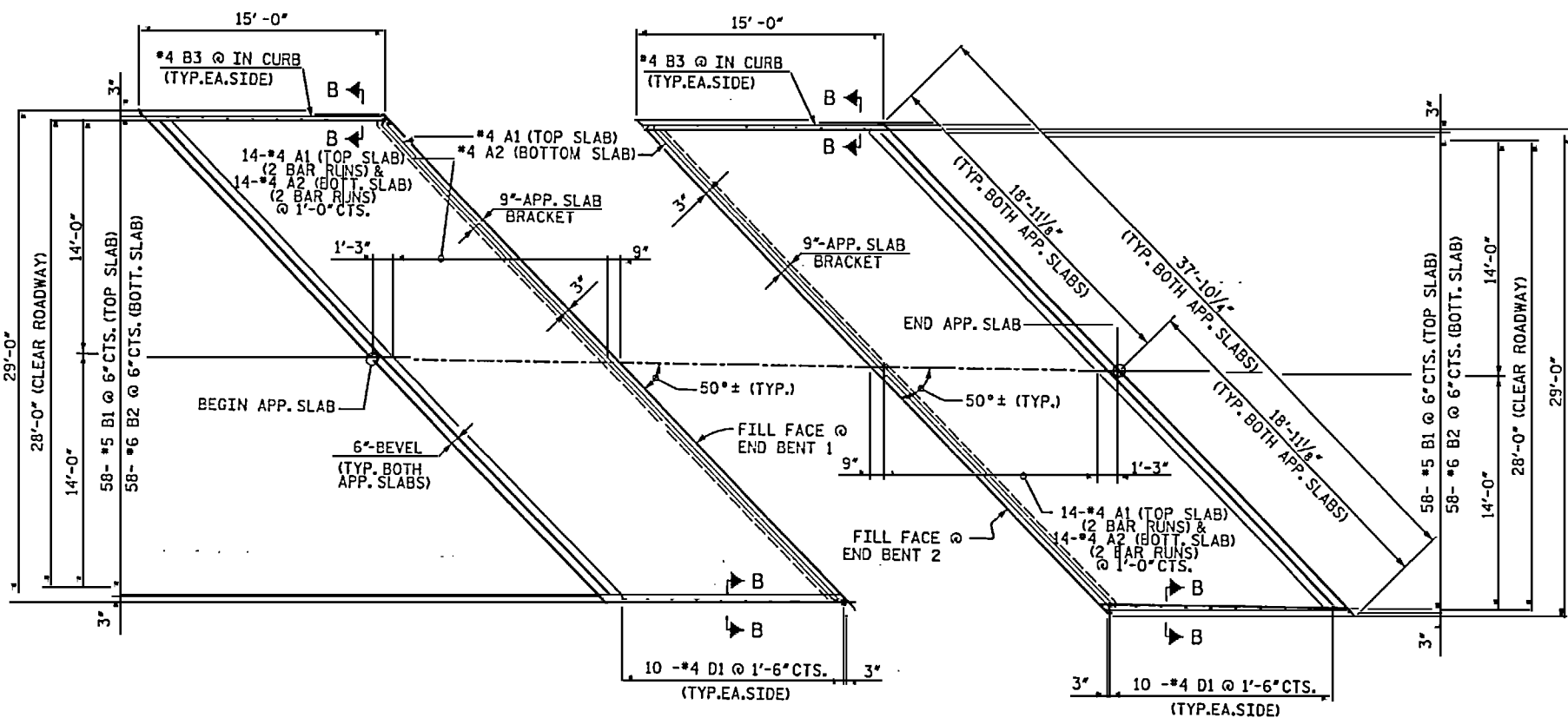
REVISIONS		SHEET NO.	
NO.	DATE	NO.	DATE
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		TOTAL SHEETS	
		44	

DRAWN BY: TJT DATE: 3-08
 CHECKED BY: PEK DATE: 3-08

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PLAN @ END BENT 1 PLAN @ END BENT 2

NOTES

FOR REINFORCED BRIDGE APPROACH FILL INCLUDING FABRIC, IMPERMEABLE GEOMEMBRANE, 4" Ø DRAINAGE PIPE, #76M 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.

