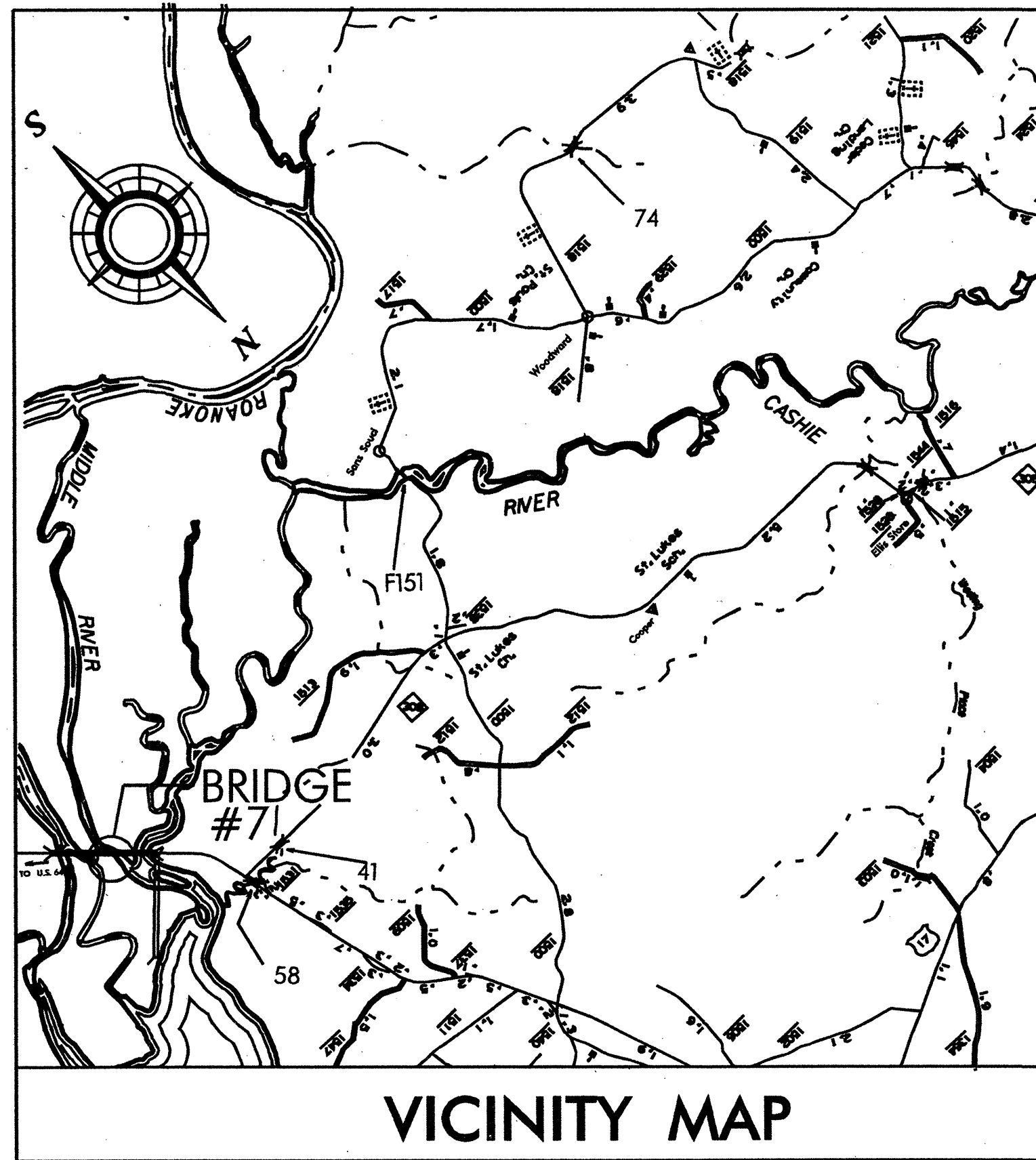


TIP PROJECT: B-5194

CONTRACT NO. 202569

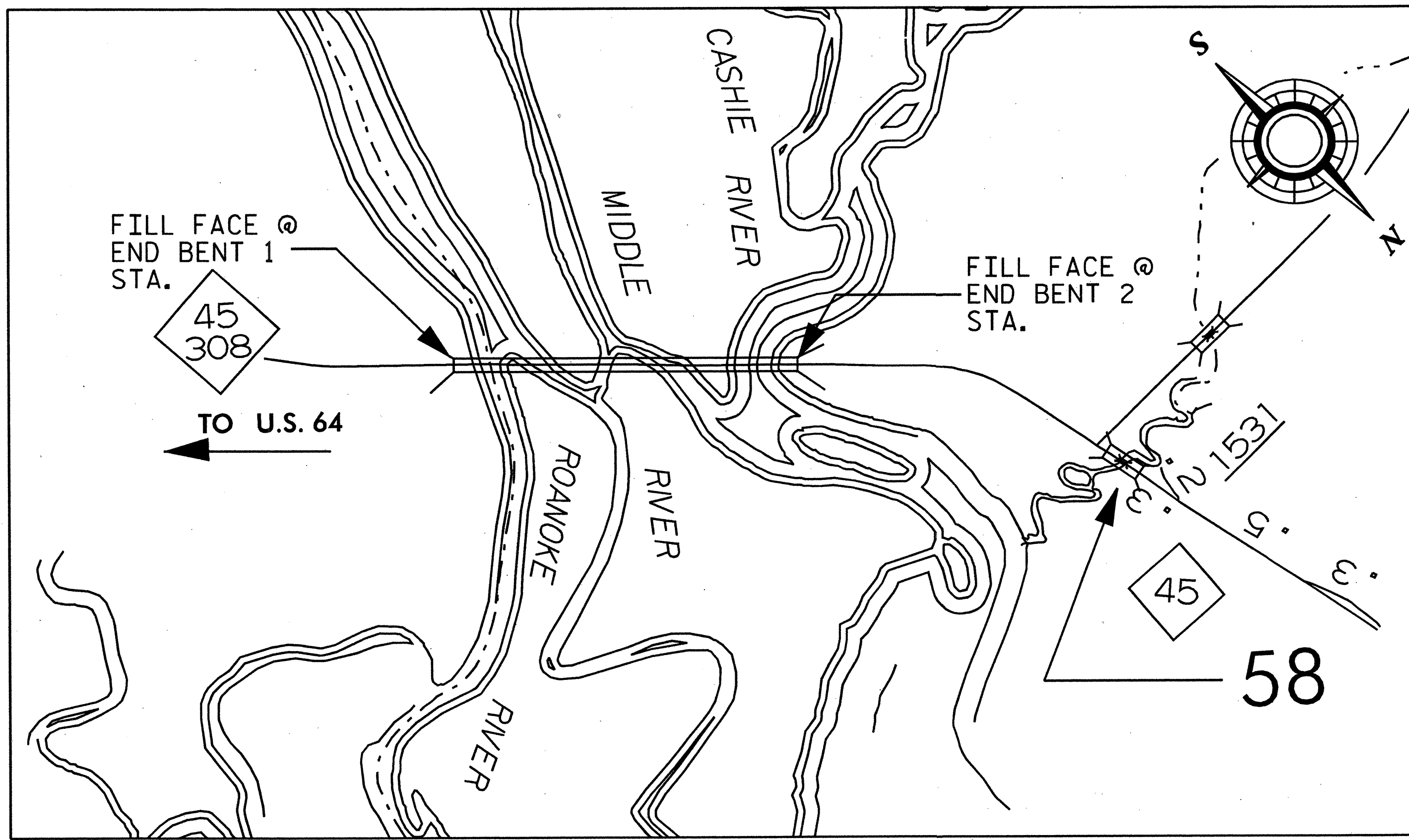


VICINITY MAP

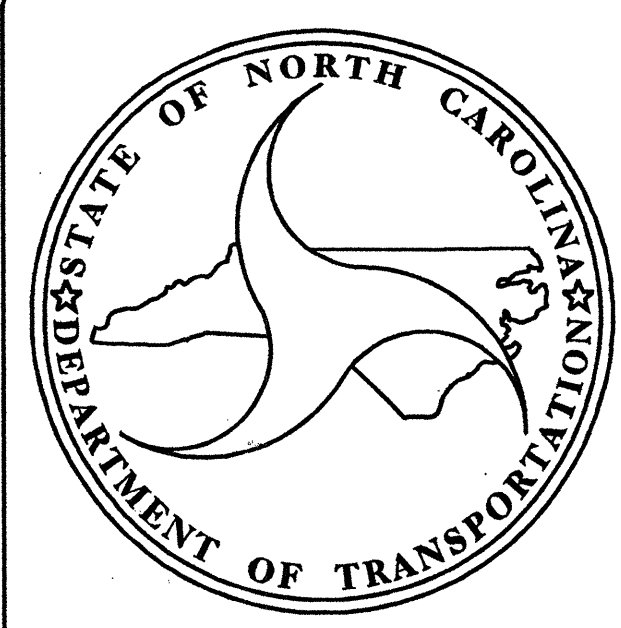
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BERTIE COUNTY

LOCATION: BRIDGE #7, ON NC 45, OVER ROANOKE, MIDDLE AND CASHIE RIVERS
TYPE OF WORK: BRIDGE PRESERVATION
(STRUCTURAL STEEL REPAIRS, REPAIRS TO PRESTRESSED GRIDERS, DIAPHRAGM CAPS, AND COLUMNS, PILE ENCAPSULATION AND CLEANING AND PAINTING OF STRUCTURE, AND TRAFFIC CONTROL.)



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5194	1	40
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
42608.1.ST1	STM - 0045(6)	P.E.	
45287.3.ST1	STM - 0045(6)	CONST	



DESIGN DATA

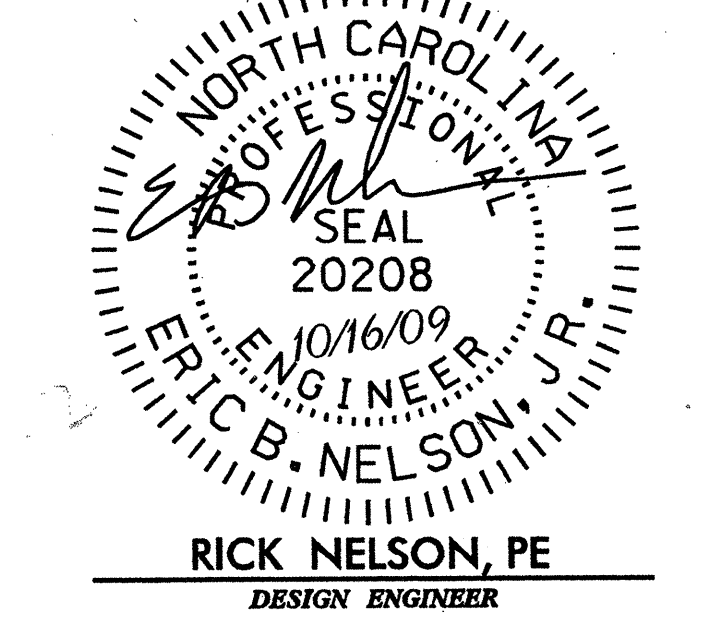
ADT 2005 =	4200
ADT 2025 =	8400

PROJECT LENGTH

LENGTH STRUCTURE PROJECT = 1.106 MILE

Prepared in the Office of:
BRIDGE MANAGEMENT UNIT
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
2006 STANDARD SPECIFICATIONS

LETTING DATE: MARCH 16, 2010	DAN HOLDERMAN, PE STATE BRIDGE MANAGEMENT ENGINEER
MIKE SUMMERS BRIDGE MANAGEMENT PROJECT MANAGER	



TIP PROJECT: B-5194

CONTRACT NO:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BERTIE COUNTY

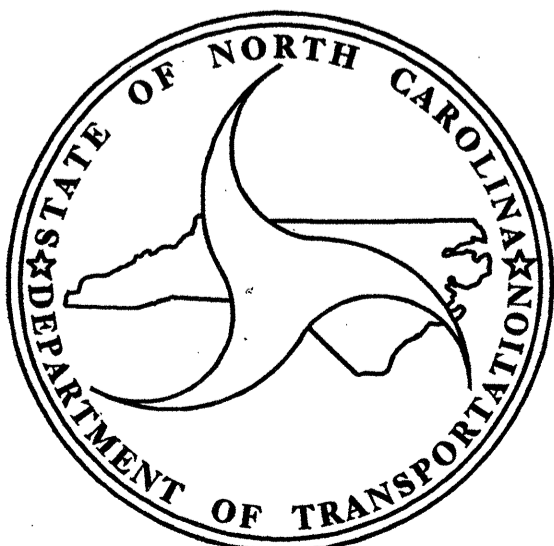
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5194	1A	23
STATE PROJECT NO.	F.A. PROJ. NO.	DESCRIPTION	
42608.LST1	STM - 0045(6)	P.E.	
45287.3ST1	STM - 0045(6)	CONSTR	

LOCATION: BRIDGE #7, ON NC 45, OVER ROANOKE,
MIDDLE AND CASHIE RIVERS
TYPE OF WORK: PILE, PRESTRESSED GIRDER, CONCRETE
DIAPHRAGM ,CAP REPAIRS,CLEANING, PAING
OF STRUCTURE AND TRAFFIC CONTROL

INDEX OF SHEETS

1	TITLE SHEET
1A	INDEX OF SHEET
2	SUMMARY OF QUANTITIES
S1 THRU S31	STRUCTURE PLANS
S32 THUR S40	EXISTING STRUCTURE PLANS
TCP-1 THRU TCP-6	TRAFFIC CONTROL PLANS

\$DATE\$ \$TIME\$ \$FILES\$



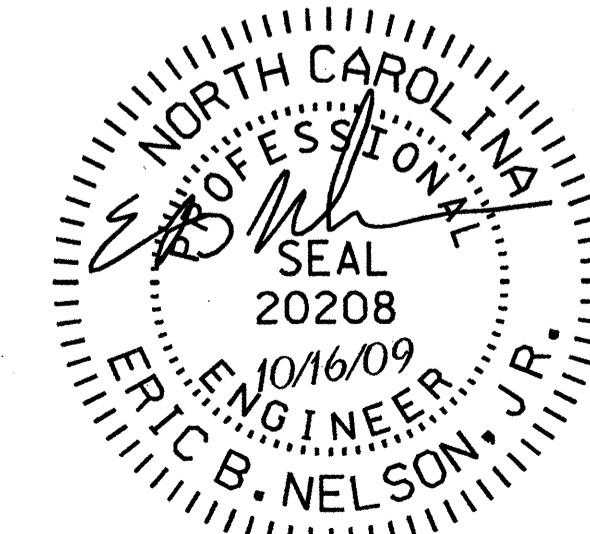
Prepared In the Office of:
BRIDGE MANAGEMENT UNIT
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2006 STANDARD SPECIFICATIONS

LETTING DATE:
MARCH 16, 2010

DAN HOLDERMAN, PE
STATE BRIDGE
MANAGEMENT ENGINEER

MIKE SUMMERS
BRIDGE MANAGEMENT
PROJECT MANAGER



RICK NELSON, PE
DESIGN ENGINEER

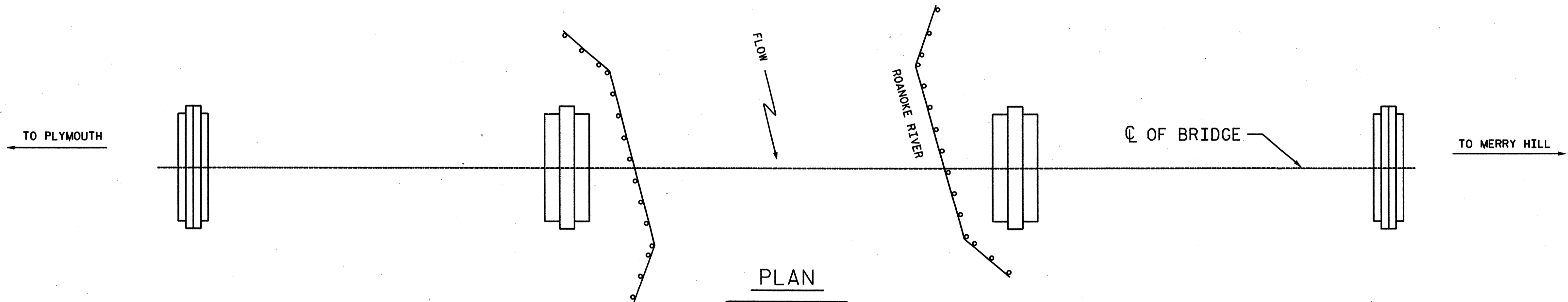
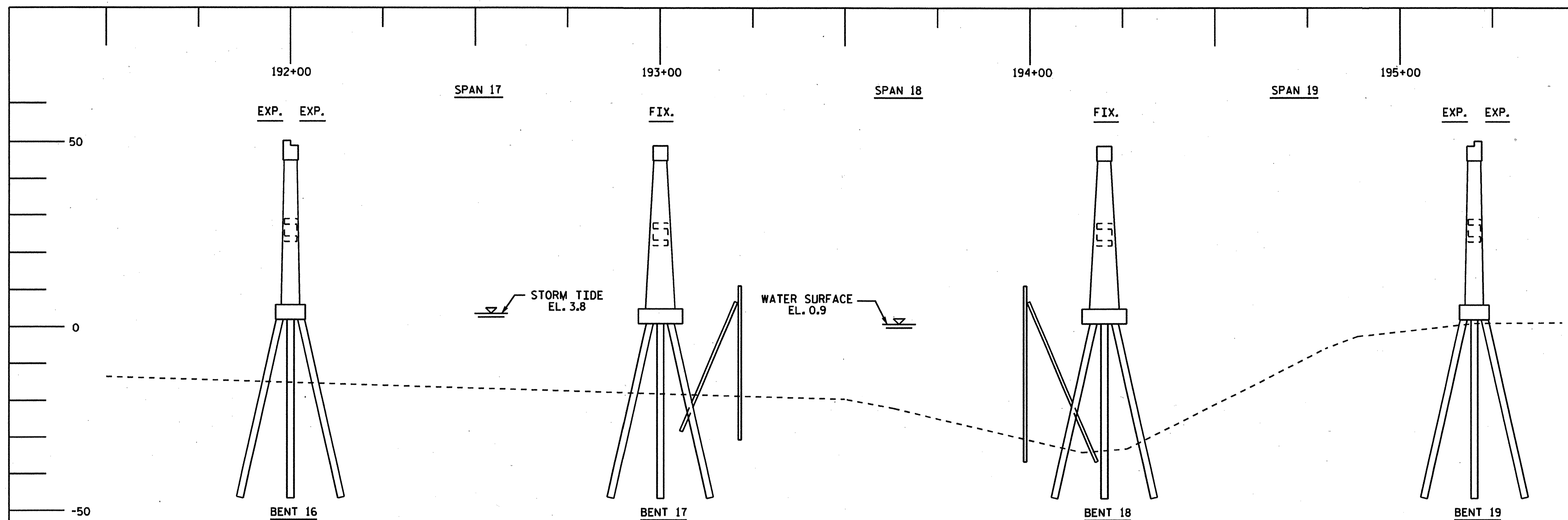
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

0001	4589000000-N	SP	GENERIC TRAFFIC CONTROL ITEM TRAFFIC CONTROL	Lump Sum	0013	8860000000-N	SP	GENERIC STRUCTURE ITEM UNDER STRUCTURE WORK PLATFORM	Lump Sum
0002	8000000000-N	800	MOBILIZATION (STRUCTURES)	Lump Sum	0014	8867000000-E	SP	GENERIC STRUCTURE ITEM PILE ENCAPSULATION	357 LF
0003	8147000000-E	420	REINFORCED CONCRETE DECK SLAB	588 SF	0015	8882000000-E	SP	GENERIC STRUCTURE ITEM CONCRETE REPAIRS TO CAPS, DIAPHRAGMS AND COLUMNS	256 CF
0004	8161000000-E	420	GROOVING BRIDGE FLOORS	510 SF	0016	8882000000-E	SP	GENERIC STRUCTURE ITEM REPAIRS TO PRESTRESSED CONCRETE GIRDERS	9 CF
0005	8182000000-E	420	CLASS A CONCRETE (BRIDGE)	2 CY	0017	8889000000-E	SP	GENERIC STRUCTURE ITEM STRUCTURAL STEEL REPAIR APPROX. LBS.	27,000 LB
0006	8217000000-E	425	REINFORCING STEEL (BRIDGE)	500 LB	0018	8897000000-N	SP	GENERIC STRUCTURE ITEM CLEAN AND PAINT EXISTING BEARINGS	744 EA
0007	8657000000-N	430	ELASTOMERIC BEARINGS	Lump Sum					
0008	8692000000-N	SP	EVAZOTE JOINT SEALS	Lump Sum					
0009	8860000000-N	SP	GENERIC STRUCTURE ITEM BRIDGE JACKING	Lump Sum					
0010	8860000000-N	SP	GENERIC STRUCTURE ITEM CLEANING AND PAINTING EXISTING STRUCTURE	Lump Sum					
0011	8860000000-N	SP	GENERIC STRUCTURE ITEM PARTIAL REMOVAL OF EXISTING STRUCTURE	Lump Sum					
0012	8860000000-N	SP	GENERIC STRUCTURE ITEM POLLUTION CONTROL	Lump Sum					

5/28/99

SYSTEMS



BILL OF MATERIAL

	MOBILIZATION	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	REINFORCING STEEL	ELASTOMERIC BEARINGS	EVAZOTE JOINT SEALS	PARTIAL REMOVAL OF EXISTING STRUCTURE	BRIDGE JACKING	CLEANING AND PAINTING EXISTING STRUCTURE
	LUMP SUM	SO. FT.	SO. FT.	CU. YDS.	LBS.	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM
TOTAL	LUMP SUM	588	510	2.0	500	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM

BILL OF MATERIAL

	POLLUTION CONTROL	CONCRETE REPAIRS TO CAPS, DIAPHRAGMS, AND COLUMNS	REPAIRS TO PRESTRESSED CONCRETE GIRDERS	UNDER STRUCTURE WORK PLATFORM	PILE ENCAPSULATION	STRUCTURAL STEEL REPAIR	CLEAN AND PAINT EXISTING BEARINGS	TRAFFIC CONTROL
	LUMP SUM	CU. FT.	CU. FT.	LUMP SUM	L.F.	APPROX. LBS.	EA.	LUMP SUM
TOTAL	LUMP SUM	256	9	LUMP SUM	357	27,000	744	LUMP SUM

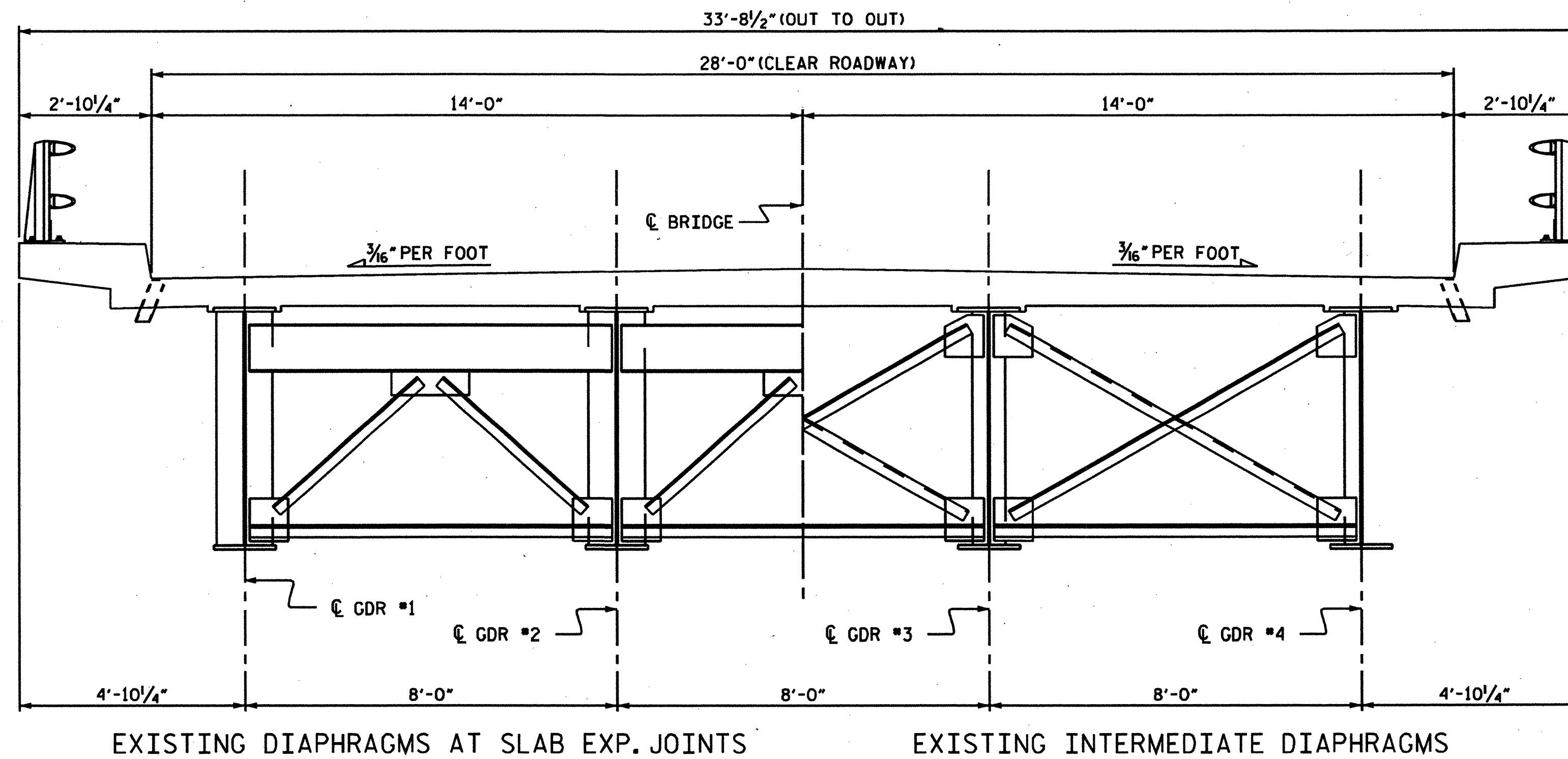
BRIDGE NO. 7
BERTIE COUNTY
 STATION: 193+60

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 BRIDGE ON NC 45 OVER THE
 ROANOKE RIVER BETWEEN
 PLYMOUTH AND MERRY HILL

DRAWN BY : W.M. CLARKE DATE : 9-09
 CHECKED BY : B.C. HANKS DATE : 9-09

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

*****SYSTEM*****
 *****DGN*****
 *****USER*****



EXISTING TYPICAL SECTION

(LOOKING AHEAD STATION)

CONSTRUCTION SEQUENCE

1. CLOSE BRIDGE TO TRAFFIC
2. CUT AND REMOVE DECK AT JOINT LOCATIONS (7 TOTAL)
3. REMOVE EXPANSION JOINT ASSEMBLIES AT BENTS 16 AND 19
4. REMOVE EXISTING DIAPHRAGMS AT ALL JOINT LOCATIONS
5. REMOVE BEARING STIFFENER/CONNECTOR PLATES AT ALL JOINT LOCATIONS
6. REMOVE EXISTING PAINT IN AREA OF DIAPHRAGM REPLACEMENT
7. CLEAN DEBRIS FROM EXISTING WEB AND INSTALL CONNECTOR PLATES OR BEARING STIFFENERS
8. INSTALL NEW STRUCTURAL STEEL (DIAPHRAGMS D1 AND D2, WEB REPAIR PLATES, AND BOTTOM FLANGE REPAIR ANGLES)
9. INSTALL DECK REINFORCING STEEL
10. INSTALL ARMORED EVAZOTE JOINT COMPONENTS AT BENTS 16 AND 19
11. RECAST PORTIONS OF DECK THAT WERE REMOVED TO PROPER GRADE AND GROOVE
12. CAST ELASTOMERIC CONCRETE AT BENTS 16 AND 19
13. JACK BRIDGE NO MORE THAN 1" AND REMOVE BEARINGS AT BENTS 16 AND 19
14. PROVIDE BLOCKING TO ASSIST IN SUPPORTING BRIDGE
15. OPEN BRIDGE TO TRAFFIC
16. CONSTRUCT CONCRETE PEDESTALS AT BENTS 16 AND 19
17. INSTALL SOLE PLATES AND BEARING PADS AT BENTS 16 AND 19
18. TEMPORARILY CLOSE BRIDGE TO TRAFFIC AND LOWER BRIDGE
19. INSTALL EVAZOTE JOINTS WHILE STAGING TRAFFIC
20. OPEN BRIDGE TO TRAFFIC
21. CLEAN AND PAINT ALL STRUCTURAL STEEL

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

NOTES

EXISTING BRIDGE AND REPAIR DETAILS INDICATED ON THE PLANS ARE FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE AND REPAIR DETAILS SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

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

FOR POLLUTION CONTROL, SEE CLEANING AND PAINTING EXISTING STRUCTURE SPECIAL PROVISION.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "CLEANING AND PAINTING EXISTING STRUCTURE"

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

THE COST ASSOCIATED WITH WELDING THE STRUCTURAL STEEL REPAIR PLATES TO THE EXISTING GIRDERS SHALL BE INCLUDED IN THE BID PRICE FOR "STRUCTURAL STEEL REPAIR".

BLOCKING SHALL BE PROVIDED TO INSURE THE SAFETY OF THE STRUCTURE AND ITS OCCUPANTS DURING THE JACKING PROCESS. AT NO TIME SHALL JACKS BE IN OPERATION IN THE ABSENCE OF BLOCKING. FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

FOR DIRECT TENSION INDICATORS, SEE SPECIAL PROVISIONS.

FOR SECURING OF VESSELS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS TO CAPS, DIAPHRAGMS, AND COLUMNS, SEE SPECIAL PROVISIONS.

FOR CLEANING AND PAINTING EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

FOR COORDINATION WITH THE U.S. COAST GUARD, SEE SPECIAL PROVISIONS.

STRUCTURAL STEEL REPAIR MATERIAL SHALL BE AASHTO M270 GRADE 50 AND PAINTED IN ACCORDANCE WITH SYSTEM 1 OF ARTICLE 442-7 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.

EXISTING STRUCTURAL STEEL SHALL BE CLEANED AND PAINTED IN ACCORDANCE WITH SECTION 442 OF THE STANDARD SPECIFICATIONS.

EXISTING STRUCTURAL STEEL SHALL BE PAINTED IN ACCORDANCE WITH SYSTEM 1 OF ARTICLE 442-7 OF THE STANDARD SPECIFICATIONS.

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

ALL FIELD CONNECTIONS TO BE 3/8" Ø HIGH STRENGTH BOLTS UNLESS OTHERWISE NOTED.

WHEN REPLACING CONNECTOR PLATES FOR DIAPHRAGM CONNECTIONS, THE REPLACEMENT CONNECTOR PLATES ARE TO BE PLACED NORMAL TO THE WEB OF THE GIRDER AND SHALL BE PLUMB.

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

REPLACEMENT CONNECTOR PLATES REQUIRE COPING WHEN ANGLE SECTIONS ARE ADDED TO THE BOTTOM FLANGE. SEE DETAIL ON "SUPERSTRUCTURE REPAIR 4-D.2" SHEET.

FOR HIGH STRENGTH BOLTS, SEE SPECIAL PROVISIONS.

FOR WORK IN, OVER, OR ADJACENT TO NAVIGABLE WATERS, SEE SPECIAL PROVISIONS.

FOR TRAFFIC CONTROL, SEE SPECIAL PROVISIONS.

DECK REMOVAL SHALL BE PERFORMED BY FIRST INTRODUCING A PARTIAL DEPTH SAWCUT (1/2" MAX DEPTH) FOLLOWED BY CONCRETE REMOVAL WITH A CHIPPING HAMMER IN THE RANGE OF 35 LBS. CARE SHALL BE TAKEN SO AS TO PREVENT DAMAGE TO EXISTING DECK REINFORCING STEEL AND EXISTING GIRDERS.

FOR REPAIRS TO PRESTRESSED CONCRETE GIRDERS, SEE SPECIAL PROVISIONS.

FOR PILE ENCAPSULATION, SEE SPECIAL PROVISIONS.

FOR UNDER STRUCTURE WORK PLATFORM, SEE SPECIAL PROVISIONS.

FOR PARTIAL REMOVAL OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

FOR STRUCTURAL STEEL REPAIR, SEE SPECIAL PROVISIONS.

FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

FOR CLEAN AND PAINT EXISTING BEARINGS, SEE SPECIAL PROVISIONS.

FOR MANAGING BRIDGE WASH WATER, SEE SPECIAL PROVISIONS.

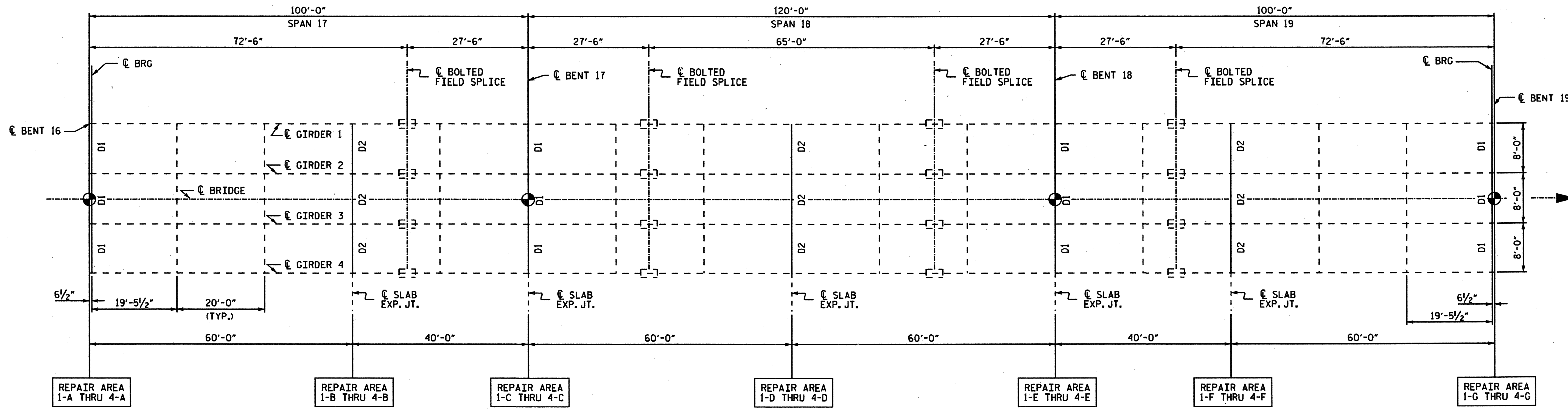
BRIDGE NO. 7
BERTIE COUNTY
 STATION: 193+60

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 TYPICAL SECTION

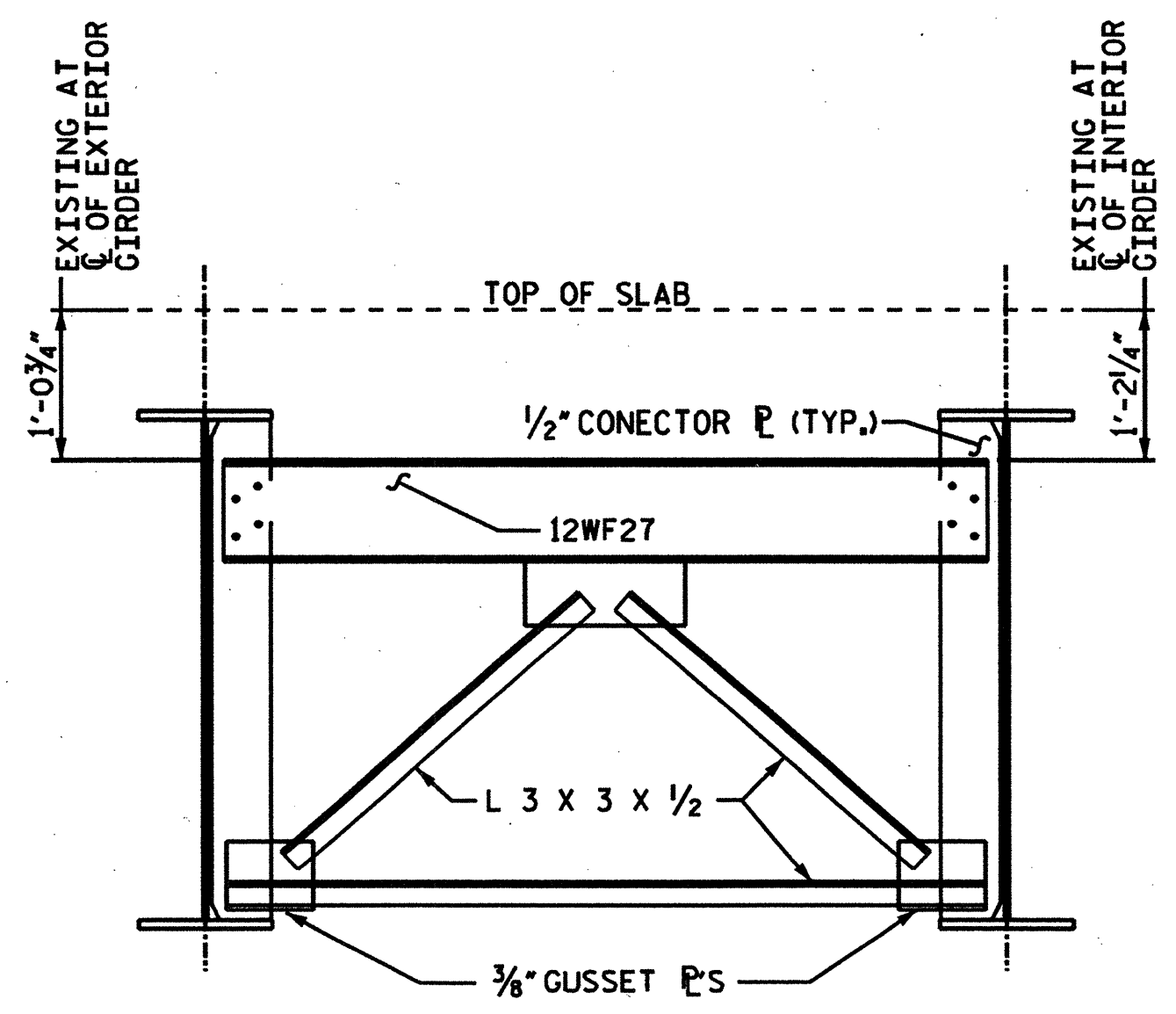
REVISIONS						SHEET NO. S-2
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS
2			4			

DRAWN BY : W.M. CLARKE DATE : 8-09
 CHECKED BY : B.C. HANKS DATE : 9-09

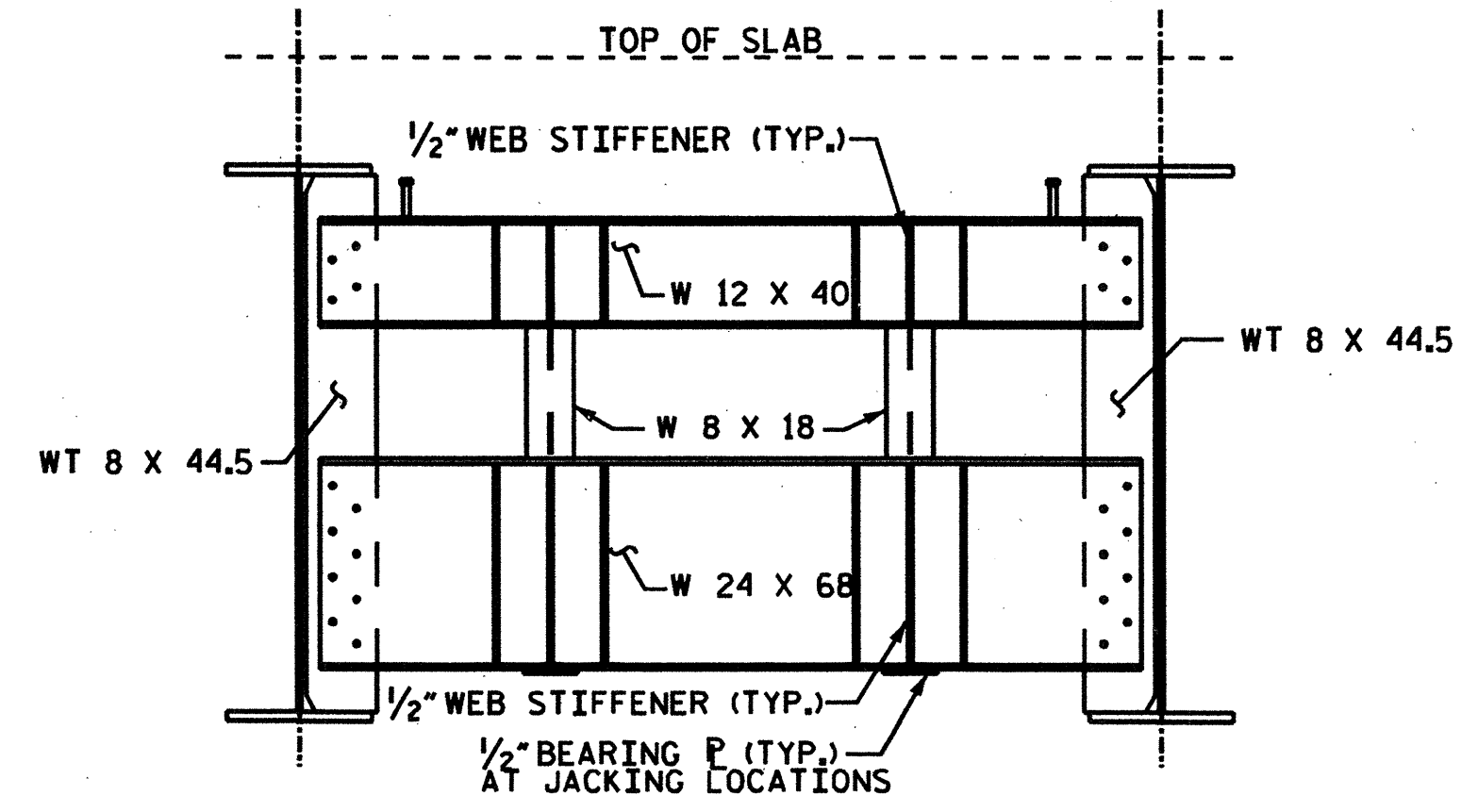
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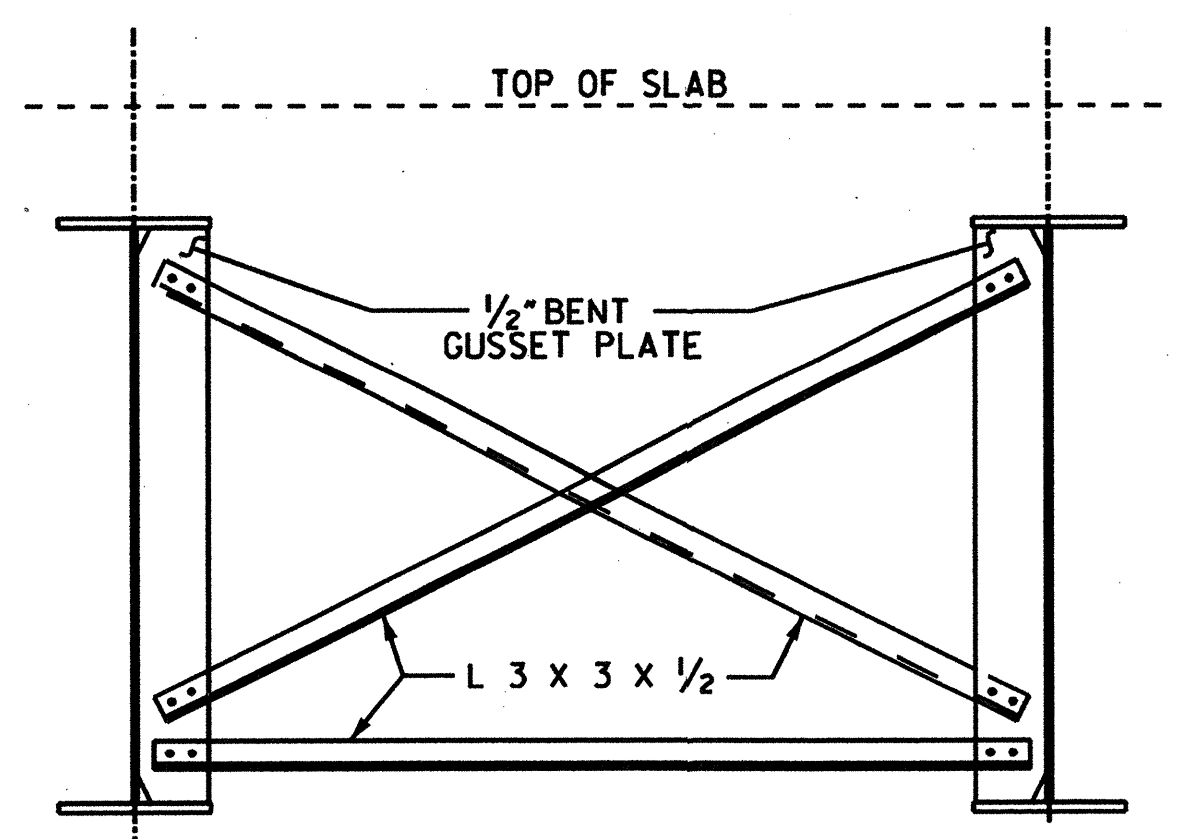
FRAMING PLAN



EXISTING DIAPHRAGM



PROPOSED REPLACEMENT DIAPHRAGM (D1)
(TO BE LOCATED AT BENTS)



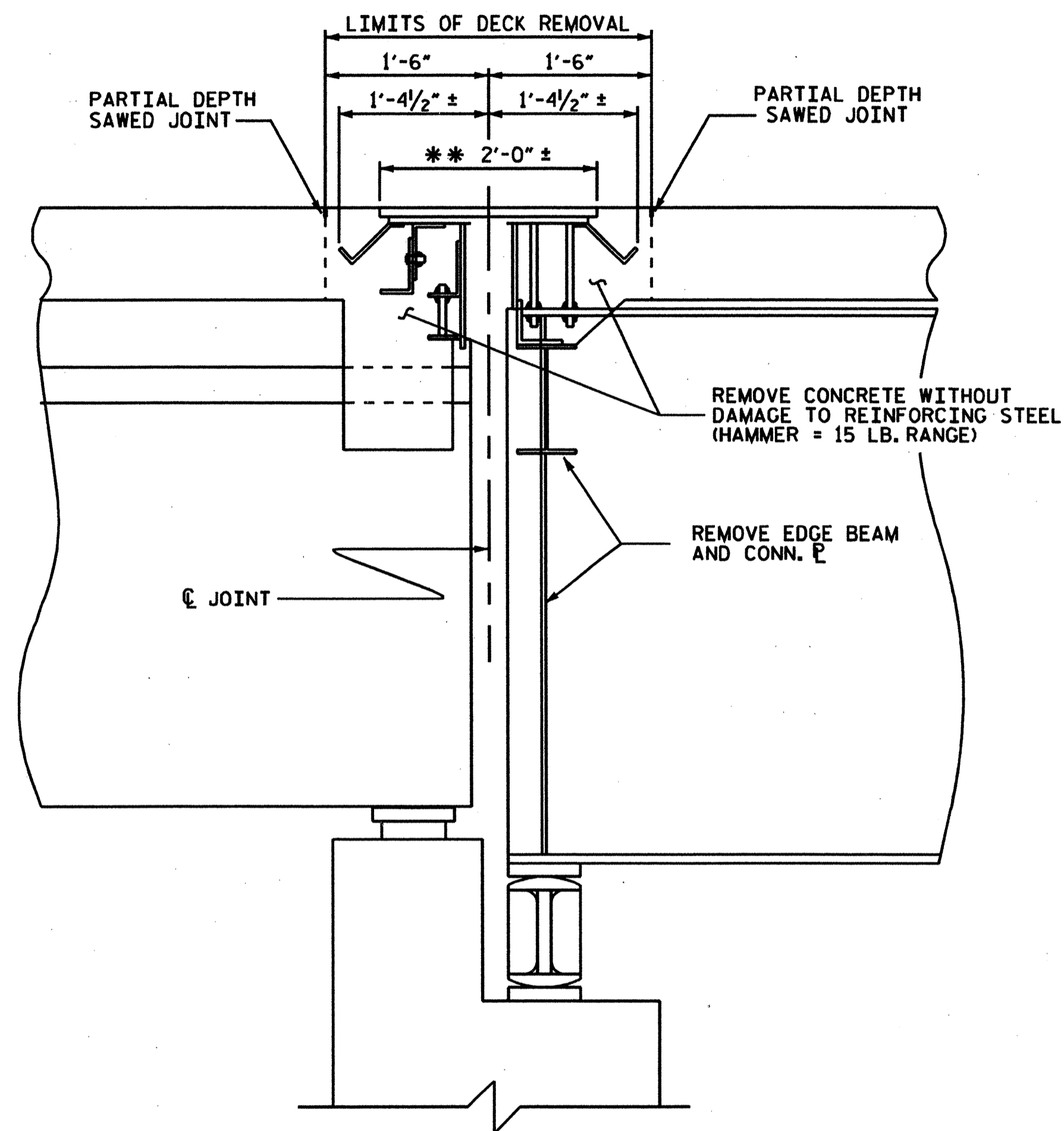
PROPOSED REPLACEMENT DIAPHRAGM (D2)
(TO BE LOCATED UNDER EXISTING EXP. JT'S. AT MIDSPAN)

BRIDGE NO. 7
BERTIE COUNTY
 STATION: 193+60

STATE OF NORTH CAROLINA						SHEET NO. S-3
DEPARTMENT OF TRANSPORTATION RALEIGH						
SUPERSTRUCTURE						
FRAMING PLAN						
REVISIONS						TOTAL SHEETS
NO.	BY	DATE	NO.	BY	DATE	
1			3			1
2			4			

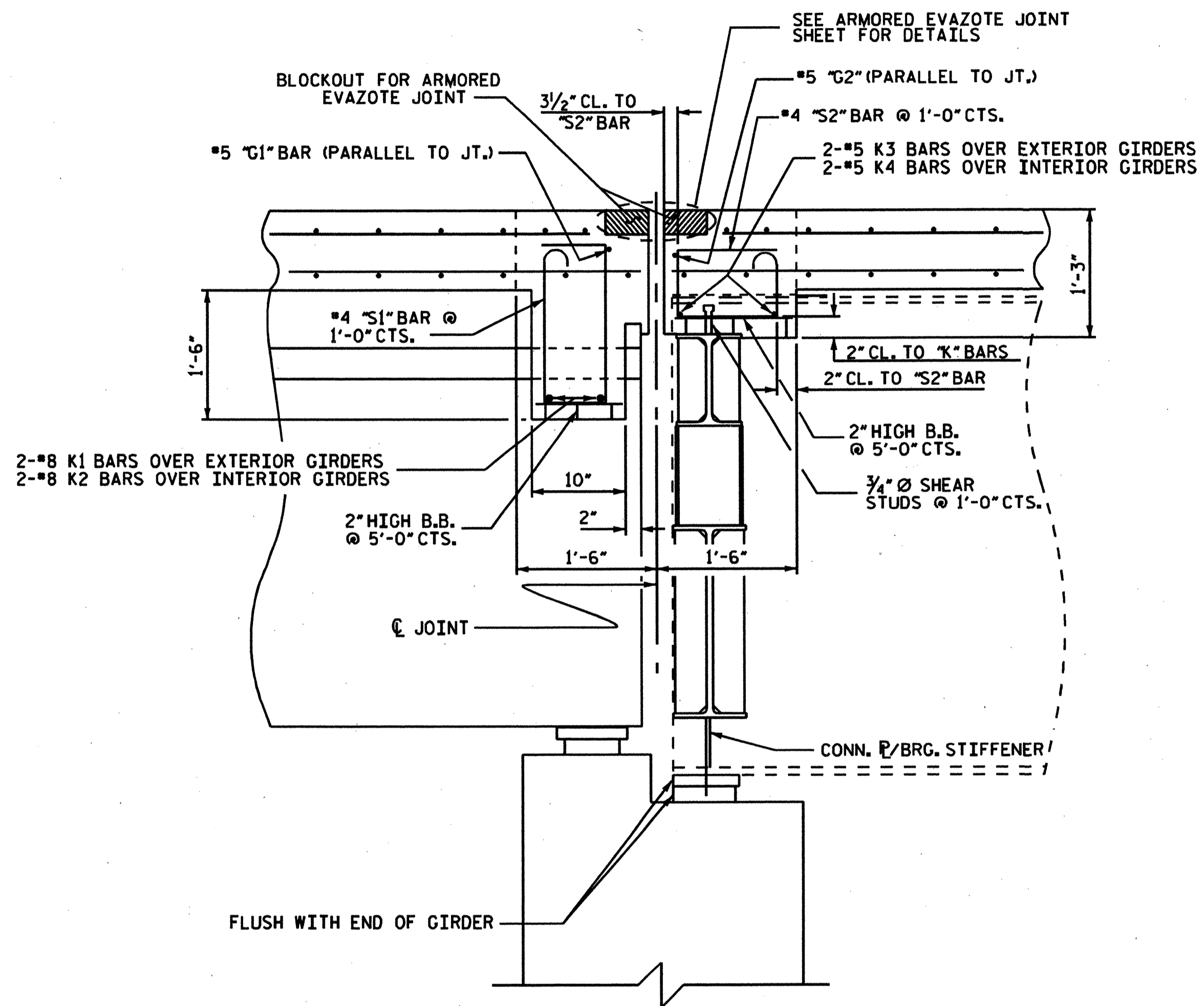
DRAWN BY: W.M. CLARKE DATE: 8-09
 CHECKED BY: B.C. HANKS DATE: 9-09

*****SYSTEM*****
 *****DCN*****
 *****USERNAME*****



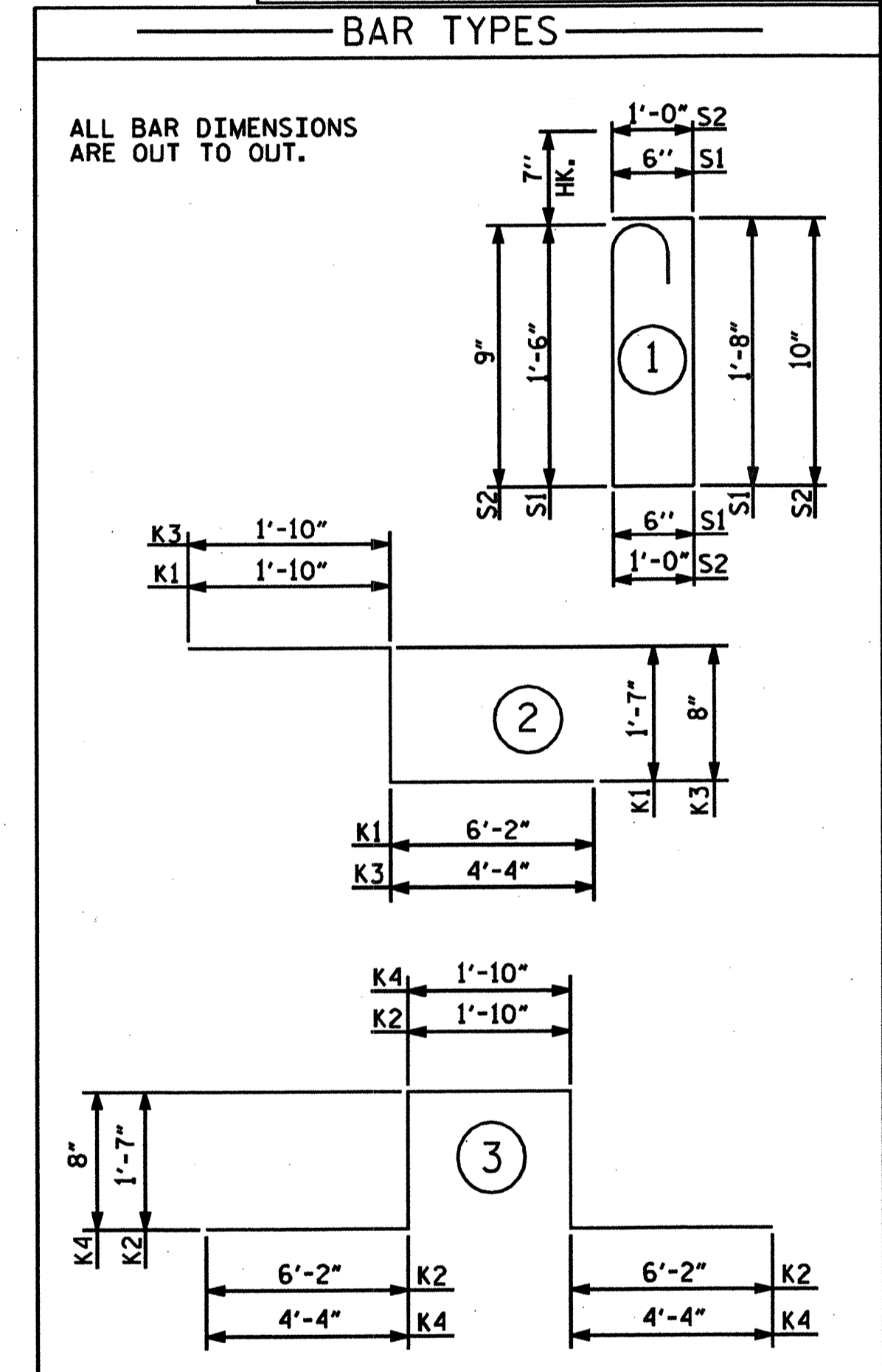
** NOTE: REMOVE ALL MEMBERS COMPRISING THE FINGER JOINT

EXISTING SECTION AT BENTS 16 & 19



PROPOSED SECTION AT BENTS 16 & 19

BILL OF MATERIAL					
1 BENT SHOWN (2 REQ'D)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	8	*6	STR	27'-8"	332
*G1	1	*5	STR	27'-8"	29
*G2	1	*5	STR	27'-8"	29
*K1	4	*8	2	9'-7"	102
*K2	4	*8	3	17'-4"	185
*K3	4	*5	2	6'-10"	29
*K4	4	*5	3	11'-10"	49
					0
*S1	28	*4	1	4'-9"	89
*S2	28	*4	1	4'-2"	78
* EPOXY COATED REINF. STEEL =					922 LBS
CLASS AA CONCRETE =					4.3 C.Y.



BRIDGE NO. 7
BERTIE COUNTY
 STATION: 193+60

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SECTION THROUGH
 BENTS 16 & 19

DRAWN BY: W.M. CLARKE DATE: 9-09
 CHECKED BY: B.C. HANKS DATE: 9-09

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

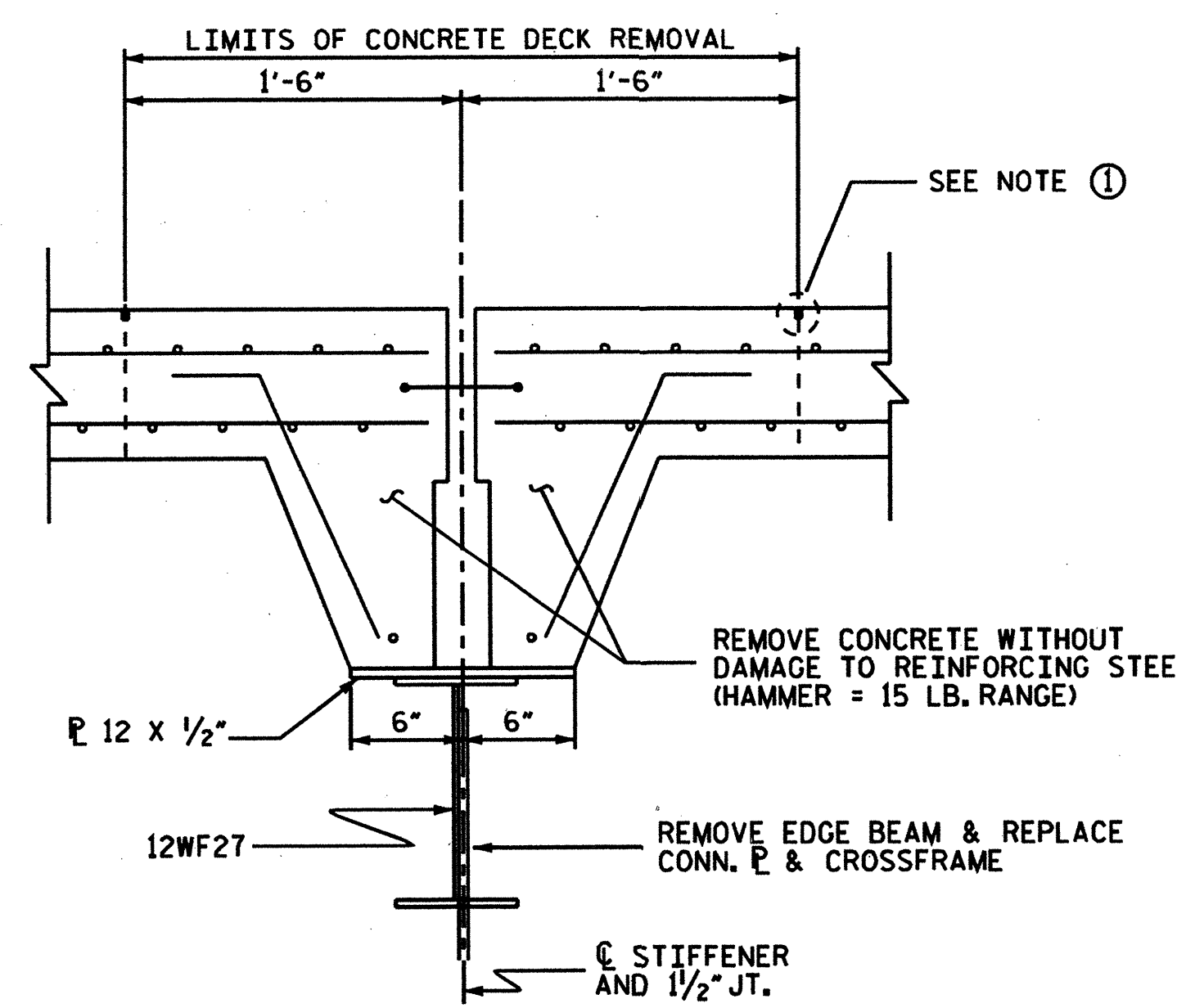
SHEET NO.
S-4
 TOTAL SHEETS

*****SYSTEM*****
 *****DCN*****
 *****USER*****

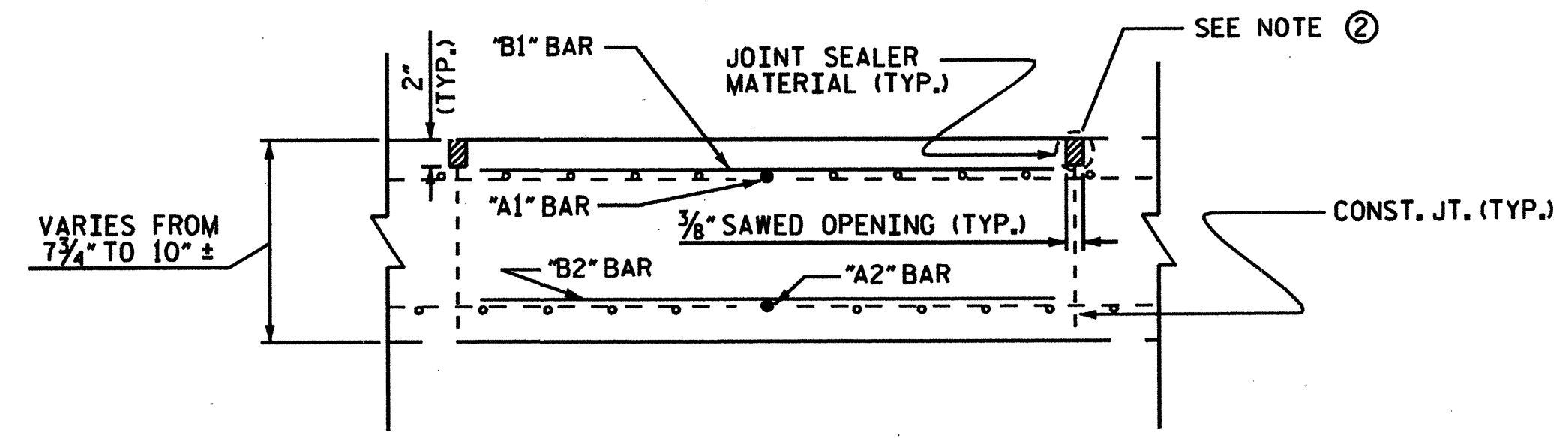
BILL OF MATERIAL					
1 JOINT SHOWN (5 REQ'D)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	1	*6	STR	27'-8"	42
A2	1	*6	STR	27'-8"	42
*B1	28	*5	STR	2'-8"	78
B2	37	*5	STR	2'-8"	103
REINFORCING STEEL					= 145 LBS
*EPOXY COATED REINF. STEEL					= 120 LBS
CLASS AA CONCRETE					= 2.3 C.Y.

NOTES

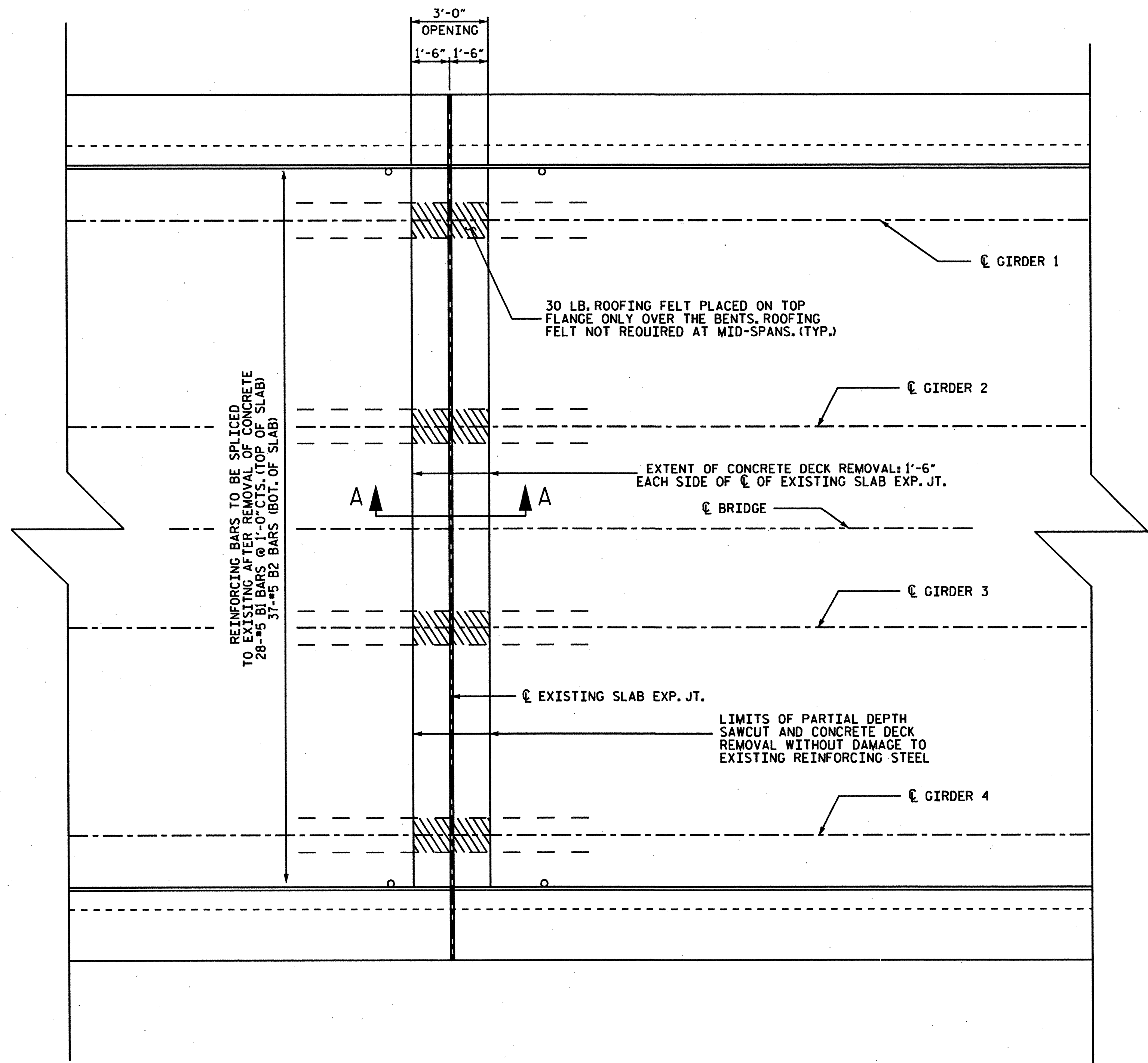
- DECK REMOVAL SHALL BE PERFORMED BY FIRST INTRODUCING A PARTIAL DEPTH SAWCUT (1/2" MAX DEPTH) FOLLOWED BY CONCRETE REMOVAL WITH A CHIPPING HAMMER IN THE RANGE OF 15 LBS. CARE SHALL BE TAKEN SO AS TO PREVENT DAMAGE TO EXISTING DECK REINFORCING STEEL AND EXISTING GIRDERS.
- THE JOINT OPENING AT THE EXISTING/NEWLY PLACED CONCRETE INTERFACE SHALL BE SAWED NO MORE THAN 12 HOURS AFTER THE CONCRETE IS CAST. 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.
- WELDING OF FORMS OR FALSEWORK TO THE TOP FLANGE WILL NOT BE PERMITTED AT BENTS 17 AND 18.



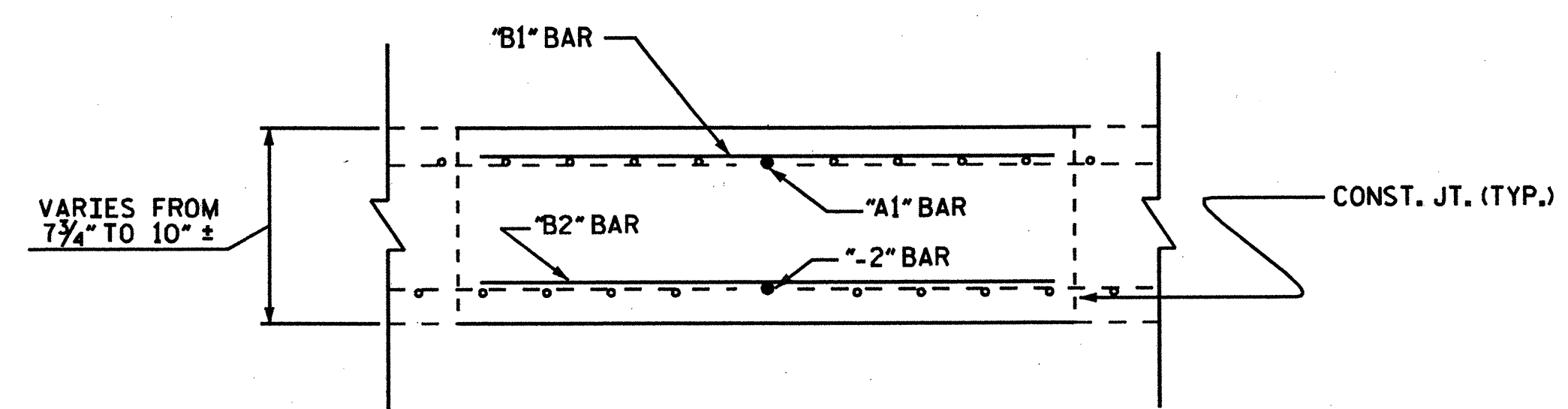
EXISTING SECTION A-A



PROPOSED SECTION A-A @ BENTS 17 AND 18



SLAB EXPANSION JOINT REPAIR



PROPOSED SECTION A-A IN SPANS 17, 18, AND 19

(3/8" WIDE AND 2" DEEP SAWCUT WITH JOINT SEALER NOT REQ'D)

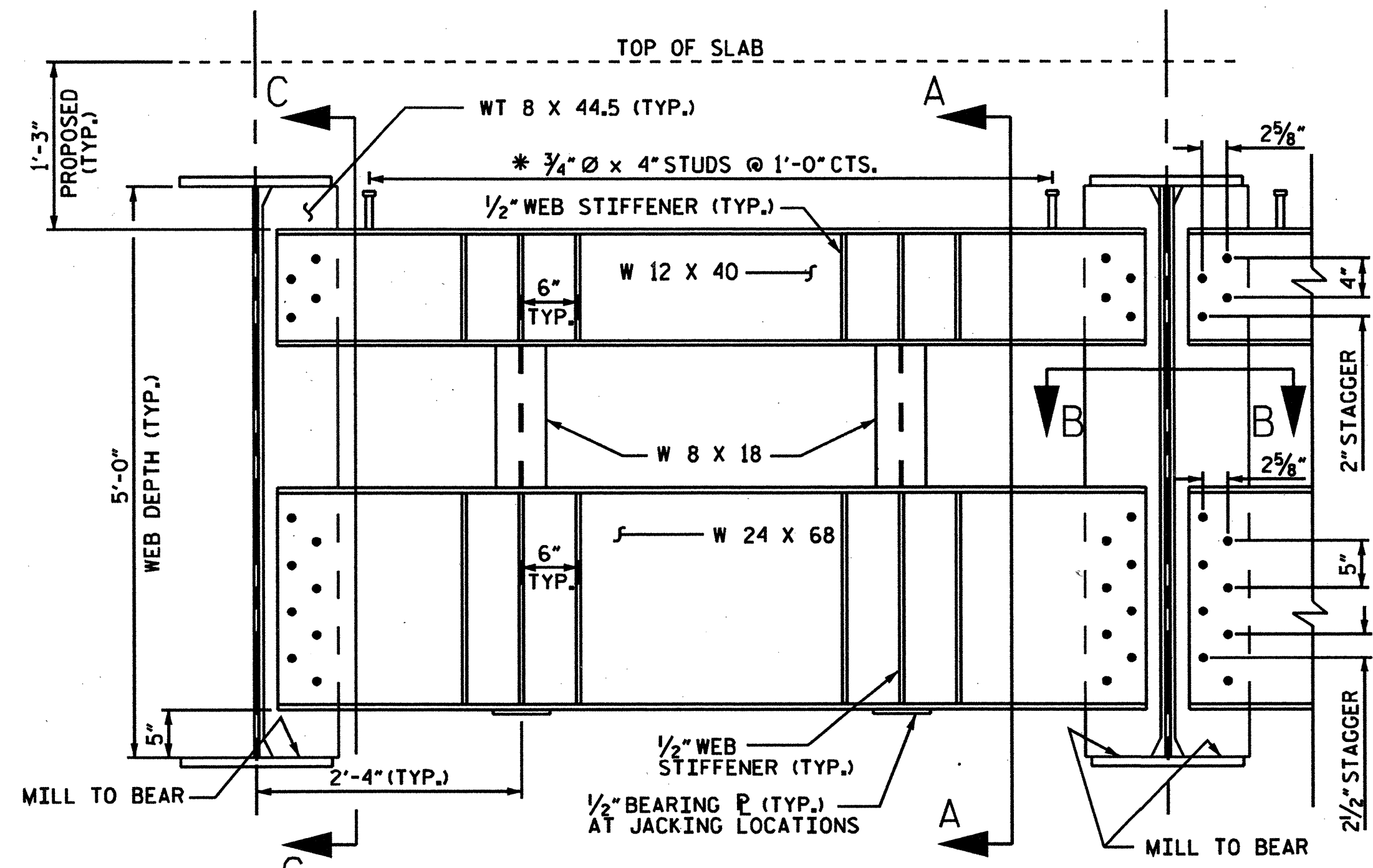
BRIDGE NO. 7
 BERTIE COUNTY
 STATION: 193+60

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 JOINT AND SLAB
 REPAIR DETAILS

DRAWN BY: W.M. CLARKE DATE: 8/09
 CHECKED BY: B.C. HANKS DATE: 9-09

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

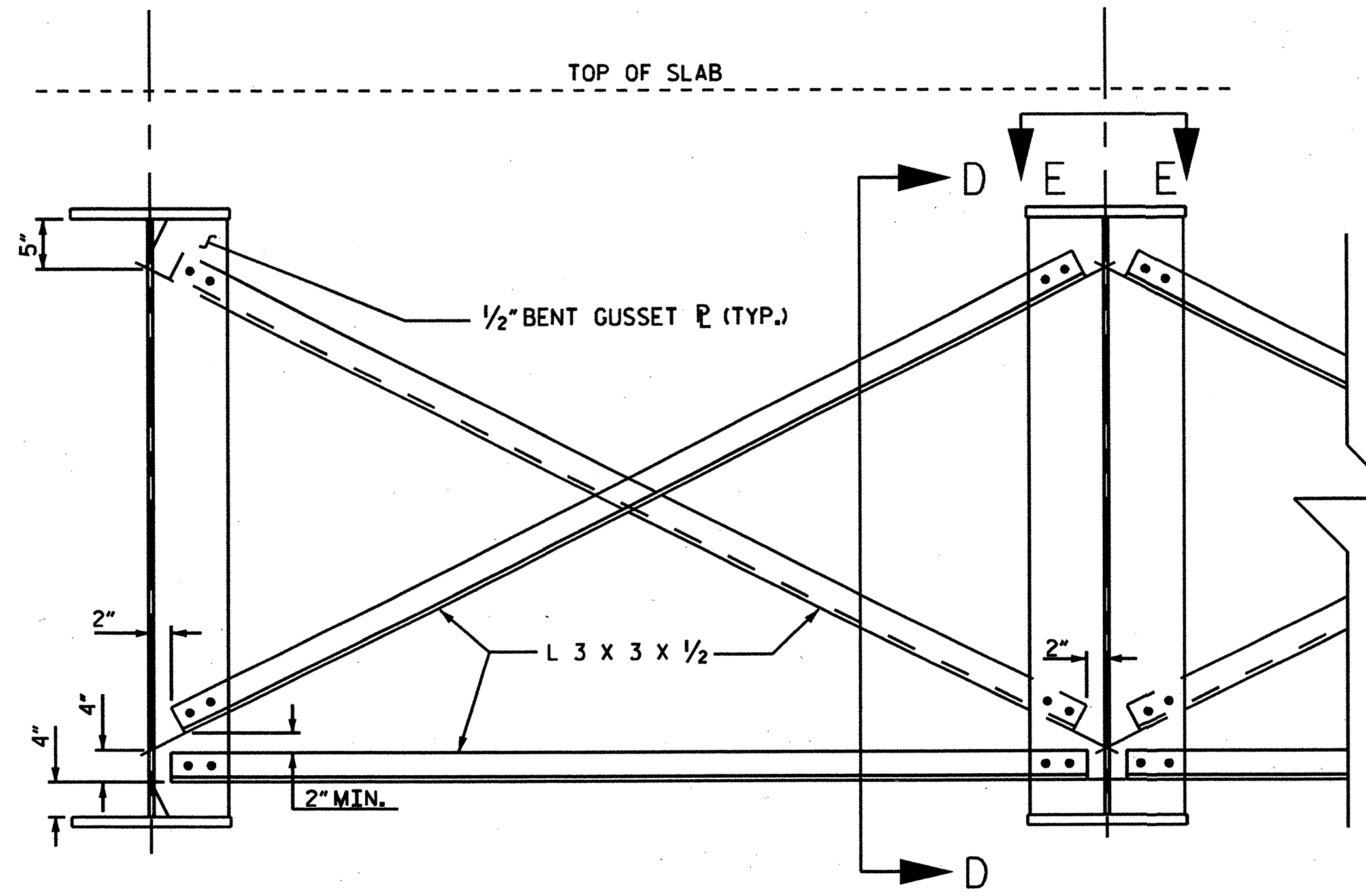
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 *****USER*****



REPLACEMENT DIAPHRAGM (D1)

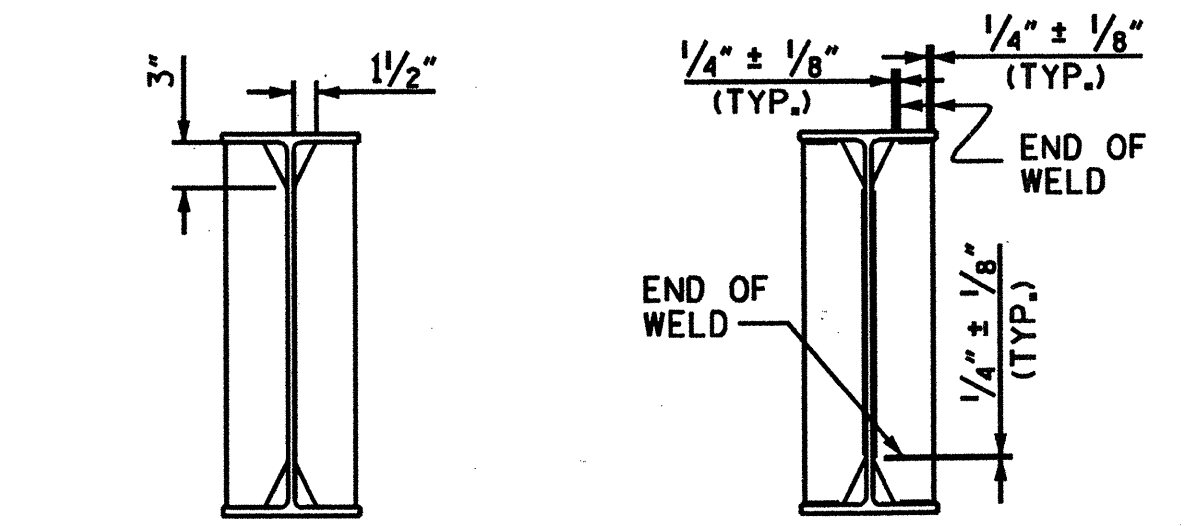
12 ASSEMBLIES REQ'D

* NOTE: SHEAR STUDS ARE NOT REQUIRED AT BENTS 17 AND 18

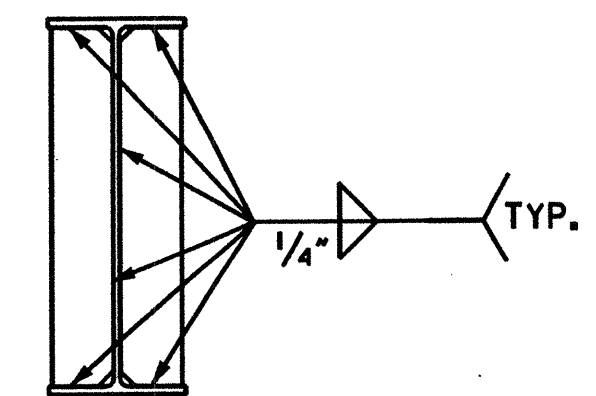


REPLACEMENT DIAPHRAGM (D2)

9 ASSEMBLIES REQ'D

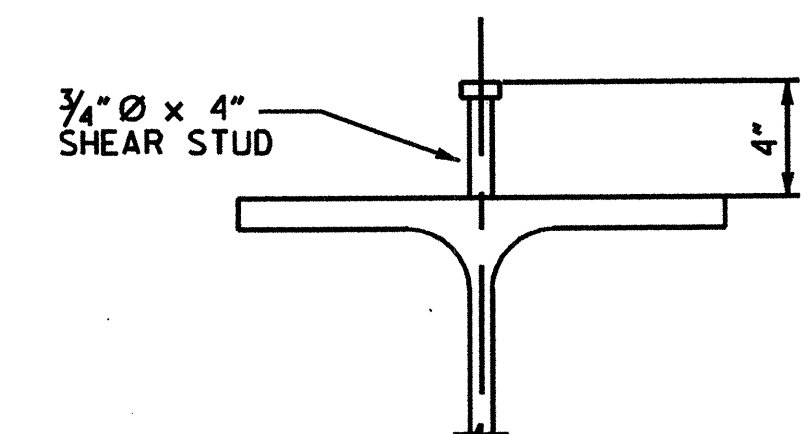


CLIP AND WELD TERMINATION DETAILS



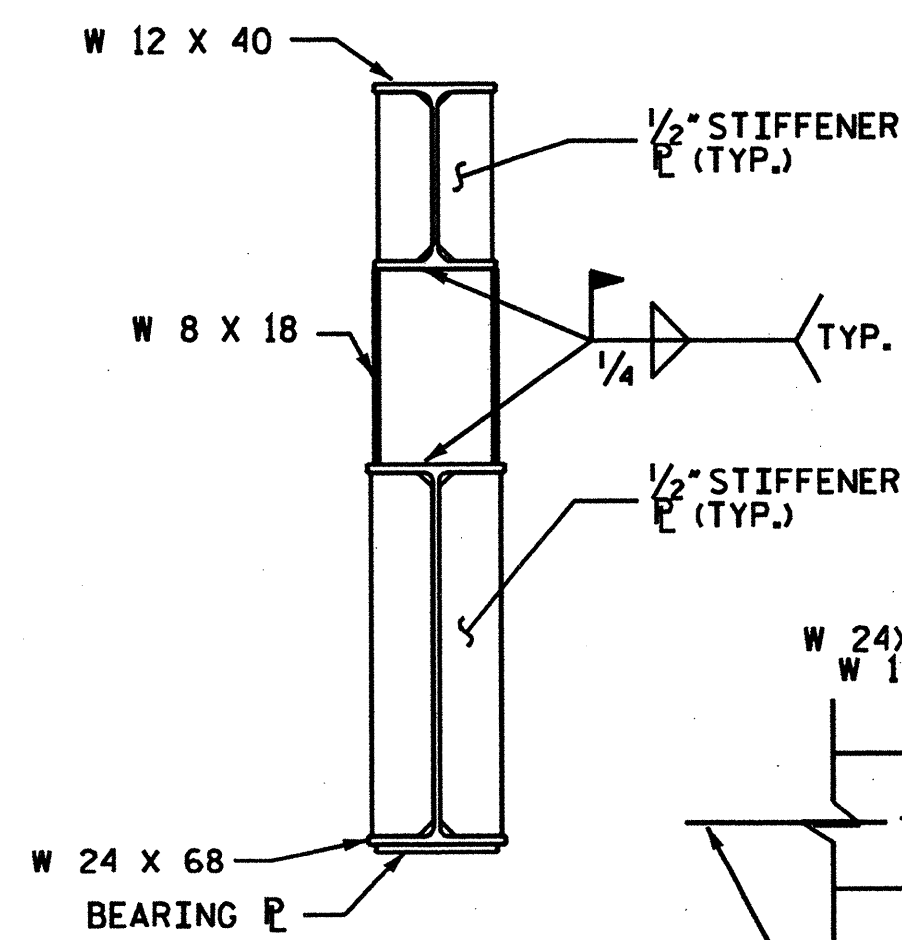
TYPICAL WEB STIFFENER DETAIL

(W 12 X 40 OR W 24 X 68)

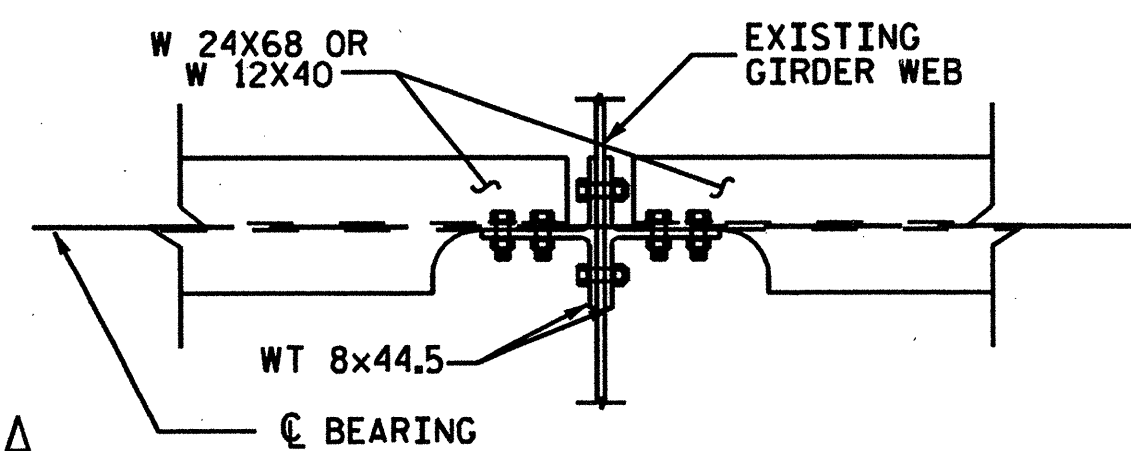


SHEAR STUD DETAIL

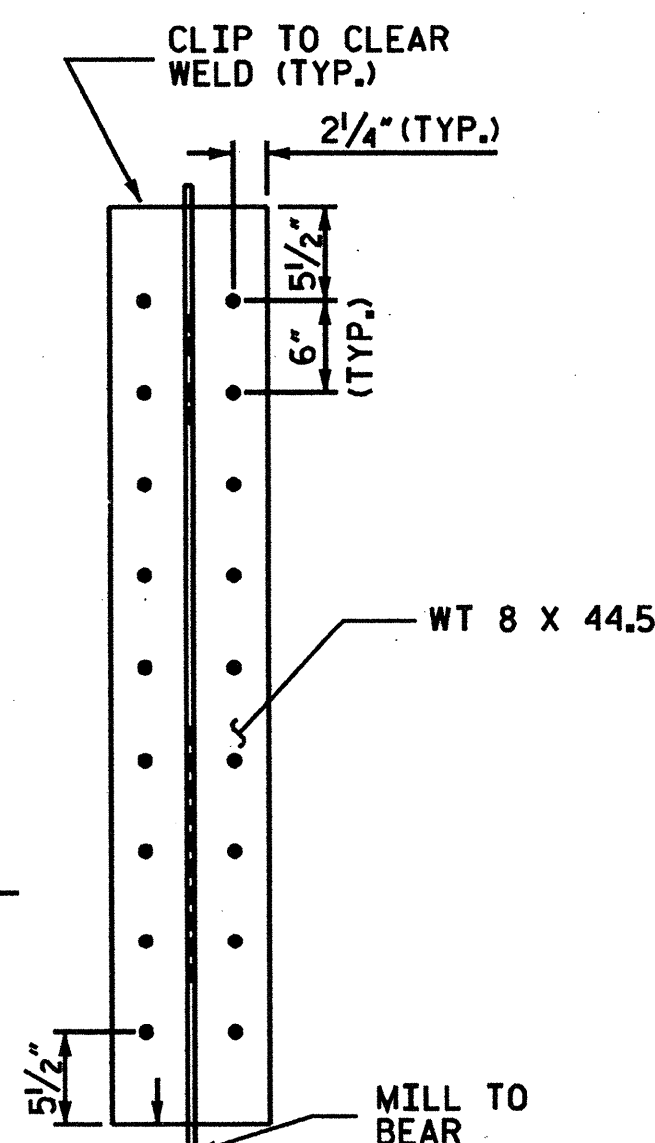
(FOR W 12 X 40)



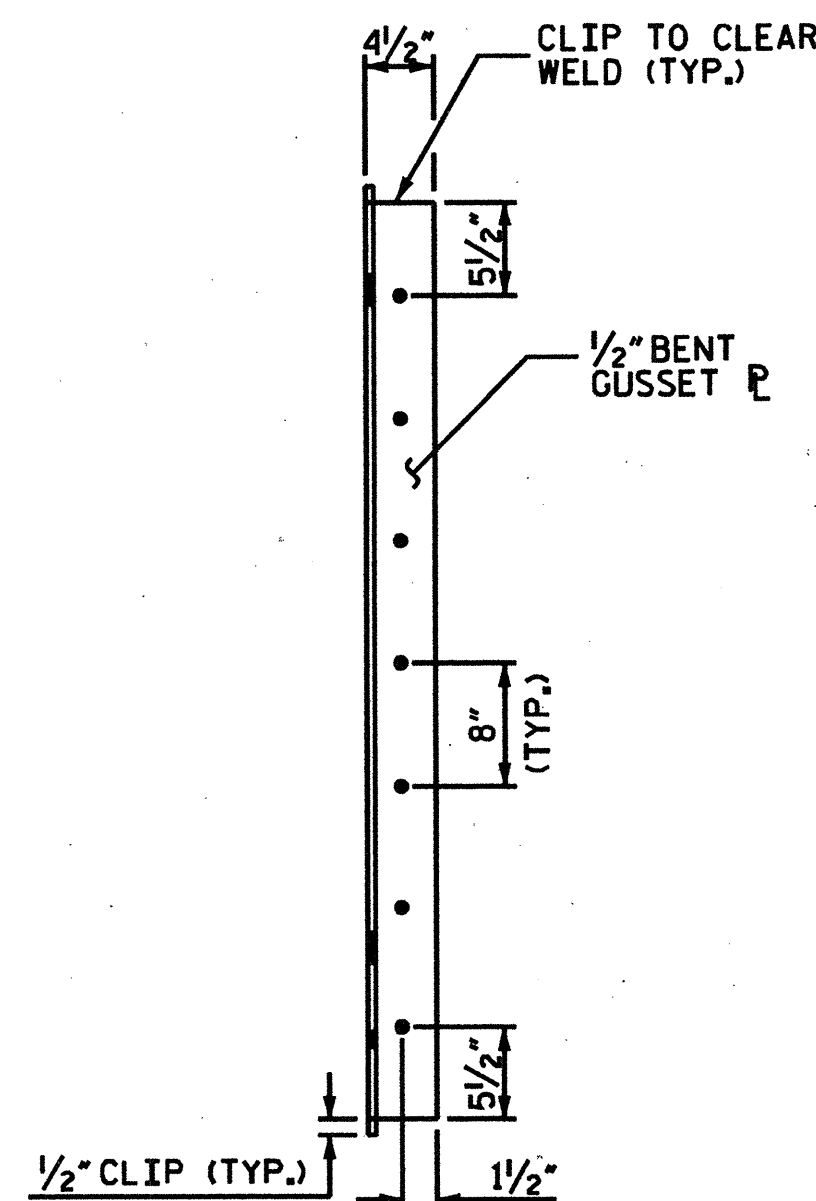
SECTION A-A



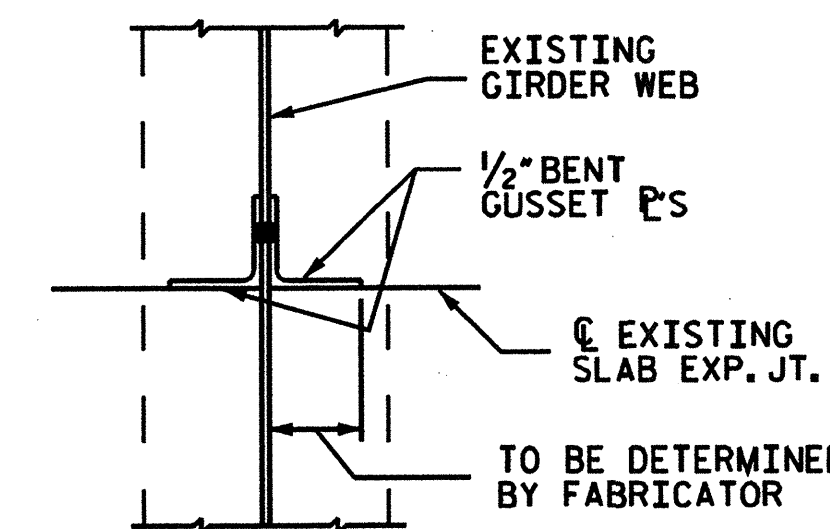
SECTION B-B



SECTION C-C



SECTION D-D



SECTION E-E

NOTE: ALL HOLES SHALL BE 15/16" Ø

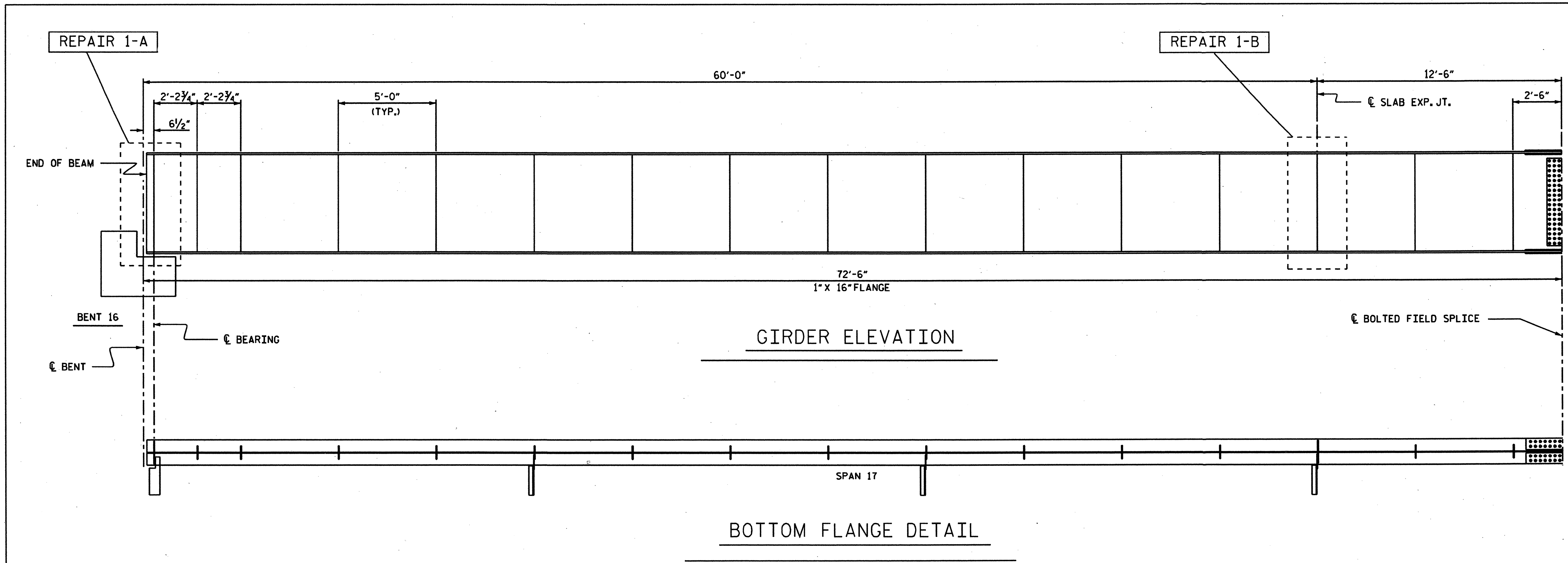
NOTE: PROPOSED WT AND BENT GUSSET CONNECTOR PLATES SHALL BE INSTALLED SO AS TO MAINTAIN THE EXISTING C OF BEARING.

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BRIDGE NO. 7
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 STATION: 193+60

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-6
SUPERSTRUCTURE DIAPHRAGM REPLACEMENT DETAILS						
REVISIONS						TOTAL SHEETS
NO.	BY	DATE	NO.	BY	DATE	
1			3			
2			4			



REPAIR 1-A	
REMOVAL	REMOVE EXISTING DECK CONCRETE 1'-6" FROM CENTER OF JOINT (3'-0" OPENING). REMOVE EXPANSION JOINT ASSEMBLY, DIAPHRAGM, CONCRETE EDGE BEAM, AND BEARING STIFFENERS. REMOVE EXISTING PAINT IN AREA OF DIAPHRAGM REPLACEMENT.
STRUCTURAL STEEL REPAIR	CLEAN DEBRIS FROM EXISTING WEB AND INSTALL WT 8 X 44.5 BEARING/CONNECTOR PLATE SECTIONS. INSTALL DIAPHRAGM D1.
CONCRETE REPAIR	INSTALL REINFORCING STEEL. INSTALL ARMORED EVAZOTE JOINT COMPONENTS. RECAST EDGE BEAM AND RECAST DECK TO PROPER ELEVATION WITH CLASS AA CONCRETE.
EXPANSION JT. REPLACEMENT	CAST ELASTOMERIC CONCRETE. GROOVE DECK REPLACEMENT.

NOTE: REPAIR 2-A THROUGH 4-A SIMILAR

REPAIR 1-B	
REMOVAL	REMOVE EXISTING DECK CONCRETE 1'-6" FROM CENTER OF JOINT (3'-0" OPENING). REMOVE EXISTING DIAPHRAGM AND CONNECTOR PLATES. REMOVE EXISTING PAINT IN AREA OF DIAPHRAGM REPLACEMENT.
STRUCTURAL STEEL REPAIR	CLEAN DEBRIS FROM EXISTING WEB AND INSTALL 1/2" BENT GUSSET PLATE CONNECTORS. INSTALL DIAPHRAGM D2.
CONCRETE REPAIR	INSTALL REINFORCING STEEL. RECAST DECK TO PROPER ELEVATION WITH CLASS AA CONCRETE. GROOVE DECK REPLACEMENT.

NOTE: REPAIR 2-B THROUGH 4-B SIMILAR

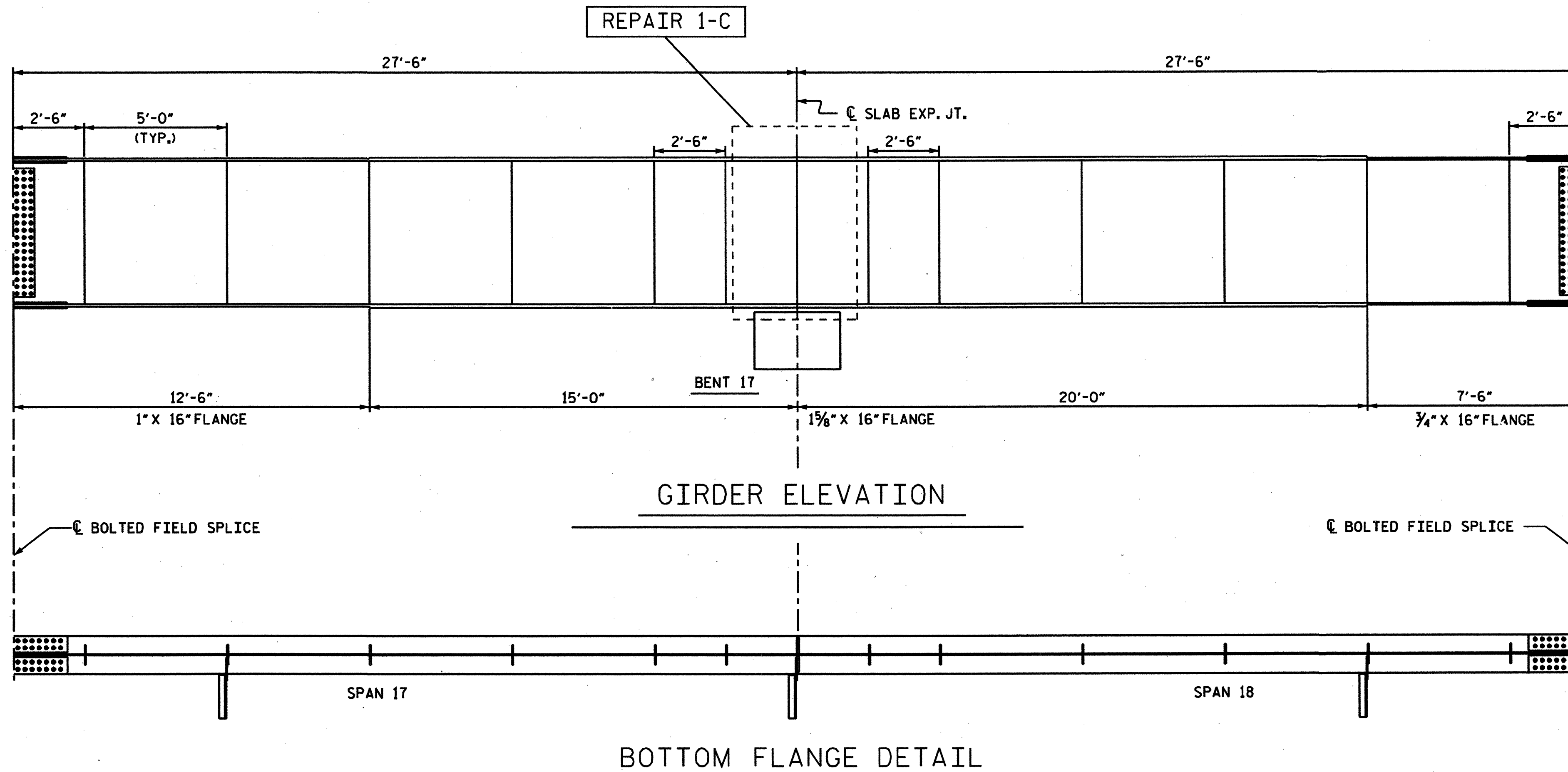
BRIDGE NO. 7
BERTIE COUNTY
 STATION: 193+60

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 STRUCTURAL
 STEEL DETAILS
 (GIRDER #1 SHOWN)

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

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REPAIR 1-C	
REMOVAL	REMOVE EXISTING DECK CONCRETE 1'-6" FROM CENTER OF JOINT (3'-0" OPENING). REMOVE DIAPHRAGM AND BEARING STIFFENERS. REMOVE EXISTING PAINT IN AREA OF DIAPHRAGM REPLACEMENT.
STRUCTURAL STEEL REPAIR	CLEAN DEBRIS FROM EXISTING WEB AND INSTALL WT 8 X 44.5 BEARING/CONNECTOR PLATE SECTIONS. INSTALL DIAPHRAGM D1.
CONCRETE REPAIR	INSTALL REINFORCING STEEL. RECAST DECK TO PROPER ELEVATION WITH CLASS AA CONCRETE. GROOVE DECK REPLACEMENT. SAWCUT 3/8" DECK JOINTS, 2" DEEP AND FILL WITH SILICONE SEALANT.