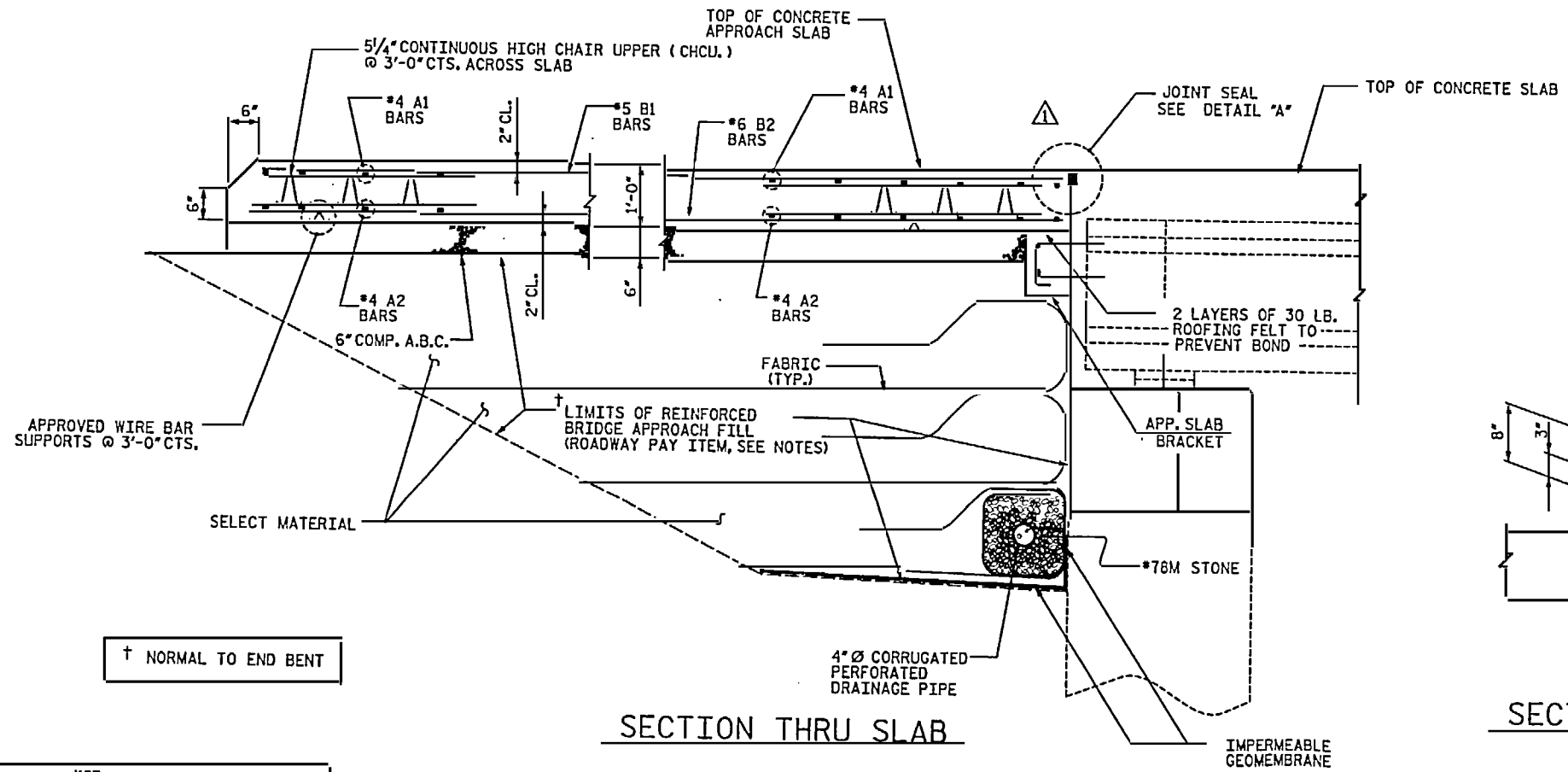
THE CONTRACTOR MAY USE 5" CLASS "A" CONCRETE BASE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE CONCRETE BASE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB. THE CONCRETE SHALL BE FINISHED TO A SMOOTH SURFACE AND A LAYER 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.