NOTE: REPAIR 2-C THROUGH 4-C SIMILAR

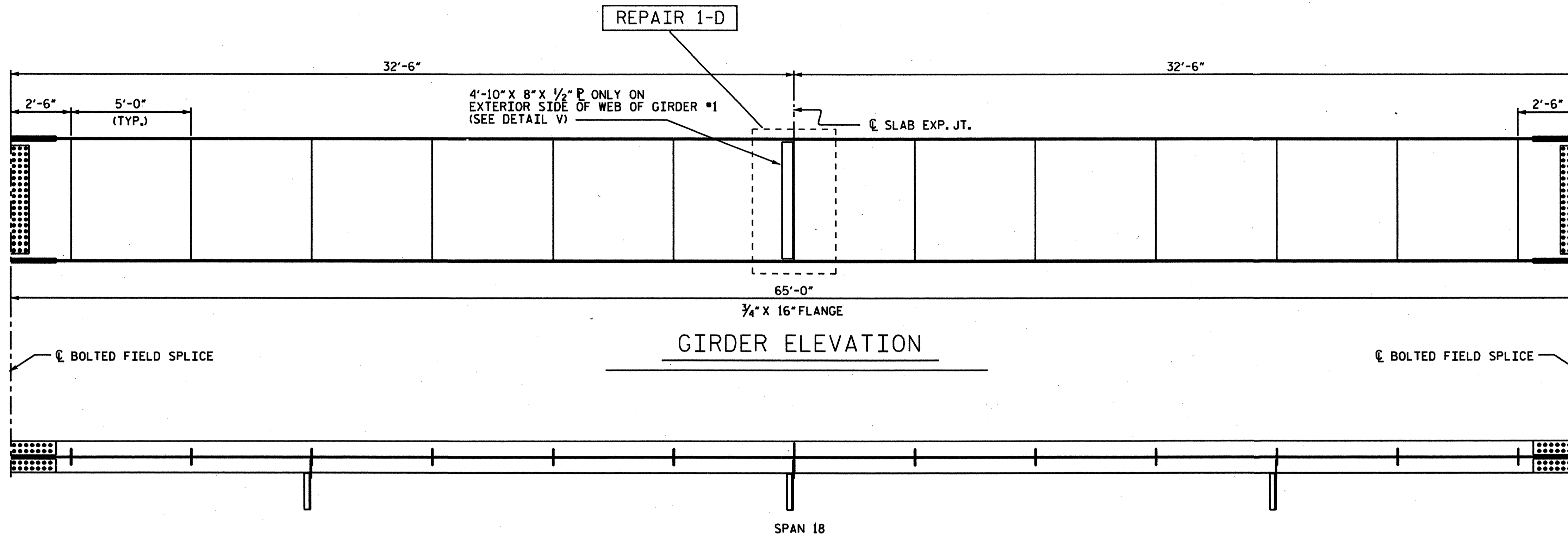
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 RALEIGH
 SUPERSTRUCTURE
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 STEEL DETAILS
 (GIRDER #1 SHOWN)

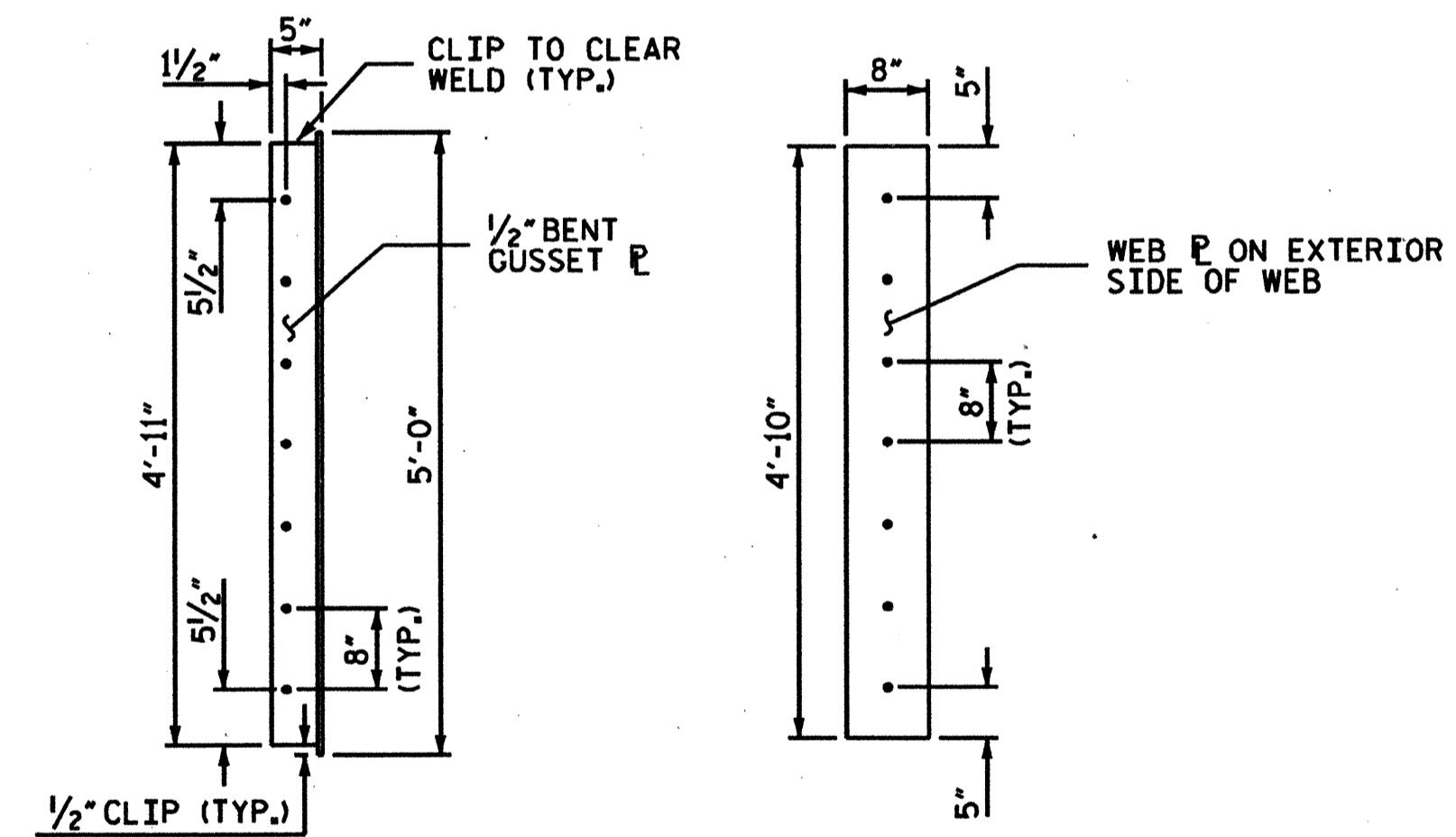
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REVISIONS						SHEET NO. S-8
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS
2			4			

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BOTTOM FLANGE DETAIL



BENT GUSSET PLATE

WEB PLATE

SIMILAR TO SECTION D-D ON DIAPHRAGM REPLACEMENT DETAILS SHEET

DETAIL V

ALL HOLES SHALL BE 15/16" Ø

REPAIR 1-D	
REMOVAL	REMOVE EXISTING DECK CONCRETE 1'-6" FROM CENTER OF JOINT (3'-0" OPENING). REMOVE DIAPHRAGM AND CONNECTOR PLATES. REMOVE EXISTING PAINT IN AREA OF DIAPHRAGM REPLACEMENT.
STRUCTURAL STEEL REPAIR	CLEAN DEBRIS FROM EXISTING WEB AND INSTALL 1/2" BENT GUSSET PLATE CONNECTORS AND 4'-10" X 8" X 1/2" WEB PLATE. INSTALL DIAPHRAGM D2.
CONCRETE REPAIR	INSTALL REINFORCING STEEL. RECAST DECK TO PROPER ELEVATION WITH CLASS AA CONCRETE. GROOVE DECK REPLACEMENT.

NOTE: REPAIR 2-D AND 3-D SIMILAR EXCEPT FOR 4'-10" X 8" X 1/2" WEB PLATE. SEE SHEETS "REPAIR 4-D.1" AND "REPAIR 4-D.2" FOR REPAIR 4-D

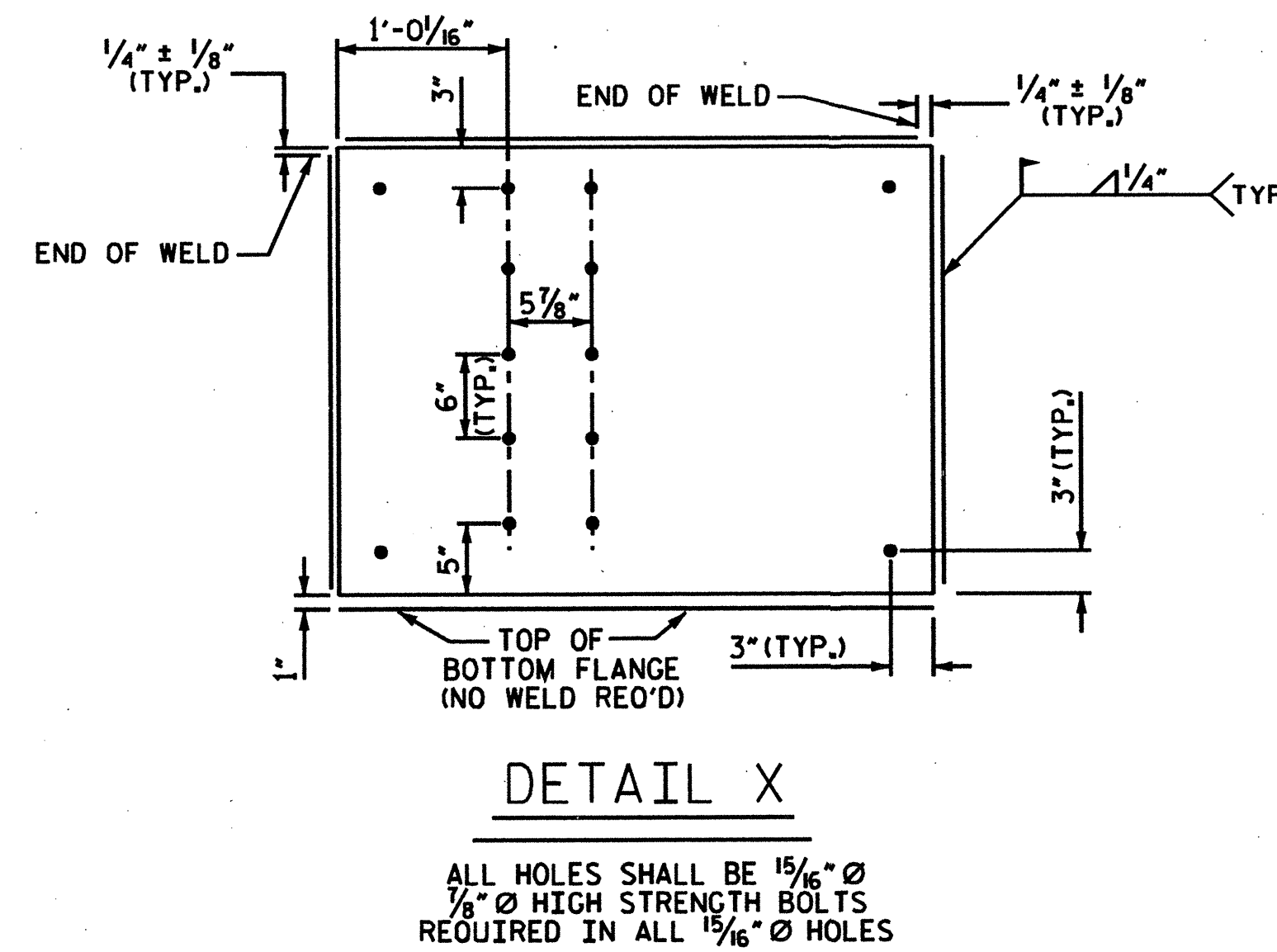
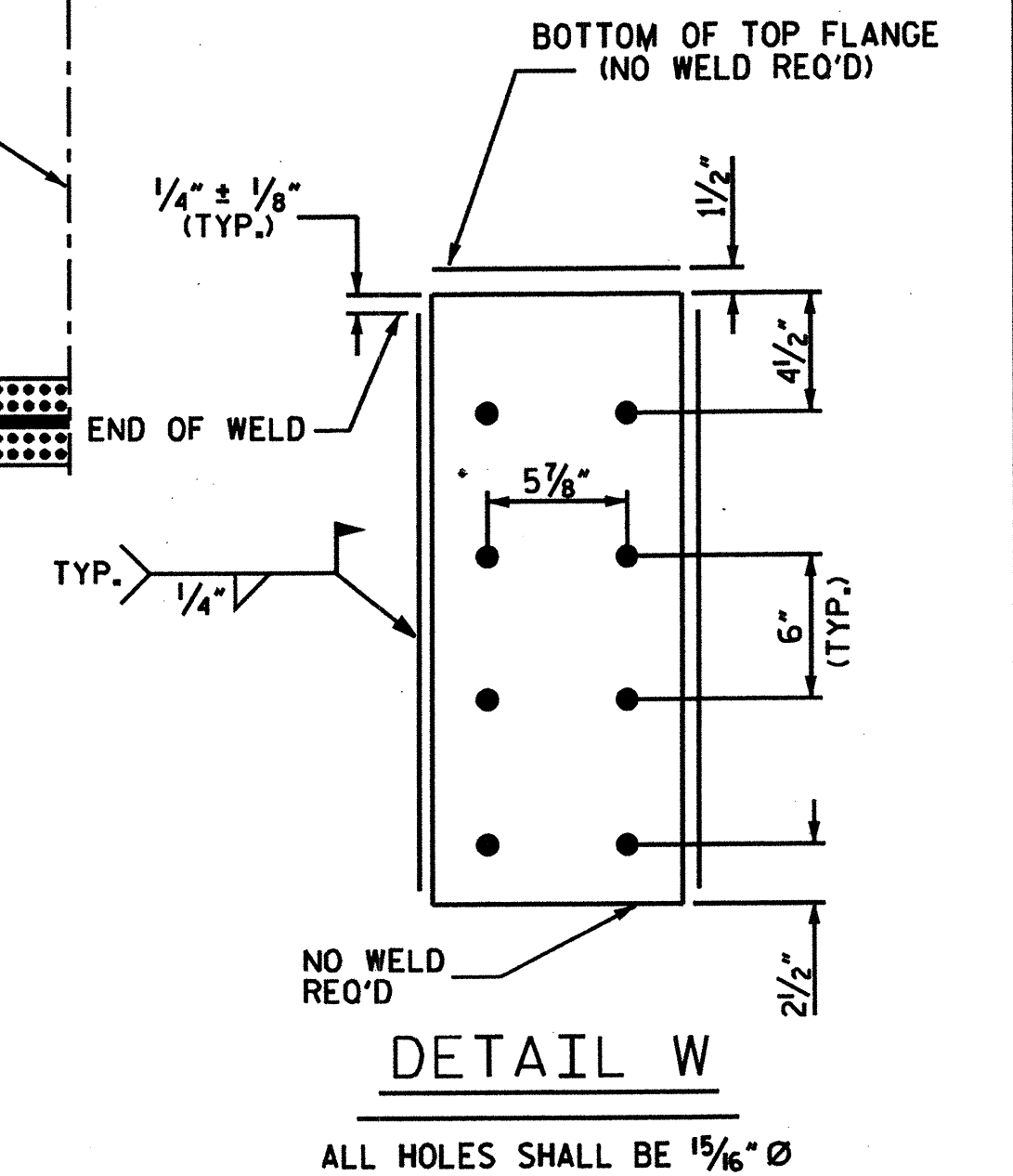
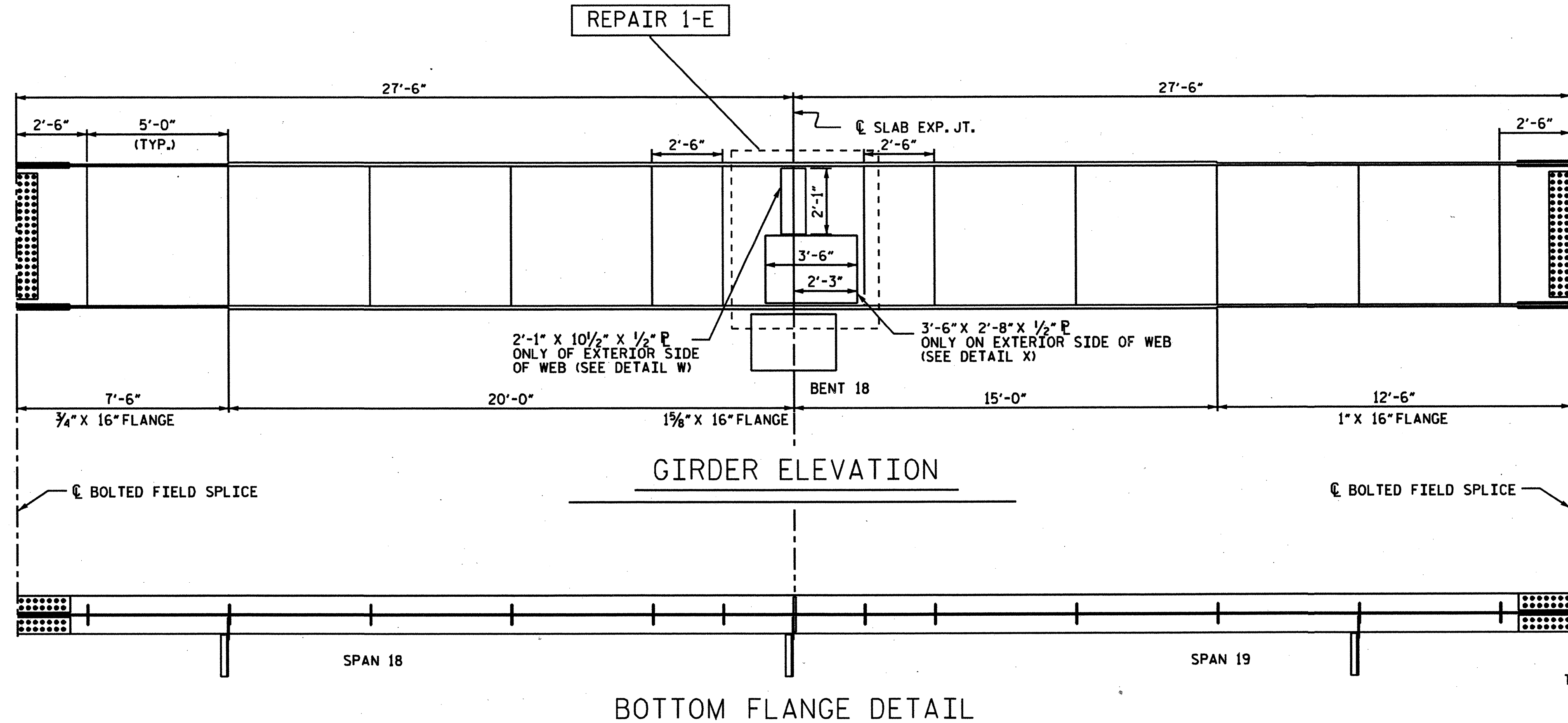
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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 STRUCTURAL
 STEEL DETAILS
 (GIRDER #1 SHOWN)

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

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 CHECKED BY : B.C. HANKS DATE : 9-09

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REPAIR 1-E	
REMOVAL	REMOVE EXISTING DECK CONCRETE 1'-6" FROM CENTER OF JOINT (3'-0" OPENING). REMOVE DIAPHRAGM AND BEARING STIFFENERS. REMOVE EXISTING PAINT IN AREA OF DIAPHRAGM REPLACEMENT.
STRUCTURAL STEEL REPAIR	CLEAN DEBRIS FROM EXISTING WEB. INSTALL WT 8 X 44.5 BEARING/CONNECTOR PLATE SECTIONS AND 3'-6" X 2'-8" X 1/2" AND 2'-1" X 10 1/2" X 1/2" WEB PLATES. INSTALL DIAPHRAGM DI.
CONCRETE REPAIR	INSTALL REINFORCING STEEL. RECAST DECK TO PROPER ELEVATION WITH CLASS AA CONCRETE. GROOVE DECK REPLACEMENT. SAWCUT 3/8" DECK JOINTS, 2" DEEP AND FILL WITH SILICONE SEALANT.

NOTE: REPAIR 2-E THROUGH 4-E SIMILAR EXCEPT 3'-6" X 2'-8" X 1/2" AND 2'-1" X 10 1/2" X 1/2" WEB PLATES ARE NOT REQ'D.

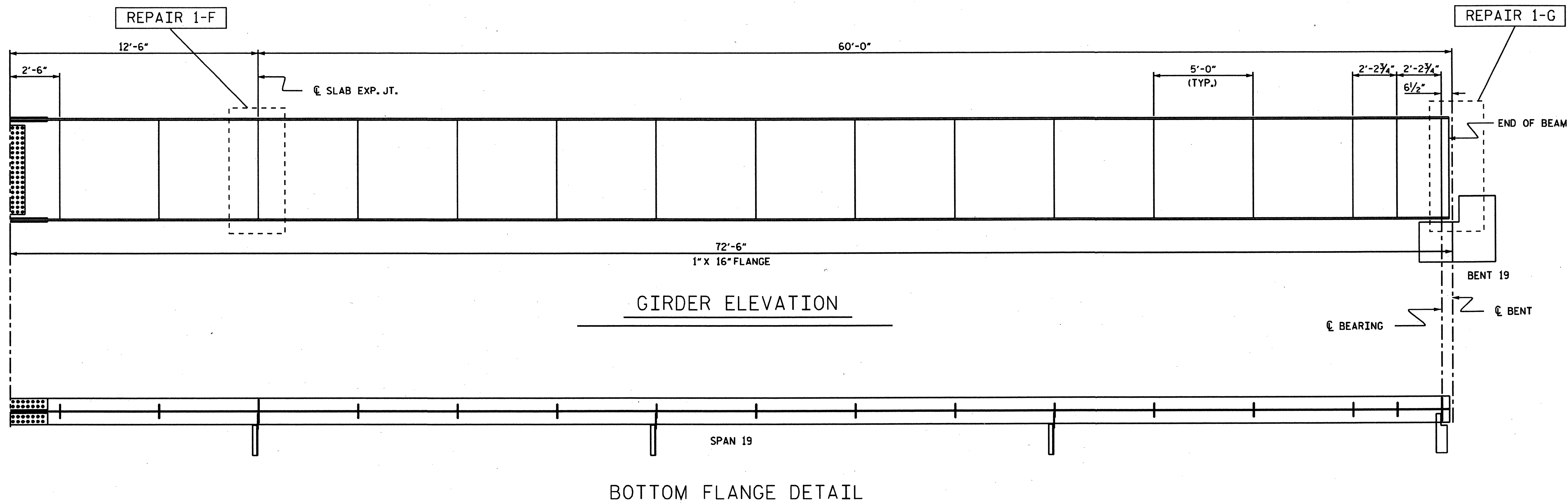
BRIDGE NO. 7
 BERTIE COUNTY
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STATE OF NORTH CAROLINA
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 STRUCTURAL
 STEEL DETAILS
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REVISIONS						SHEET NO. S-10
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS
2			4			

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REPAIR 1-F	
REMOVAL	REMOVE EXISTING DECK CONCRETE 1'-6" FROM CENTER OF JOINT (3'-0" OPENING). REMOVE EXISTING DIAPHRAGM AND CONNECTOR PLATES. REMOVE EXISTING PAINT IN AREA OF DIAPHRAGM REPLACEMENT.
STRUCTURAL STEEL REPAIR	CLEAN DEBRIS FROM EXISTING WEB AND INSTALL 1/2" BENT GUSSET PLATE CONNECTORS. INSTALL DIAPHRAGM D2.
CONCRETE REPAIR	INSTALL REINFORCING STEEL. RECAST DECK TO PROPER ELEVATION WITH CLASS AA CONCRETE. GROOVE DECK REPLACEMENT.

NOTE: REPAIR 3-F AND 4-F SIMILAR
SEE SHEET REPAIR 2-F AND 2-G
FOR REPAIR 2-F

REPAIR 1-G	
REMOVAL	REMOVE EXISTING DECK CONCRETE 1'-6" FROM CENTER OF JOINT (3'-0" OPENING). REMOVE EXPANSION JOINT ASSEMBLY, DIAPHRAGM, CONCRETE EDGE BEAM, AND BEARING STIFFENERS. REMOVE EXISTING PAINT IN AREA OF DIAPHRAGM REPLACEMENT.
STRUCTURAL STEEL REPAIR	CLEAN DEBRIS FROM EXISTING WEB AND INSTALL WT 8 X 44.5 BEARING/CONNECTOR PLATE SECTIONS. INSTALL DIAPHRAGM D1.
CONCRETE REPAIR	INSTALL REINFORCING STEEL. INSTALL ARMORED EVAZOTE JOINT COMPONENTS. RECAST EDGE BEAM AND RECAST DECK TO PROPER ELEVATION WITH CLASS AA CONCRETE.
EXPANSION JT. REPLACEMENT	CAST ELASTOMERIC CONCRETE. GROOVE DECK REPLACEMENT.

NOTE: REPAIR 2-G THROUGH 4-G SIMILAR

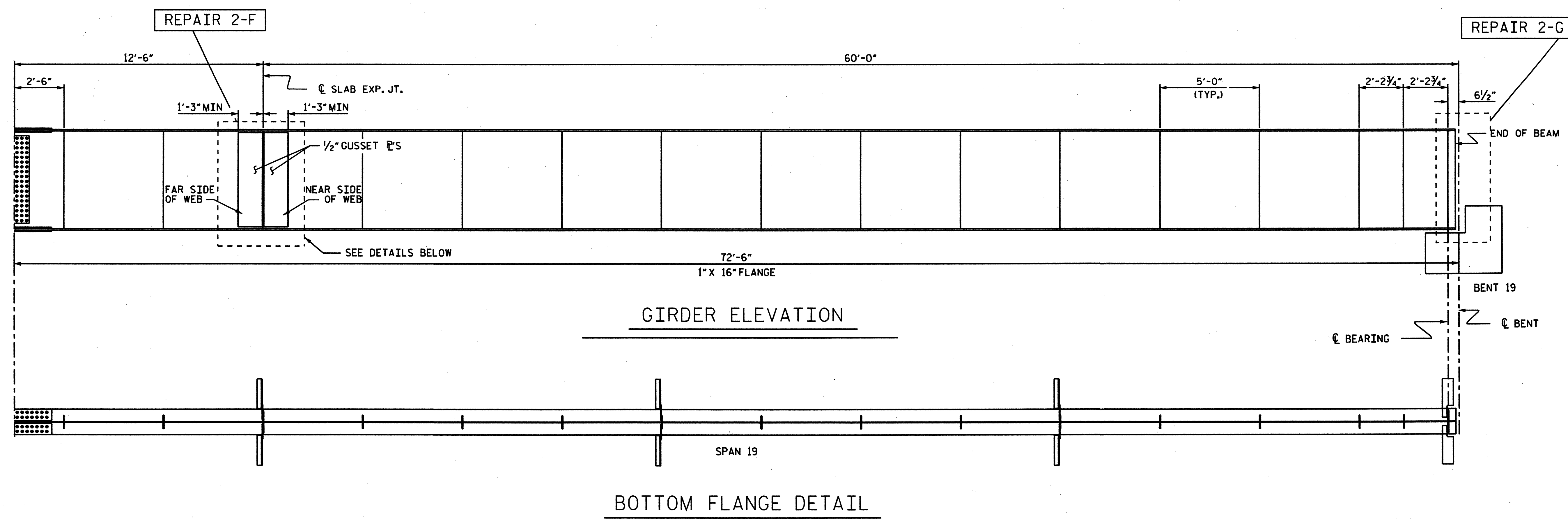
BRIDGE NO. 7
BERTIE COUNTY
 STATION: 193+60

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 STRUCTURAL
 STEEL DETAILS
 (GIRDER #1 SHOWN)

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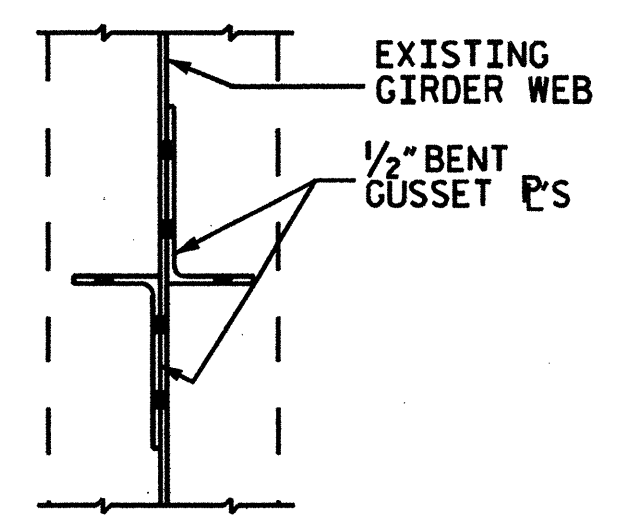
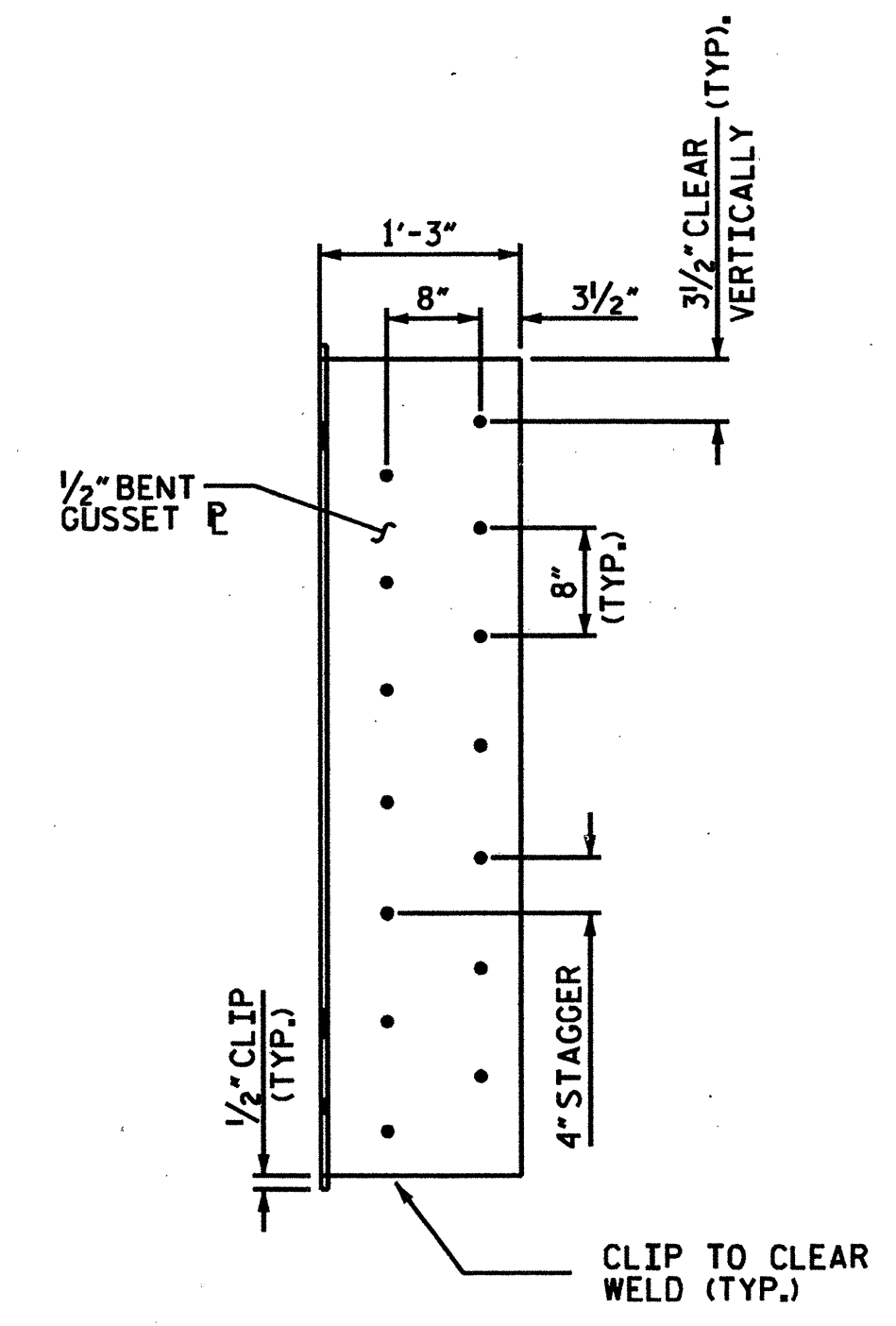
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REVISIONS					SHEET NO. S-11
NO.	BY	DATE	NO.	DATE	
1			3		TOTAL SHEETS
2			4		



REPAIR 2-F	
REMOVAL	REMOVE EXISTING DECK CONCRETE 1'-6" FROM CENTER OF JOINT (3'-0" OPENING). REMOVE EXISTING DIAPHRAGM AND CONNECTOR PLATES. REMOVE EXISTING PAINT IN AREA OF DIAPHRAGM REPLACEMENT.
STRUCTURAL STEEL REPAIR	CLEAN DEBRIS FROM EXISTING WEB AND INSTALL 1/2" BENT GUSSET PLATE CONNECTORS. INSTALL DIAPHRAGM D2. (SEE REPAIR 2-F DETAILS BELOW)
CONCRETE REPAIR	INSTALL REINFORCING STEEL. RECAST DECK TO PROPER ELEVATION WITH CLASS AA CONCRETE. GROOVE DECK REPLACEMENT.

REPAIR 2-G	
REMOVAL	REMOVE EXISTING DECK CONCRETE 1'-6" FROM CENTER OF JOINT (3'-0" OPENING). REMOVE EXPANSION JOINT ASSEMBLY, DIAPHRAGM, CONCRETE EDGE BEAM, AND BEARING STIFFENERS. REMOVE EXISTING PAINT IN AREA OF DIAPHRAGM REPLACEMENT.
STRUCTURAL STEEL REPAIR	CLEAN DEBRIS FROM EXISTING WEB AND INSTALL WT 8 X 44.5 BEARING/CONNECTOR PLATE SECTIONS. INSTALL DIAPHRAGM D1.
CONCRETE REPAIR	INSTALL REINFORCING STEEL. INSTALL ARMORED EVAZOTE JOINT COMPONENTS. RECAST EDGE BEAM AND RECAST DECK TO PROPER ELEVATION WITH CLASS AA CONCRETE.
EXPANSION JT. REPLACEMENT	CAST ELASTOMERIC CONCRETE. GROOVE DECK REPLACEMENT.



REPAIR 2-F DETAIL

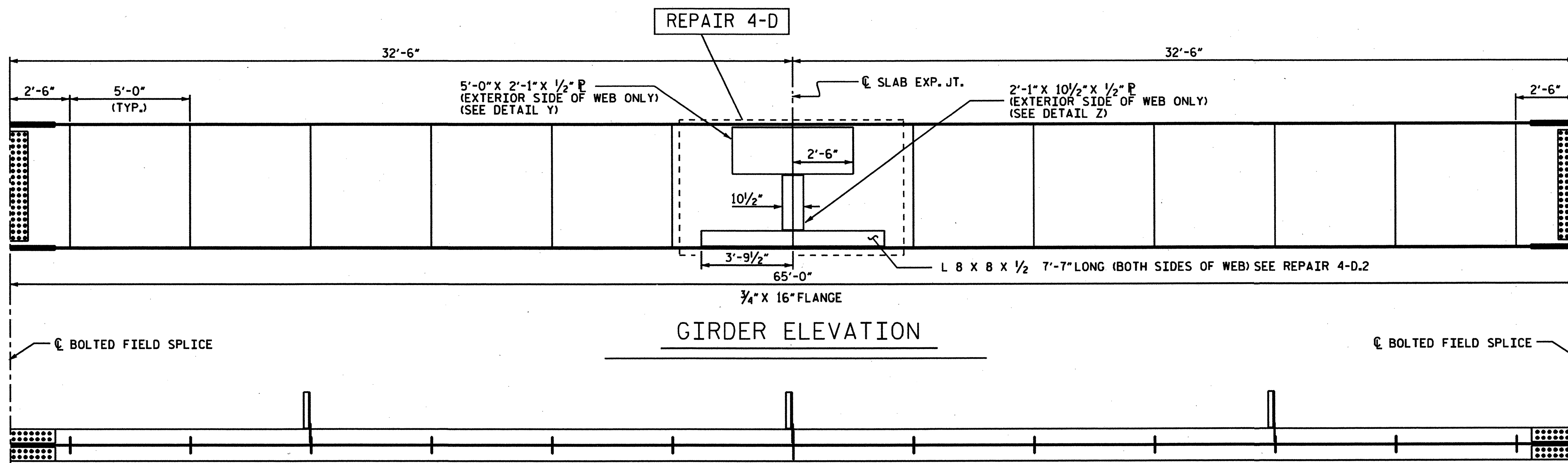
BRIDGE NO. 7
 BERTIE COUNTY
 STATION: 193+60

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 STRUCTURAL
 STEEL DETAILS
 REPAIR 2-F AND 2-G

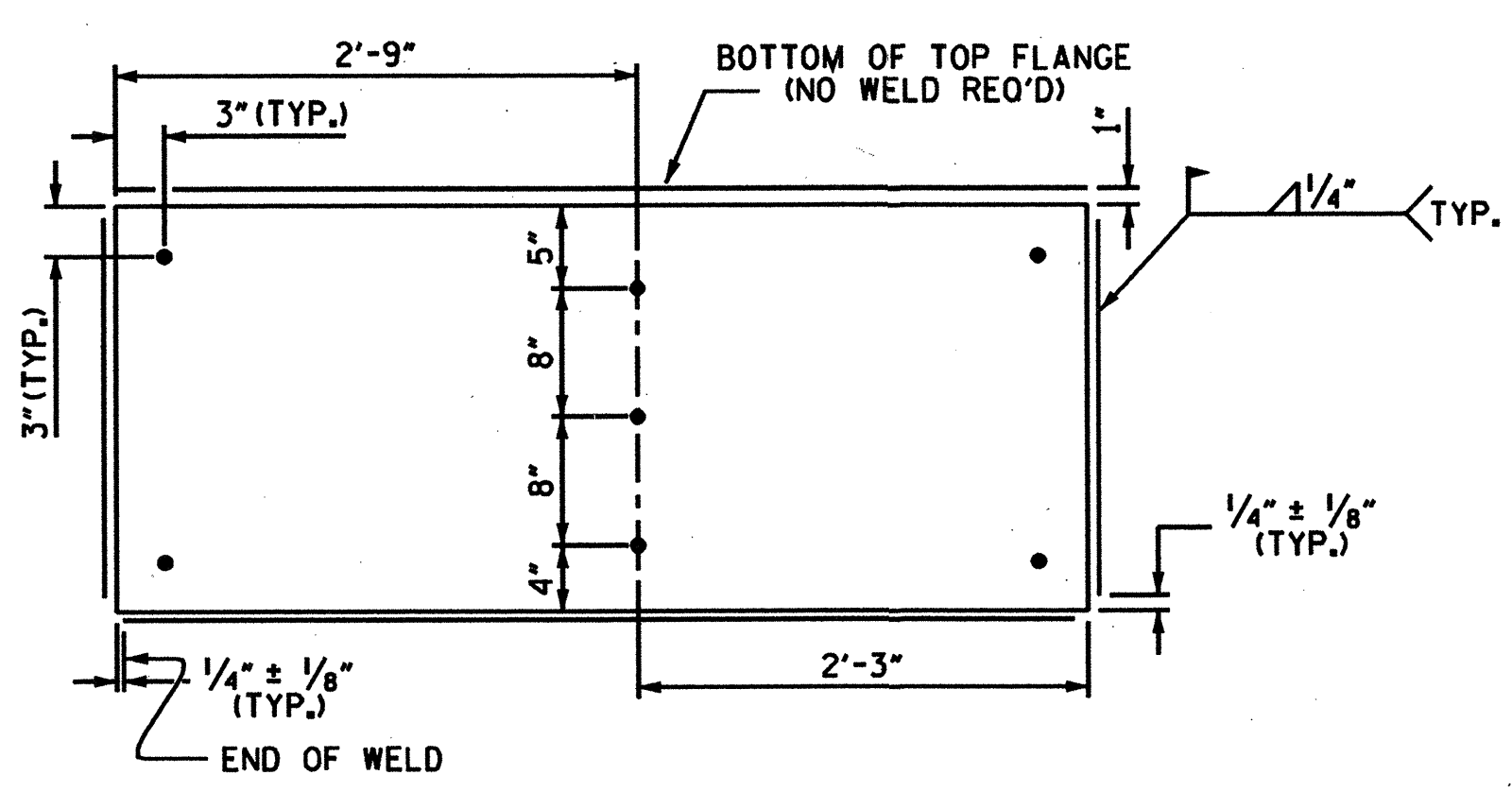
DRAWN BY: W.M. CLARKE DATE: 9-09
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REVISIONS						SHEET NO. S-12
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS
2			4			

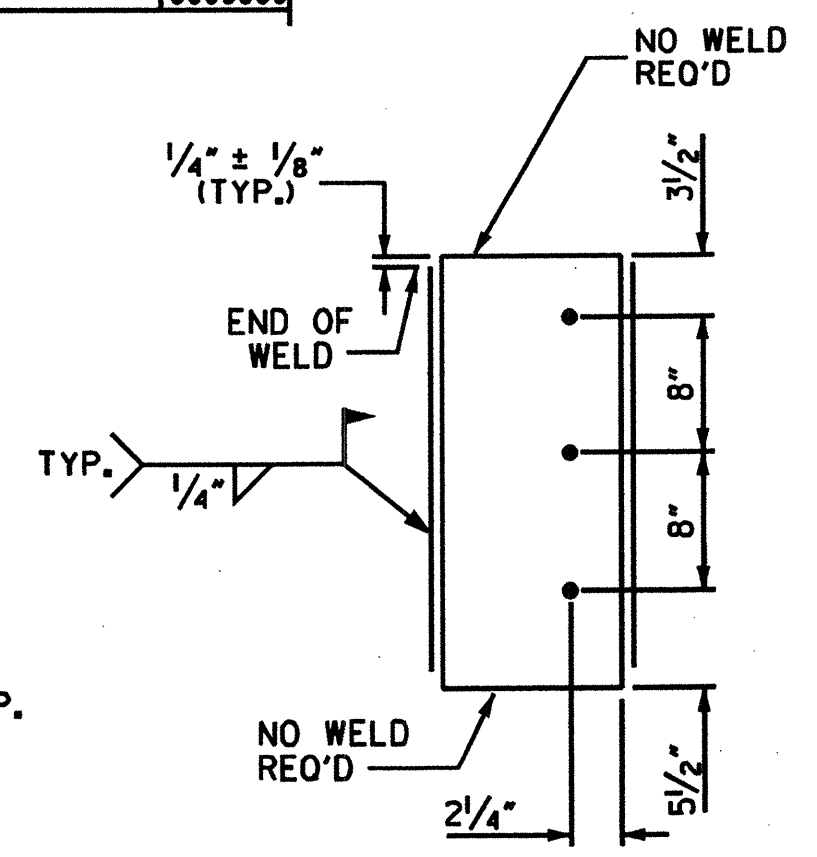
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SPAN 18
BOTTOM FLANGE DETAIL



DETAIL Y
 ALL HOLES SHALL BE 15/16" Ø
 1/8" Ø HIGH STRENGTH BOLTS
 REQUIRED IN ALL 15/16" Ø HOLES



DETAIL Z
 ALL HOLES SHALL BE 15/16" Ø

REPAIR 4-D	
REMOVAL	REMOVE EXISTING DECK CONCRETE 1'-6" FROM CENTER OF JOINT (3'-0" OPENING). REMOVE EXISTING DIAPHRAGM AND CONNECTOR PLATES. REMOVE EXISTING PAINT IN AREA OF DIAPHRAGM REPLACEMENT.
STRUCTURAL STEEL REPAIR	CLEAN DEBRIS FROM EXISTING WEB AND INSTALL 1/2" BENT GUSSET PLATE CONNECTOR, 5'-0" X 2'-1" X 1/2" AND 2'-1" X 10 1/2" X 1/2" WEB PLATES AND L 8 X 8 X 1/2 ANGLES. INSTALL DIAPHRAGM D2.
CONCRETE REPAIR	INSTALL REINFORCING STEEL. RECAST DECK TO PROPER ELEVATION WITH CLASS AA CONCRETE. GROOVE DECK REPLACEMENT.

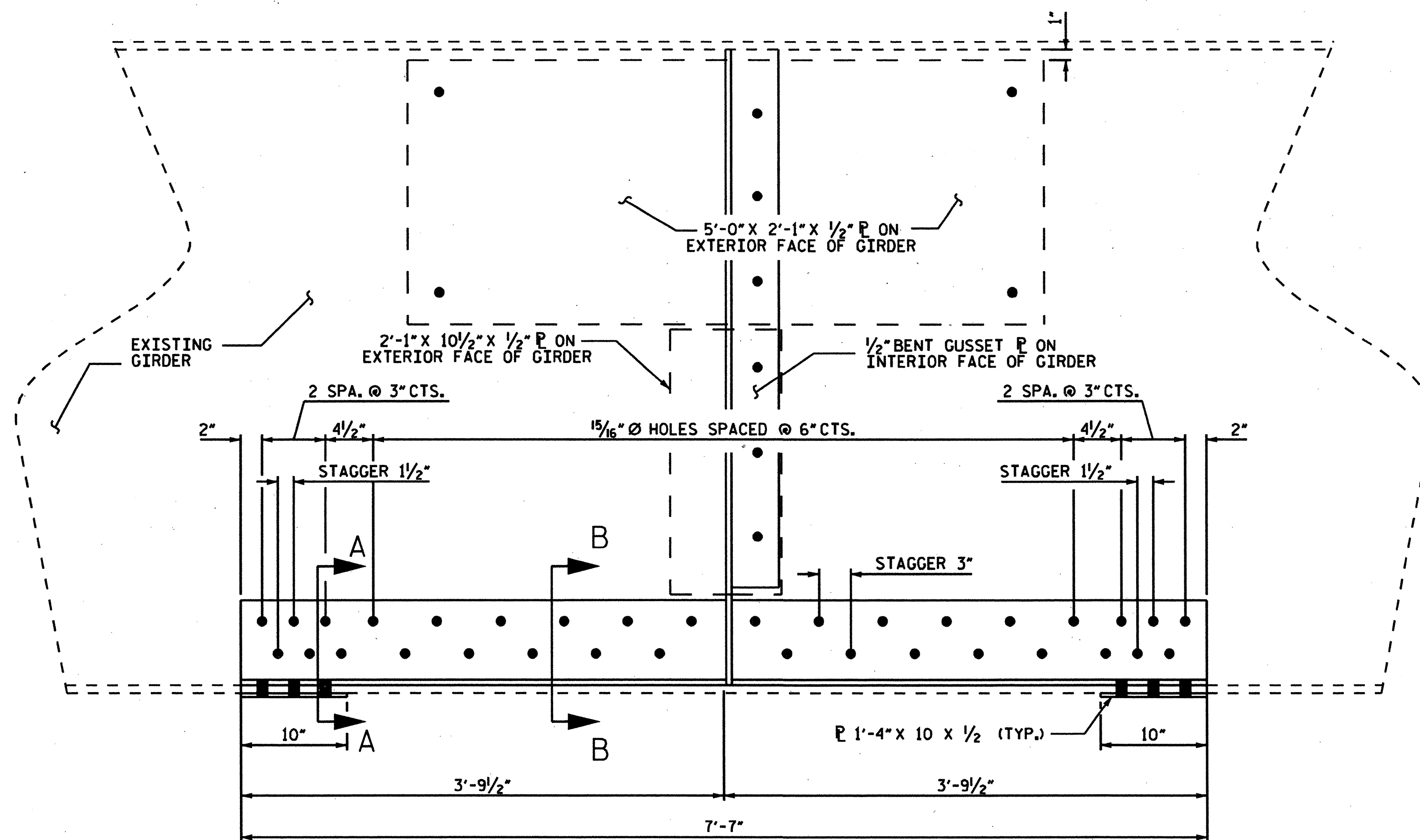
BRIDGE NO. 7
BERTIE COUNTY
 STATION: 193+60

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 STRUCTURAL
 STEEL DETAILS
 REPAIR 4-D.1

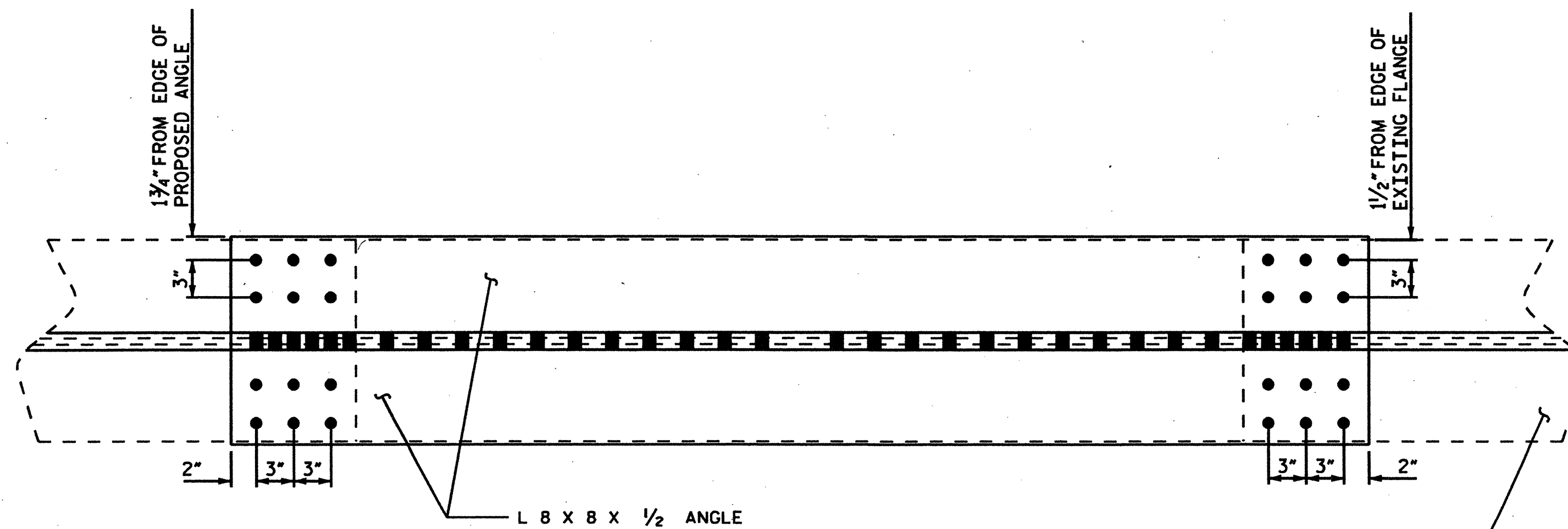
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REVISIONS						SHEET NO. S-13
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS
2			4			

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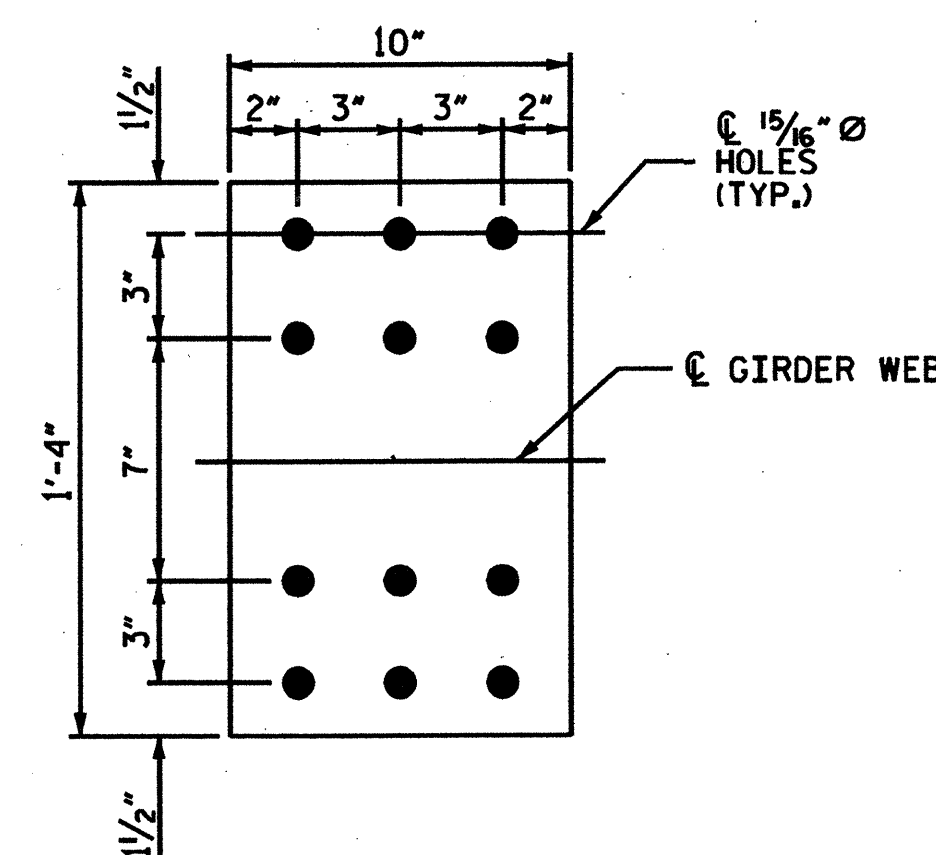


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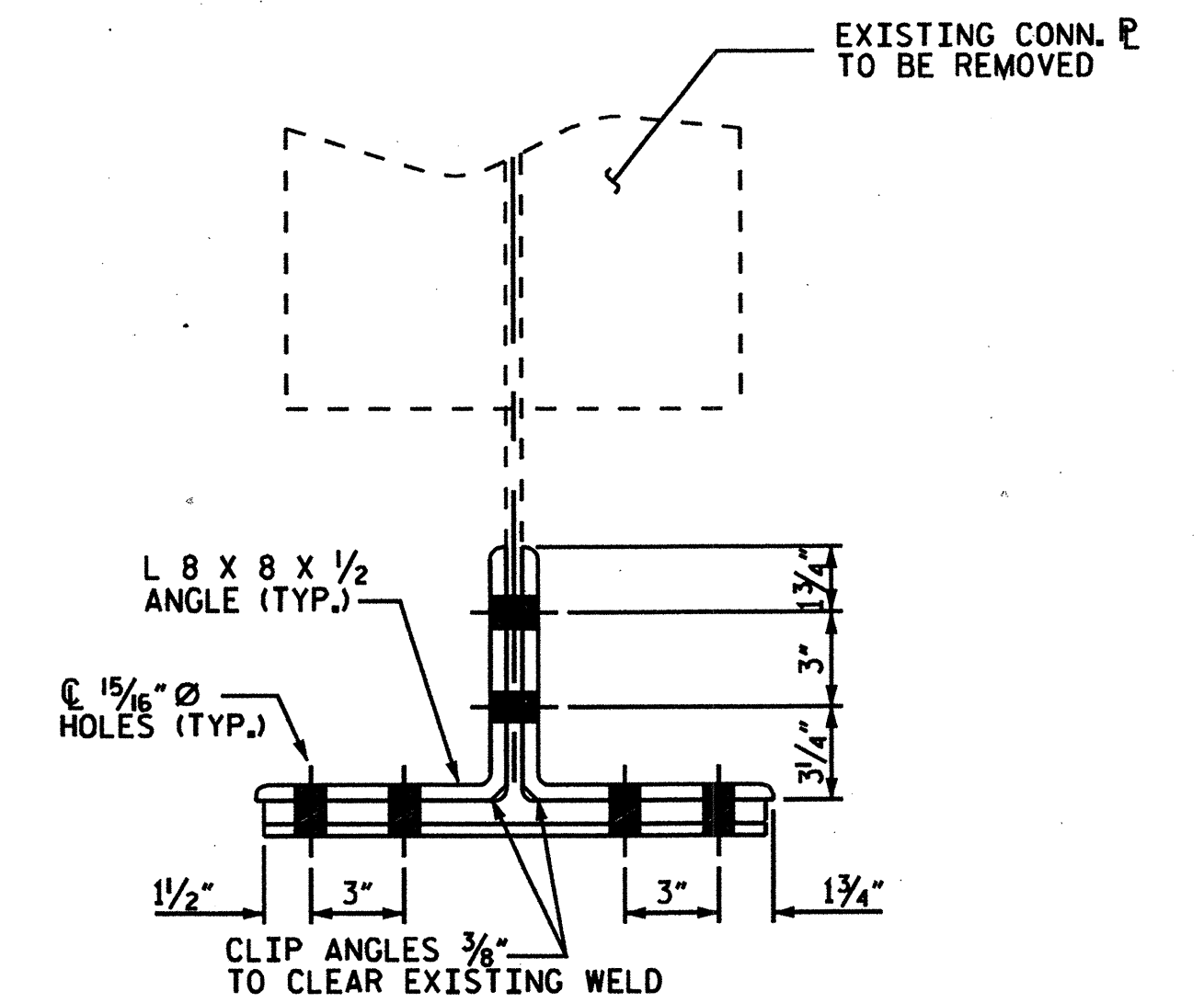


PLAN (TOP OF BOT. FLANGE)

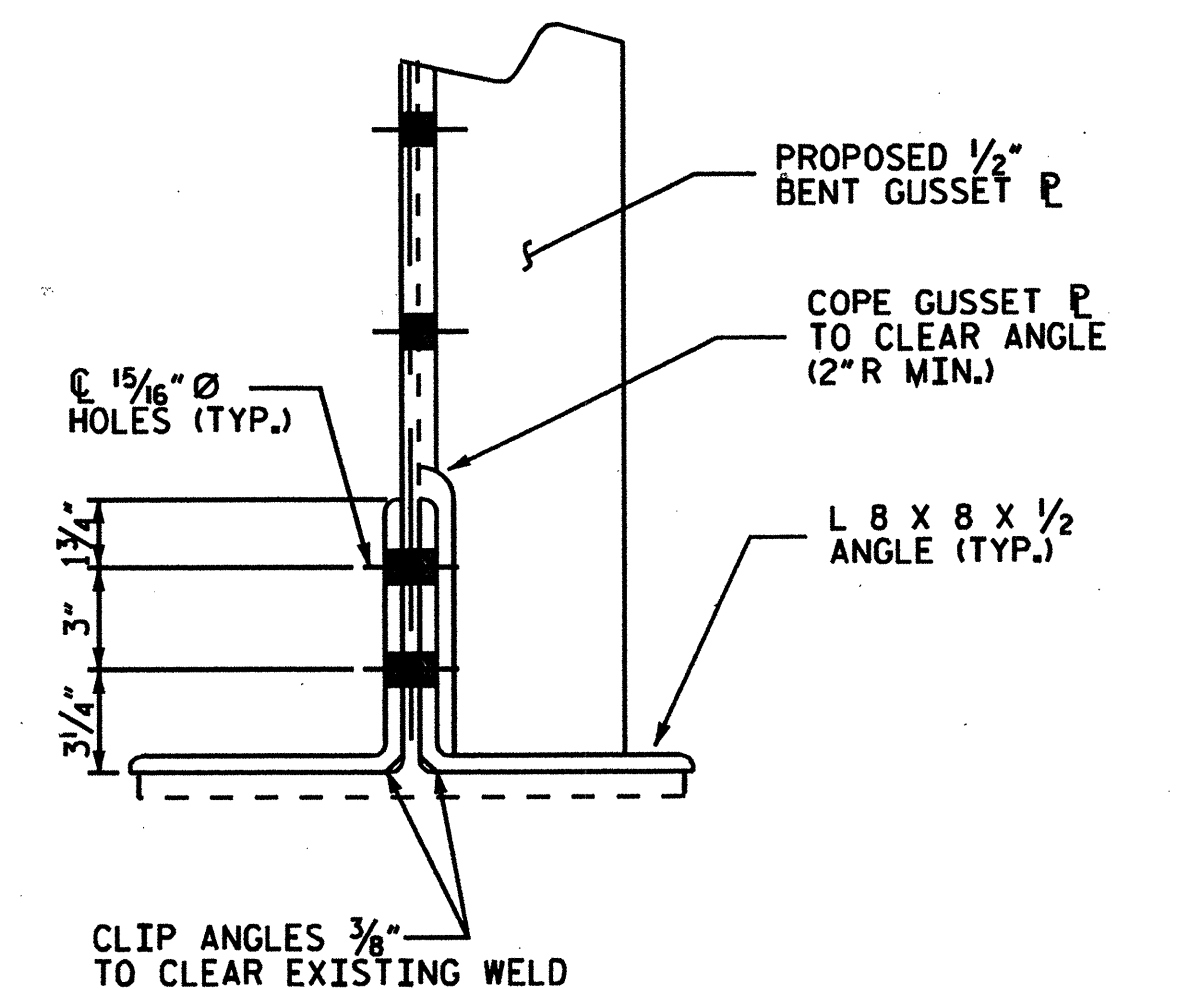
ANGLE ATTACHMENT DETAILS



FLANGE PLATE
(BOTTOM OF BOTTOM FLANGE)



SECTION A-A



SECTION B-B

BRIDGE NO. 7
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STATION: 193+60

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
REPAIR 4-D.2

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

NOTES

AT ALL FIXED POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS ARE TO BE TIGHTENED FINGER TIGHT AND THEN BACKED OFF 1/2 TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

THE 2" Ø PIPE SLEEVE SHALL BE CUT FROM SCHEDULE 40 PVC PLASTIC PIPE. THE PVC PLASTIC PIPE SHALL MEET THE REQUIREMENTS OF ASTM D1785.

THE PAYMENT FOR THE PIPE SLEEVES SHALL BE INCLUDED IN THE SEVERAL PAY ITEMS.

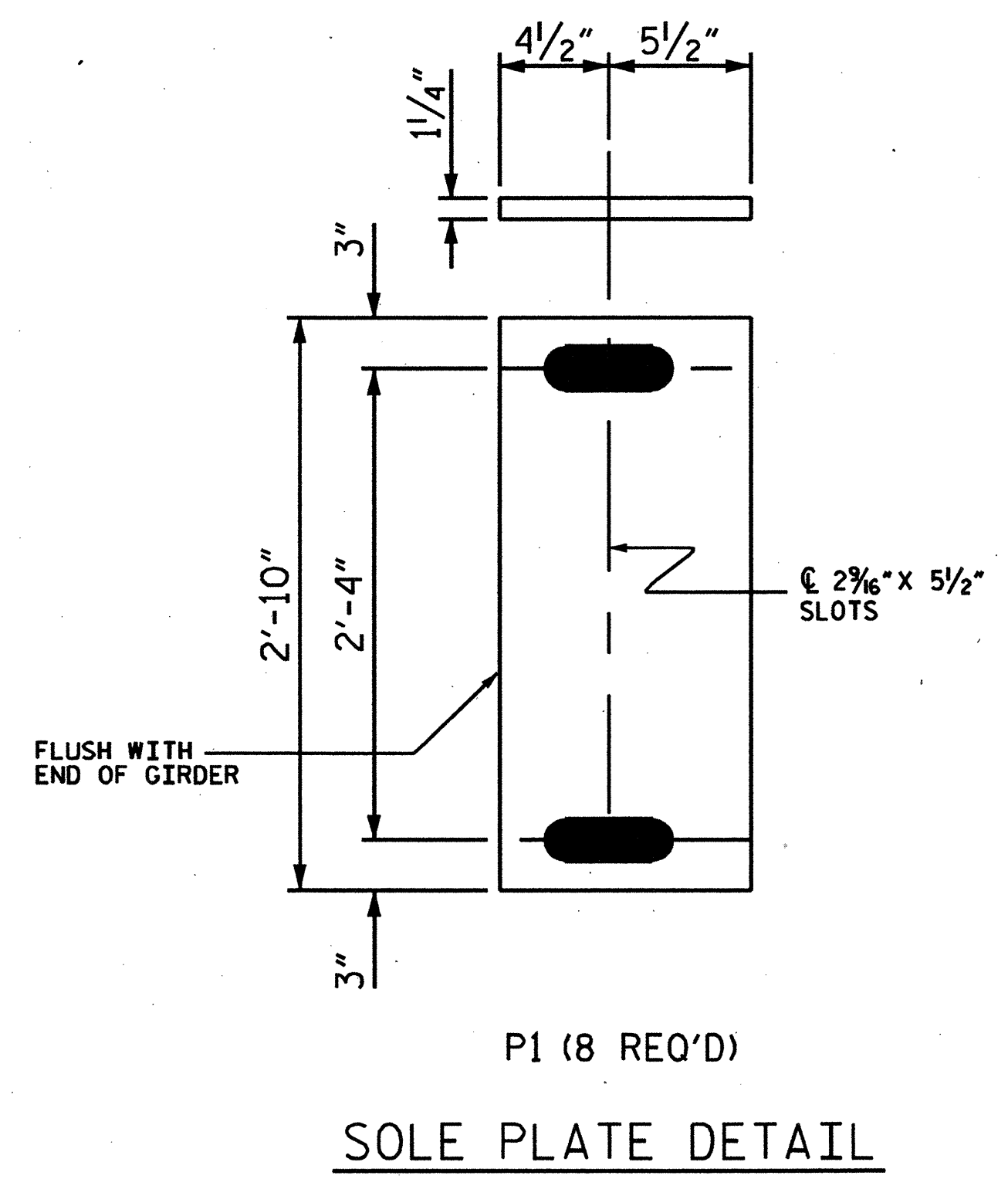
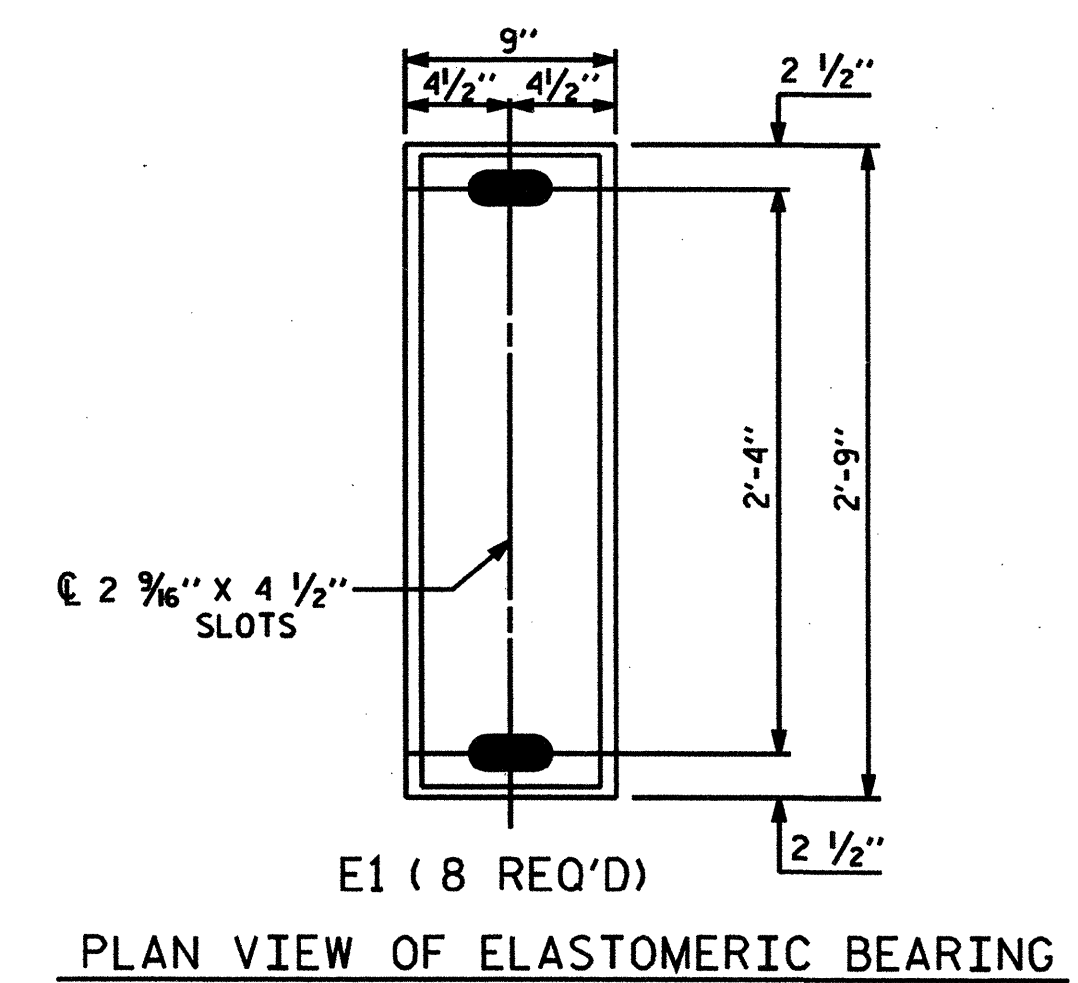
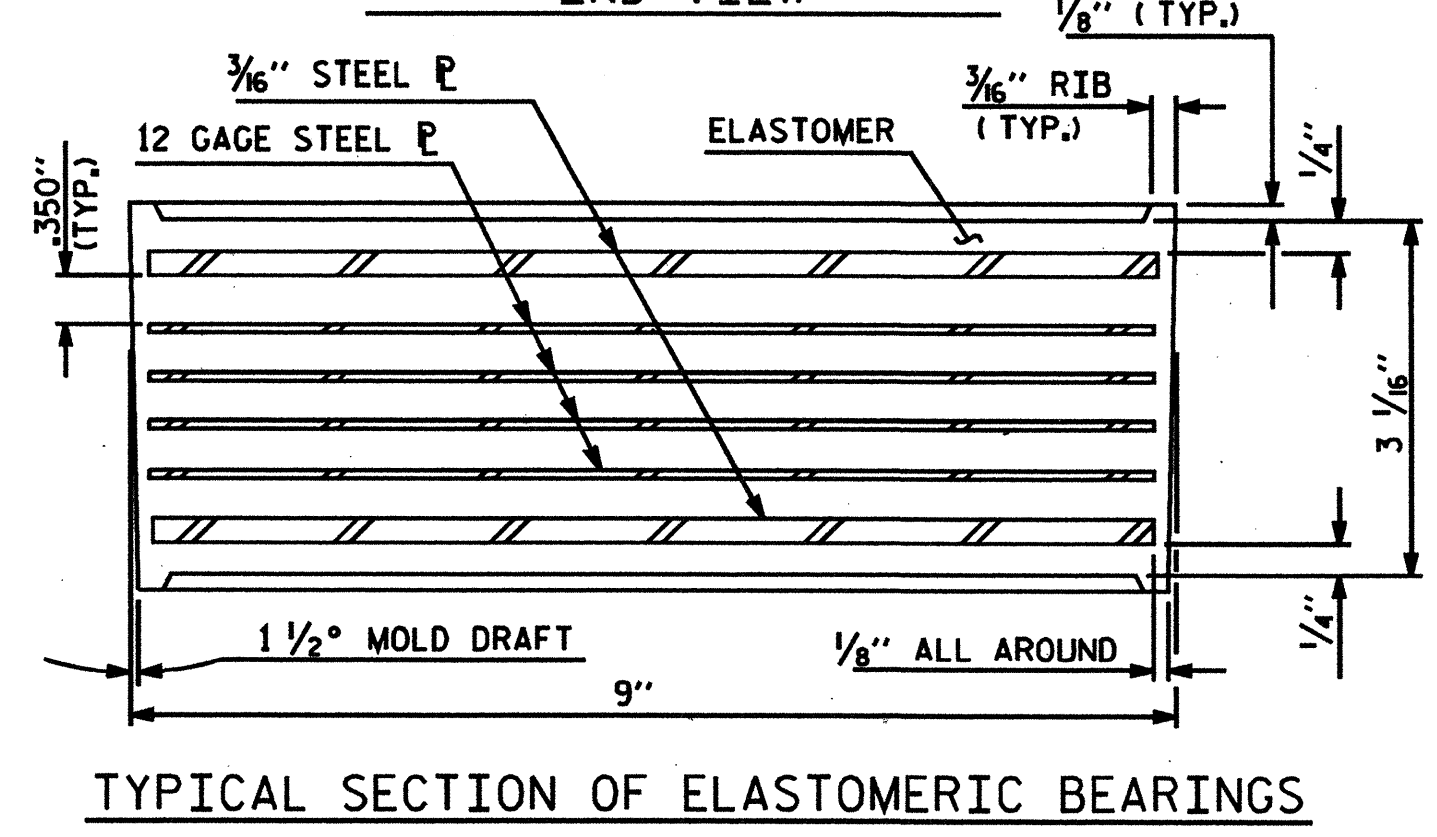
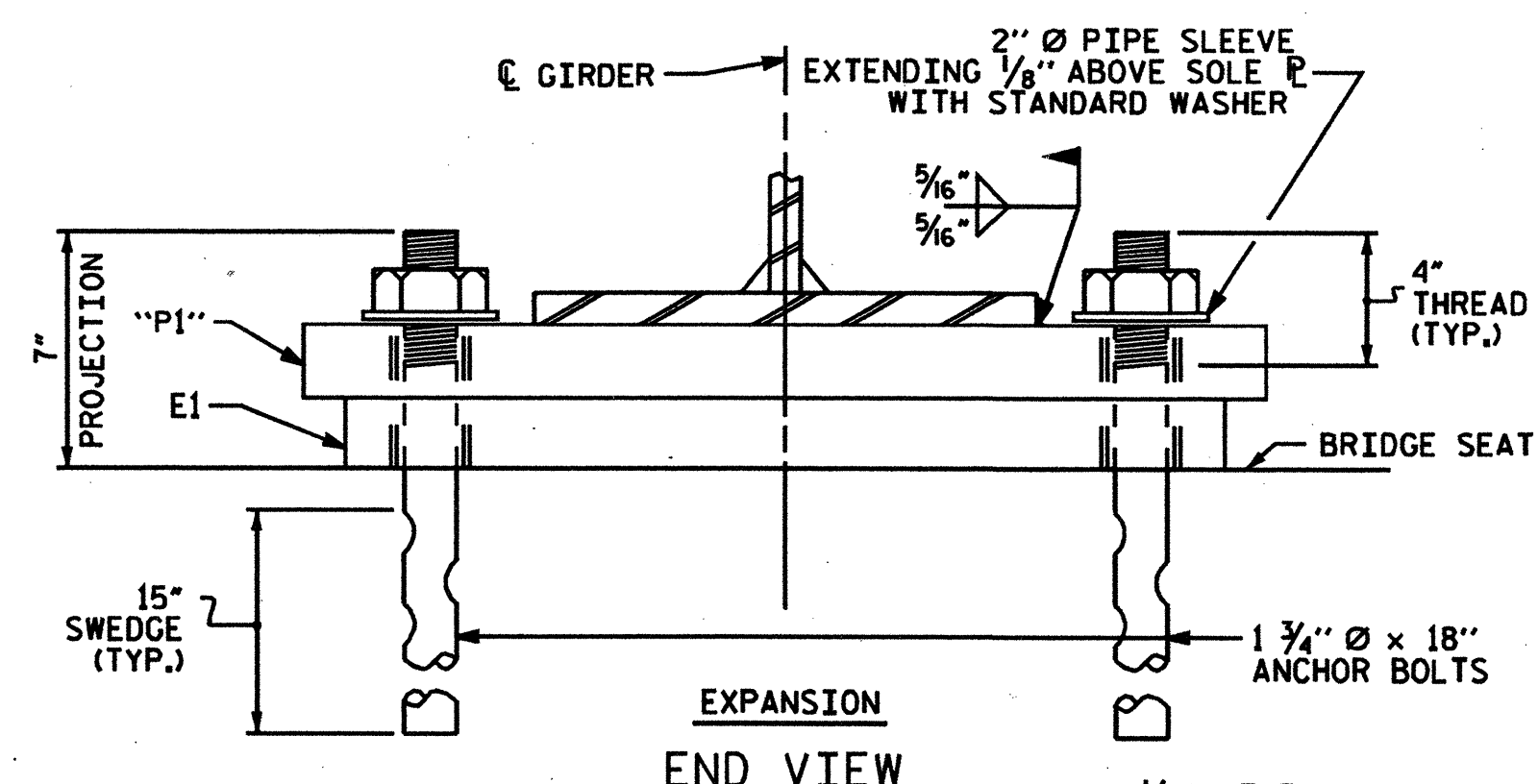
FOR PAINTED STRUCTURAL STEEL (EXCLUDING AASHTO M270 GRADE 50W), SOLE PLATES, ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

FOR AASHTO M270 GRADE 50W STRUCTURAL STEEL, SOLE PLATE SHALL BE AASHTO M270 GRADE 50W AND SHALL NOT BE GALVANIZED. ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H. WASHERS SHALL MEET THE REQUIREMENTS OF AASHTO M293. SHOP DRAWINGS ARE NOT REQUIRED FOR ANCHOR BOLTS, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED.

WHEN FIELD WELDING THE SOLE PLATE TO THE GIRDER FLANGE, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE SOLE PLATE DOES NOT EXCEED 300°F. TEMPERATURES ABOVE THIS MAY DAMAGE THE ELASTOMER.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

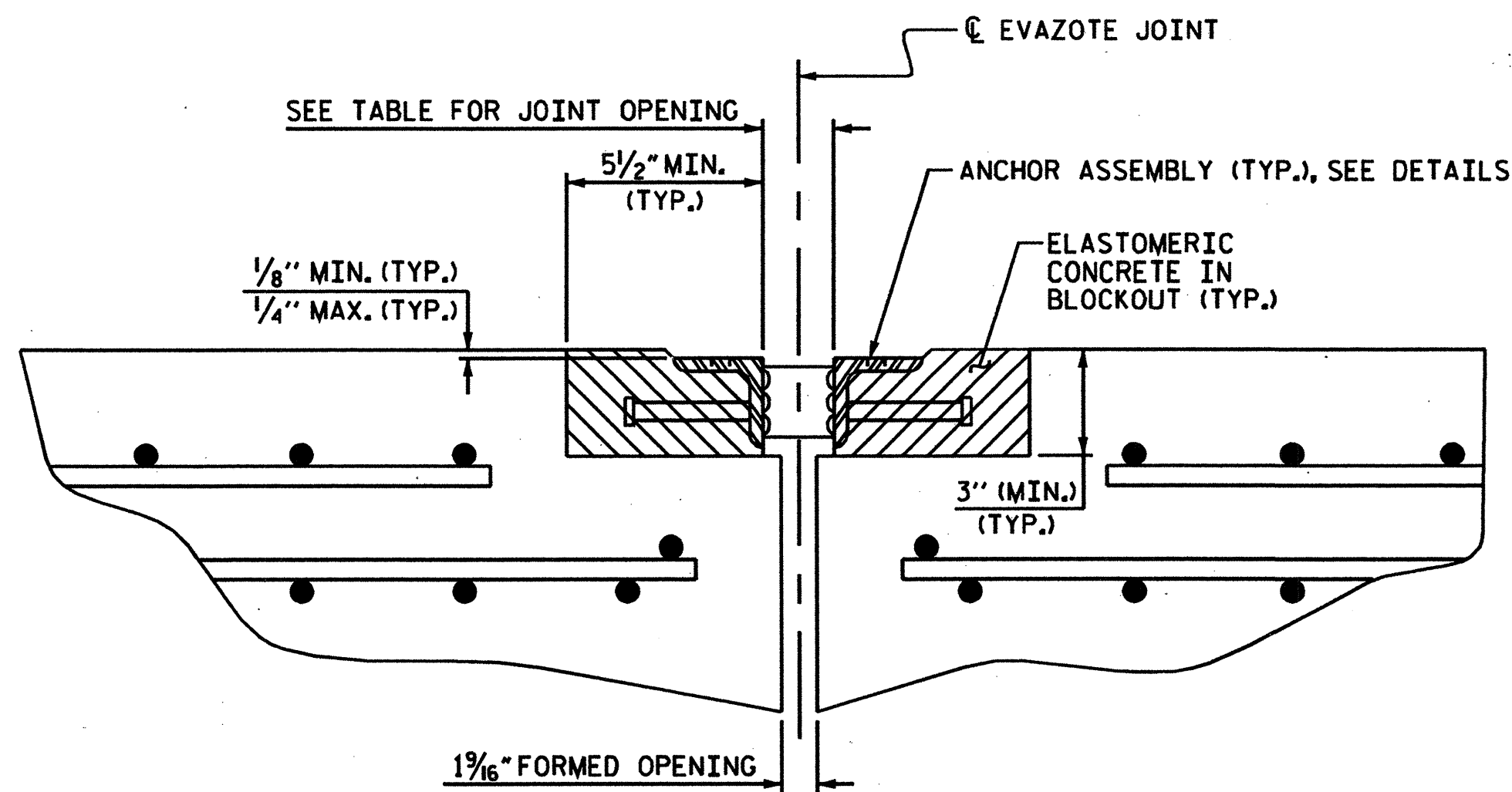


ASSEMBLED BY : W.M. CLARKE	DATE : 8-09
CHECKED BY : B.C. HANKS	DATE : 9-09
DRAWN BY : EEM 10/95	REV. 10/17/00 RWW/LES
CHECKED BY : PEK 10/95	REV. 7/10/01 LES/RDR
	REV. 5/1/06 TLA/GM

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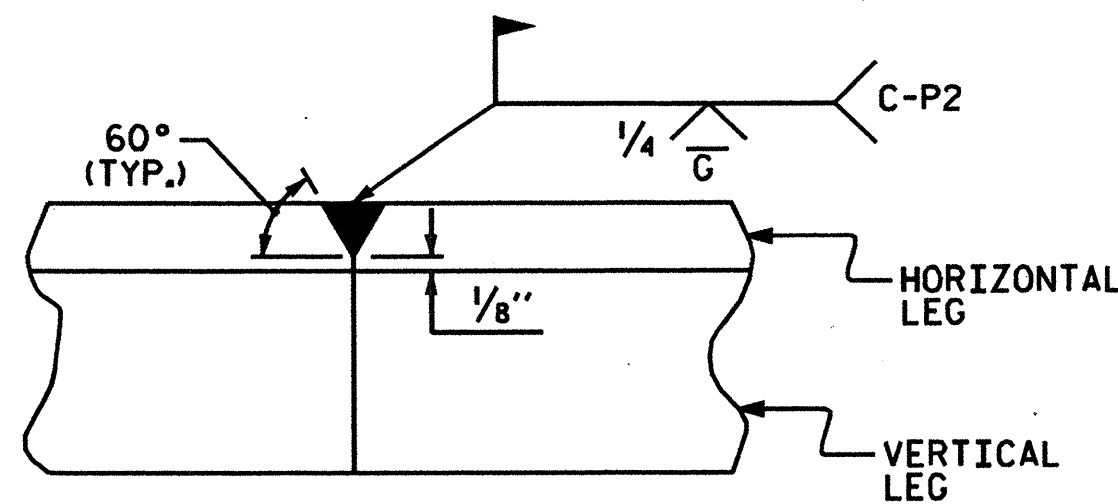
BRIDGE NO. 7
BERTIE COUNTY
STATION: 193+60

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
ELASTOMERIC BEARING DETAILS (STEEL SUPERSTRUCTURE)					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
					SHEET NO. S-15
					TOTAL SHEETS



ARMORED JOINT DETAILS

SECTION NORMAL TO JOINT AT BENT



DETAIL- FIELD WELD SPLICE OF ANGLE

NOTES

ANGLES SHALL CONFORM TO AASHTO M270 GRADE 36 STEEL OR APPROVED EQUAL. ALL STUD ANCHORS SHALL CONFORM TO AASHTO M169 GRADES 1010 THRU 1020 OR APPROVED EQUAL.

STUD ANCHORS SHALL BE SHOP WELDED AND ALL HOLES SHALL BE SHOP DRILLED AS SHOWN ON THE PLANS. STUD ANCHORS SHALL BE ELECTRIC ARC END WELDED WITH COMPLETE FUSION.

UPON COMPLETION OF SHOP FABRICATION, THE ENTIRE ANCHOR ASSEMBLY SHALL BE METALLIZED. THE 1/2\"/>

ANCHOR ASSEMBLY SHALL BE MADE CONTINUOUS THE LENGTH OF THE JOINT FROM GUTTER TO GUTTER. FOR FIELD SPLICES AT ALL CROWN BREAK POINTS, THE ENDS OF THE STEEL ANGLES SHALL BE CUT PARALLEL TO THE BRIDGE CENTERLINE. FINISHED FIELD WELDS SHALL BE GROUND SMOOTH AND COATED WITH A MINIMUM THICKNESS OF 4 DRY MILS OF ZINC-RICH PAINT IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

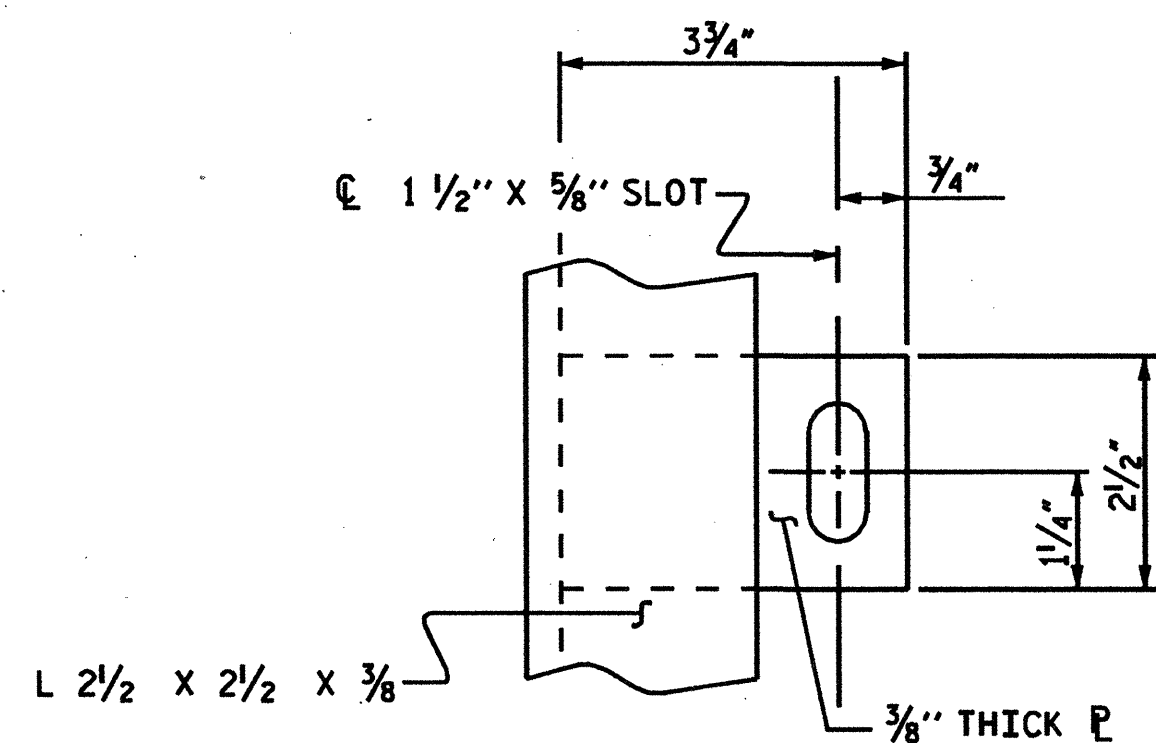
ANCHOR ASSEMBLY SEGMENTS SHALL NOT BE LESS THAN 12 FEET NOR MORE THAN 20 FEET IN LENGTH. SHORTER SEGMENTS MAY BE USED AT THE EDGE OF ROADWAY OR AT POINTS OF STAGED CONSTRUCTION.

THE ANCHOR ASSEMBLY SHALL BE SECURED AND LEVELED AS SHOWN IN THE "ARMORED JOINT ANCHOR ASSEMBLY DETAILS". NO SUBMITTALS ARE REQUIRED FOR 3/8\"/>

AFTER THE ELASTOMERIC CONCRETE HAS BEEN CAST ON BOTH SIDES OF THE JOINT, REMOVE ANY EXCESS CONCRETE THAT COMES THROUGH THE WEEP HOLES AND THOROUGHLY CLEAN THE ANGLES. ANY DAMAGED STEEL SHALL BE COATED WITH A MINIMUM OF 4 MILS OF ZINC-RICH PAINT IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

SEE SPECIAL PROVISIONS FOR EVAZOTE JOINT SEALS.

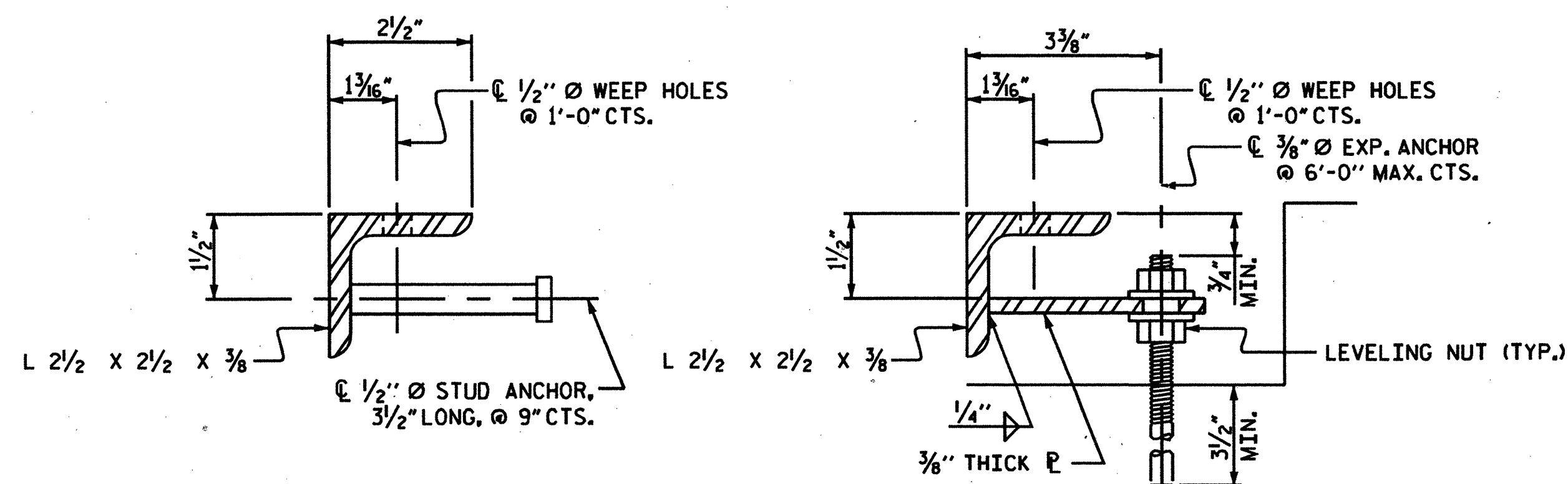
SEE SPECIAL PROVISIONS FOR ELASTOMERIC CONCRETE FOR JOINT REPAIR.



PLAN VIEW OF TAB

MOVEMENT AND SETTING AT EVAZOTE JOINT						
BENT NO.	SKEW ANGLE	NOMINAL UNCOMPRESSED SEAL WIDTH	TOTAL MOVEMENT (ALONG C. RDWY)	PERPENDICULAR JOINT OPENING AT 45° F	PERPENDICULAR JOINT OPENING AT 60° F	PERPENDICULAR JOINT OPENING AT 90° F
16	90°	3 7/16"	1 3/4"	2 3/4"	2 1/2"	2"
19	90°	3 7/16"	1 3/4"	2 3/4"	2 1/2"	2"

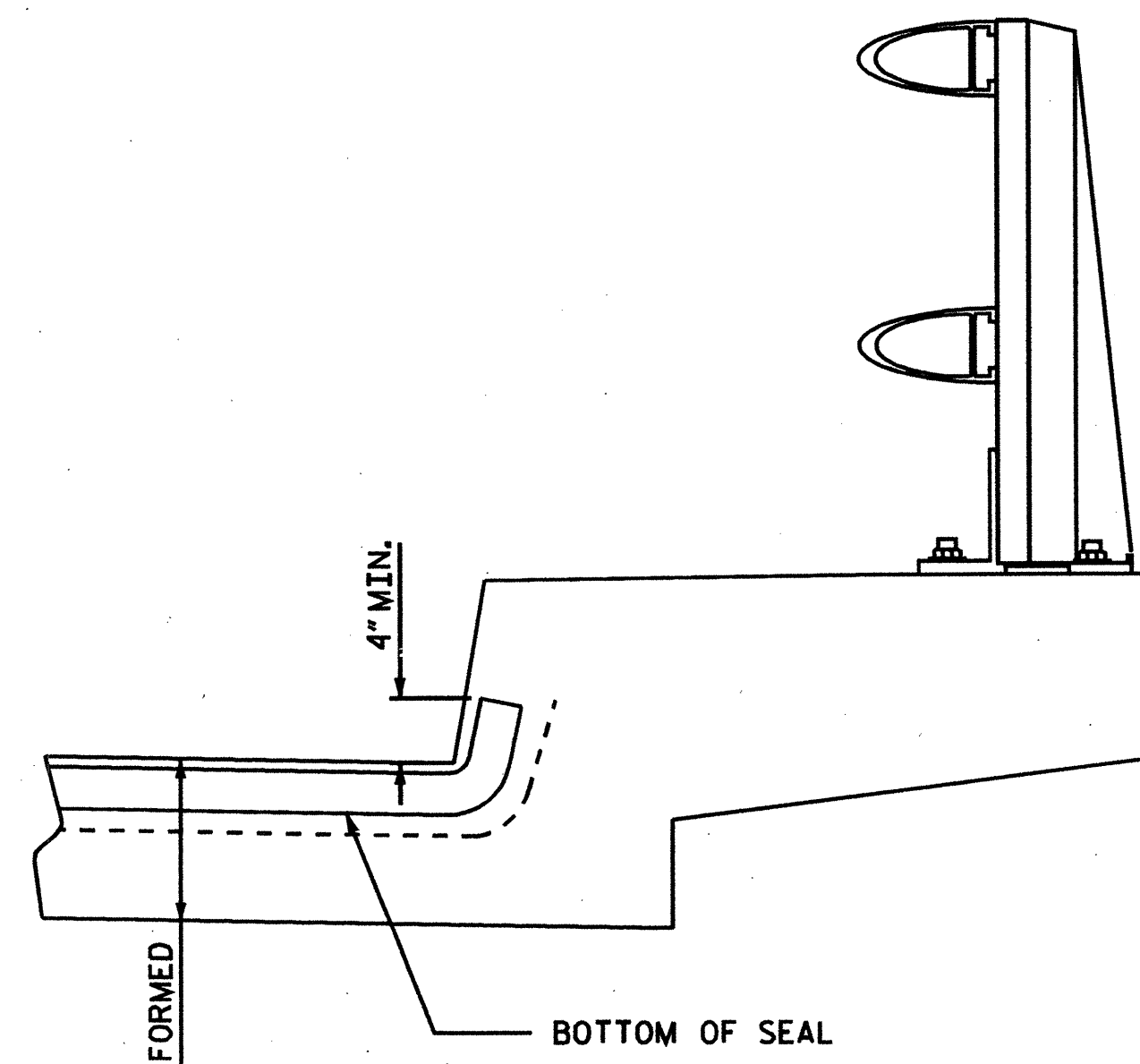
TOTAL MOVEMENT IS CALCULATED ALONG THE CENTERLINE OF ROADWAY. JOINT OPENINGS ARE MEASURED PERPENDICULAR TO THE JOINT.



SECTION VIEW OF STUD

SECTION VIEW OF TAB

ARMORED JOINT ANCHOR ASSEMBLY DETAILS



EVAZOTE JT. IN RAIL

BILL OF MATERIAL		
BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)	TOTAL LENGTH OF ANGLE (FT.)
16	6.4	56'-0"
19	6.4	56'-0"

* BASED ON THE MINIMUM BLOCKOUT SHOWN.

BRIDGE NO. 7
 BERTIE COUNTY
 STATION: 193+60

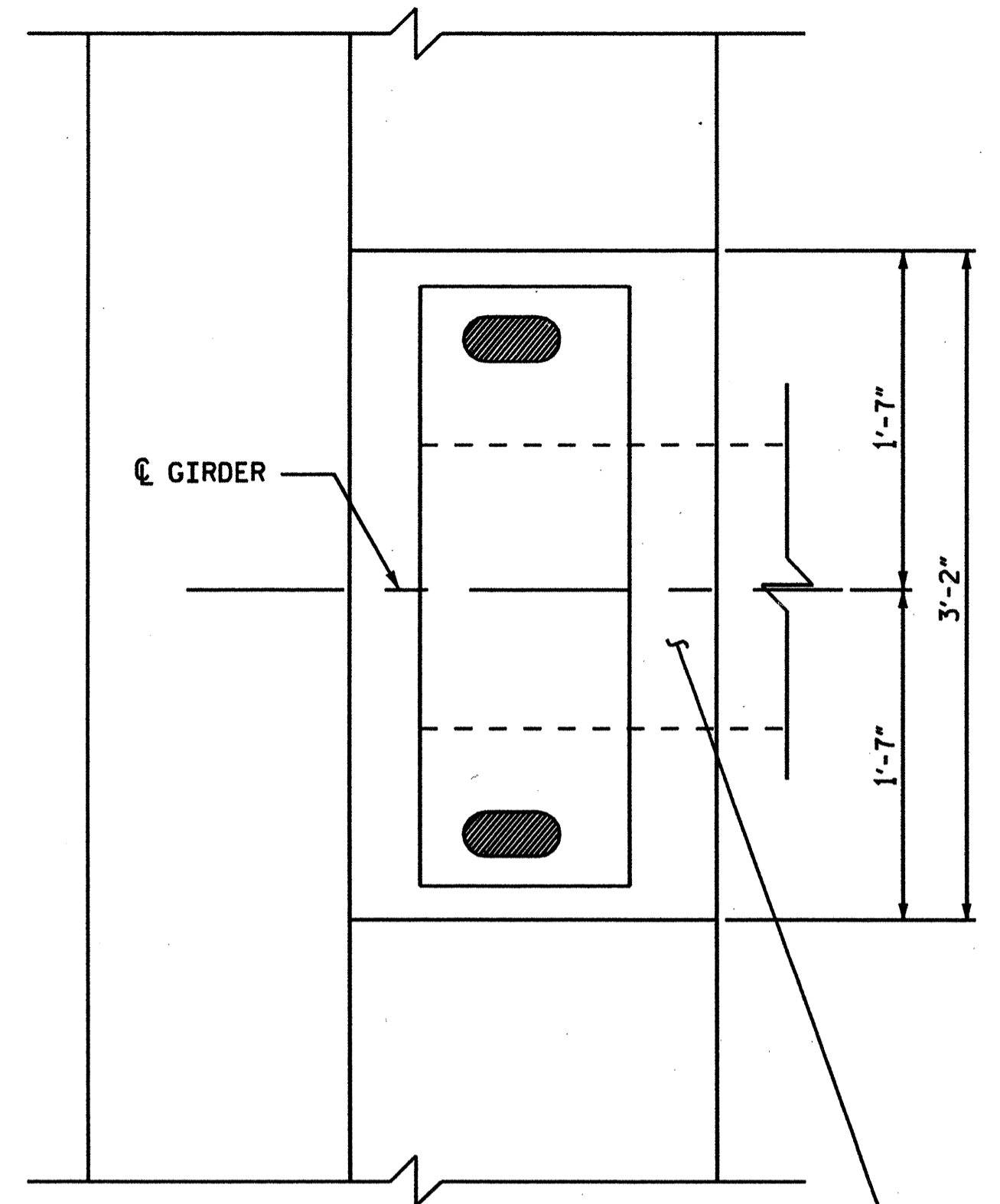
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

ARMORED EVAZOTE JOINT DETAILS

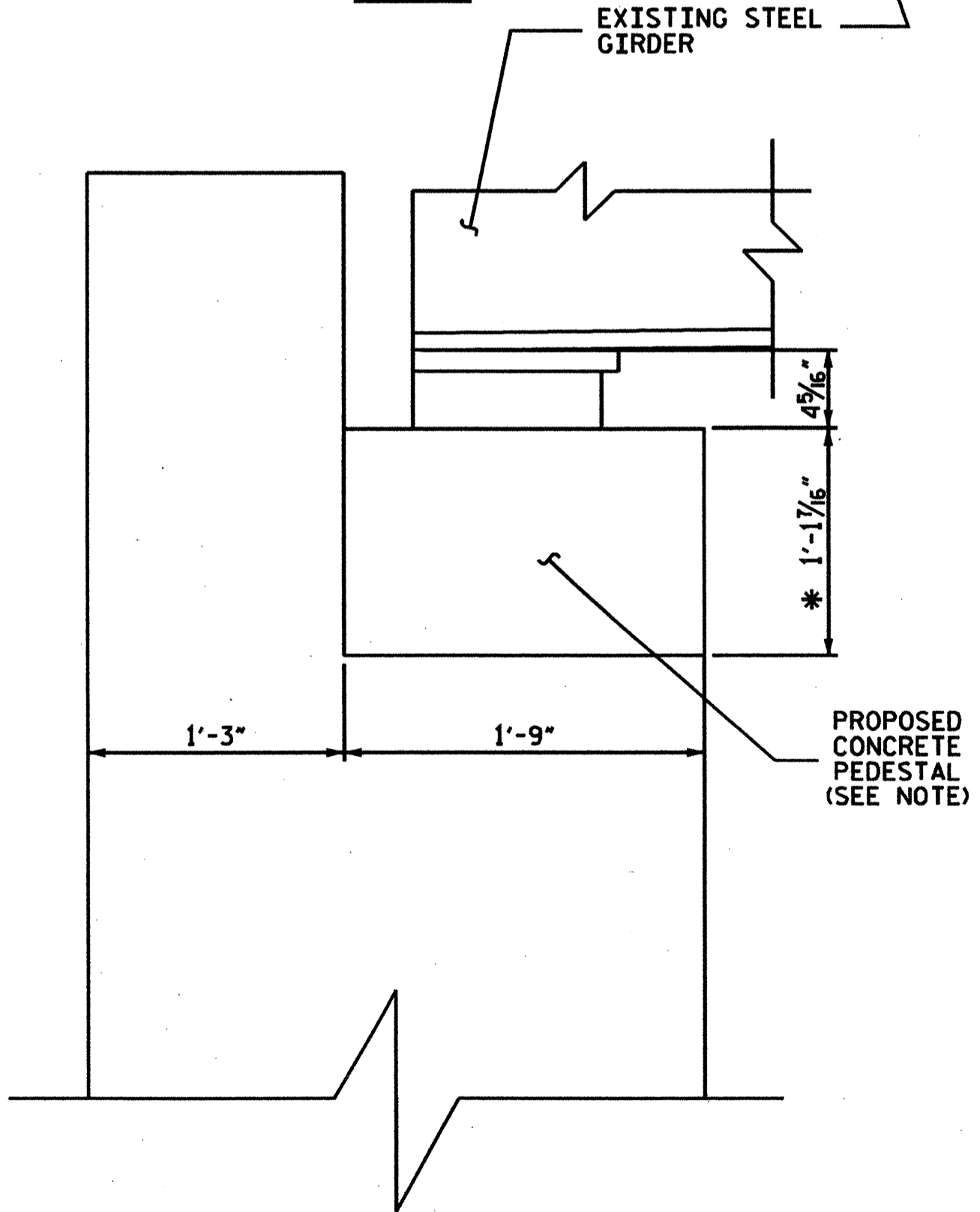
ASSEMBLED BY : W.M. CLARKE DATE : 8-09
 CHECKED BY : B.C. HANKS DATE : 9-09
 DRAWN BY : EEM 1/96 REV. 7/10/01 LES/RDR
 CHECKED BY : RCW 1/96 REV. 5/17/03RR RWW/JTE
 REV. 5/1/06 TLG/OM