THE 6" BEVEL AT THE END OF THE APPROACH SLAB SHALL EXTEND FROM FRONT FACE OF CURB TO FRONT FACE OF CURB.

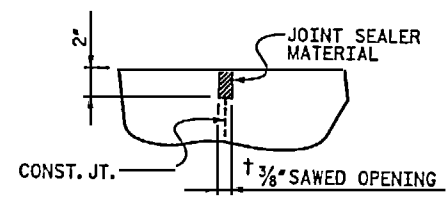
THE JOINT OPENING AT THE APPROACH SLAB/DECK INTERFACE SHALL BE FORMED. THE JOINT SHALL BE CLEANED OF ALL DEBRIS BEFORE THE SEALANT IS APPLIED. THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF TYPE SL LOW MODULUS SILICONE SEALANT.

BILL OF MATERIAL					
ONE APP. SLAB (2 REQ'D)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	30	#4	STR	19'-8"	394
A2	30	#4	STR	19'-8"	394
*B1	58	#5	STR	14'-2"	857
B2	58	#6	STR	14'-8"	1278
*B3	2	#4	STR	14'-8"	20
*D1	20	#4	STR	1'-0"	13
REINFORCING STEEL				lbs.	1672
*EPOXY COATED REINFORCING STEEL				lbs.	1284
CLASS AA CONCRETE					
POUR 1	SLAB		C. Y.	15.8	
POUR 2	CURB		C. Y.	0.4	
TOTAL CONCRETE				C. Y.	16.2
SPlice CHART					
BAR SIZE	EPOXY COATED	UNCOATED			
*4	2'-0"	1'-9"			
*5	2'-6"	2'-2"			
*6	3'-10"	2'-7"			

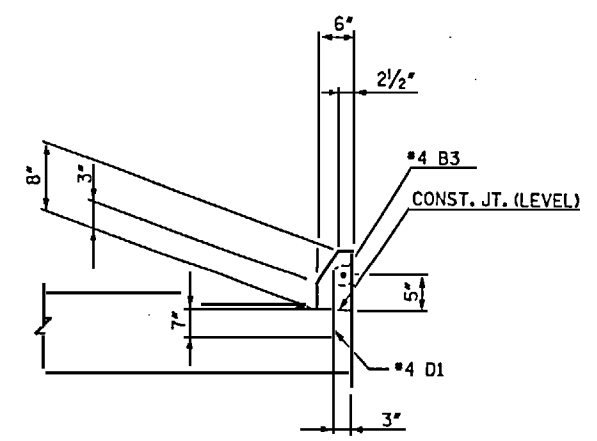
REVISION #1: REVISED PER REVIEW COMMENTS
 BY: TJT DATE: 5-08
 CH'KD BY: KGB DATE: 5-08



SECTION THRU SLAB

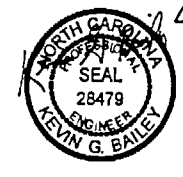


DETAIL "A"



SECTION B-B (THRU CURB)

PROJECT NO. B-5022
 HARNETT COUNTY
 BRIDGE: 81



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 BRIDGE APPROACH SLAB
 FOR FLEXIBLE PAVEMENT

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1	STV	5-08	3			5-44
2			4			38/4 44

D-1810.44

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