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

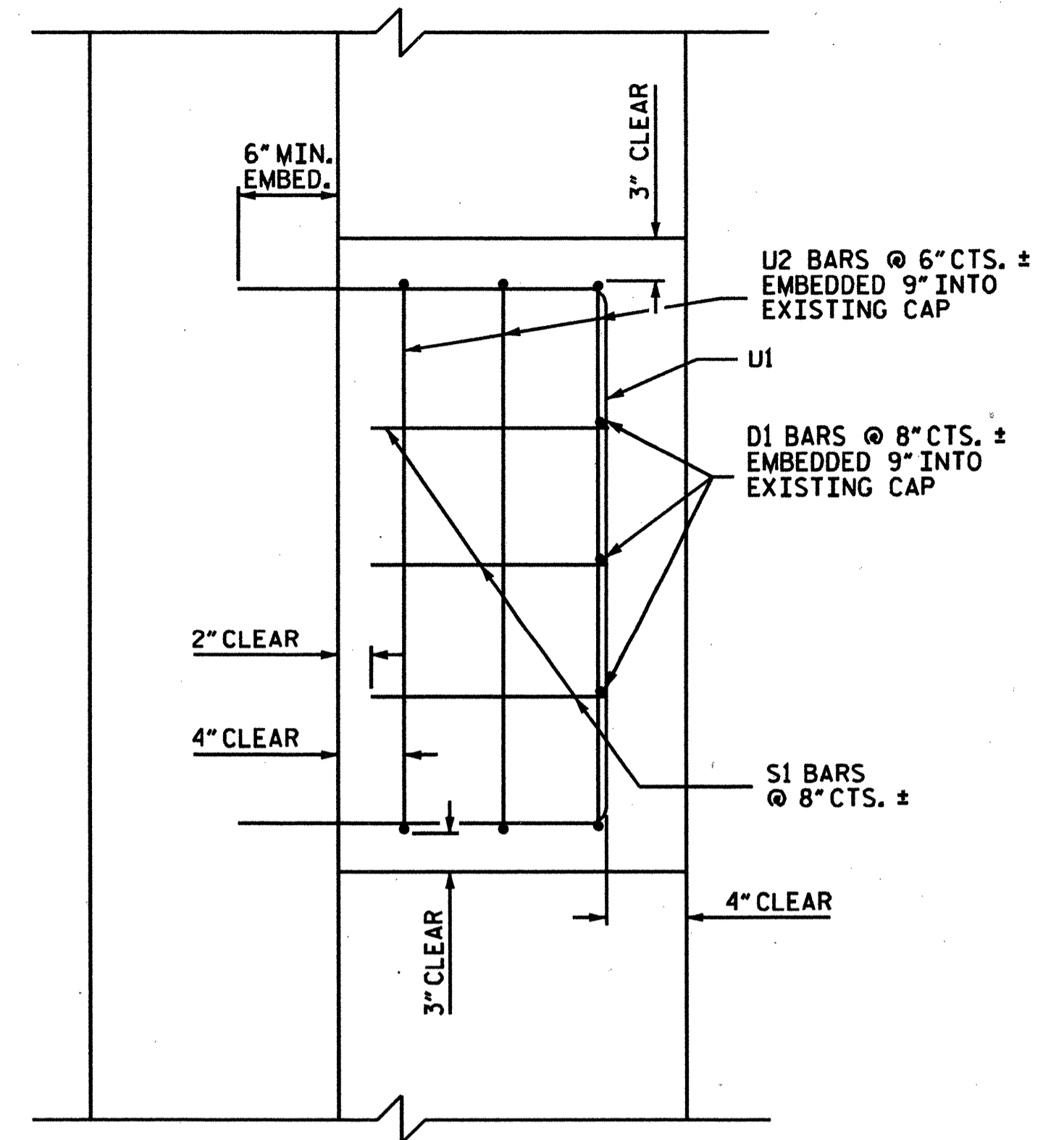
*****SYSTEM*****
 *****DGN*****
 *****USERNAME*****



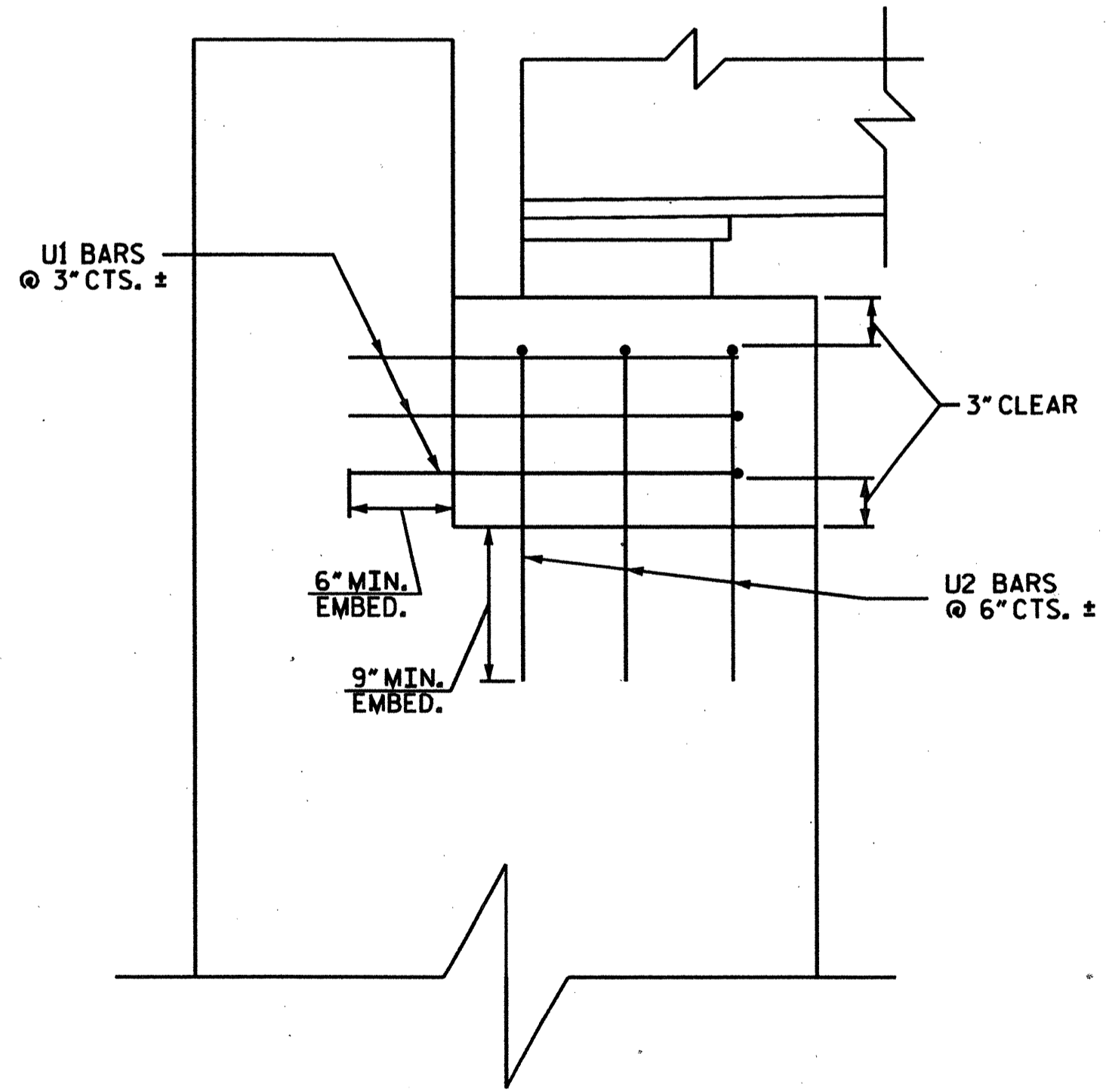
PLAN



ELEVATION

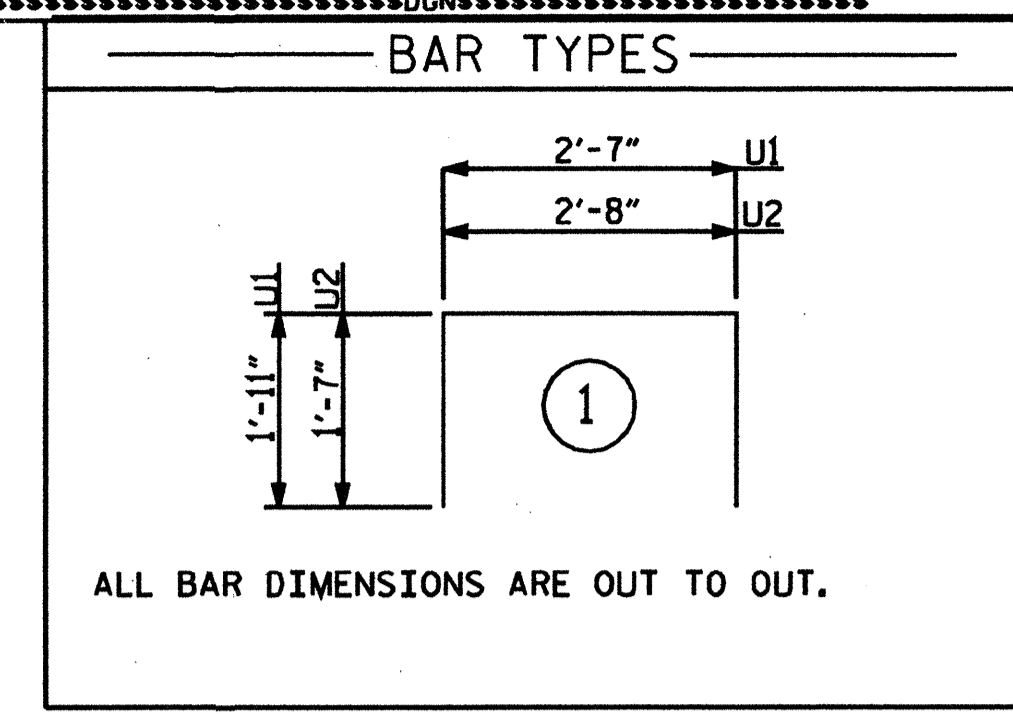


PLAN



ELEVATION

EXTERIOR REINFORCEMENT



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL					
1 PEDESTAL (8 REQ'D)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
D1	3	#4	STR	1'-7"	3
S1	3	#4	STR	1'-3"	3
U1	3	#4	1	6'-5"	13
U2	3	#4	1	5'-10"	12
REINFORCING STEEL					= 31 LBS
CLASS A CONCRETE					= 0.25 C.Y.

NOTES

- ① BRIDGE SEAT SHALL BE CLEANED AND ROUGHENED, AND AN APPROVED BONDING AGENT SHALL BE APPLIED PRIOR TO CASTING THE PEDESTAL.
- ② THE U1 AND U2 BARS SHALL BE INSTALLED USING AN ADHESIVE ANCHOR SYSTEM. THE YIELD LOAD FOR THE "U" 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.

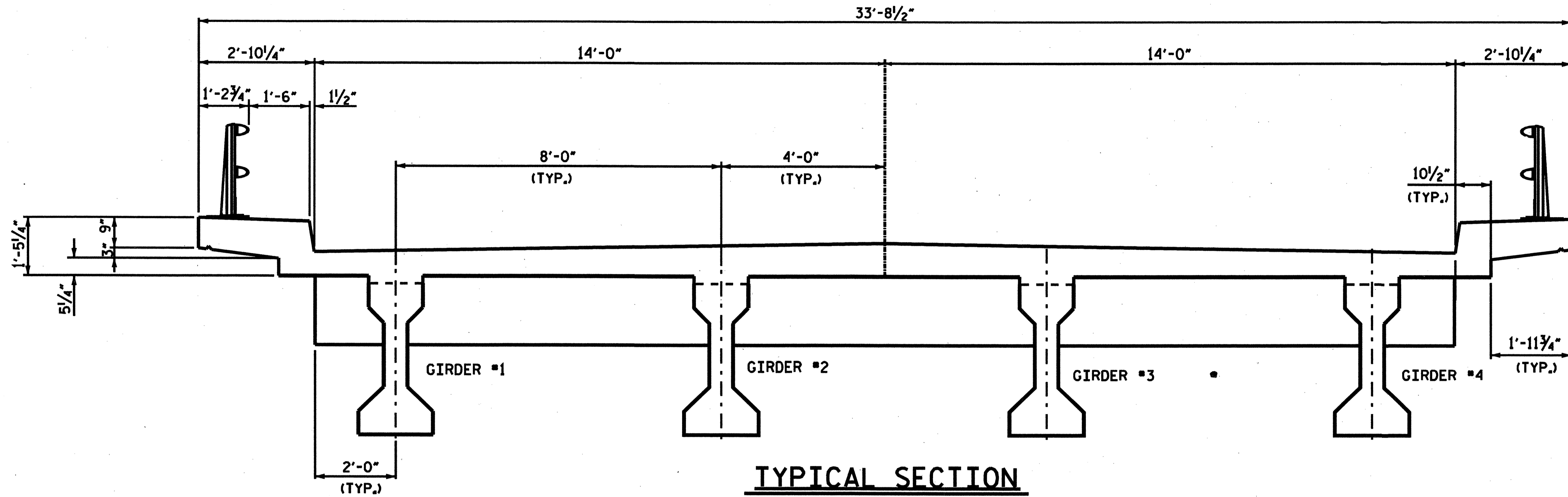
* PEDESTAL HEIGHT BASED UPON EXISTING PLANS. CONTRACTOR SHALL VERIFY EXISTING BEARING HEIGHTS AND ADJUST PEDESTAL AND REBAR AS NEEDED TO MAINTAIN EXISTING GRADE ON BRIDGE.

BRIDGE NO. 7
 BERTIE COUNTY
 STATION: 193+60

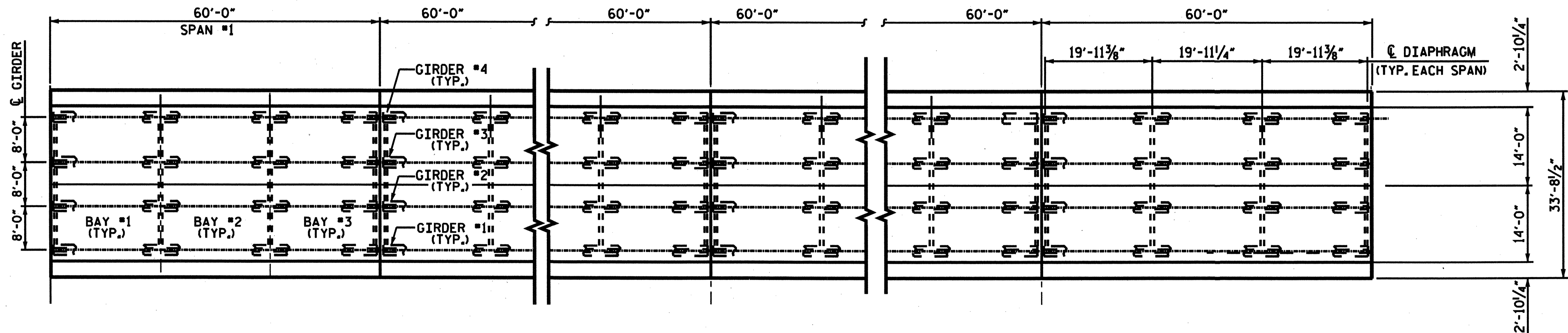
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 PROPOSED CONCRETE
 PEDESTAL AT
 BENT 16 AND BENT 19

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

DRAWN BY : W.M. CLARKE DATE : 8-09
 CHECKED BY : B.C. HANKS DATE : 9-09



TYPICAL SECTION



PLAN OF SPANS
(SPAN #1 TO SPAN #16)

PROJECT NO. B-5194
 COUNTY: BERTIE
 BRIDGE NO. 7

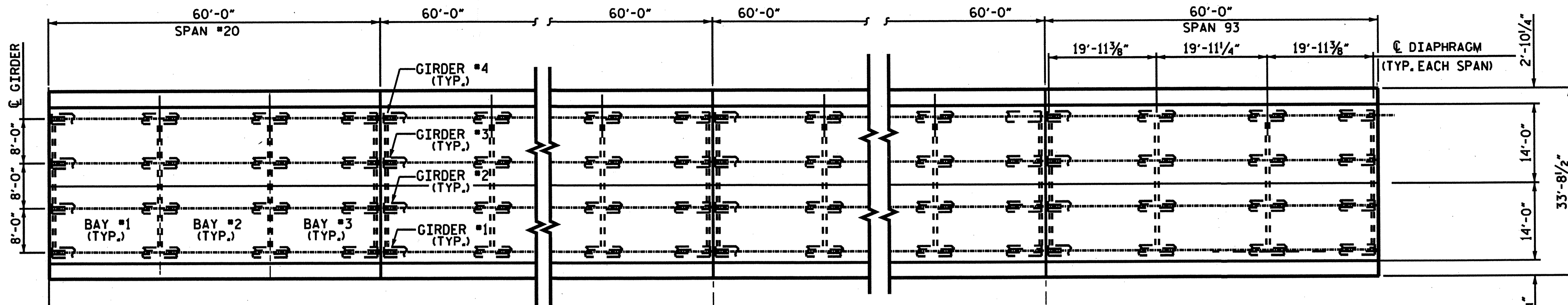


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 BALDWIN
**GIRDER & DIAPHRAGM
 REPAIRS**
 (SPAN #1 TO SPAN #16)

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

SHEET NO.
S-18
TOTAL SHEETS
40

DRAWN BY : S.T.S DATE : 07/2009
 CHECKED BY : A. ABRAHA DATE : 08/2009



PLAN OF SPANS
(SPAN #20 TO SPAN #93)

DIAPHRAGMS AND GIRDER REPAIRS

BENT	DESCRIPTION	LENGTH (FEET)	WIDTH (FEET)	DEPTH (FEET)	VOLUME (CU.FT.)
1	DIAPHRAGM-S. FACE UNDER BAY2	7.75	1.17	0.42	3.80
4	SPAN 4-END DIAPHRAGM BAY #2	1.33	1.33	0.50	0.89
4	SPAN 5-END DIAPHRAGM BAY #2	1.33	1.33	0.50	0.89
4	SPAN 4- GIRDER 1	1.00	0.50	0.21	0.13
5	SPAN 6-END DIAPHRAGM BAY #1	4.04	1.33	0.50	2.69
5	SPAN 6- GIRDER 2	0.58	0.58	0.25	0.09
7	END DIAPHRAGM - BAY 1	1.83	1.17	0.50	1.07
7	SPAN 7- END DIAPHRAGM BAY 3	1.33	1.17	0.50	0.78
7	SOUTH FACE AREAS-DIAPHRAGM- END DIAPHRAGM - BAY 1	1.33	1.17	0.50	0.78
8	SPAN 11-END DIAPHRAGM BAY #2	1.83	1.17	0.50	1.07
11	SPAN 12- GIRDER 2	0.91	0.50	0.25	0.12
12	SPAN 12-END DIAPHRAGM BAY #3	1.83	1.17	0.50	1.07
12	SPAN 13-END DIAPHRAGM BAY #2	1.33	1.17	0.50	0.78
13	SPAN 14-GIRDER 4- EAST SIDE	1.33	1.33	0.33	0.59
14	SPAN 15-GIRDER 3- WEST SIDE	1.33	1.33	0.33	0.59
15	SPAN 15-GIRDER 4- WEST SIDE	1.33	1.33	0.33	0.59
15	SPAN 16- GIRDER 3	0.58	0.91	0.25	0.13
15	SPAN 16- GIRDER 4	1.58	1.15	0.41	0.75
15	SPAN 16- GIRDER 4	1.33	1.33	0.25	0.59
16	SPAN 16- GIRDER 3	0.58	0.58	0.25	0.09
21	SPAN 21-GIRDER #1	1.33	1.00	0.25	0.34
21	SPAN 21-GIRDER #4	1.33	1.00	0.41	0.55
21	END DIAPHRAGM BAY 1-SPAN 21	1.83	1.16	0.50	1.07
22	SPAN 22-GIRDER #3	1.33	1.00	0.41	0.55
23	SPAN 23-END DIAPHRAGM	2.33	1.00	0.58	1.36
25	DIAPHRAGM-UNDER BAY2-SPAN 26	3.33	1.17	0.42	1.62

BENT	DESCRIPTION	LENGTH (FEET)	WIDTH (FEET)	DEPTH (FEET)	VOLUME (CU.FT.)
26	SPAN 27- GIRDER #2	1.00	1.00	0.41	0.42
27	SPAN 28- GIRDER #4	1.00	1.00	0.41	0.42
27	END DIAPHRAGM BAY #2	1.33	1.17	0.50	0.78
28	SPAN 29-END DIAPHRAGM BAY #3	1.33	1.17	0.50	0.78
30	SPAN 30-GIRDER #3	1.00	1.00	0.41	0.42
30	SPAN 31-GIRDER 3	1.33	1.33	0.33	0.59
32	SPAN 32- UNDER GIRDER 2	0.83	0.83	0.33	0.23
36	SPAN 37- GIRDER 3	0.91	0.83	0.25	0.19
36	END DIAPH.-BAY 2 ON SPAN 37	7.33	1.17	0.50	4.28
37	SPAN 38- GIRDER 2	0.83	0.83	0.33	0.29
57	SPAN 57-GIRDER 4	0.75	2.17	0.25	0.41
57	SPAN 57-GIRDER 2	0.66	2.17	0.25	0.36
64	SPAN 64-GIRDER 1	1.33	1.33	0.33	0.59
80	SPAN 81-GIRDER 2	1.16	1.08	0.25	0.32
82	SPAN 83-GIRDER 3	1.16	0.91	0.25	0.27
TOTAL					34.11

NOTES
ALL QUANTITIES ARE APPROXIMATE.
FOR TYPE OF REPAIRS SEE SHEET No. S-20.

PROJECT NO. B-5194
COUNTY: BERTIE
BRIDGE NO. 7

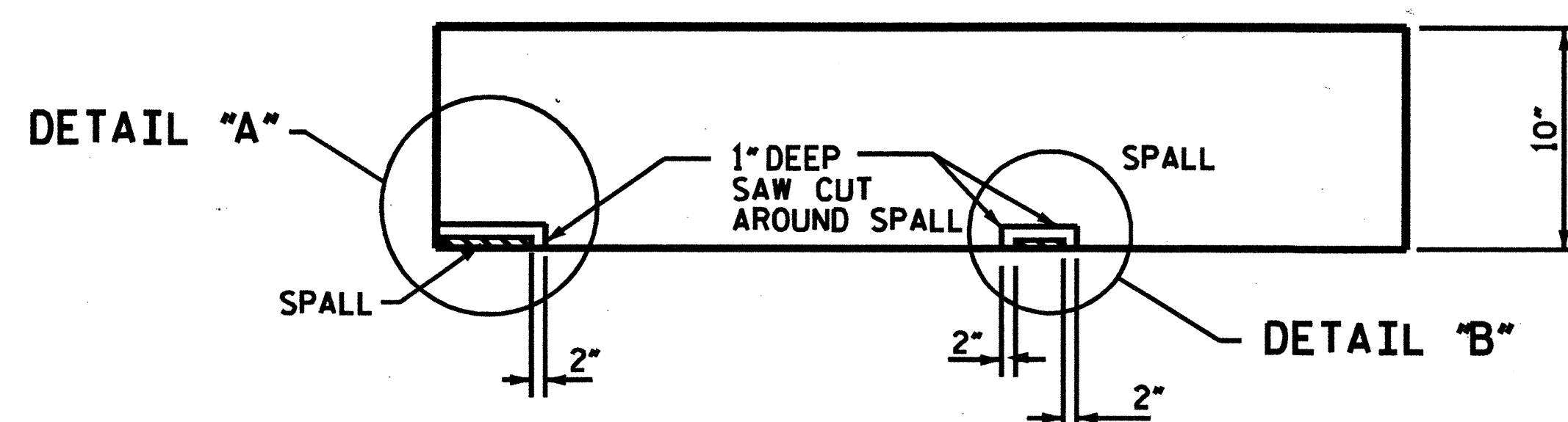
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
**GIRDER & DIAPHRAGM
REPAIRS**
(SPAN #20 TO SPAN #93)

REVISIONS						SHEET NO. S-19
NO.	BY	DATE	NO.	BY	DATE	
1			2			TOTAL SHEETS 40
2			4			

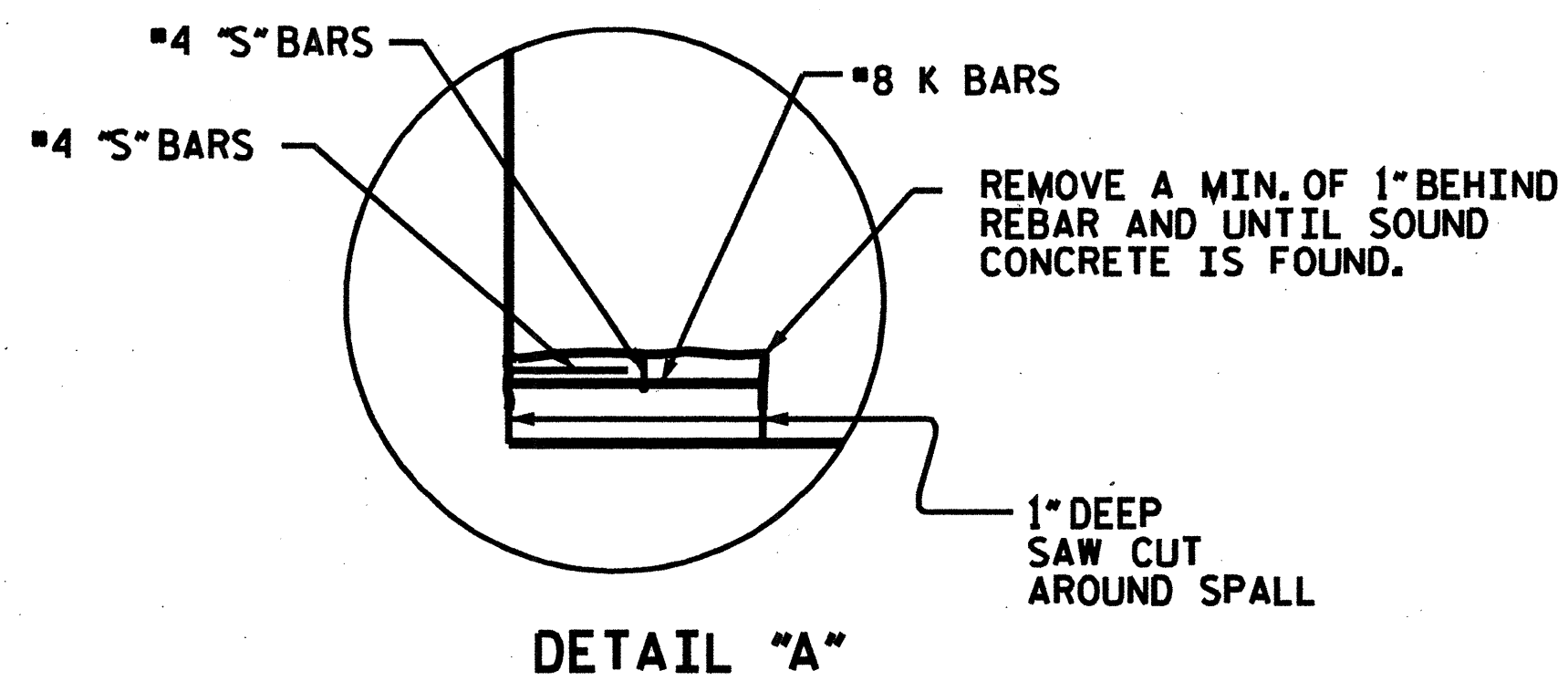
DRAWN BY : S.T.S DATE : 07/2009
CHECKED BY : A. ABRAHA DATE : 08/2009

GENERAL NOTES

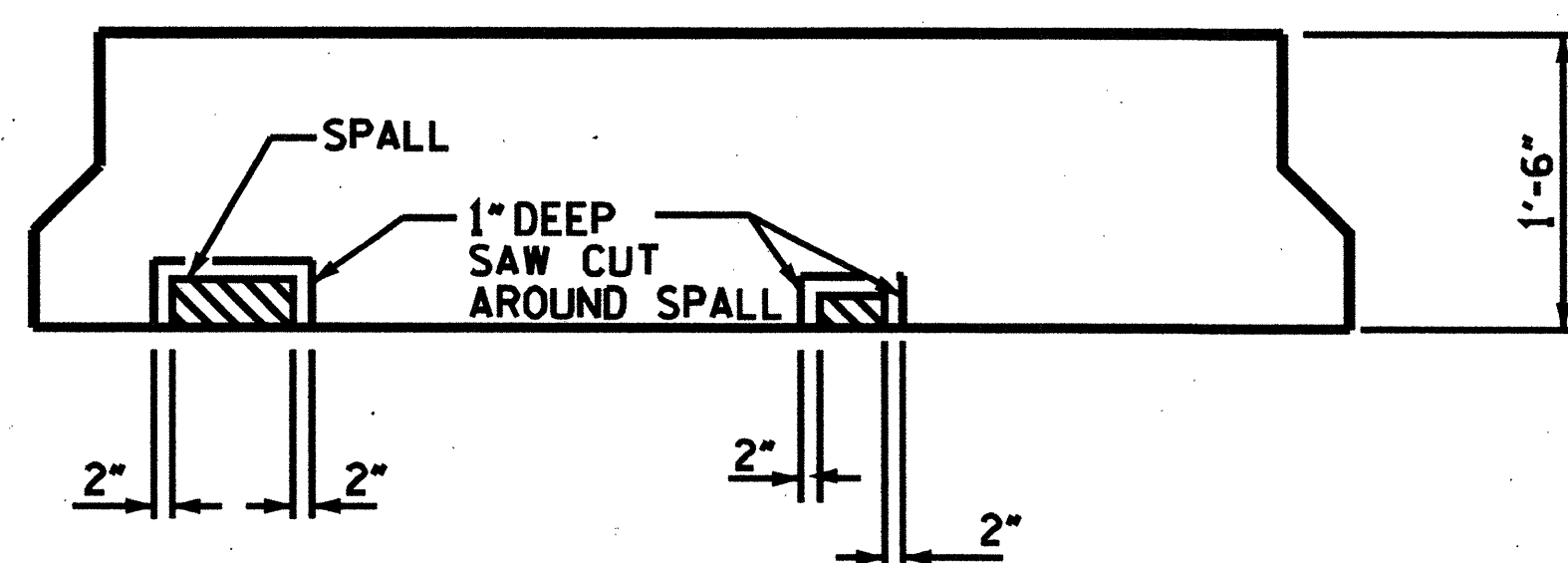
1. SPALL DIMENSIONS SHOWN ARE APPROXIMATE.
2. REINFORCING STEEL TO BE GRADE 60.
3. ADHESIVELY ANCHORED REINFORCING STEEL WILL BE TESTED FOR ADHESIVE BONDING AND PULLOUT STRENGTH. SEE SPECIAL PROVISIONS.
4. REPAIR MATERIAL FOR GIRDER SPALLS SHALL BE POLYMER MODIFIED CONCRETE. REPAIRS TO DIAPHRAGMS AND PARAPETS MAY BE MADE WITH POLYMER MODIFIED CONCRETE OR SHOTCRETE.



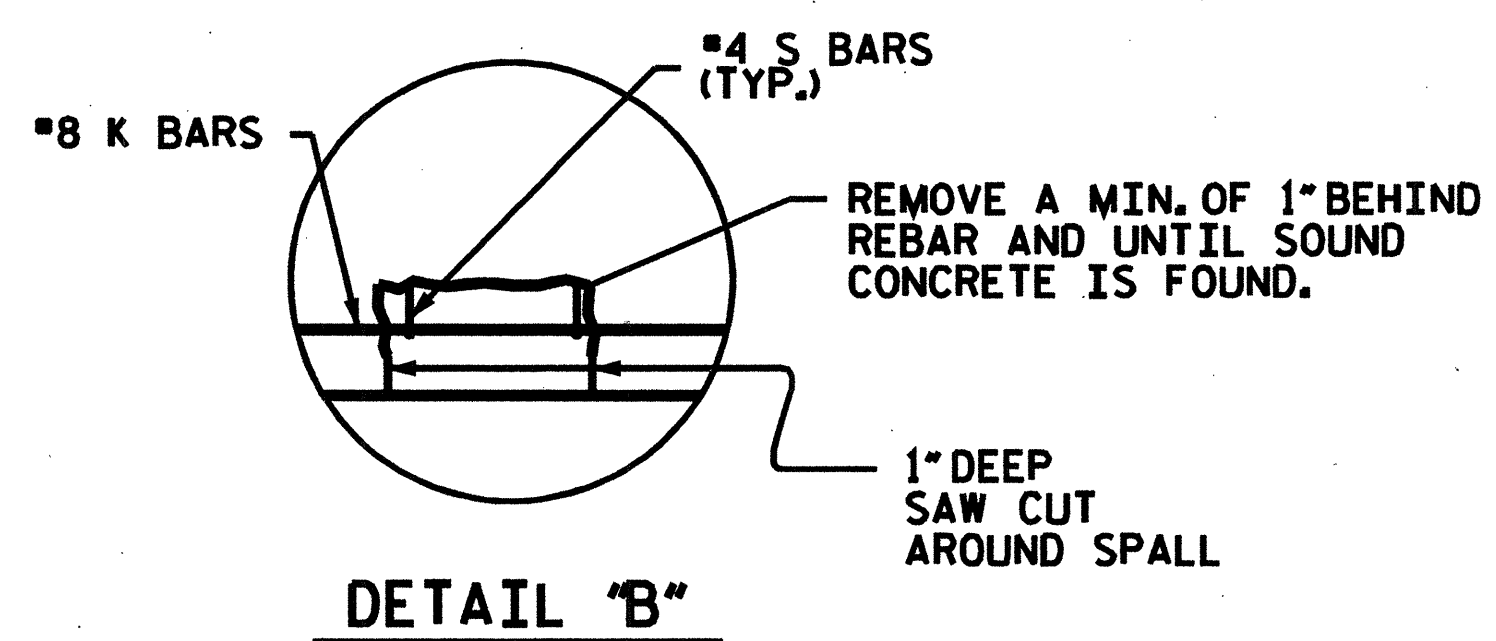
DIAPHRAGM- PLAN VIEW-



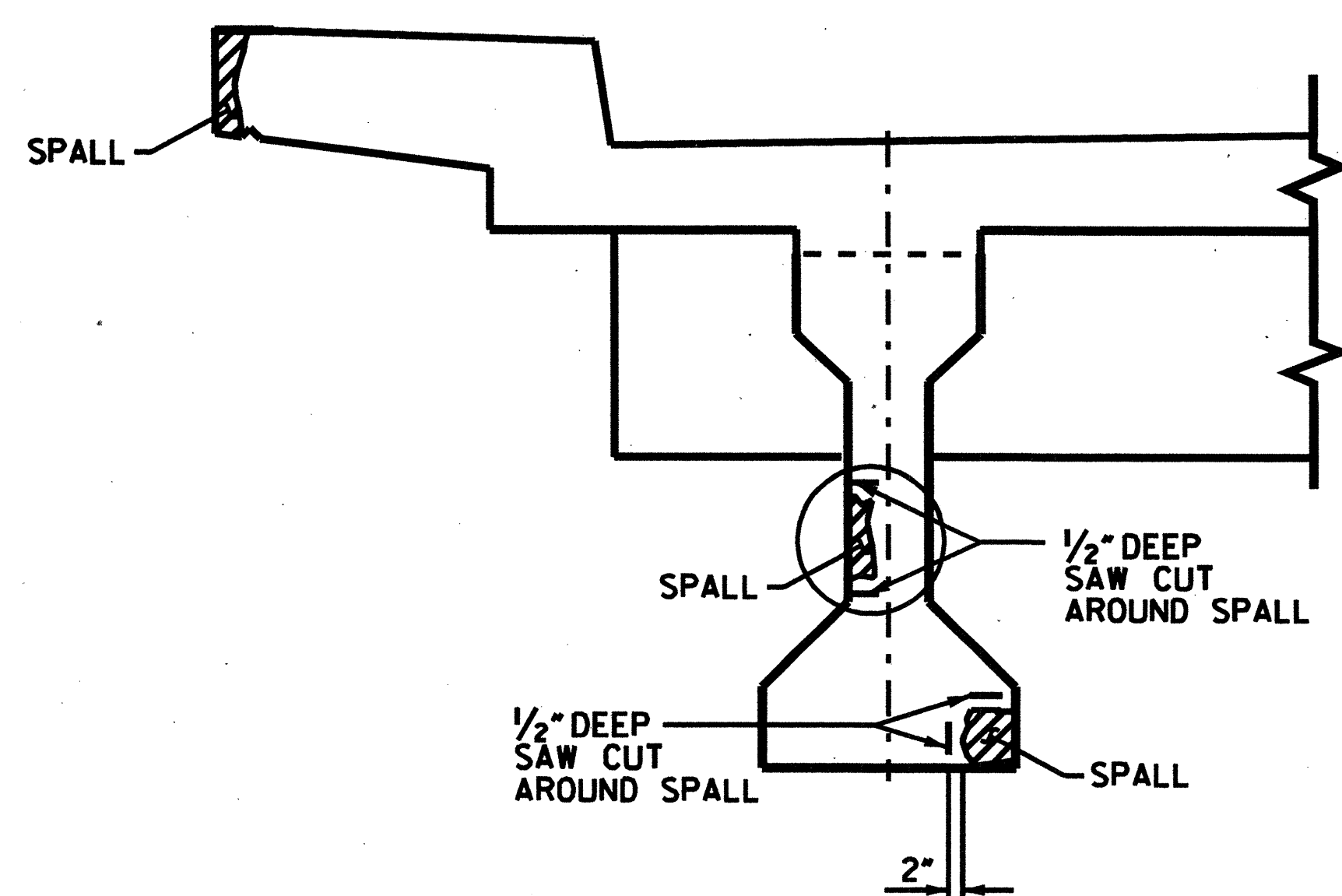
DETAIL "A"



DIAPHRAGM-ELEVATION FRONT VIEW-



DETAIL "B"



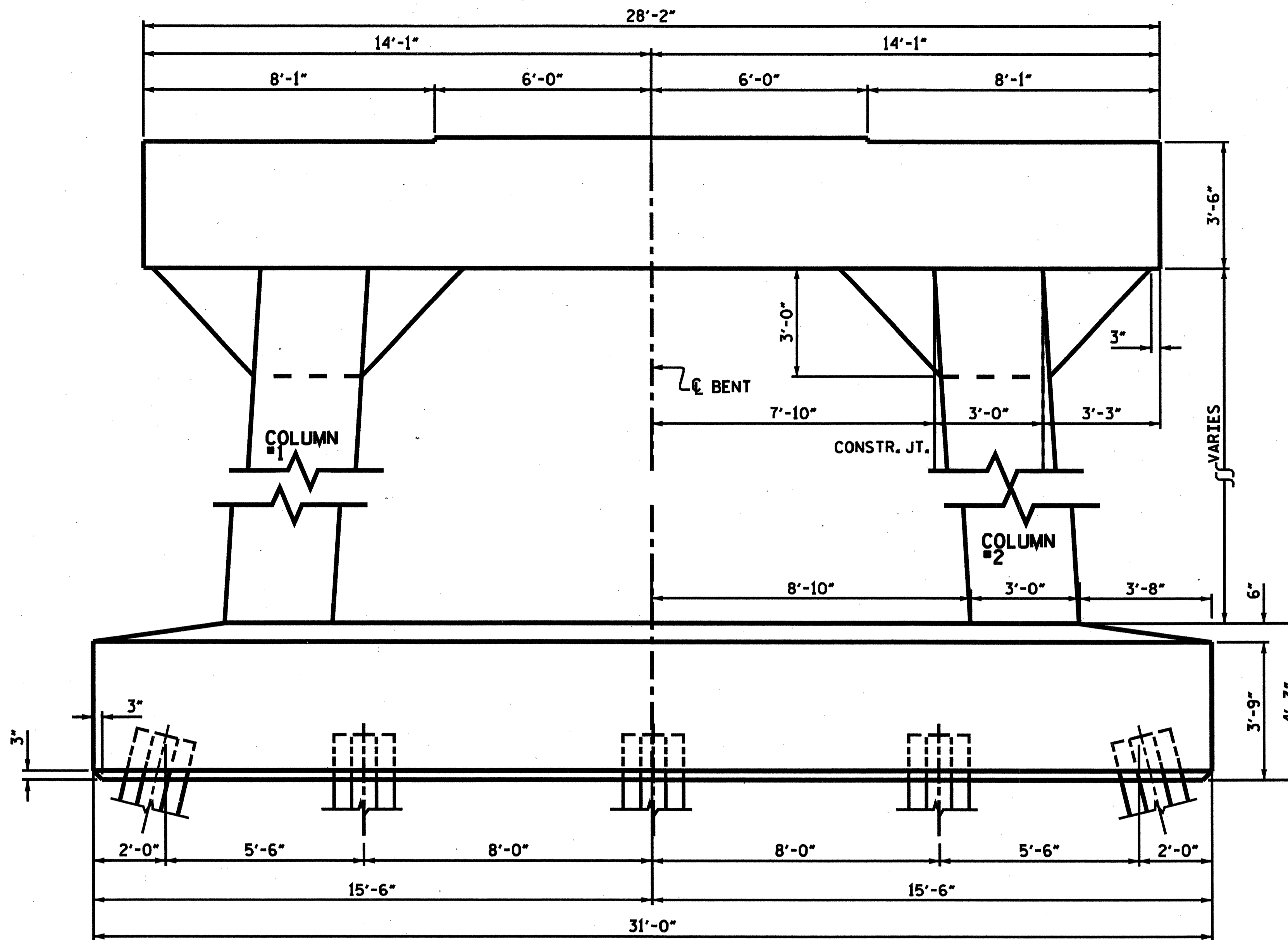
GIRDER AND BRIDGE VIEW-

PROJECT NO. B-5794
 COUNTY: BERTIE
 BRIDGE NO. 7

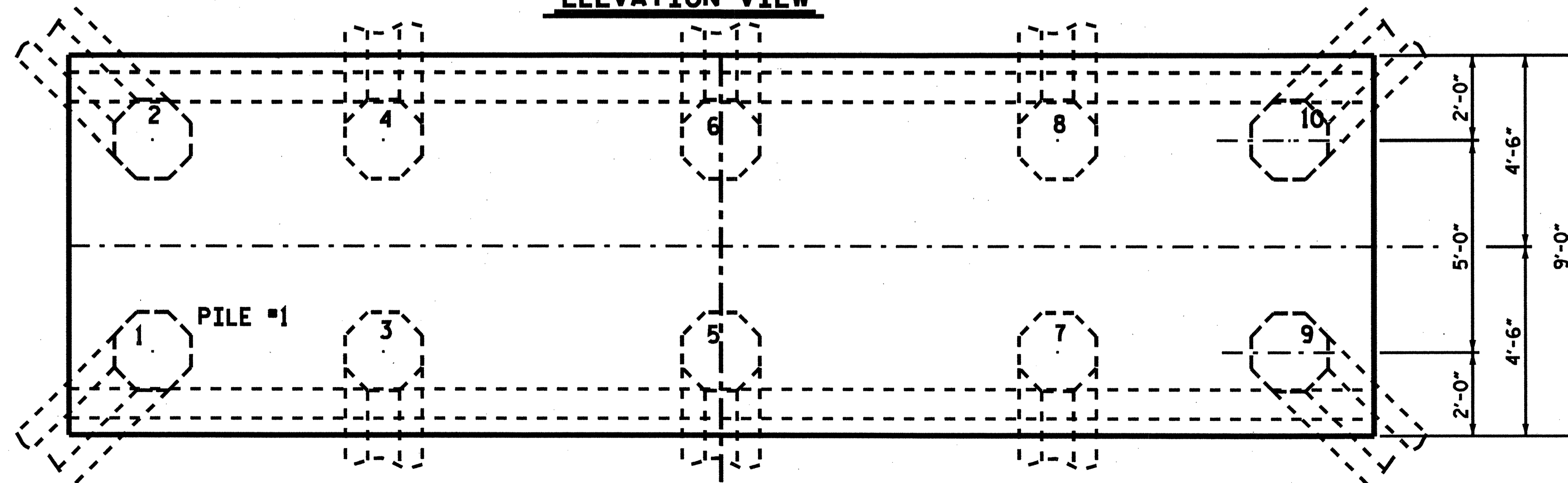
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**GIRDER AND DIAPHRAGM
 REPAIR DETAILS**

REVISIONS						SHEET NO. S-20
NO.	BY	DATE	NO.	BY	DATE	
1			2			TOTAL SHEETS 40
2			4			

DRAWN BY: S. T. SANDOR DATE: 08/09
 CHECKED BY: A. ASTER DATE: 10/09



ELEVATION VIEW



PLAN OF FOUNDATION

BENT CAP REPAIRS

BENT	DESCRIPTION	LENGTH (FEET)	WIDTH (FEET)	DEPTH (FEET)	VOLUM (CU.FT.)
4	BOC-SOUTH FACE UNDER GIRDER 2	3.58	1.00	0.92	3.31
4	SOUTH FACE UNDER BAY 2	4.25	1.50	0.92	5.88
31	SOUTH FACE CAP UNDER GIRDER #4	1.33	1.33	0.50	0.89
32	SOUTH FACE CAP UNDER BAY#1	4.08	1.08	0.67	2.96
32	SOUTH FACE CAP UNDER BAY#2	2.33	0.75	0.58	1.02
32	BOC	0.75	0.75	0.50	0.28
32	CAP AT SPAN #32-GIRDER 3-	0.91	0.83	0.42	0.32
32	BOC-SOUTH FACE UNDER BEARING #2	1.33	1.33	0.50	0.89
34	BOC-SOUTH FACE UNDER GIRDER #3	3.33	3.00	0.42	4.20
TOTAL					19.76

FOR METHODS OF BENT REPAIR SEE SHEETS No. S-27 THRU No. S-29.

COLUMN REPAIRS

BENT	DESCRIPTION	LENGTH (FEET)	WIDTH (FEET)	DEPTH (FEET)	VOLUM (CU.FT.)
32	WEST FACE-COLUMN 2	4.33	0.91	0.75	2.97

FOR COLUMN REPAIR SEE SHEET No. S-27.

PILE ENCAPSULATION LOCATIONS

BENT	PILE
30	1*
30	10*
31	9*
31	10*
32	10*
33	9*

* BASED ON TYPICAL PILE REPAIR LENGTH OF 7 FT.

NOTES

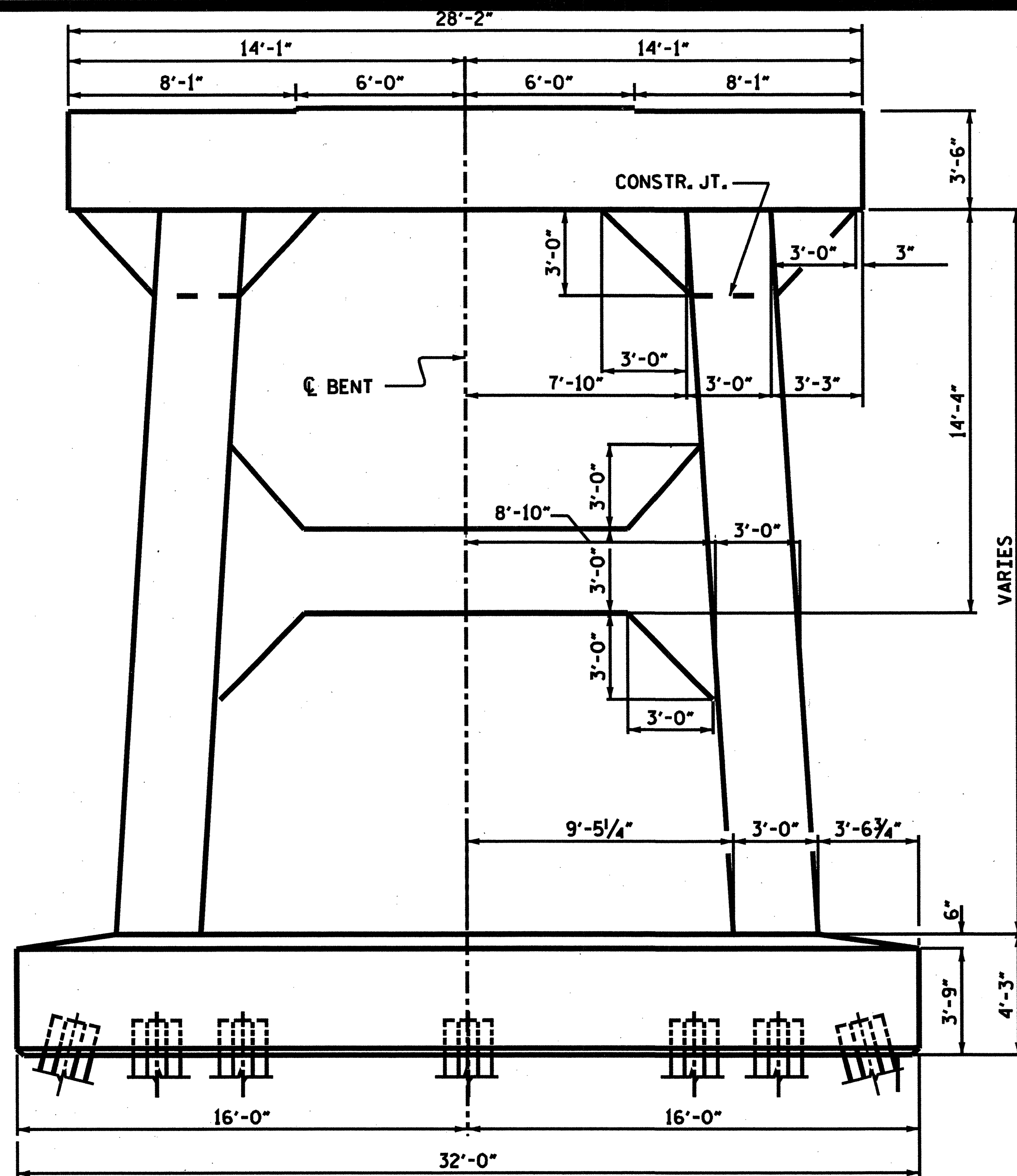
ALL QUANTITIES ARE APPROXIMATE.

PROJECT NO. B-5194
 COUNTY: BERTIE
 BRIDGE NO. 7

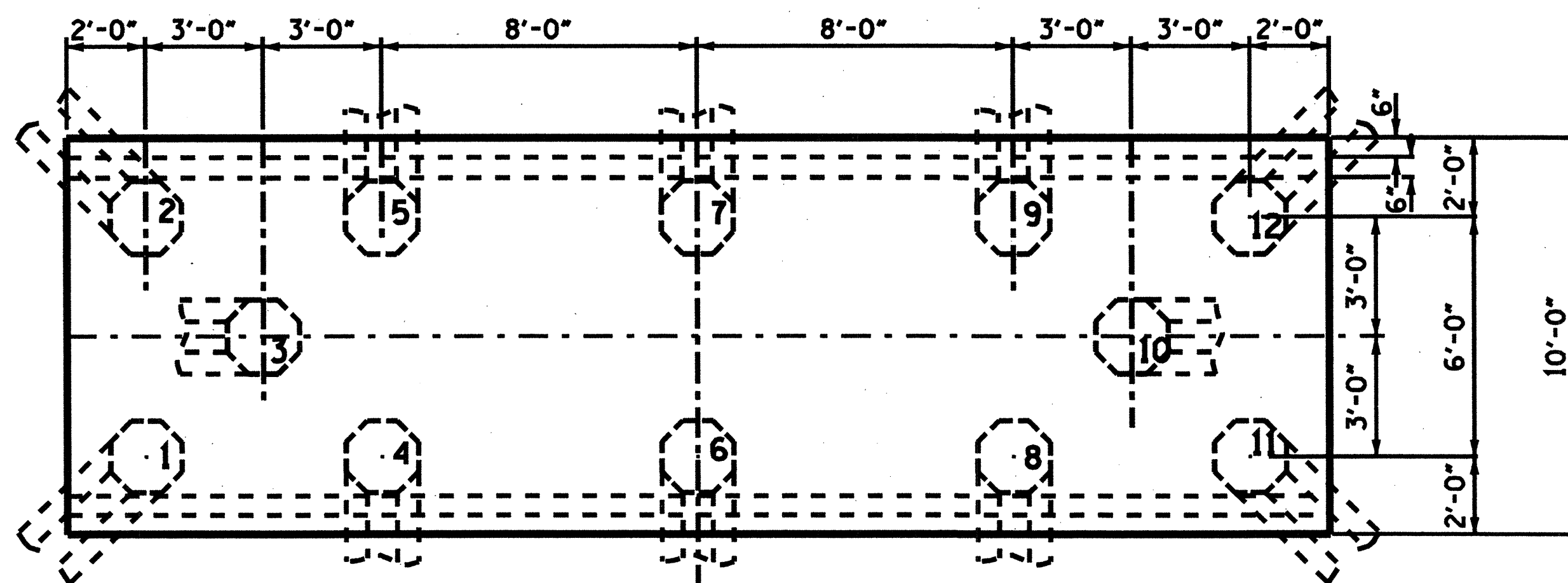
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 REPAIRS TO CAP, COLUMNS
 AND PILES
 BENTS NO. 1 THRU No.6
 AND NO.29 THRU No.34

REVISIONS						SHEET NO. S-21
NO.	BY	DATE	NO.	BY	DATE	
1			2			40
2			4			

DRAWN BY: S. T. SANDOR DATE: 08/09
 CHECKED BY: A. ABRAHA DATE: 09/09



ELEVATION VIEW



PLAN OF FOUNDATION

DRAWN BY: S. T. SANDOR DATE: 08/09
 CHECKED BY: A. ASTER DATE: 10/09

PILE ENCAPSULATION LOCATIONS

BENT	PILE
11	12*
26	7*
26	11*
27	12*
28	11*

* BASED ON TYPICAL PILE REPAIR LENGTH OF 7 FT.

BENT CAP REPAIRS

BENT	DESCRIPTION	LENGTH (FEET)	WIDTH (FEET)	DEPTH (FEET)	VOLUM (CU.FT.)
7	SOUTH FACE AREAS	2.66	2.25	0.42	2.52
7	NORTH FACE-RT. END OF CAP	3.66	3.33	0.42	5.13
21	CAP-RT. SIDE, SOUTH FACE-	1.83	2.83	0.75	3.90
23	BOC	1.83	1.15	0.58	1.23
24	SPAN 24- UNDER BEARING #4	2.83	2.33	0.92	6.08
25	SOUTH FACE -UNDER BAY 2	3.33	3.83	0.42	5.37
TOTAL					24.22

FOR METHODS OF BENT REPAIR SEE SHEETS No. S-27 THRU No. S-29.

COLUMN REPAIRS

BENT	DESCRIPTION	LENGTH (FEET)	WIDTH (FEET)	DEPTH (FEET)	VOLUM (CU.FT.)
24	COLUMN 1	9.33	2.33	1.17	25.48
28	SOUTH FACE-COLUMN 2	1.17	1.33	0.50	0.78
TOTAL					26.26

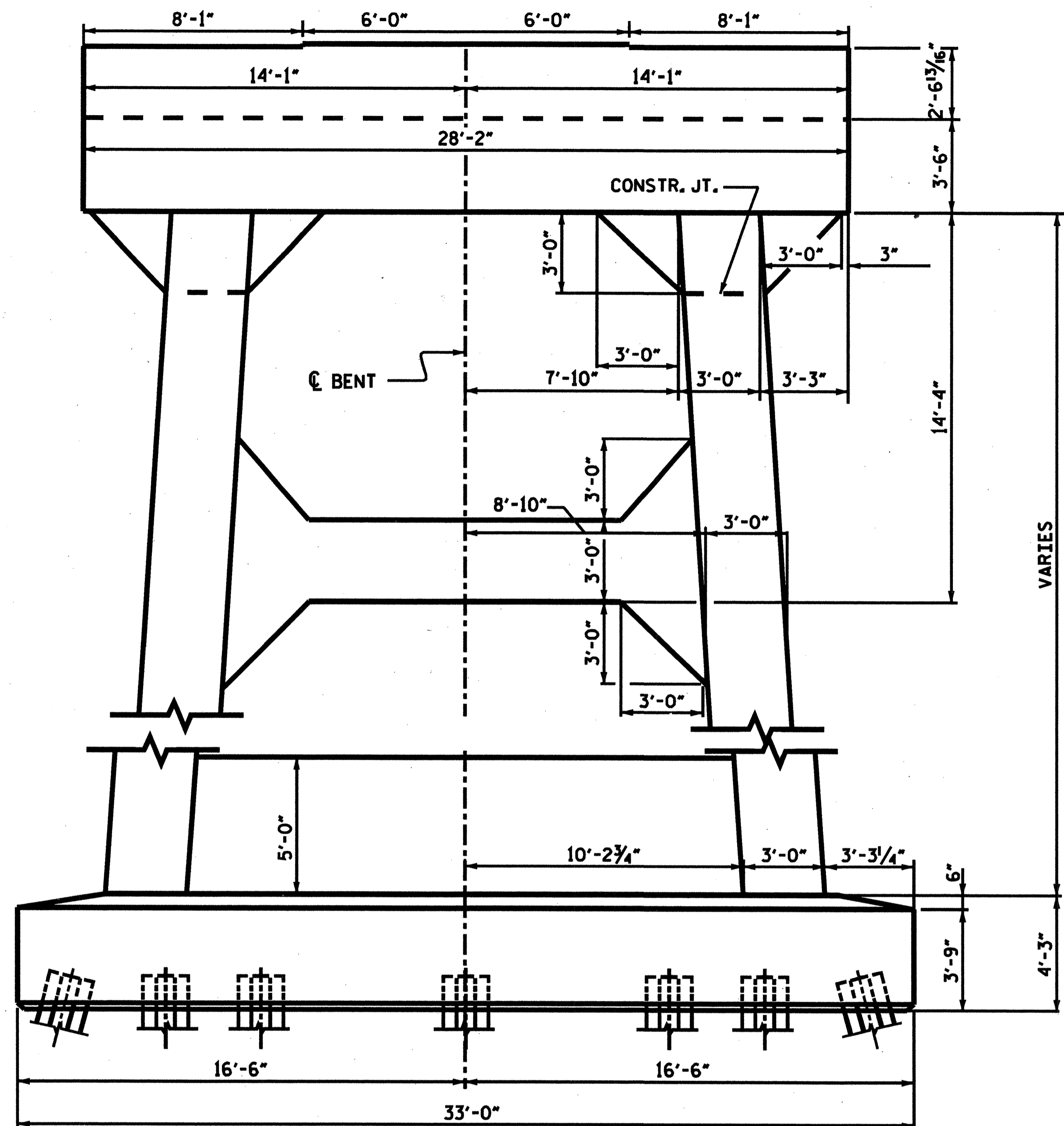
FOR COLUMN REPAIR SEE SHEET No. S-27.

NOTES

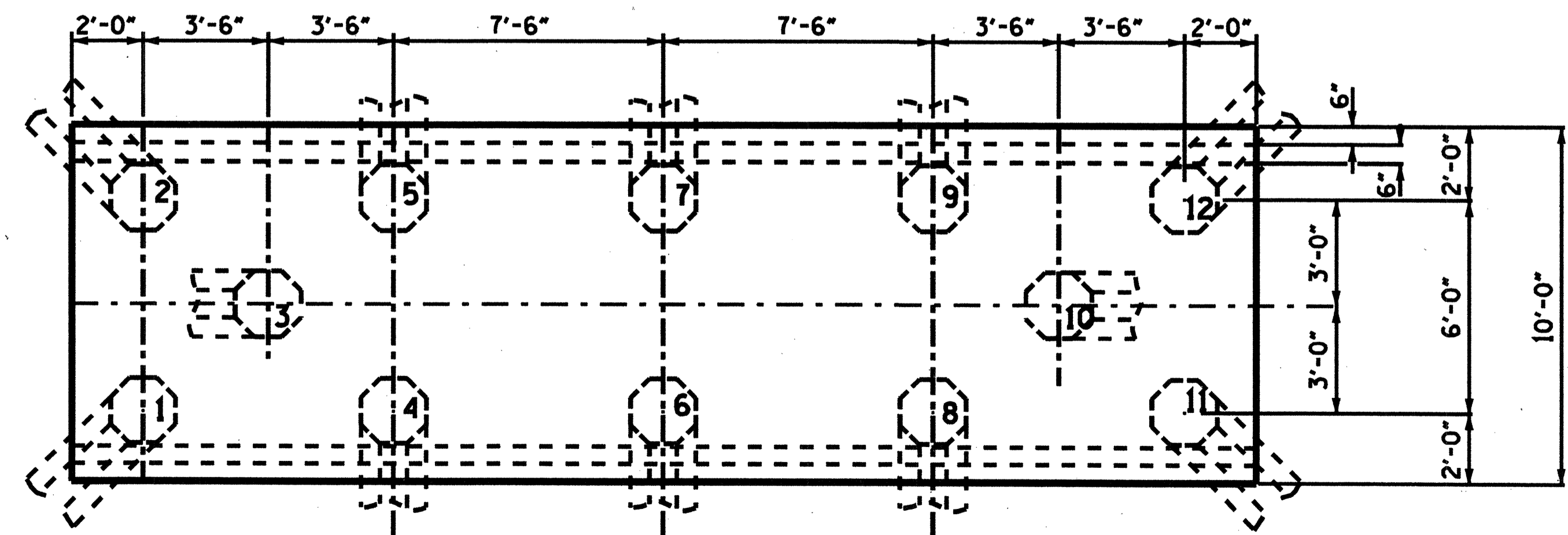
ALL QUANTITIES ARE APPROXIMATE.

PROJECT NO. B-5194
 COUNTY: BERTIE
 BRIDGE NO. 7

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION BALTIMOR					
REPAIRS TO CAP, COLUMNS AND PILES					
BENTS NO. 7 THRU No.15 AND NO.20 THRU No.28					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			2		
2			4		
					SHEET NO. S-22
					TOTAL QUANTITY 40



ELEVATION VIEW



PLAN OF FOUNDATION

DRAWN BY: S. T. SANDOR DATE: 08/09
 CHECKED BY: A. ASTER DATE: 10/09

BENT CAP REPAIRS

BENT	DESCRIPTION	LENGTH (FEET)	WIDTH (FEET)	DEPTH (FEET)	VOLUM (CU.FT.)
16	BOC	8.33	2.33	0.67	13.03

FOR METHODS OF BENT REPAIR SEE SHEETS No. S-27 THRU No. S-29.

COLUMN REPAIRS

BENT	DESCRIPTION	LENGTH (FEET)	WIDTH (FEET)	DEPTH (FEET)	VOLUM (CU.FT.)
19	COLUMN 2	0.83	0.83	0.42	0.29

FOR COLUMN REPAIR SEE SHEET No. S-27.

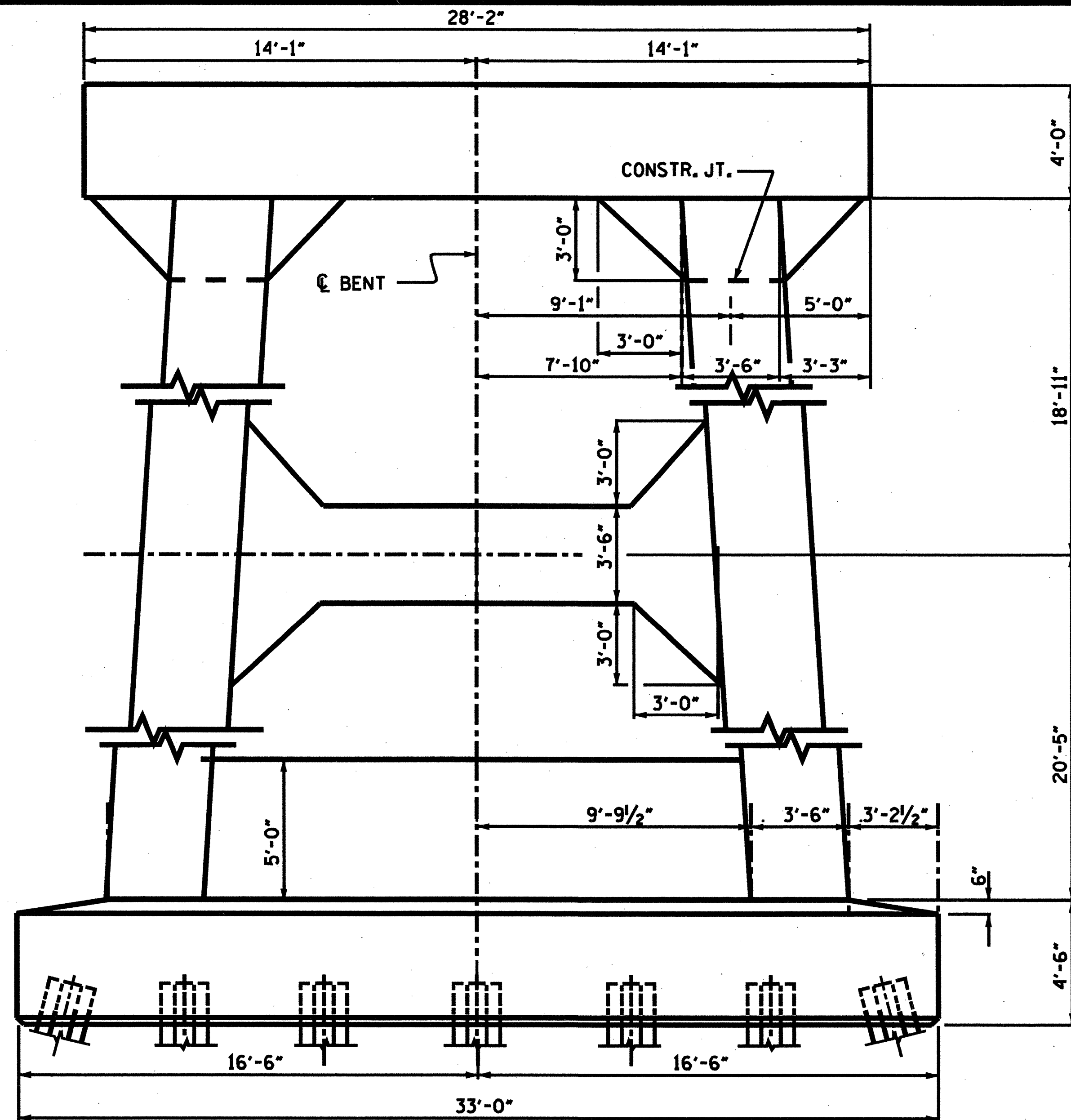
NOTES

ALL QUANTITIES ARE APPROXIMATE.

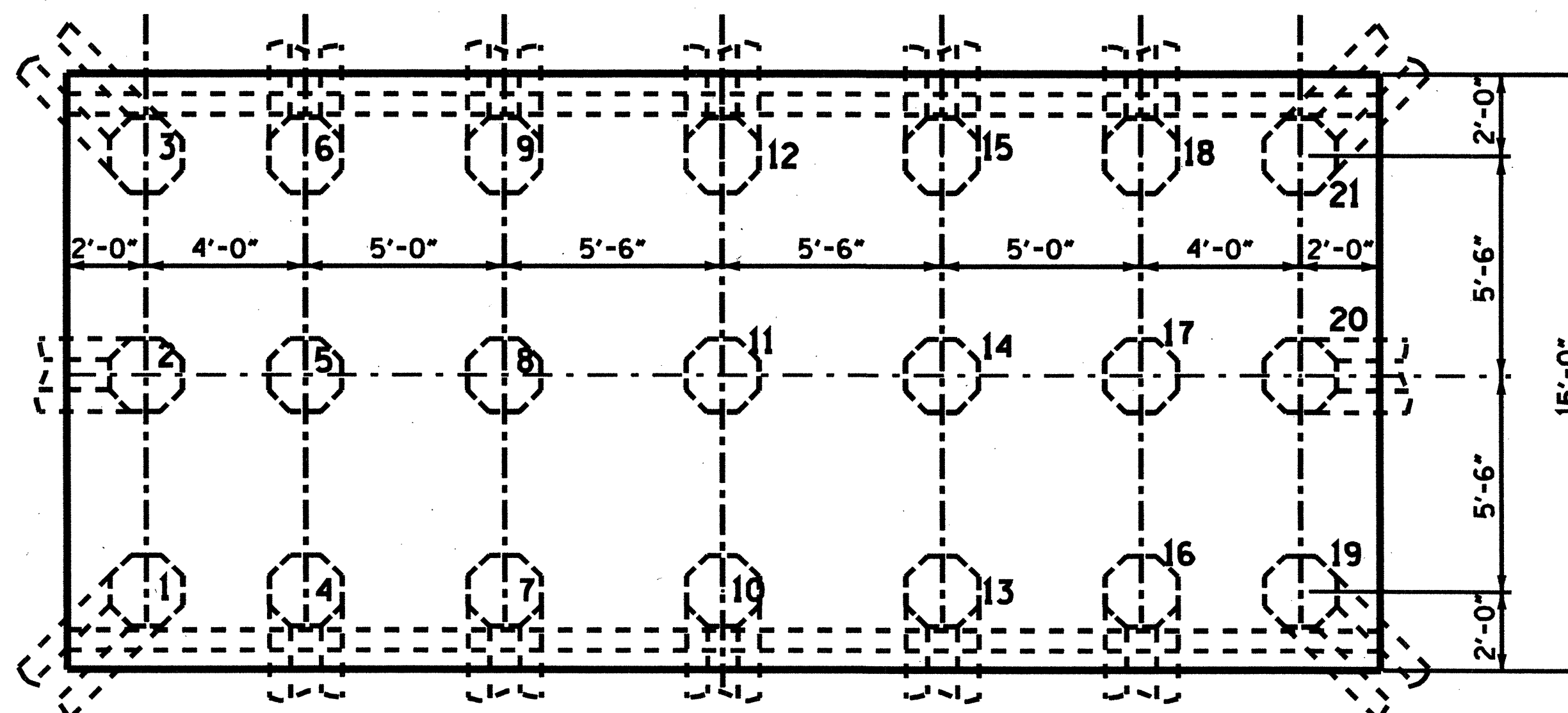
PROJECT NO. B-5194
 COUNTY: BERTIE
 BRIDGE NO. 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 REPAIRS TO CAP, COLUMNS
 AND PILES
 BENTS NO. 16 AND No. 19

REVISIONS						SHEET NO. S-23
NO.	BY	DATE	NO.	BY	DATE	
1			2			40
2			4			



ELEVATION VIEW



PLAN OF FOUNDATION

PILE ENCAPSULATION LOCATIONS

BENT	PILE
17	20*

*BASED ON TYPICAL PILE REPAIR LENGTH OF 7 FT.

NOTES

ALL QUANTITIES ARE APPROXIMATE.

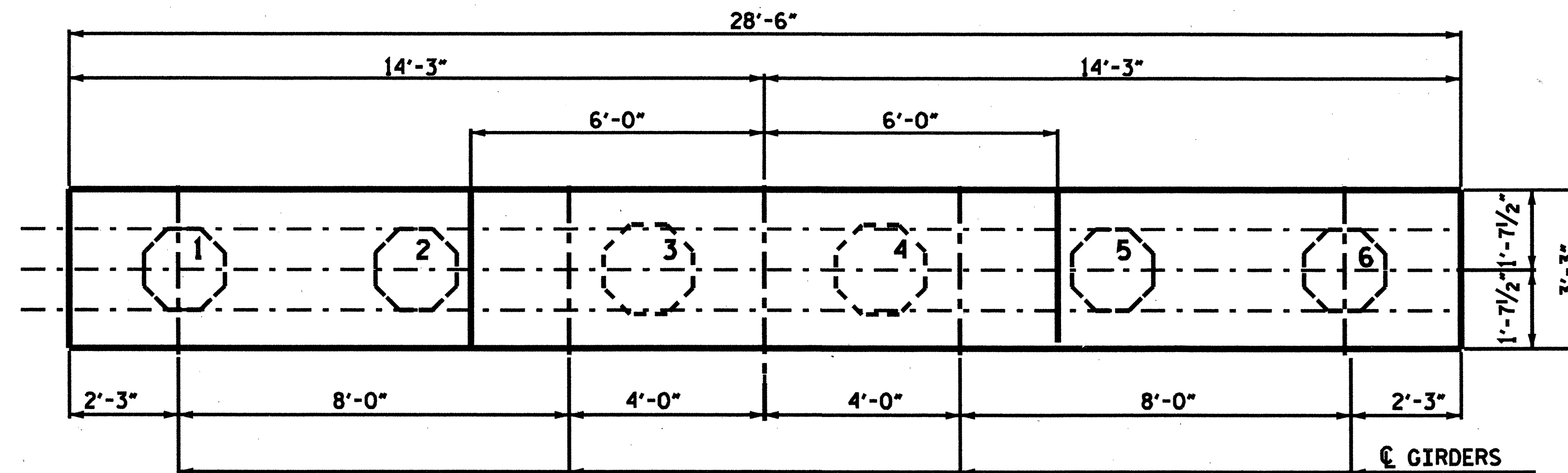
PROJECT NO. B-5194
 COUNTY: BERTIE
 BRIDGE NO. 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 BALANCE
 REPAIRS TO CAP, COLUMNS
 AND PILES
 BENTS NO. 17 AND NO. 18

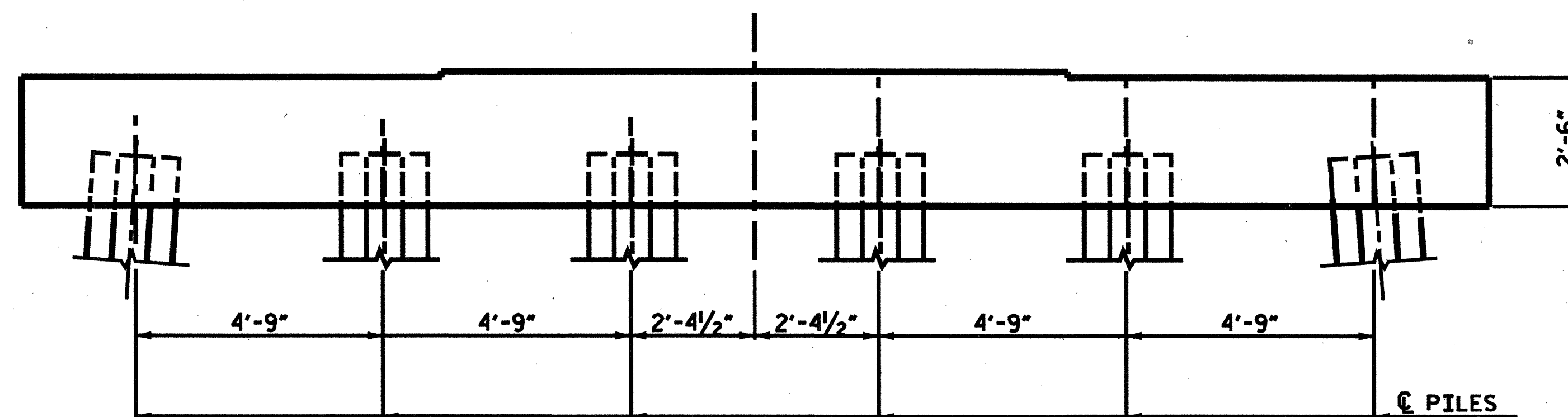
REVISIONS						DATE
NO.	BY	DATE	NO.	BY	DATE	
1			2			
2			4			

S-24
TOTAL SHEETS
40

BENT CAP REPAIRS



ELEVATION VIEW



PLAN OF FOUNDATION

PILE ENCAPSULATION LOCATIONS

BENT	PILE	BENT	PILE	BENT	PILE
35	6*	79	1*	83	1*
39	6*	79	2*	83	2*
40	1*	79	3*	83	3*
40	6*	79	4*	83	4*
53	6*	79	5*	83	5*
56	6*	81	1*	83	6*
60	6*	81	2*	84	1*
67	6*	81	3*	84	3*
69	6*	81	4*	84	6*
73	1*	81	5*	85	4*
73	6*	81	6*	87	6*

* BASED ON TYPICAL PILE REPAIR LENGTH OF 7 FT.
FOR PILE ENCAPSULATION SEE SHEETS S-30 & S-31.

BENT	DESCRIPTION	LENGTH (FEET)	WIDTH (FEET)	DEPTH (FEET)	VOLUME (CU.FT.)
36	TOC-S. FACE UNDER BAY #2	1.83	0.83	0.67	1.02
36	SOUTH FACE UNDER BEARING #3	3.33	2.08	0.67	4.65
36	NORTH FACE UNDER GIRDER #3	6.33	2.33	1.25	18.47
36	BOC-B/N PILE 3 & 4	6.33	1.50	0.67	6.38
36	NORTH FACE UNDER BAY 2	1.83	0.75	0.42	0.58
37	PILE 1-NORTH FACE -8.5' BELOW CAP	3.41	1.50	0.67	3.44
37	NORTH FACE UNDER GIRDER 2	8.33	2.33	0.67	13.03
37	BOC-B/N PILE 4 & 5	3.08	1.17	0.42	1.51
40	NORTH FACE	2.33	0.91	0.58	1.24
49	PILE -SW FACE -9.0' BELOW CAP	1.33	1.00	0.58	0.77
56	SOUTH FACE	6.33	0.91	0.58	7.36
59	SOUTH FACE	7.33	1.50	0.83	9.15
64	LT. SIDE OVER PILE 1	5.33	1.08	0.67	3.87
67	SOUTH FACE OVER PILE 3	3.66	0.83	0.67	2.05
71	SOUTH FACE UNDER BAY2-CAP	3.66	1.00	0.75	2.76
71	NORTH FACE	2.50	0.91	0.58	1.33
72	NORTH FACE-RT. SIDE	2.00	0.91	0.75	1.37
72	TOP OF CAP-NORTH FACE IN BAY 3	3.33	0.91	0.58	1.77
72	NORTH FACE	6.33	1.33	0.83	7.01
72	BOC-NORTH FACE	4.91	1.16	0.58	3.32
77	NO LOCATION GIVEN	2.25	0.58	0.58	0.76
77	SOUTH FACE-UNDER BEAM 3-BOC	3.66	0.91	0.58	1.94
80	NORTH FACE CAP	4.08	0.91	0.58	2.16
83	NORTH FACE-BOC	2.33	1.33	0.58	1.80
TOTAL					97.11

FOR METHODS OF BENT REPAIR SEE SHEETS No. S-27 THRU No. S-29.

NOTES

ALL QUANTITIES ARE APPROXIMATE.

BENTS: 35-37, 39-41
43-45, 51-53, 55-57,
59-61, 63-65, 67-69,
71-73, 75-77, 79-81,
83-85, 87-92.

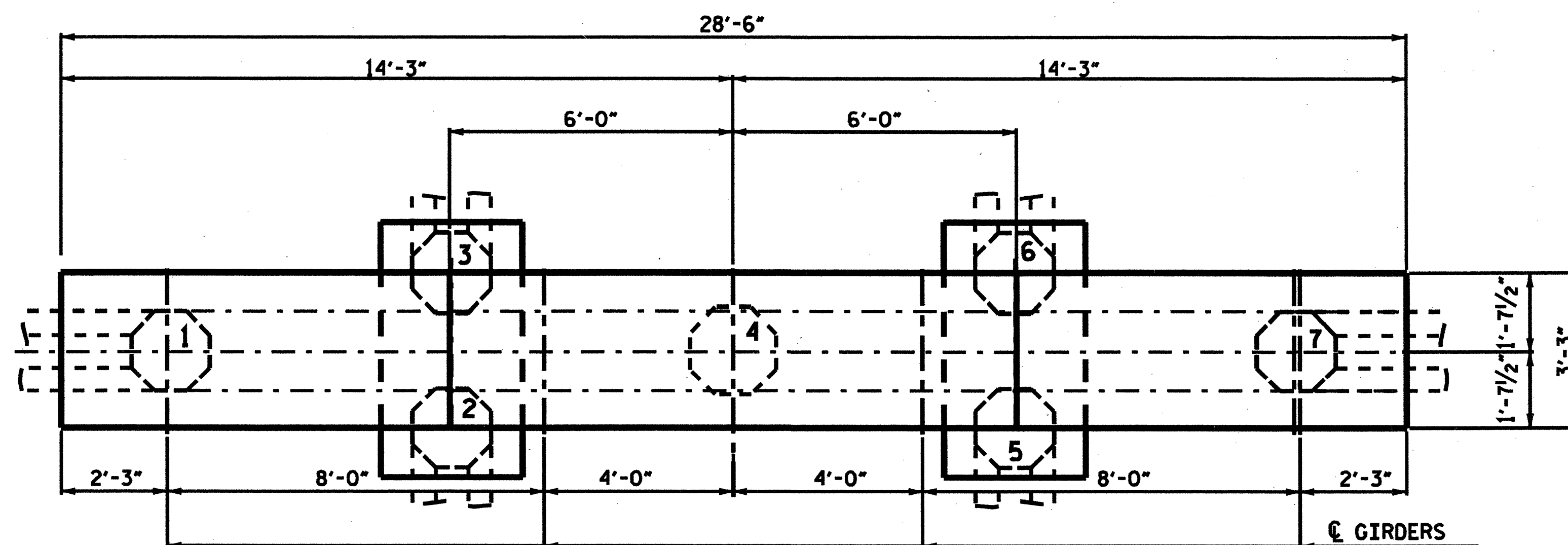
PROJECT NO. B-5194
COUNTY: BERTIE
BRIDGE NO. 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

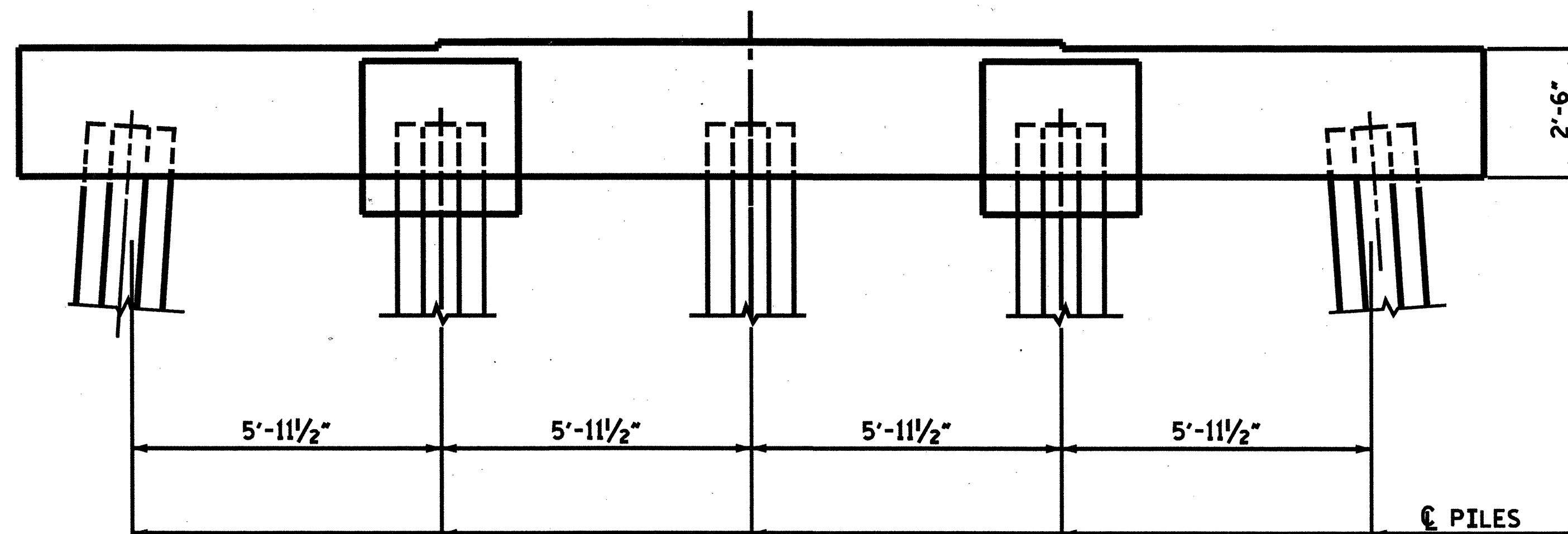
REPAIRS TO CAPS AND
PILES

REVISIONS						SHEET NO. S-25
NO.	BY	DATE	NO.	BY	DATE	
1			2			TOTAL SHEETS 40
2			4			

DRAWN BY: S. T. SANDOR DATE: 08/09
CHECKED BY: A. ABRAHA DATE: 09/09



PLAN OF FOUNDATION



ELEVATION VIEW

BENT CAP REPAIRS

BENT	DESCRIPTION	LENGTH (FEET)	WIDTH (FEET)	DEPTH (FEET)	VOLUME (CU.FT.)
50	SOUTH FACE	4.75	1.83	0.50	4.36
58	SOUTH FACE CAP UNDER GIRDER 2	1.83	1.33	0.58	1.42
58	NO LOCATION GIVEN	3.66	2.66	0.58	5.66
62	RT END OF CAP	1.33	1.33	0.50	0.89
66	TOC-SOUTH FACE UNDER BEARING 3	3.66	1.50	0.83	4.57
66	NORTH FACE LT END	1.66	1.16	0.42	0.81
66	NORTH FACE UNDER BAY 1	4.50	0.66	0.58	1.73
66	BRACE CAP 1-NORTH FACE	2.00	1.01	0.42	0.85
66	BRACE CAP 1-NE FACE CORNER	1.33	1.08	0.42	0.61
66	BRACE CAP 2-SE CORNER	1.41	1.25	0.58	1.03
66	BRACE CAP 2-SW CORNER	1.41	1.08	0.58	0.89
70	BRACE CAP 2-SOUTH FACE	2.58	1.41	1.00	3.65
70	BRACE CAP 1-SOUTH FACE	1.33	1.33	0.58	1.03
70	BRACE CAP 1-SE FACE	1.08	1.08	0.33	0.39
74	NORTH & SOUTH FACE-RT END	2.33	2.83	0.83	5.49
74	NORTH FACE -LEFT END-	1.66	1.33	0.58	1.29
78	LT END OF CAP	1.66	1.00	0.33	0.55
86	BRACE CAP 2- SOUTH FACE	9.33	1.17	1.08	11.76
				TOTAL	46.97

FOR METHODS OF BENT REPAIR SEE SHEETS No. S-27 THRU No. S-29.

PILE ENCAPSULATION LOCATIONS

BENT	PILE
38	7*
42	7*
54	7*
78	1*
78	5*
78	6*

*BASED ON TYPICAL PILE REPAIR LENGTH OF 7 FT. FOR PILE ENCAPSULATION SEE SHEETS S-30 & S-31.

NOTES

ALL QUANTITIES ARE APPROXIMATE.

PROJECT NO. B-5194
 COUNTY: BERTIE
 BRIDGE NO. 7

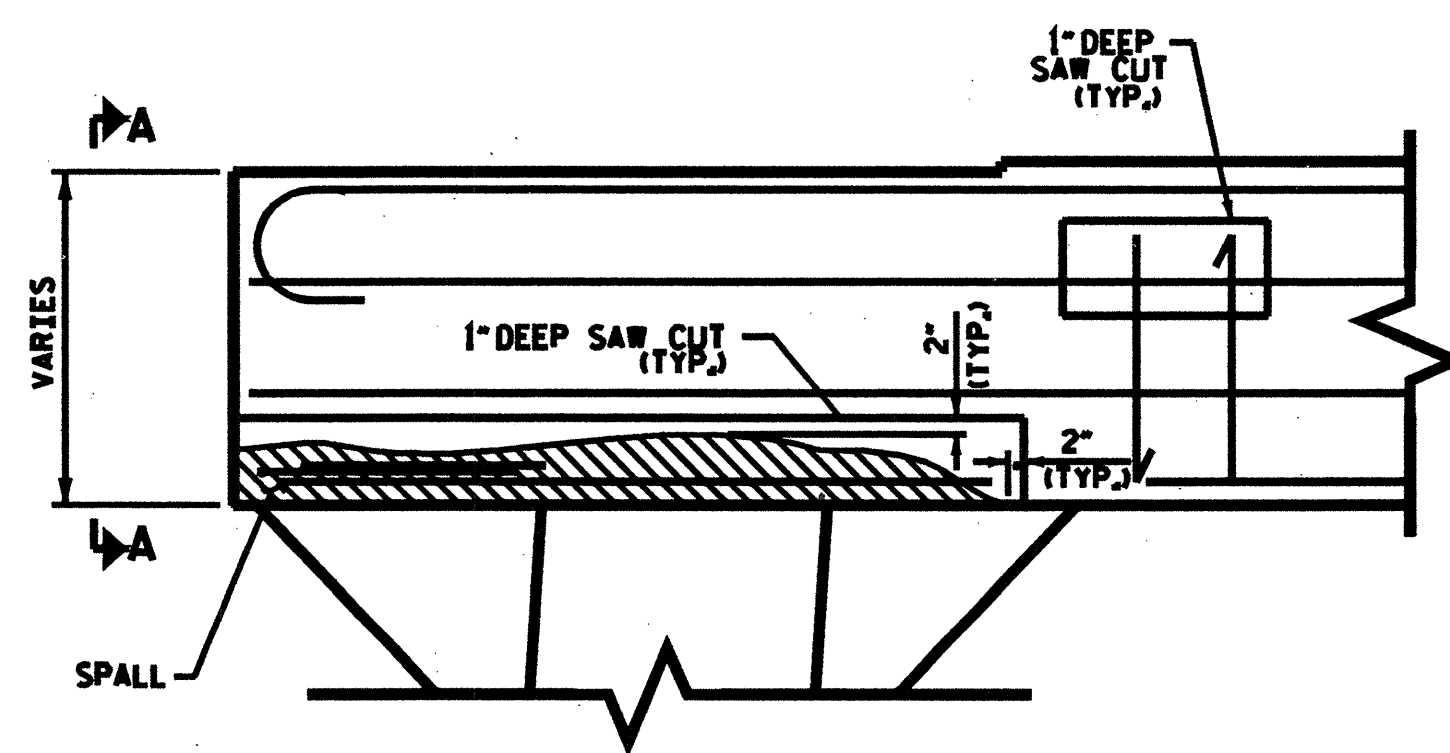
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 BALTIMOR
REPAIRS TO CAP AND PILES

BENTS: 38, 39, 42, 46, 50, 54, 58, 62, 66, 70, 74, 78, 82, 86, 89, 93.

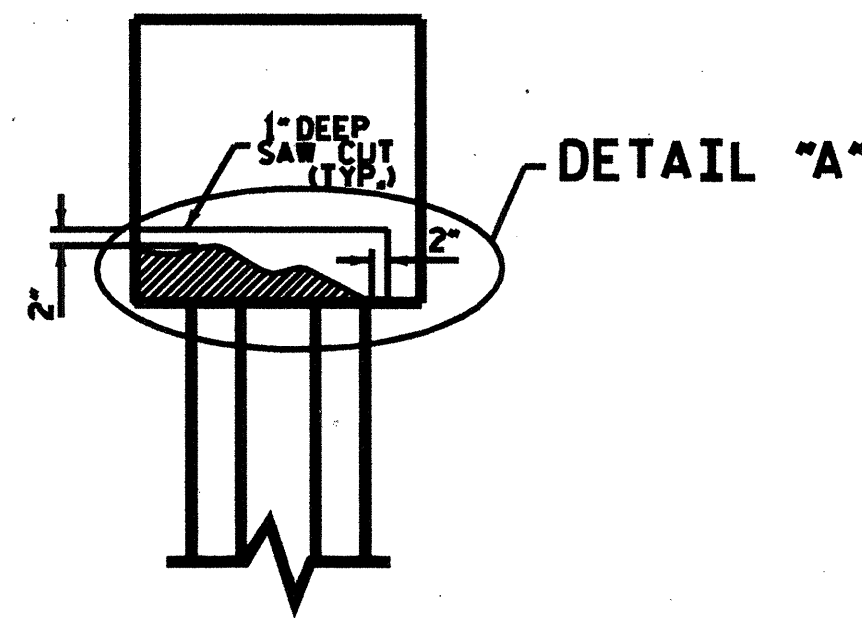
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NO.	BY	DATE	NO.	BY	DATE	
1			2			S-26
2			4			40

GENERAL NOTES

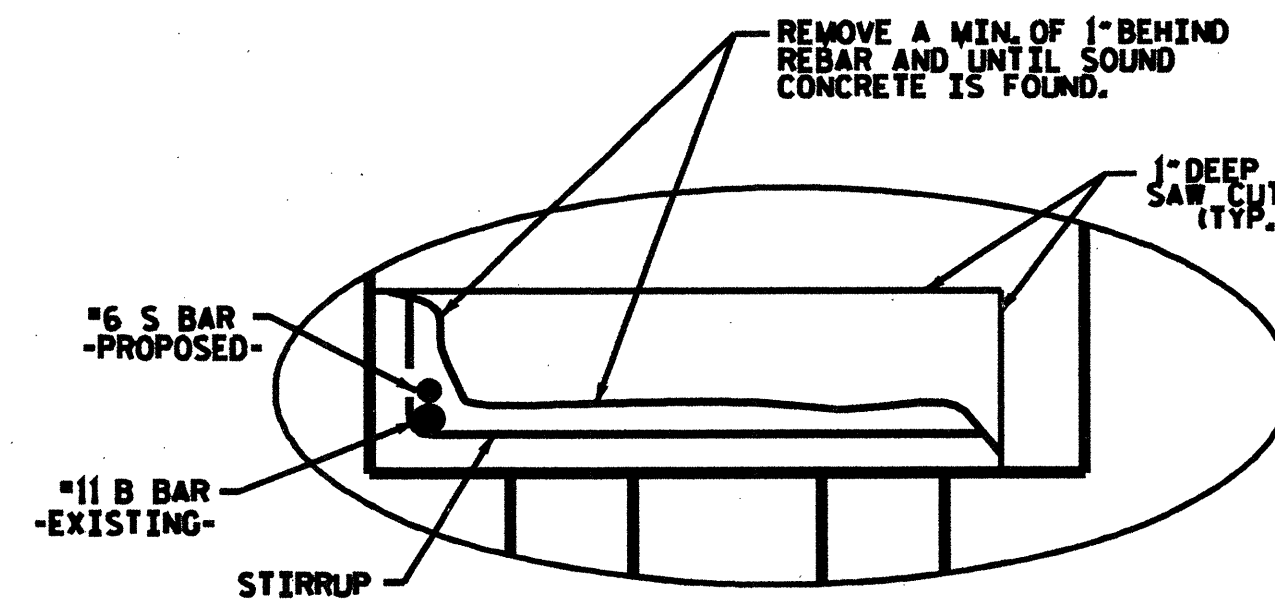
1. SPALL DIMENSIONS SHOWN ARE APPROXIMATE.
2. REINFORCING STEEL SHALL BE GRADE 60.
3. ADHESIVELY ANCHORED REINFORCING STEEL WILL BE TESTED FOR ADHESIVE BONDING AND PULLOUT STRENGTH. SEE SPECIAL PROVISIONS.
4. REPAIR MATERIAL FOR CAP SPALLS SHALL BE SHOTCRETE OR POLYMER MODIFIED CONCRETE.



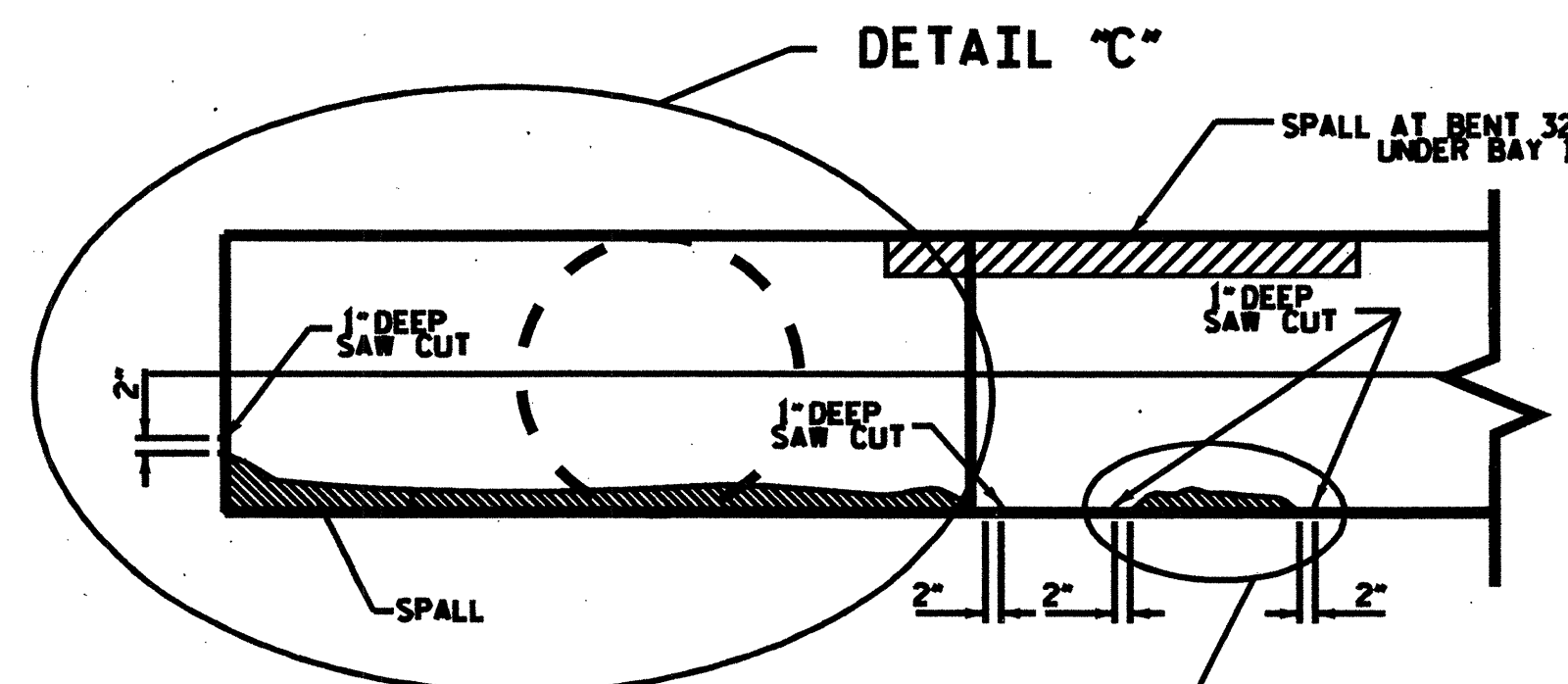
ELEVATION OF CAP



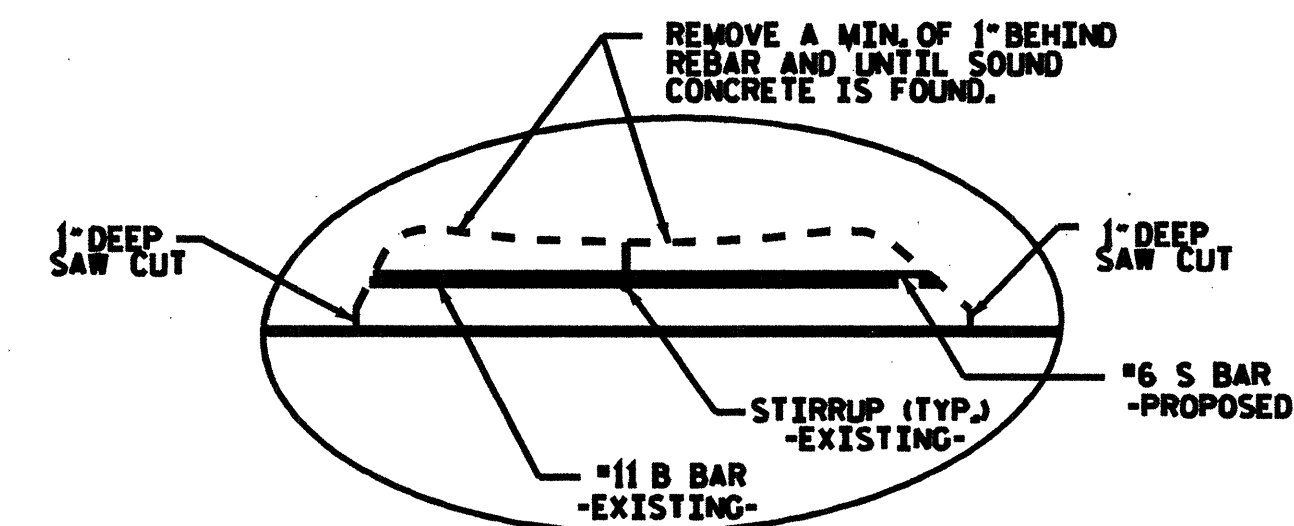
SECTION A-A



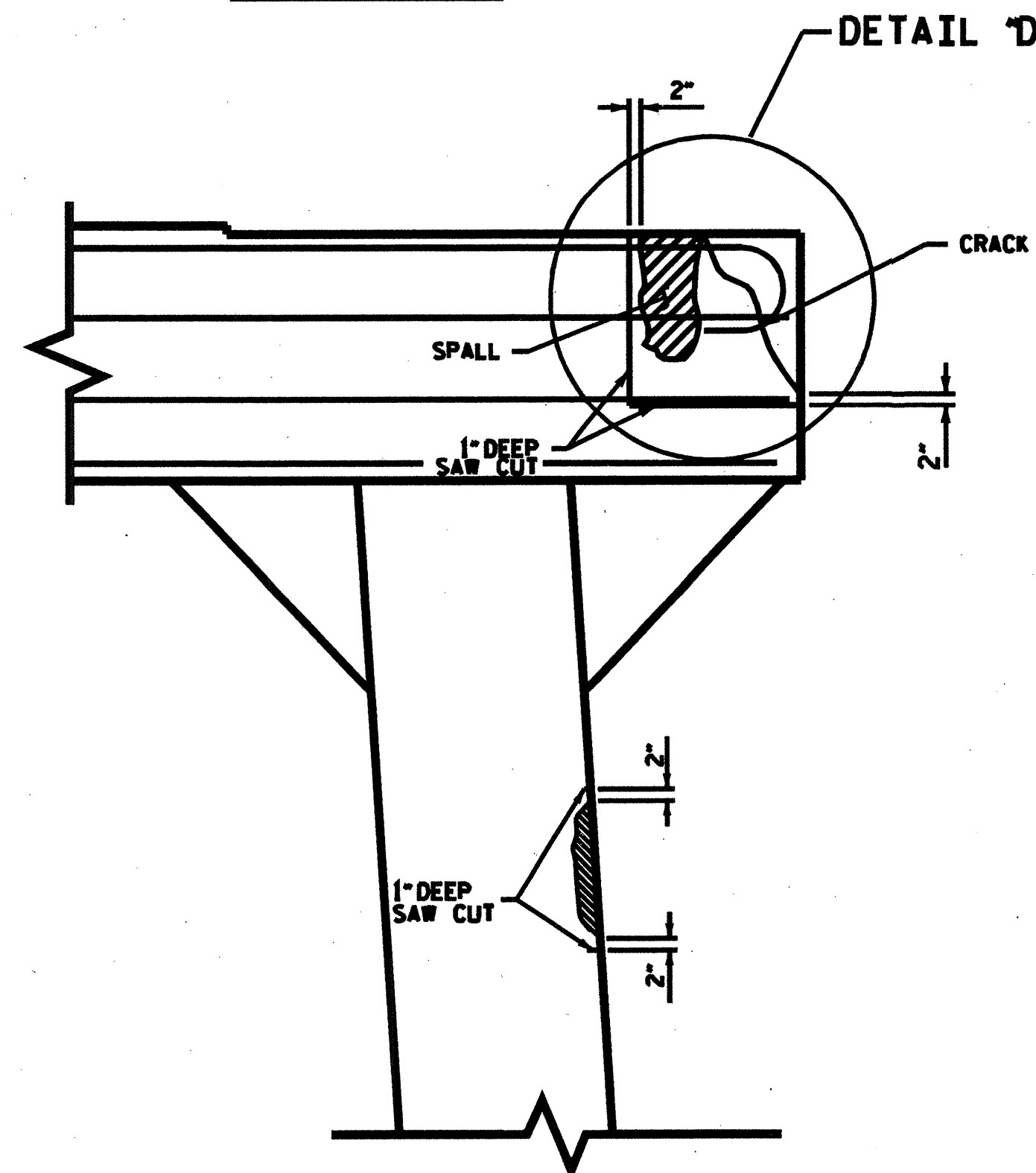
DETAIL "A"



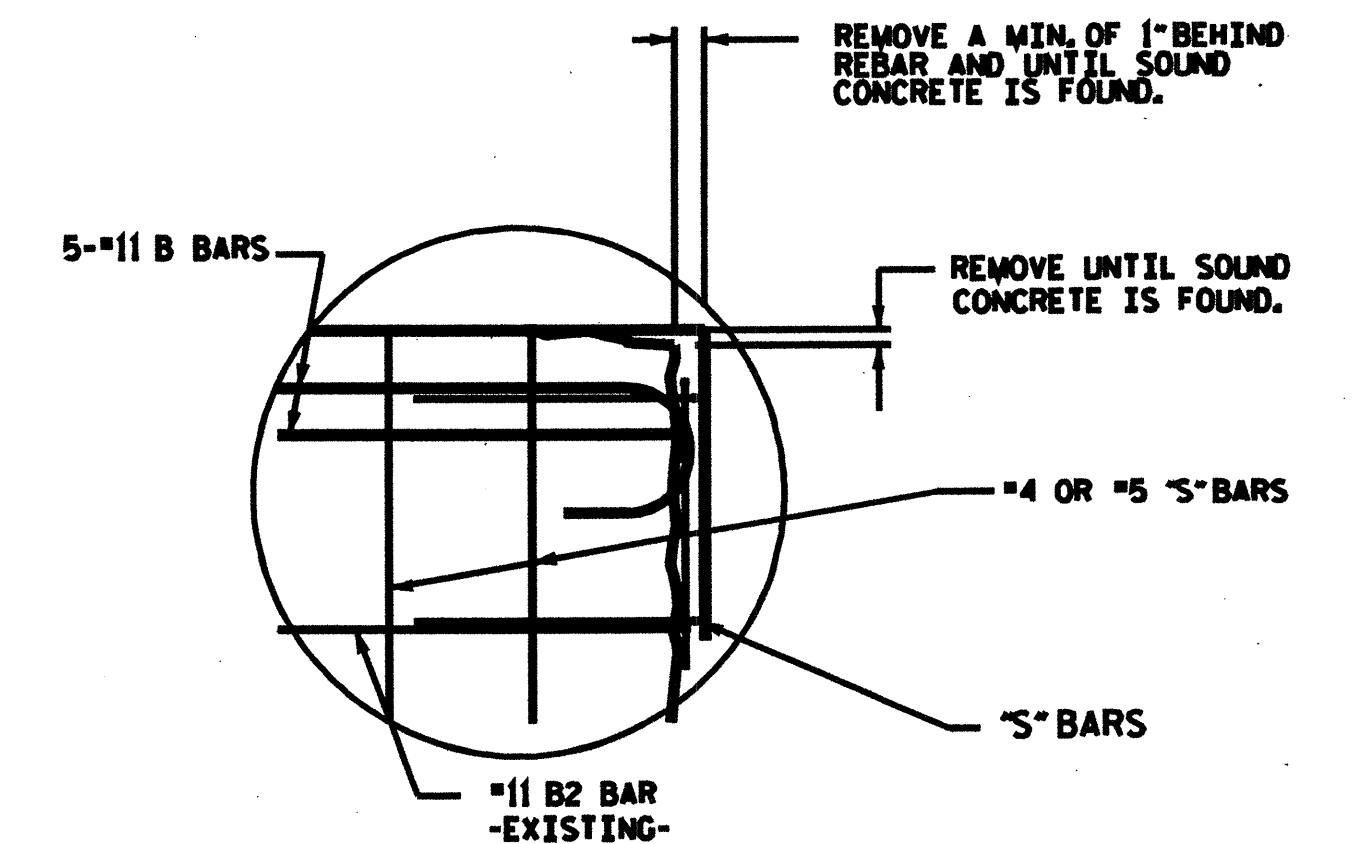
PLAN OF CAP



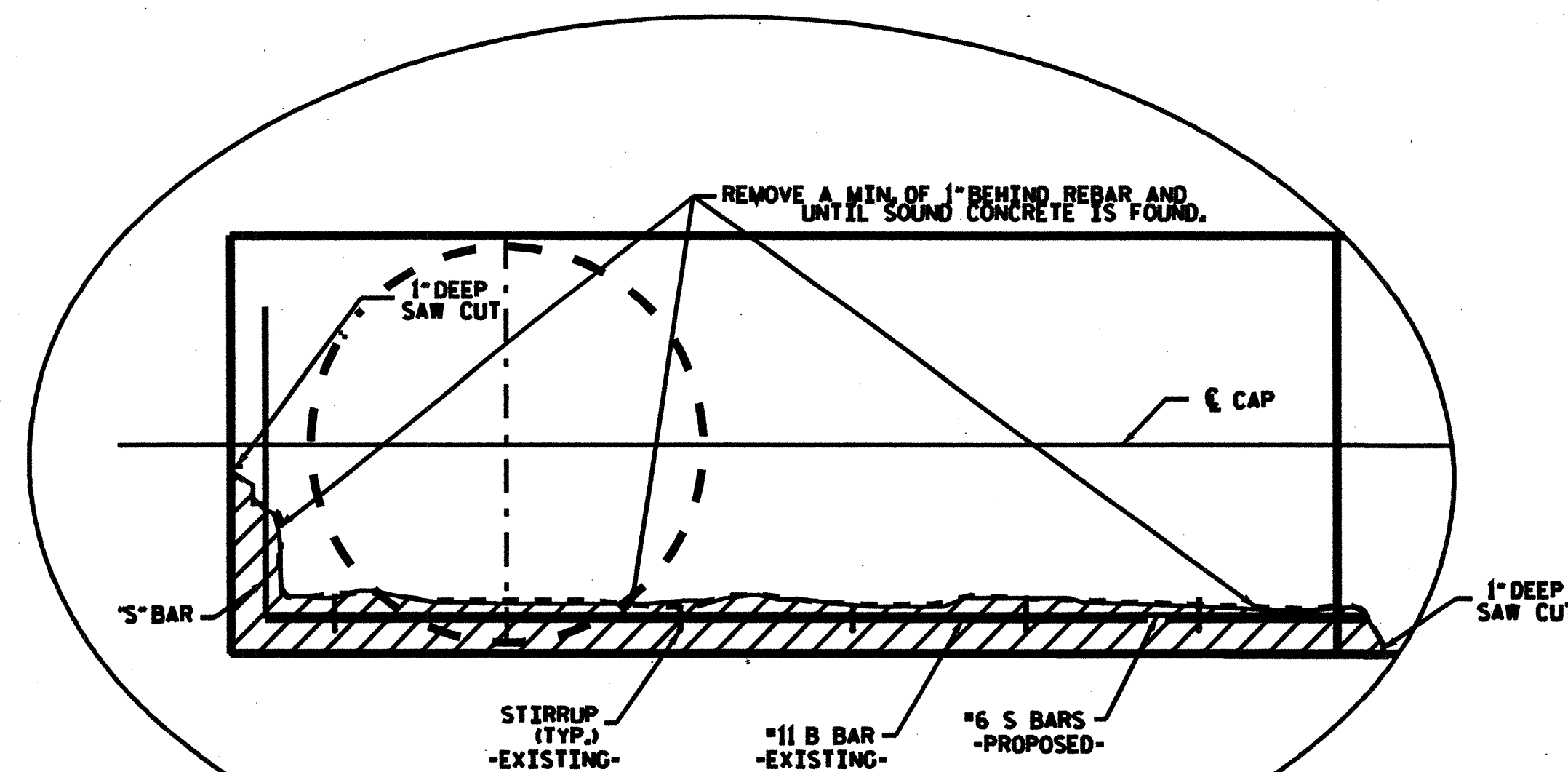
DETAIL "B"



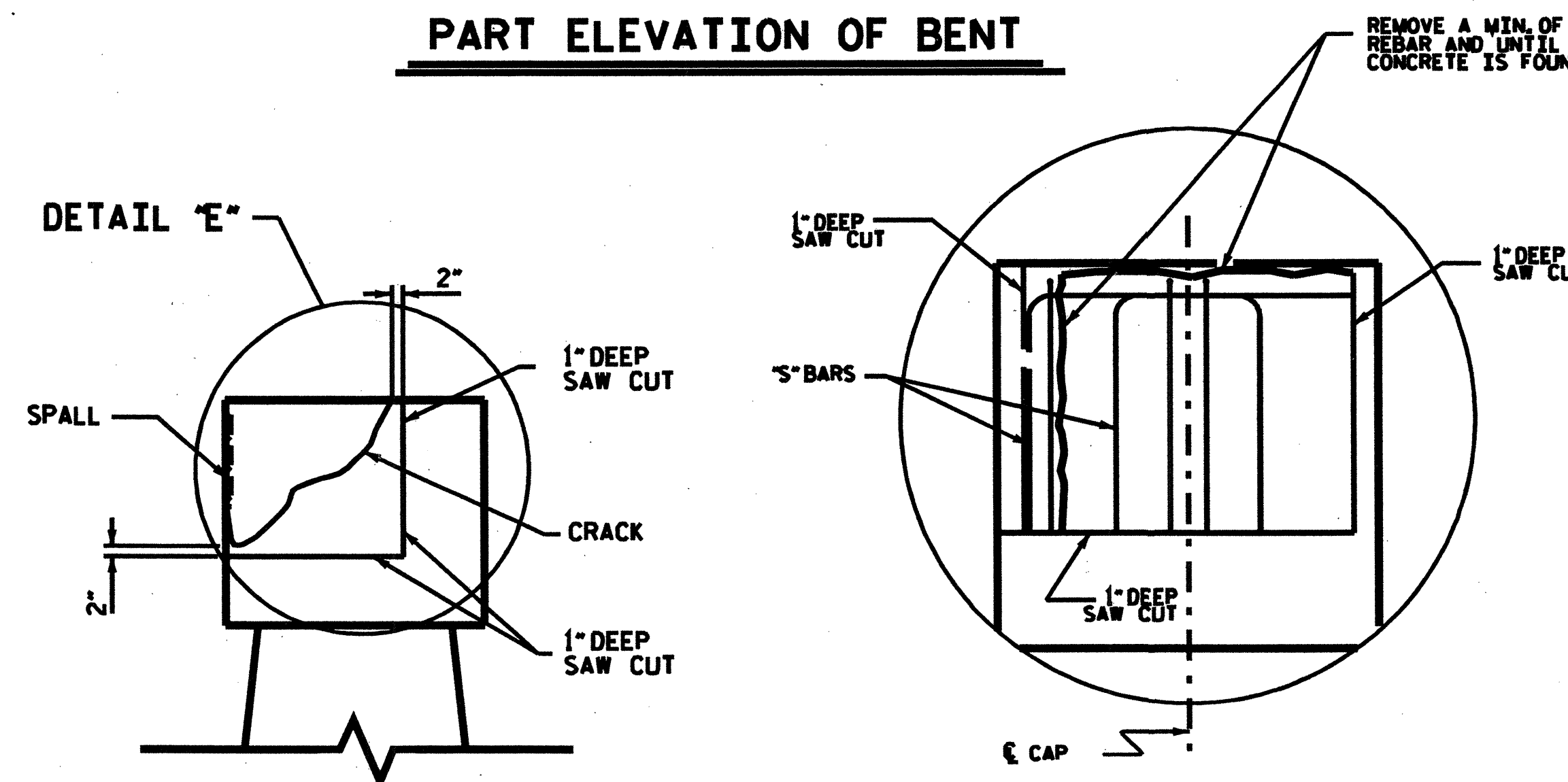
PART ELEVATION OF BENT



DETAIL "D"



DETAIL "C"



CAP VIEW

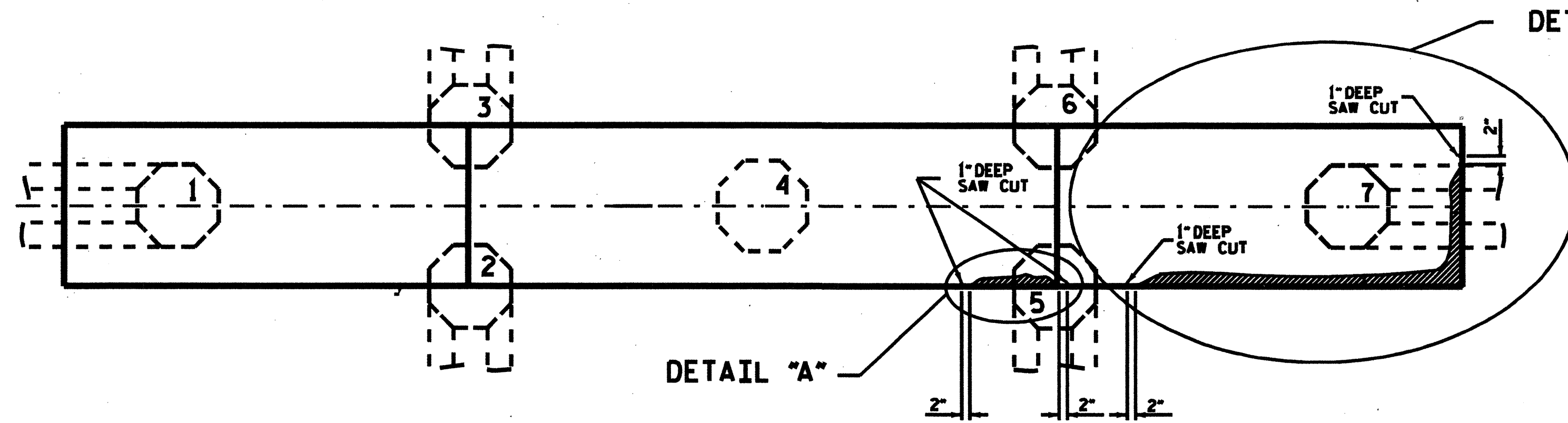
DETAIL "E"

PROJECT NO. B-5194
 COUNTY: BERTIE
 BRIDGE NO. 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 BALANCE

BENT REPAIR DETAILS

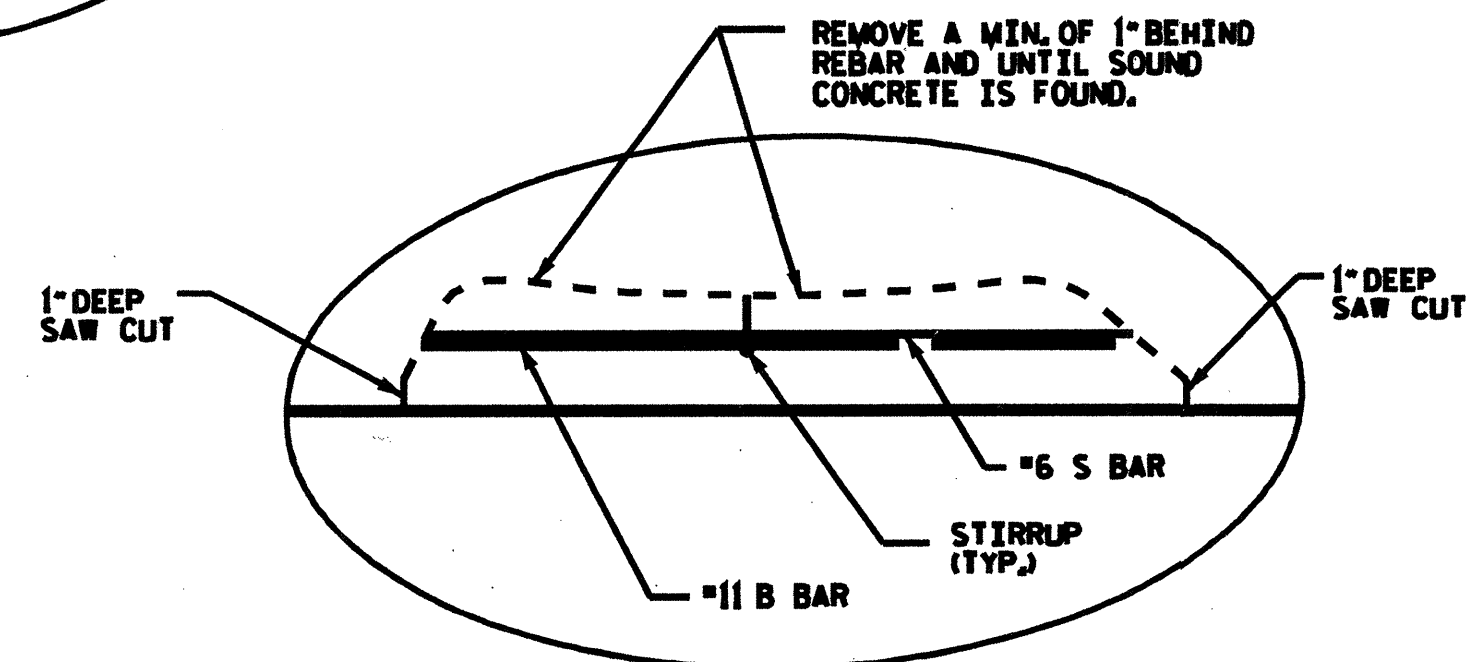
REVISIONS						SHEET NO. S-27
NO.	BY	DATE	NO.	BY	DATE	
1			2			TOTAL SHEETS 40
2			4			



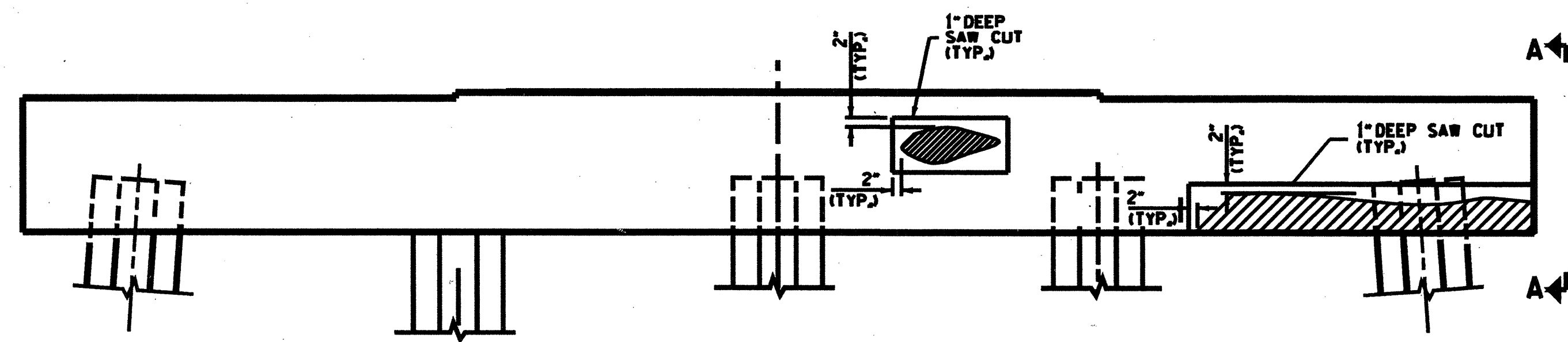
DETAIL "A"

PLAN

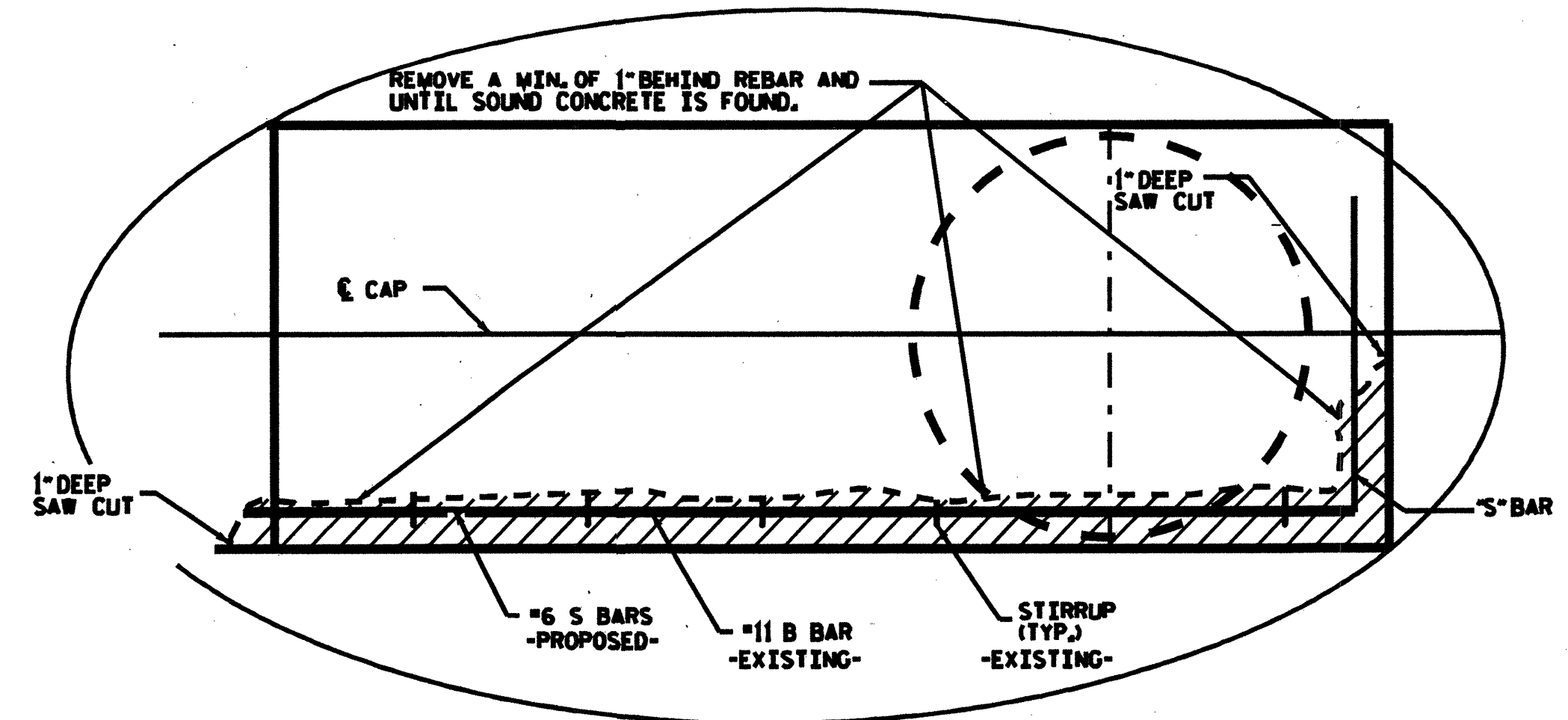
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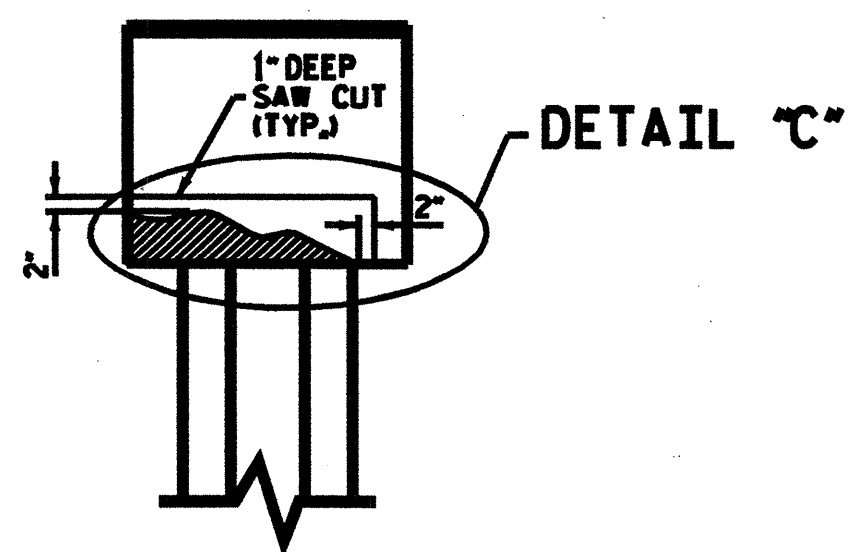
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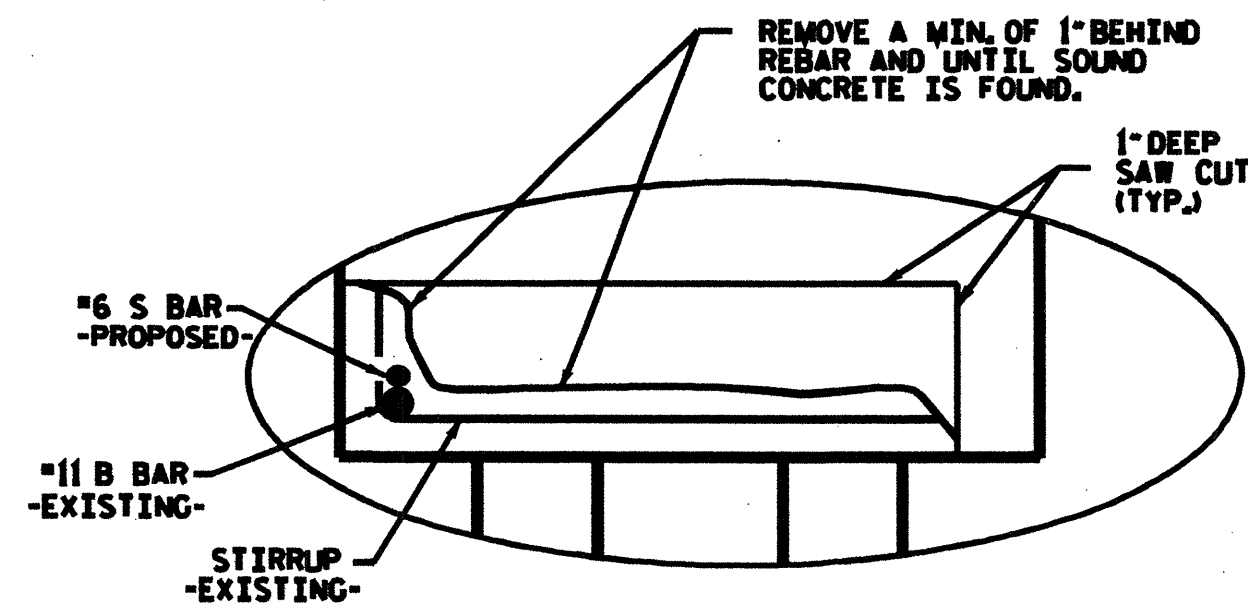
ELEVATION



DETAIL "B"



SECTION A-A



DETAIL "C"

GENERAL NOTES

1. SPALL DIMENSIONS SHOWN ARE APPROXIMATE.
2. REINFORCING STEEL SHALL BE GRADE 60.
3. ADHESIVELY ANCHORED REINFORCING STEEL WILL BE TESTED FOR ADHESIVE BONDING AND PULLOUT STRENGTH. SEE SPECIAL PROVISIONS.
4. REPAIR MATERIAL FOR CAP SPALLS SHALL BE POLYMER MODIFIED CONCRETE OR SHOTCRETE.

PROJECT NO. B-5194
 COUNTY: BERTIE
 BRIDGE NO. 7

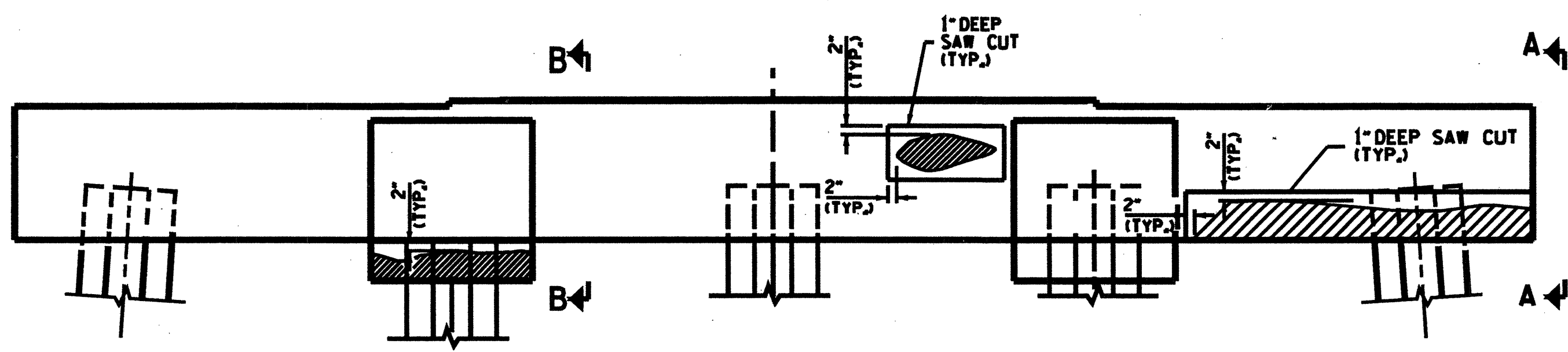
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BENT REPAIR DETAILS

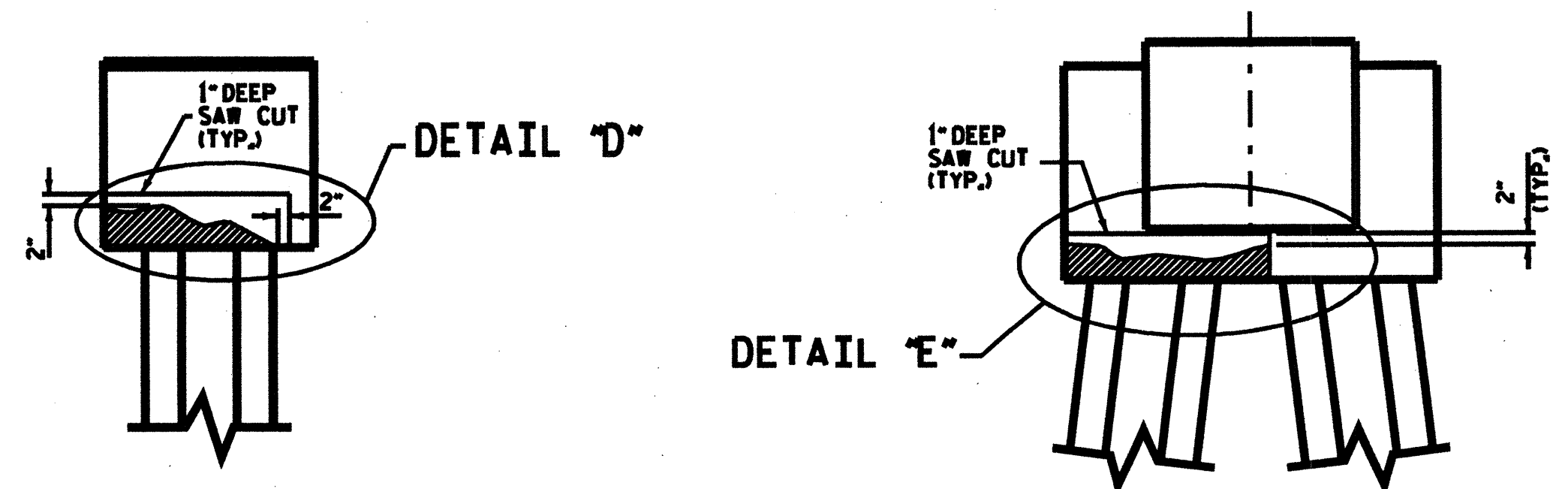
BENTS: 35-37, 39-41,
 43-45, 51-53, 55-57,
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 71-73, 75-77, 79-81,
 83-85, 87-92.

REVISIONS						SHEET NO. S-28
NO.	BY	DATE	NO.	BY	DATE	
1			2			TOTAL SHEETS 40
2			4			

DRAWN BY: S. T. SANDOR DATE: 08/09
 CHECKED BY: A. ABRAHA DATE: 09/09

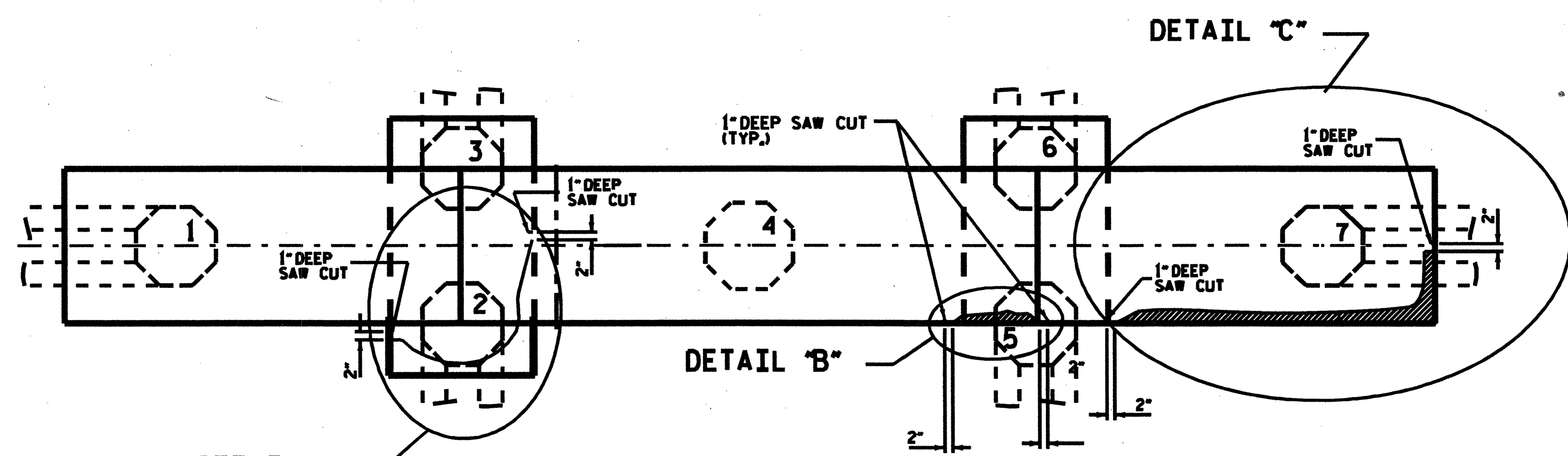


ELEVATION

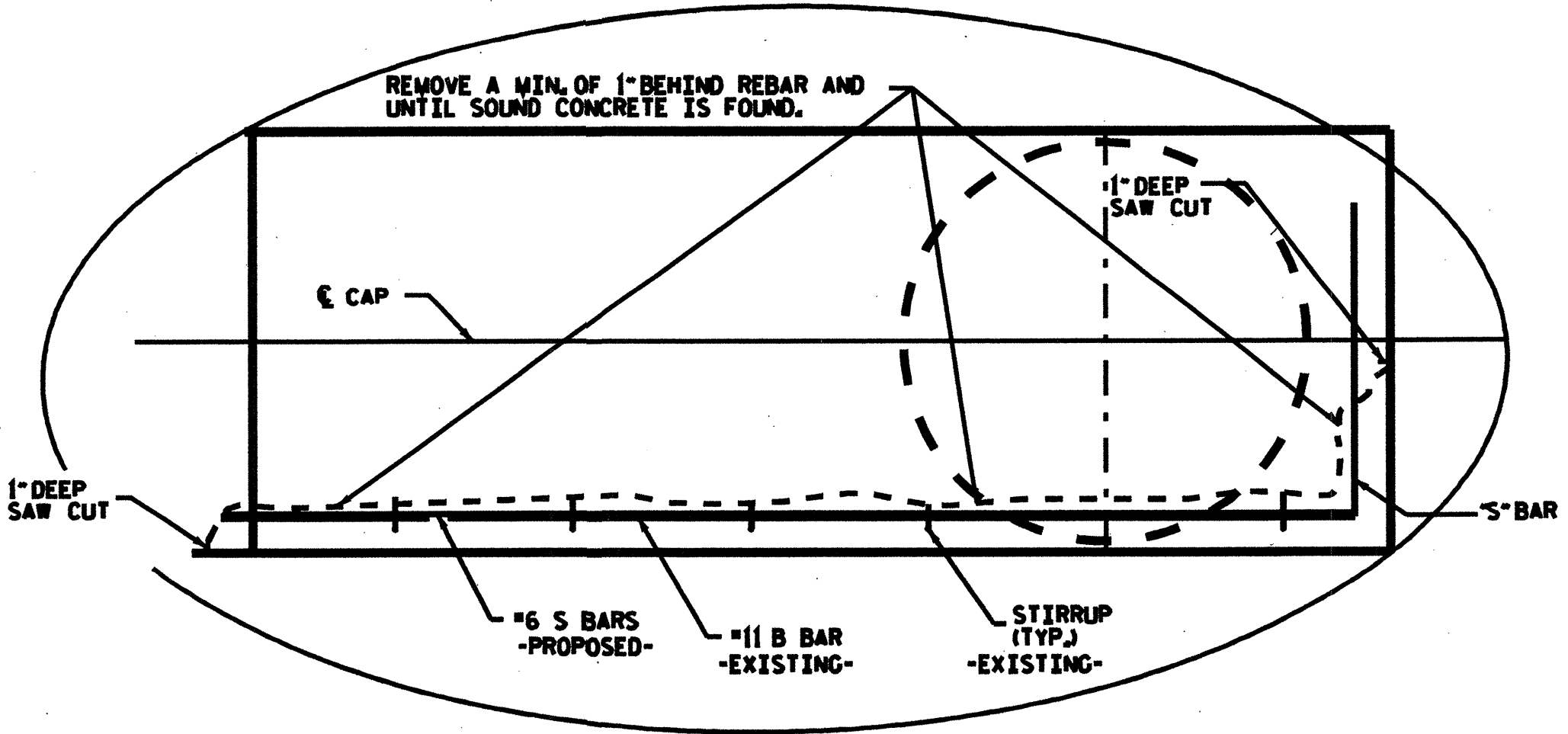


SECTION A-A

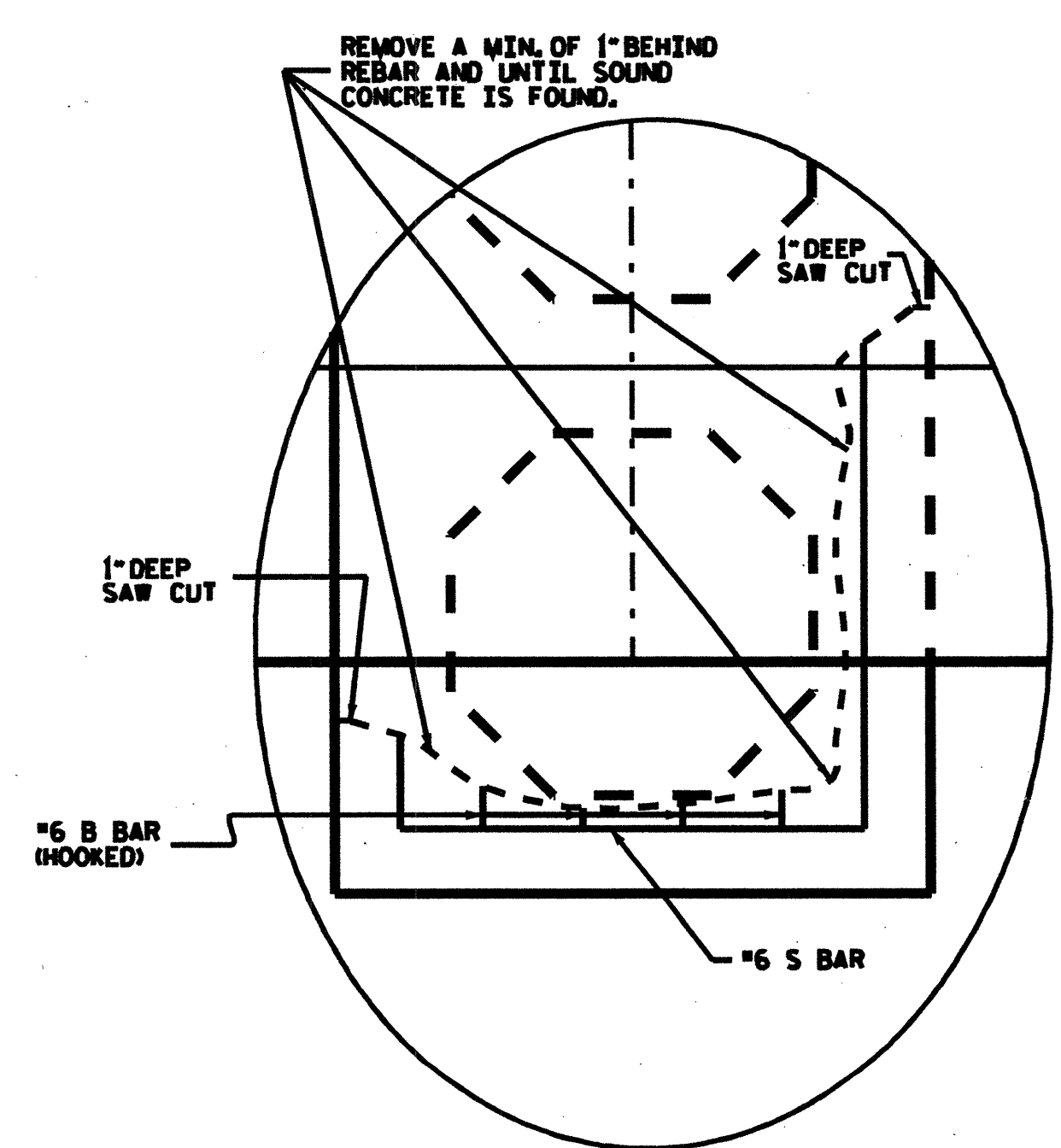
SECTION B-B



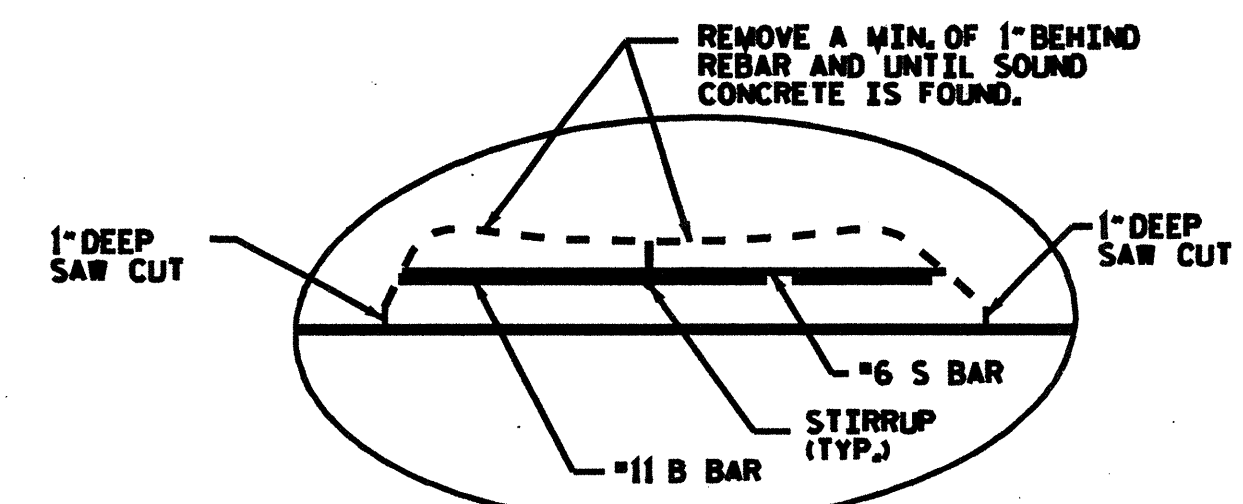
PLAN



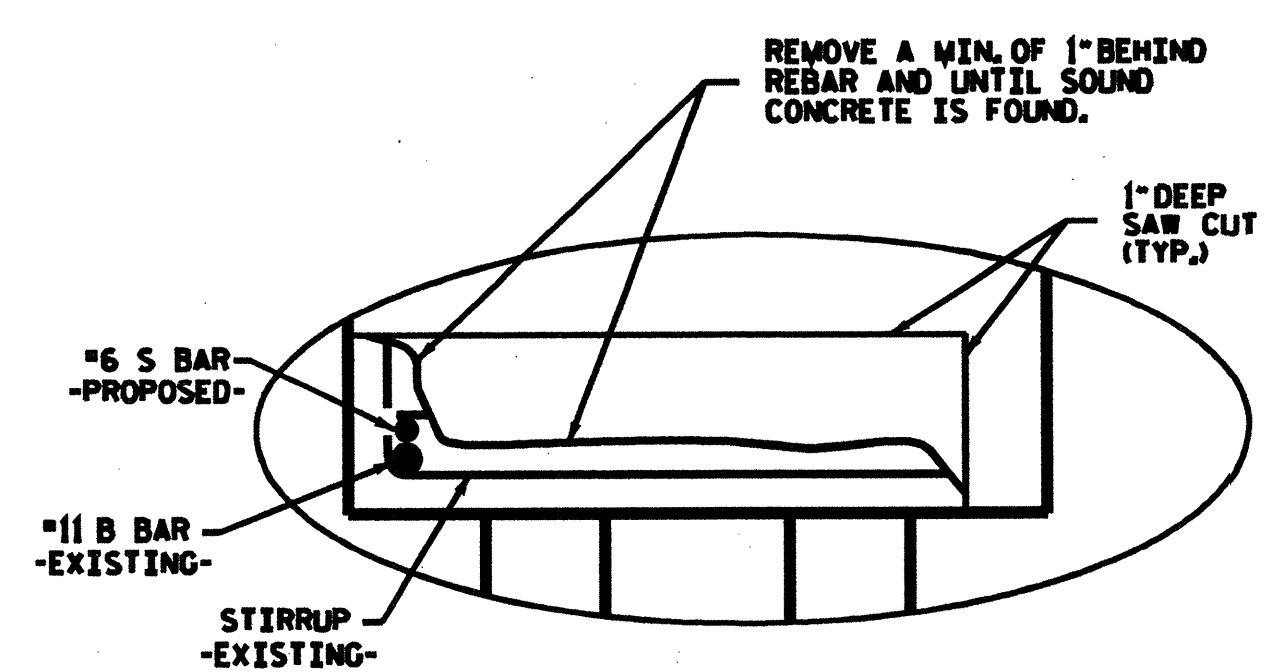
DETAIL C"



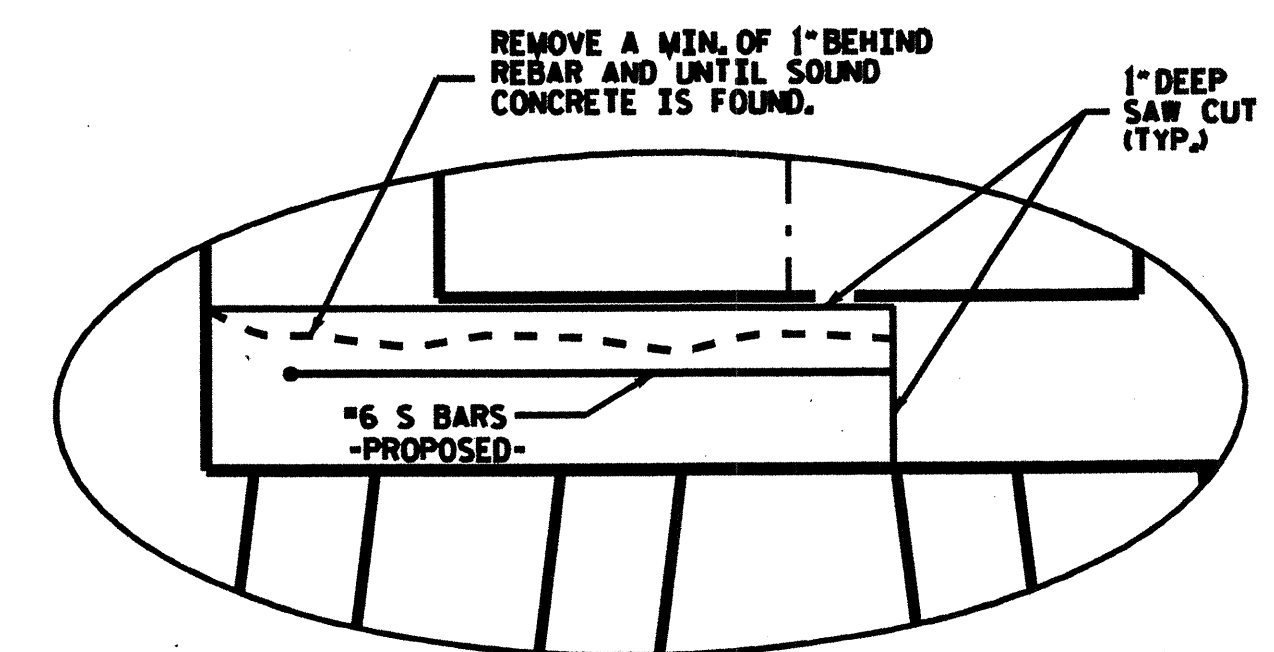
DETAIL A"



DETAIL B"



DETAIL D"



DETAIL E"

GENERAL NOTES

1. SPALL DIMENSIONS SHOWN ARE APPROXIMATE.
2. REINFORCING STEEL SHALL BE GRADE 60.
3. ADHESIVELY ANCHORED REINFORCING STEEL WILL BE TESTED FOR ADHESIVE BONDING AND PULLOUT STRENGTH. SEE SPECIAL PROVISIONS.
4. REPAIR MATERIAL FOR CAP SHALL BE POLYMER MODIFIED CONCRETE OR SHOTCRETE.

PROJECT NO. B-5194
 COUNTY: BERTIE
 BRIDGE NO. 7

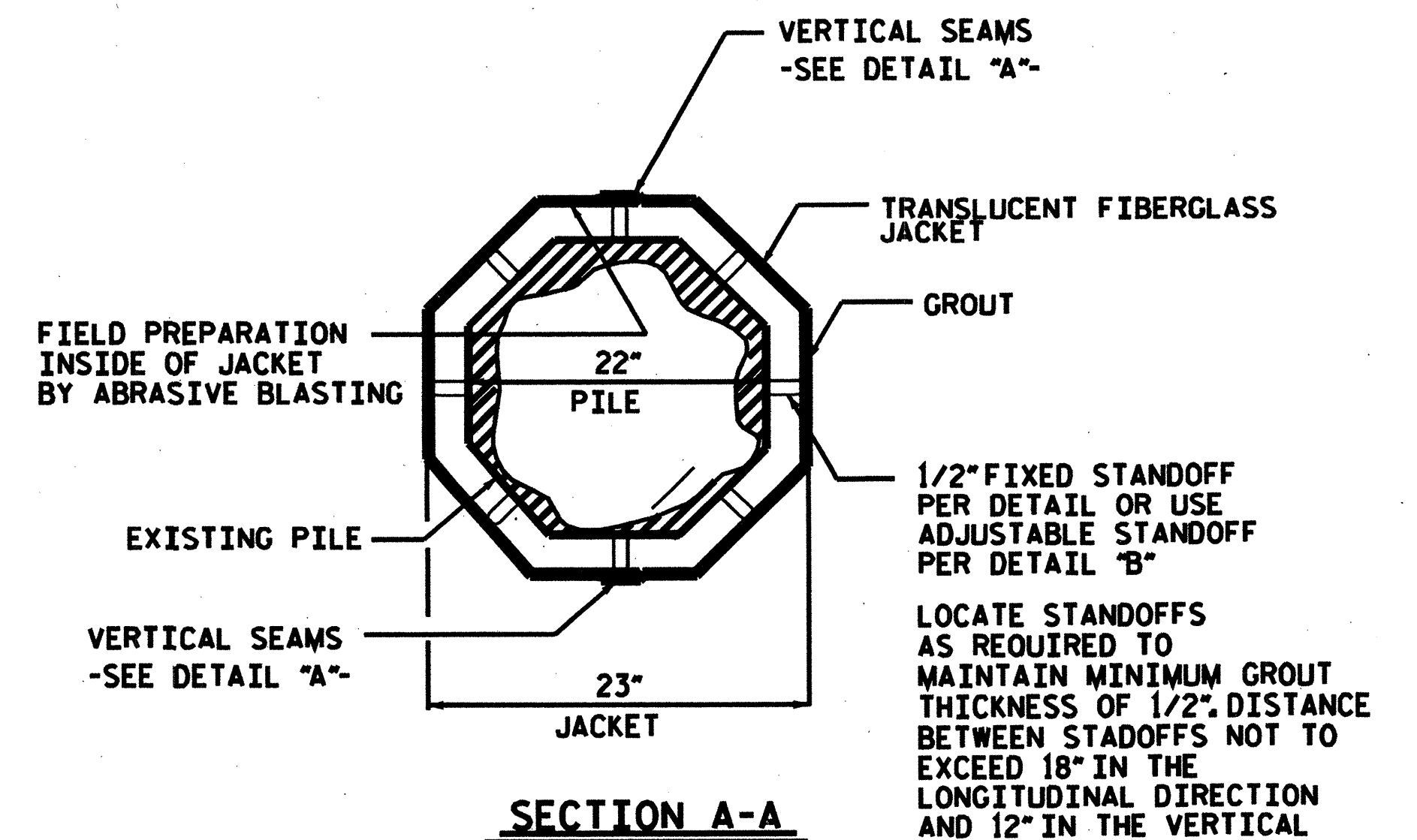
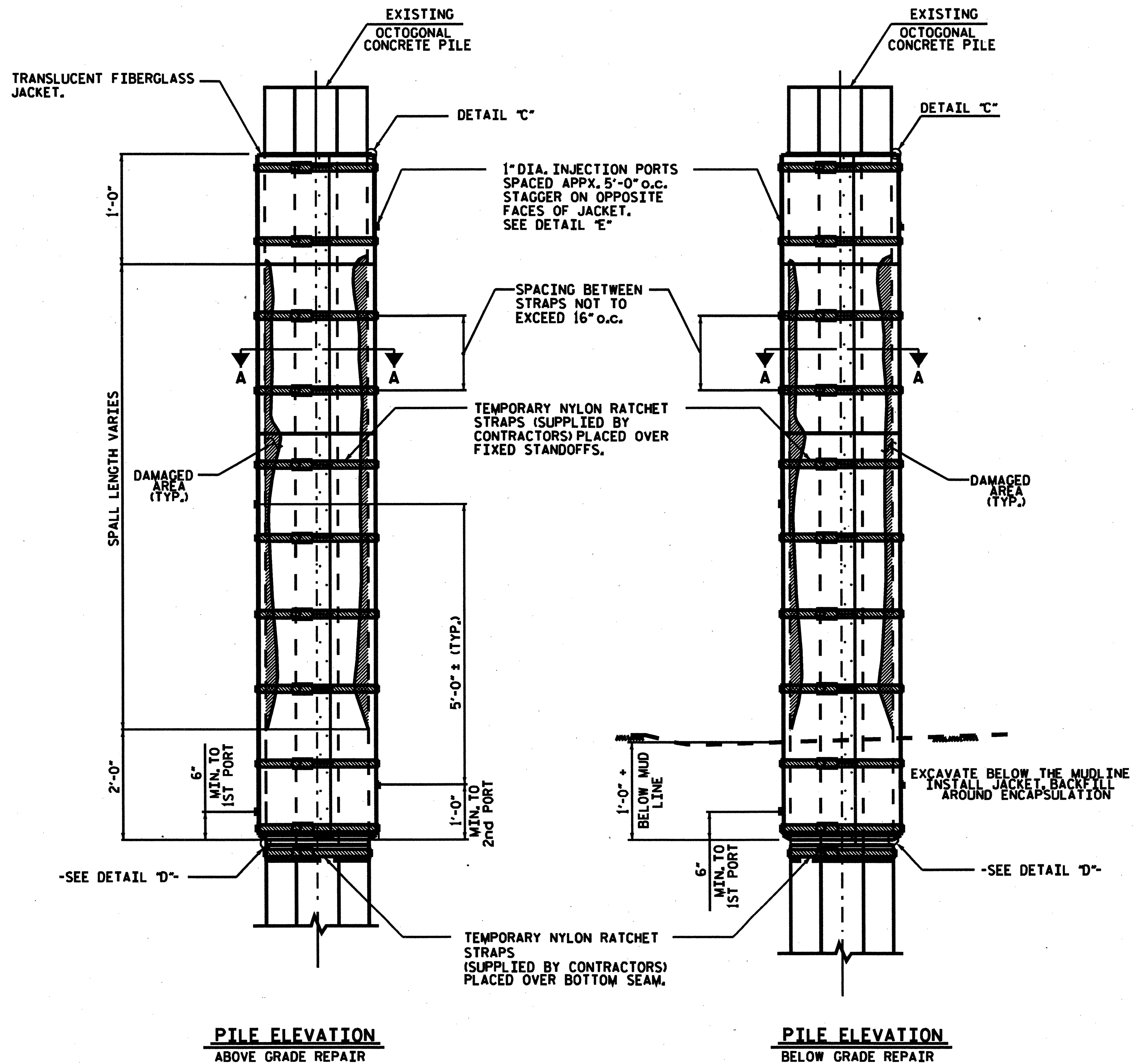
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALPH

BENT REPAIR DETAILS

BENTS: 38, 39, 42, 46,
 50, 54, 58, 62, 66, 70,
 74, 78, 82, 86, 89, 93.

REVISIONS						SHEET NO. S-29
NO.	BY	DATE	NO.	BY	DATE	
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2			4			

DRAWN BY: S. T. SANDOR DATE: 08/09
 CHECKED BY: A. ABRAHA DATE: 09/09



NOTES:

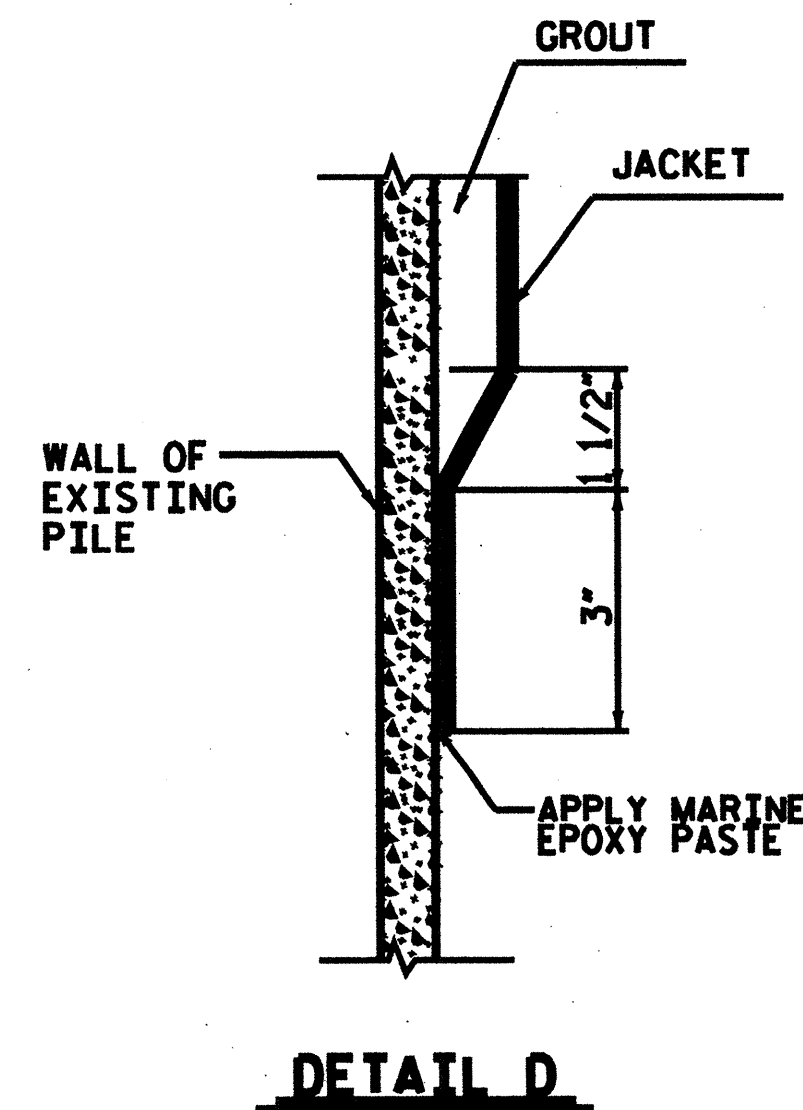
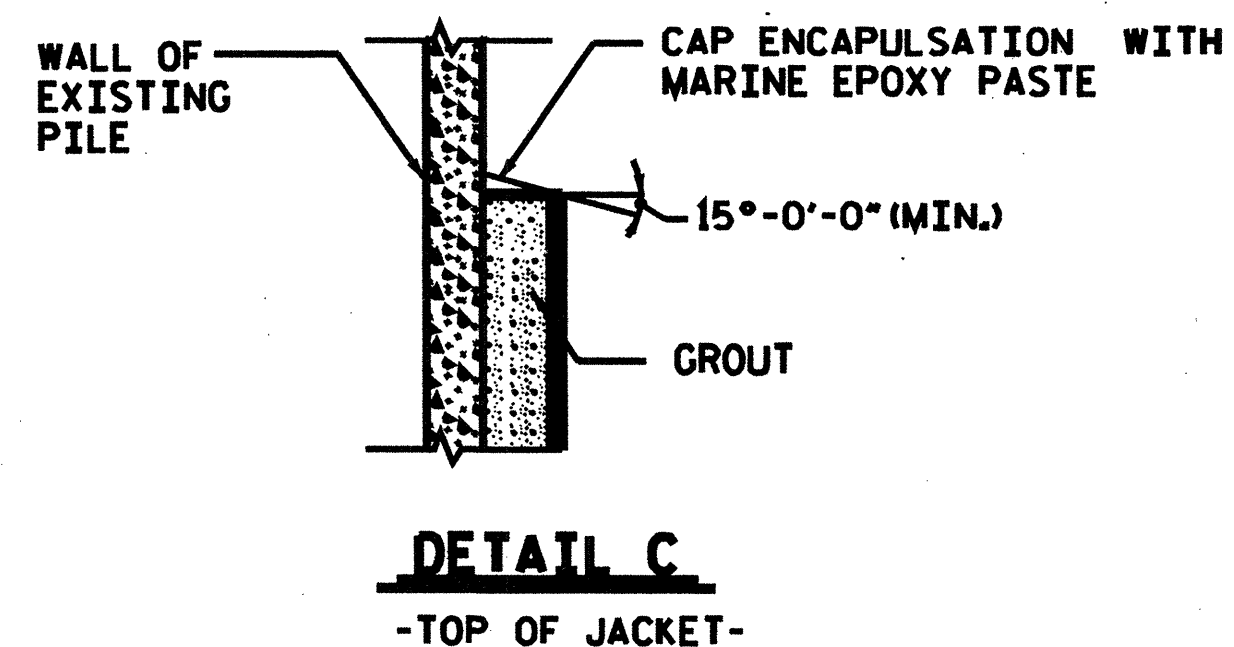
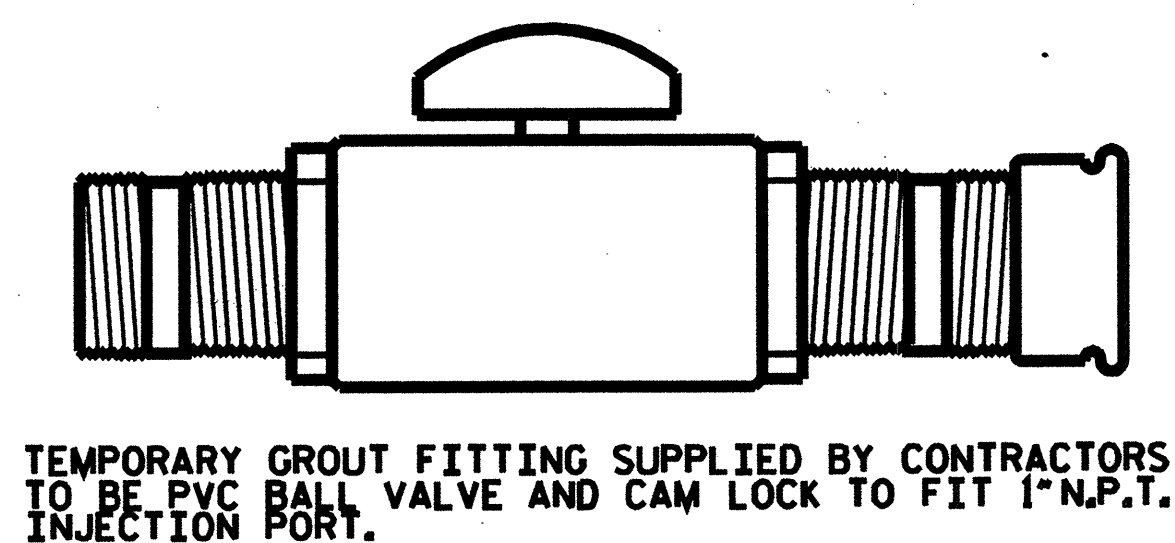
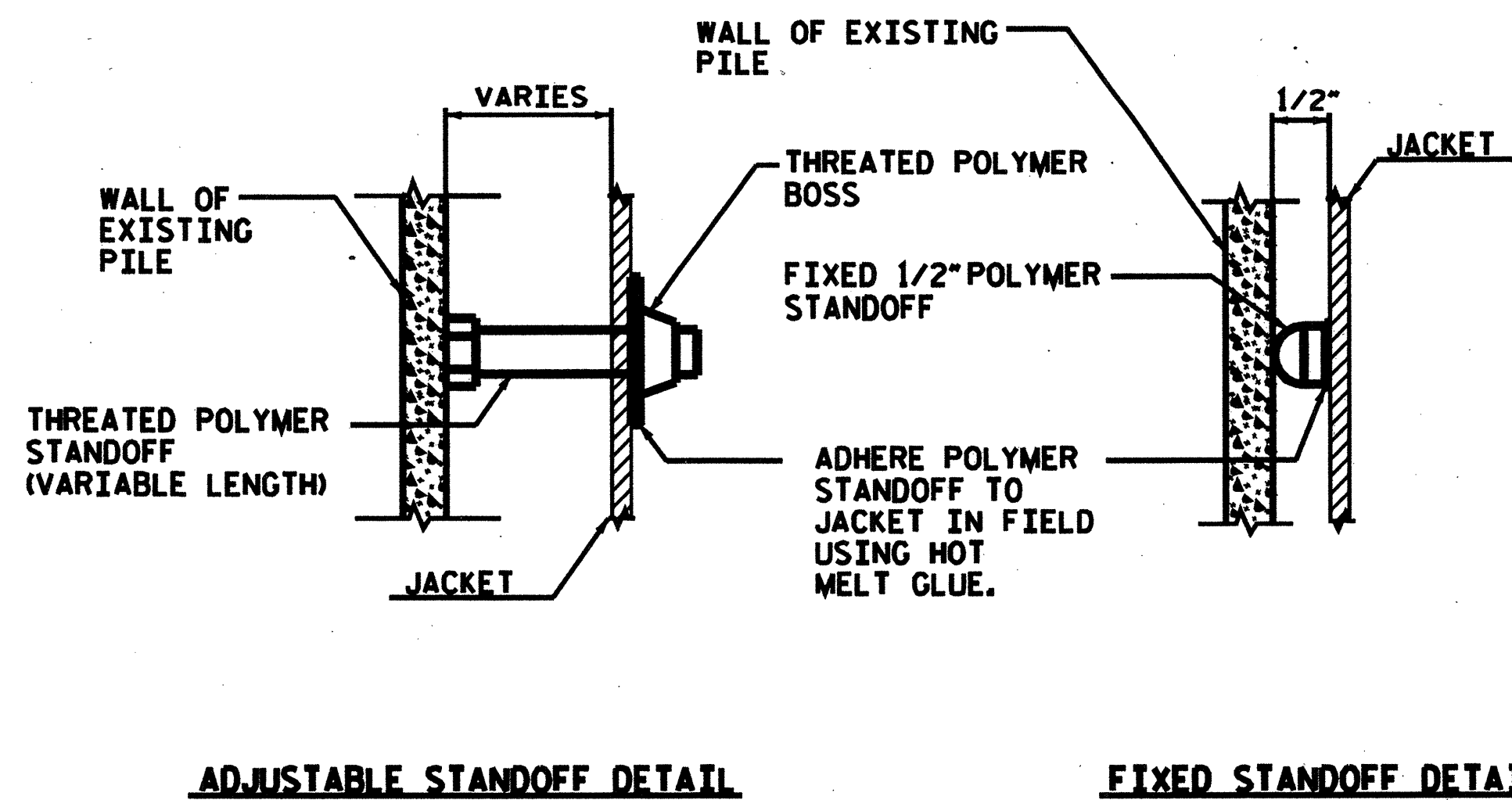
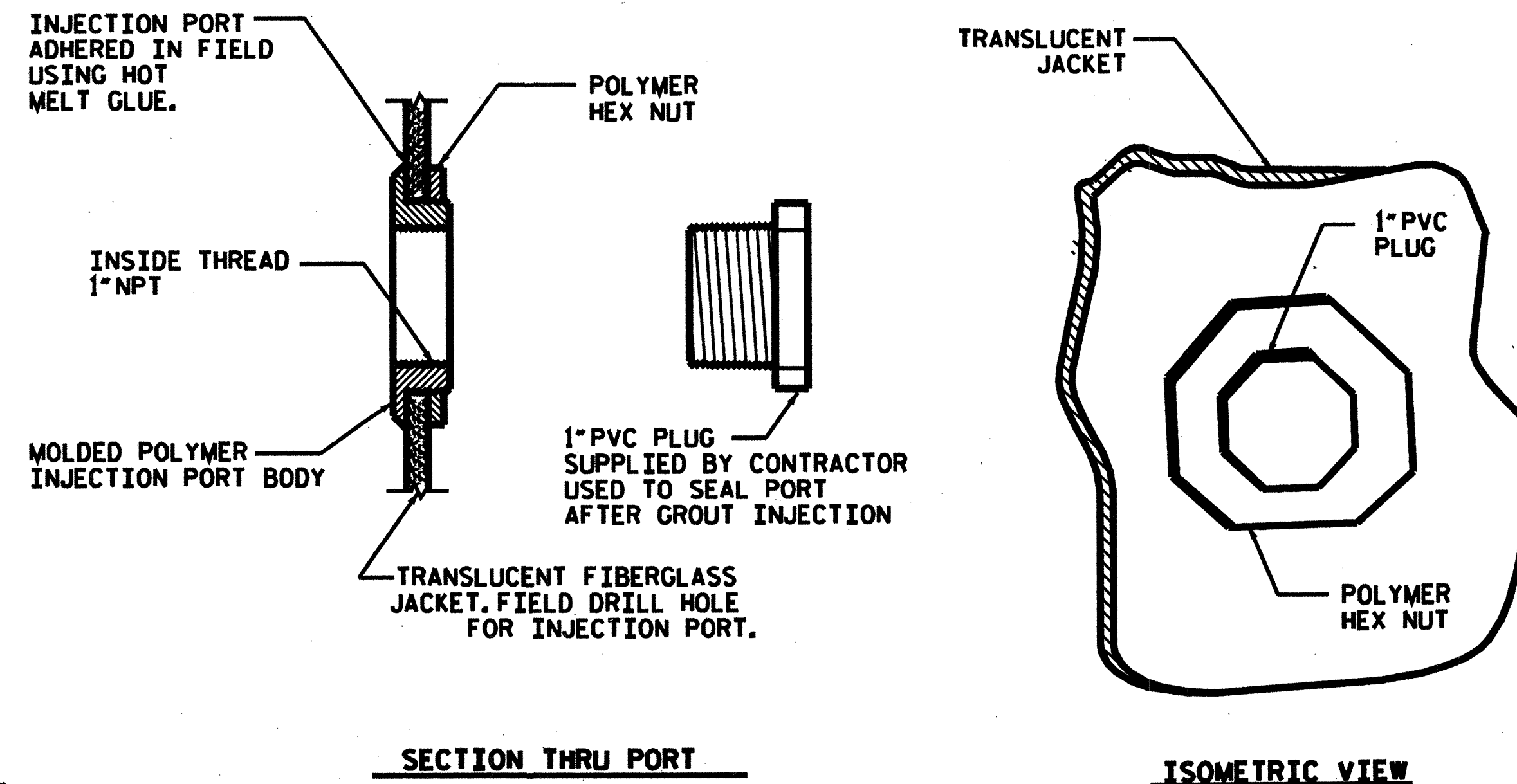
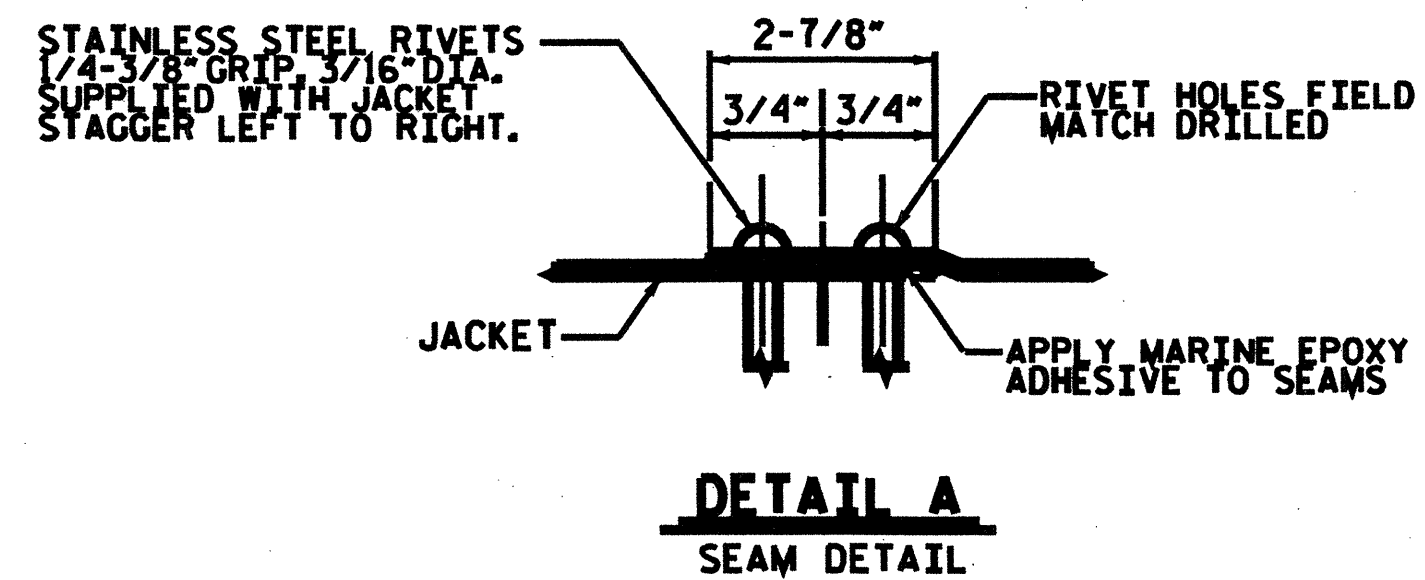
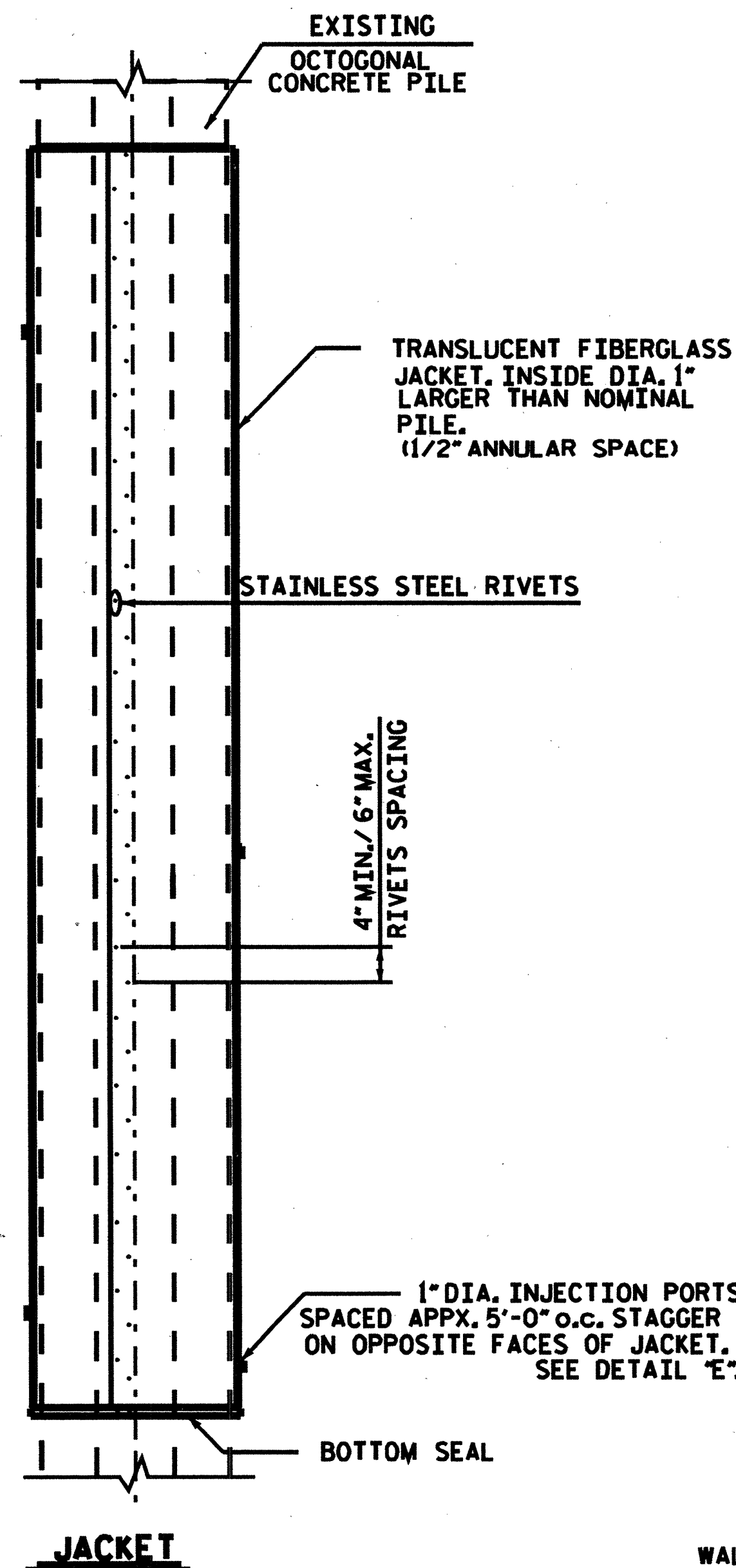
- ALL EXISTING PILES ARE 22" OCTOGONAL REINFORCING CONCRETE.
- ALL PILE JACKETS ARE ESTIMATED 7 FT. IN LENGTH AND START 2 FEET ABOVE MEAN WATER ELEVATION.
- APPROXIMATELY 5 FEET OF PILE JACKET WILL BE PLACED BELOW WATER ELEVATION DEPENDING ON THE ELEVATION OF THE RIVERS.
- SOME PILE JACKET LOCATIONS ARE SHALOW AND AND THOSE AREAS THE PILE JACKET WILL ONLY NEED TO EXTEND 2 FEET BELOW MUD LINE
- SOME PLACES THE CHANNEL IS VERY SOFT HAVING PROBE ROD PENETRATIONS FROM 4' TO 8'.

REPAIR SEQUENCES

1. AFTER SURFACE PREPARATION, PLACE JACKET IN PROPER LOCATION AROUND PILE AND SEAL LONGITUDINAL SEAMS (SEE DETAIL "A"). INSTALL TEMPORARY BRACING.
2. CONFIRM SPACING BETWEEN JACKET AND PILE. INSTALL BOTTOM SEAL (SEE DETAIL "D"). ALLOW BOTTOM SEAL TO CURE APPX. 4 HOURS.
3. ATTACH GROUT HOSE TO LOWERMOST INJECTION PORT AND PUMP A-P-E GROUT FOR 30-sec. CHECK FOR LEAKS ALONG SEAMS AND BOTTOM SEAL. (OPTIONALLY ALLOW THIS GROUT TO CURE AND PROCEED WITH GROUT INJECTION FROM 2nd PORT.)
4. PLUG UPPER INJECTION PORTS AND PUMP GROUT INTO LOWER PORT UNTIL GROUT REACHES TOP OF JACKET. ONLY USE UPPER PORTS IF INJECTION BECOMES DIFFICULT.

PROJECT NO. B-5194
 COUNTY: BERTIE
 BRIDGE NO. 7

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
OCTAGONAL PILE ENCAPSULATION					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			2		
2			4		
					S-30 40



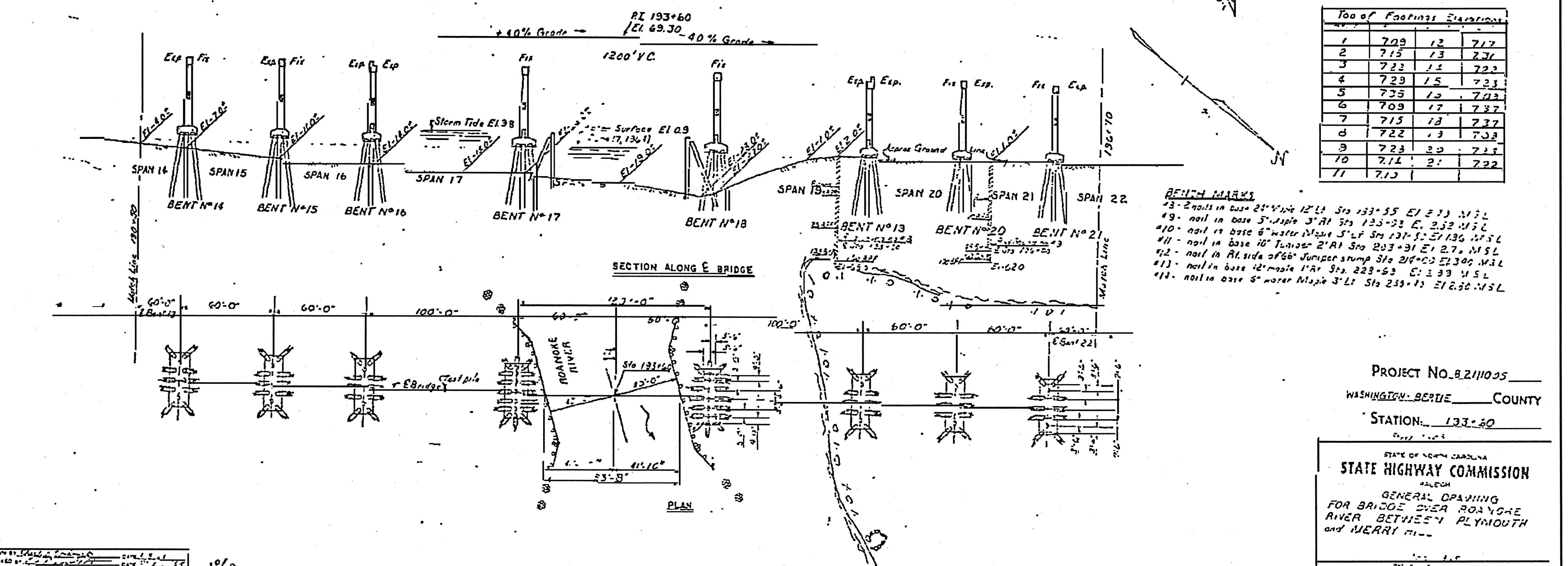
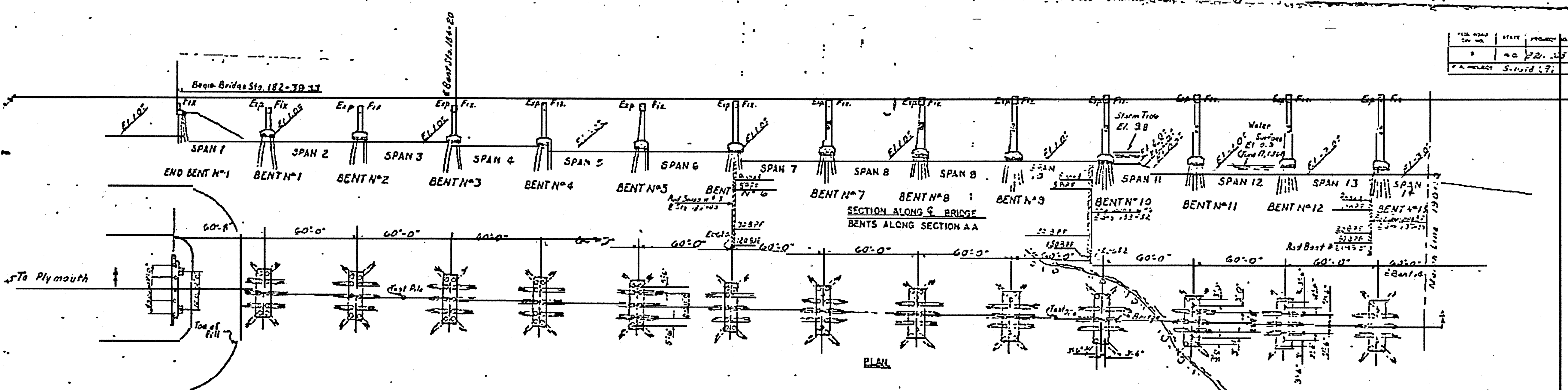
PROJECT NO. B-5194
 COUNTY: BERTIE
 BRIDGE NO. 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RAILROAD

OCTAGONAL PILE
 ENCAPSULATION DETAILS

REVISIONS						NO. OF SHEETS
NO.	BY	DATE	NO.	BY	DATE	
1			2			S-31 40
2			4			

PROJECT NO.	STATE	PROJECT ID
8	NC	B.211055
S. H. MCELROY S. 11/18/55		

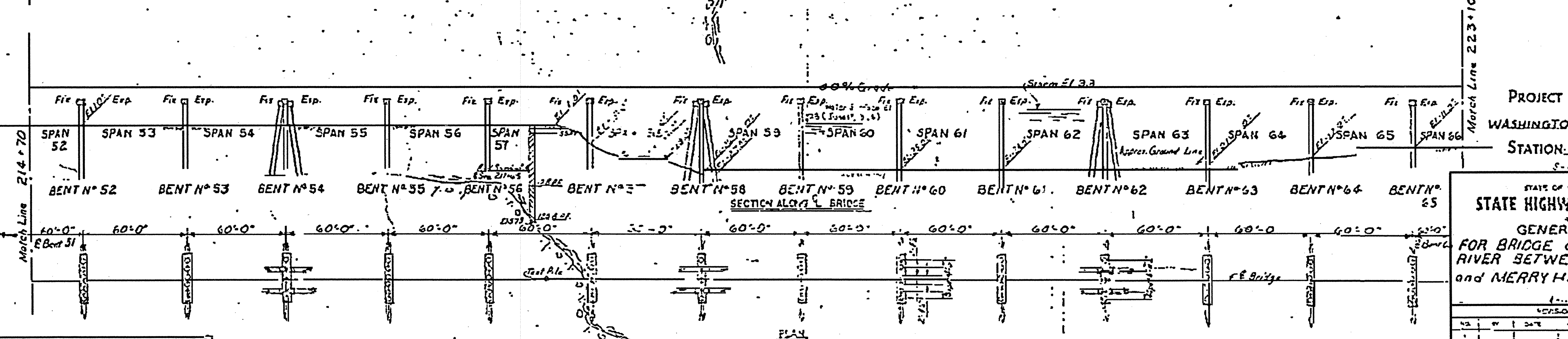
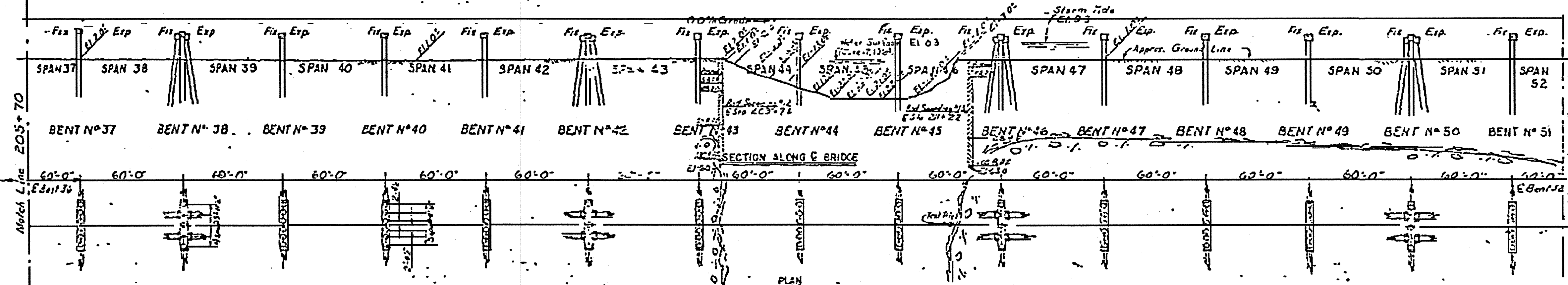
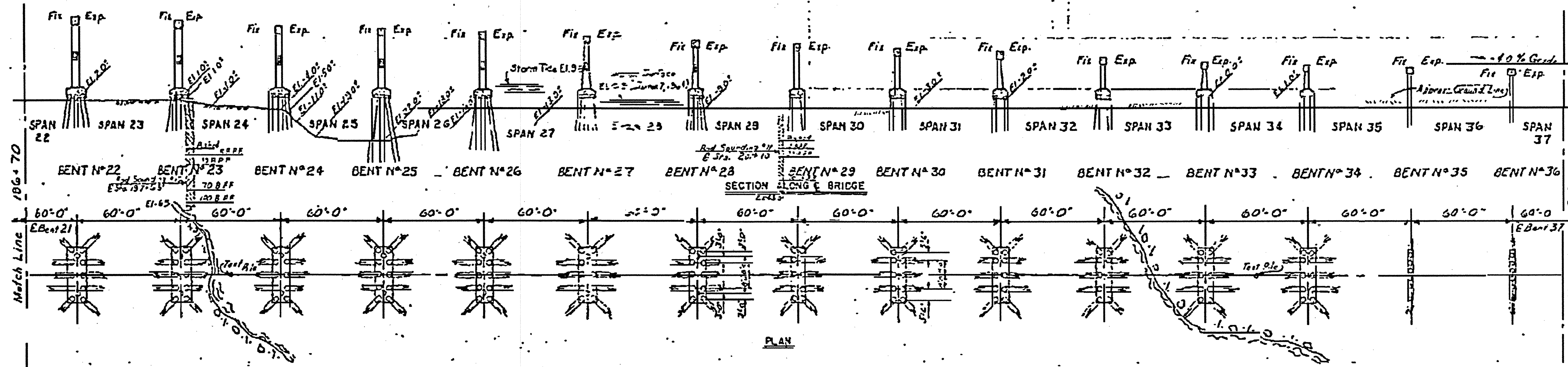


Top of Footings Elevations			
1	709	12	717
2	715	13	731
3	723	15	722
4	729	15	723
5	735	15	703
6	709	17	737
7	715	18	737
8	722	19	733
9	723	20	733
10	714	21	722
11	713		

BENCH MARKS
 43 - 2 nails in base 2 1/2" dia 12" L Stn 133+55 El 273 MSL
 49 - nail in base 3" dia 3' L Stn 133+53 El 252 MSL
 410 - nail in base 8" water pipe 5' L Stn 131+52 El 136 MSL
 411 - nail in base 10" water pipe 2' L Stn 203+31 El 270 MSL
 412 - nail in Rt. side of 66" Juniper stump Sta 217+00 El 130 MSL
 413 - nail in base 12" pipe 1' L Stn 223+53 El 333 MSL
 414 - nail in base 8" water pipe 3' L Stn 233+13 El 230 MSL

PROJECT NO. B.211055
 WASHINGTON BERKE COUNTY
 STATION 133+60
 STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
 GENERAL DRAWING
 FOR BRIDGE OVER ROANOKE
 RIVER BETWEEN PLYMOUTH
 and MERRY MILLS

PROJECT NO.	B.2110.25
DATE	5-1-33

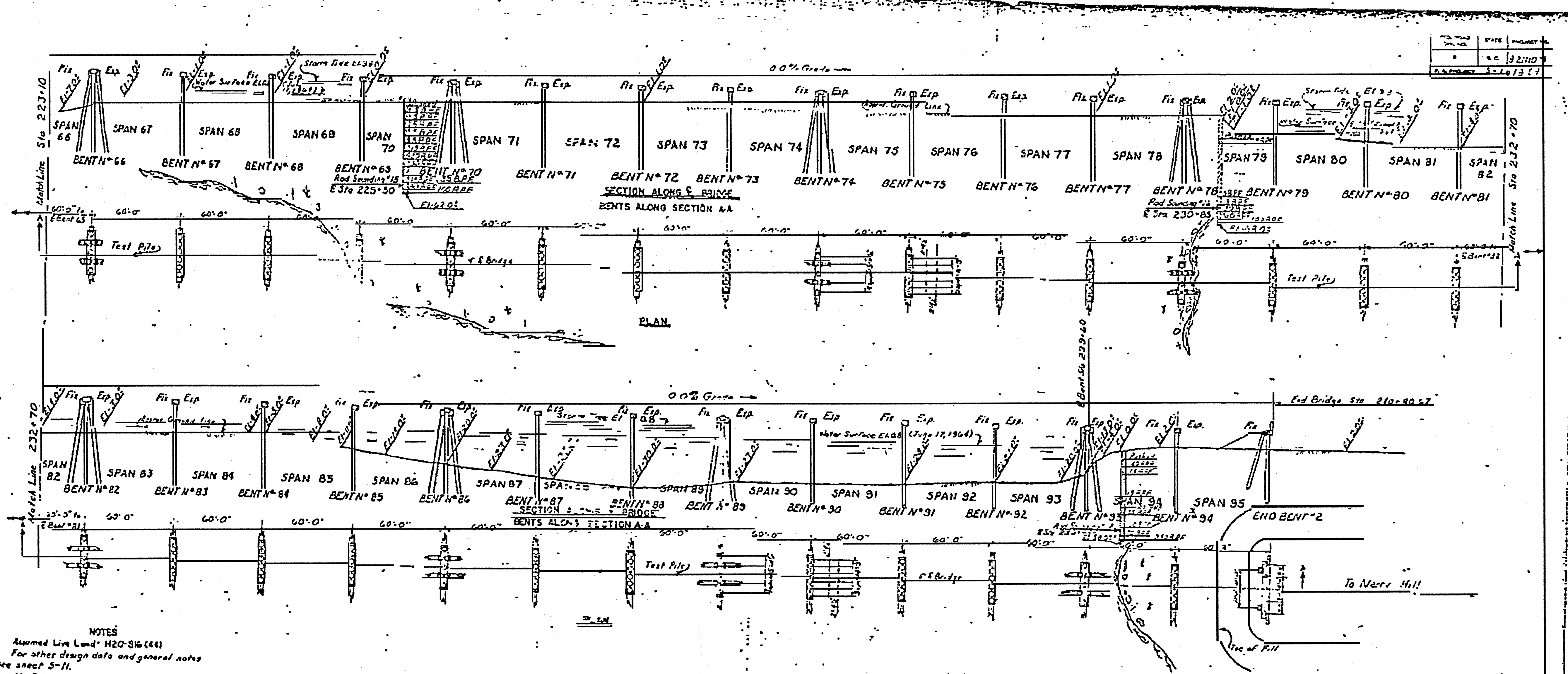


PROJECT NO. B.2110.25
 WASHINGTON-BERTIE COUNTY
 STATION 193+60

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
 GENERAL DRAWING
 FOR BRIDGE OVER ROANOKE RIVER BETWEEN PLYMOUTH and MERRY HILL

DATE	5-1-33
BY	
CHECKED BY	

PROJECT NO.	STATE	PROJECT
8.2110.03	N.C.	32110.03
DATE	SCALE	
5-10-60	1" = 100'	



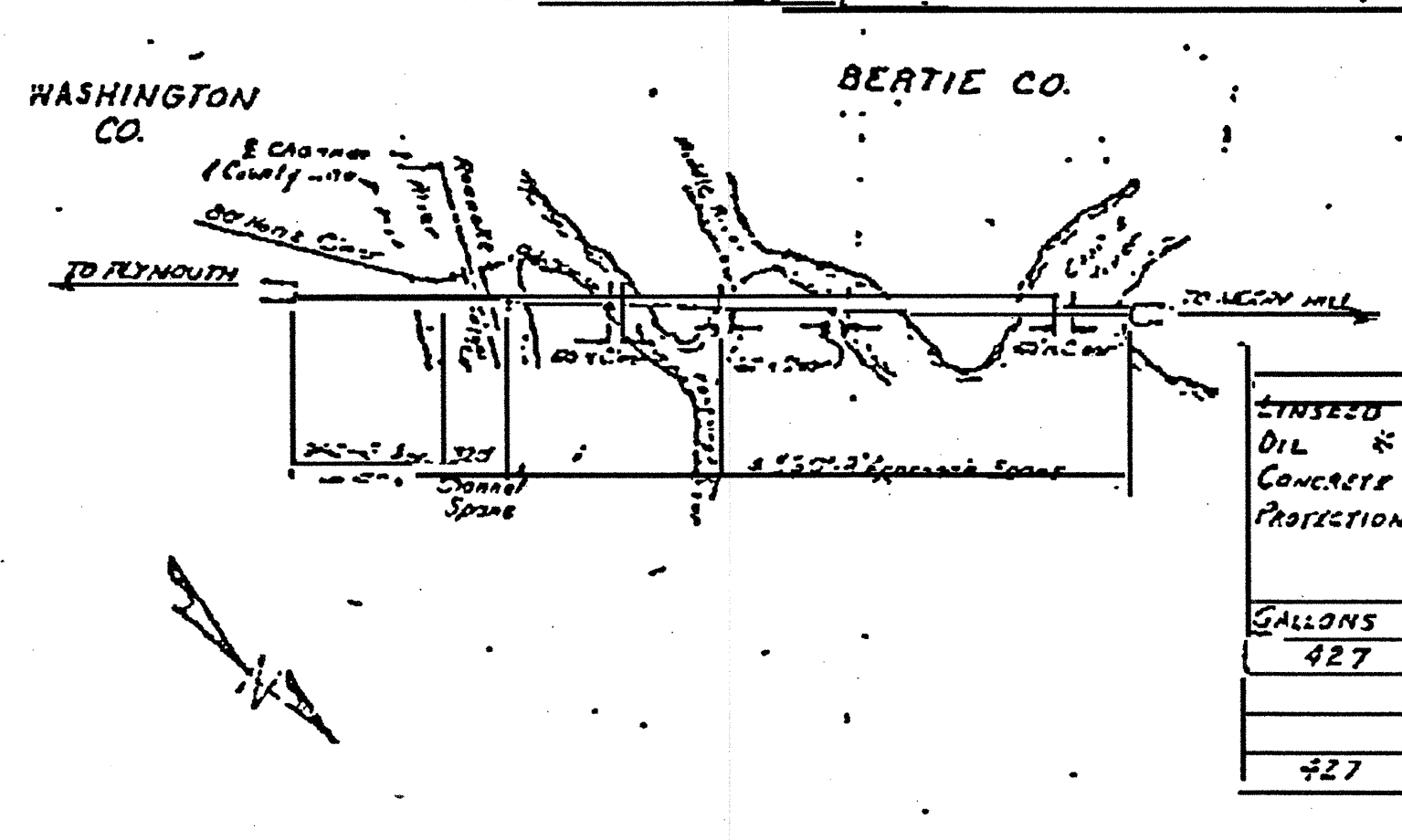
NOTES
 Assumed Live Load: H20-S16 (44)
 For other design data and general notes see sheet S-11.
 All 22" oct. prest. concrete piles shall be driven to a minimum bearing capacity of 50 tons each and shall be driven to grade. See Special Provisions.

Maintenance of Water Traffic: The contractor shall be required to maintain water traffic in a manner satisfactory to both the Engineer and the Coast Guard and in accordance with the Special Provisions.
 The contractor will be required to drive 10-22" oct. prest. concrete test piles, 70' long as shown on plan at the following Stations: 113+30, 188+10, 152+50, 97+35, 203+30, 211+10, 217+70, 223+70, 231+50, 236+50. These piles to be paid for as 22" oct. test piles. The test piles shall be driven vertical. The test piles shall be pulled if possible, but in any event shall be removed down to at least one foot below bed elevation. At the contractor's option, test piles may be raised, as test piles in good condition when pulled. Order lengths for the 22" oct. prest. cone. piles and associated timber

piles will be given after the test piles have been driven. The test piles are to be driven to minimum bearing capacity of 50 tons each.

Bench Mark '9-112 = 2536 3" Water Mole 3' RL Sta 195+0.7 EL 252 M.S.L.

* See special provisions for method of securing bridge deck and missing and applying hot linseed oil solution.



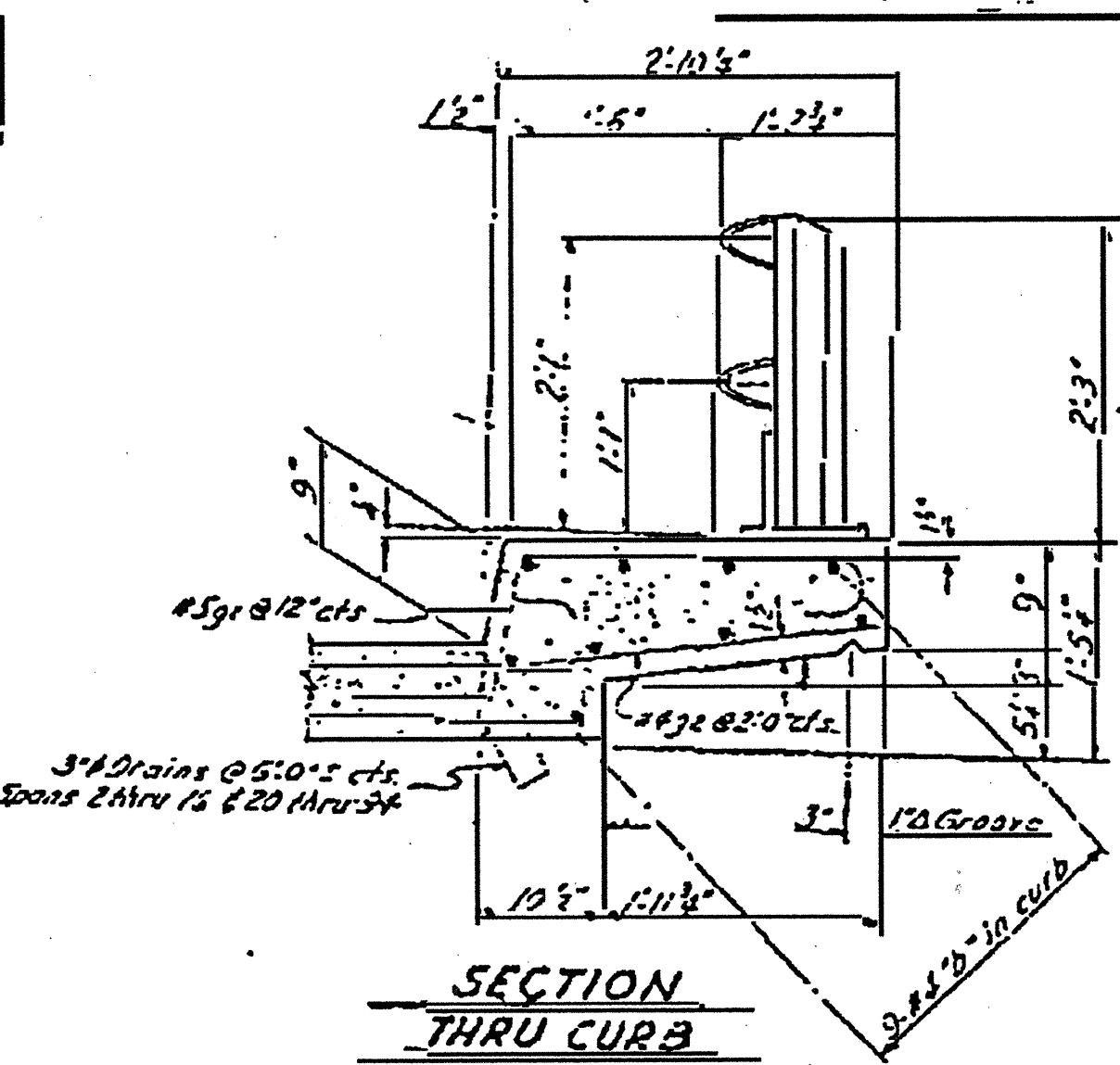
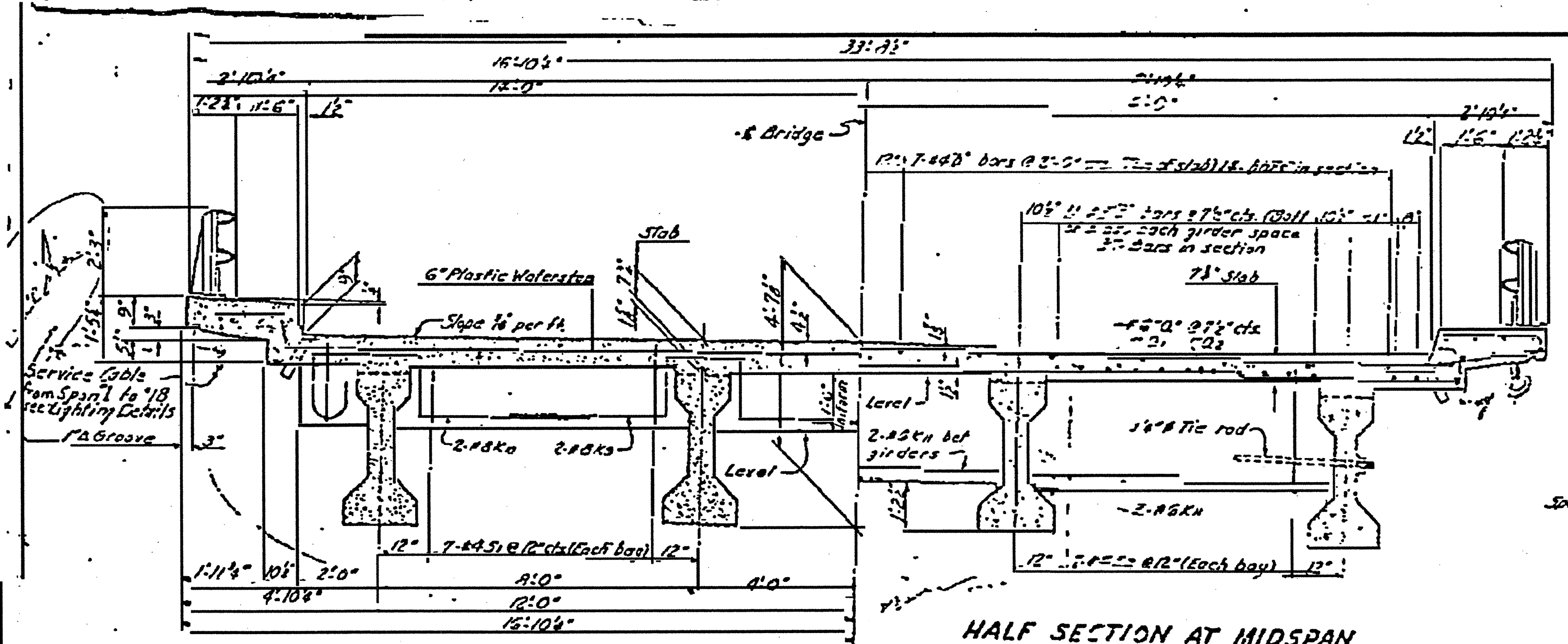
TOTAL BILL OF MATERIAL

ITEMS	QUANTITY	UNIT	APPROX. VAL.	EXT. SUM.
INSEED OIL	32	75		
CONCRETE PROTECTION	5,463 G	1.20	6,555.60	6,555.60
CLASS 75 REIN. CONCRETE	368	220.1803	81,026.24	81,026.24
15' PRESTR. CONCRETE GIRDERS	353	0.000	0.00	0.00
STRUCTURAL STEEL	11,569.75	1.00	11,569.75	11,569.75
2-BAY METAL RAIL				
LIGHTING SYSTEM				
TOTALS			89,151.59	89,151.59

PROJECT NO. 8.2110.03
 WASHINGTON-BERTIE COUNTY
 STATION: 193+60

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
 GENERAL DRAWING
 FOR BRIDGE OVER ROANOKE RIVER BETWEEN PLYMOUTH AND MERRY HILL

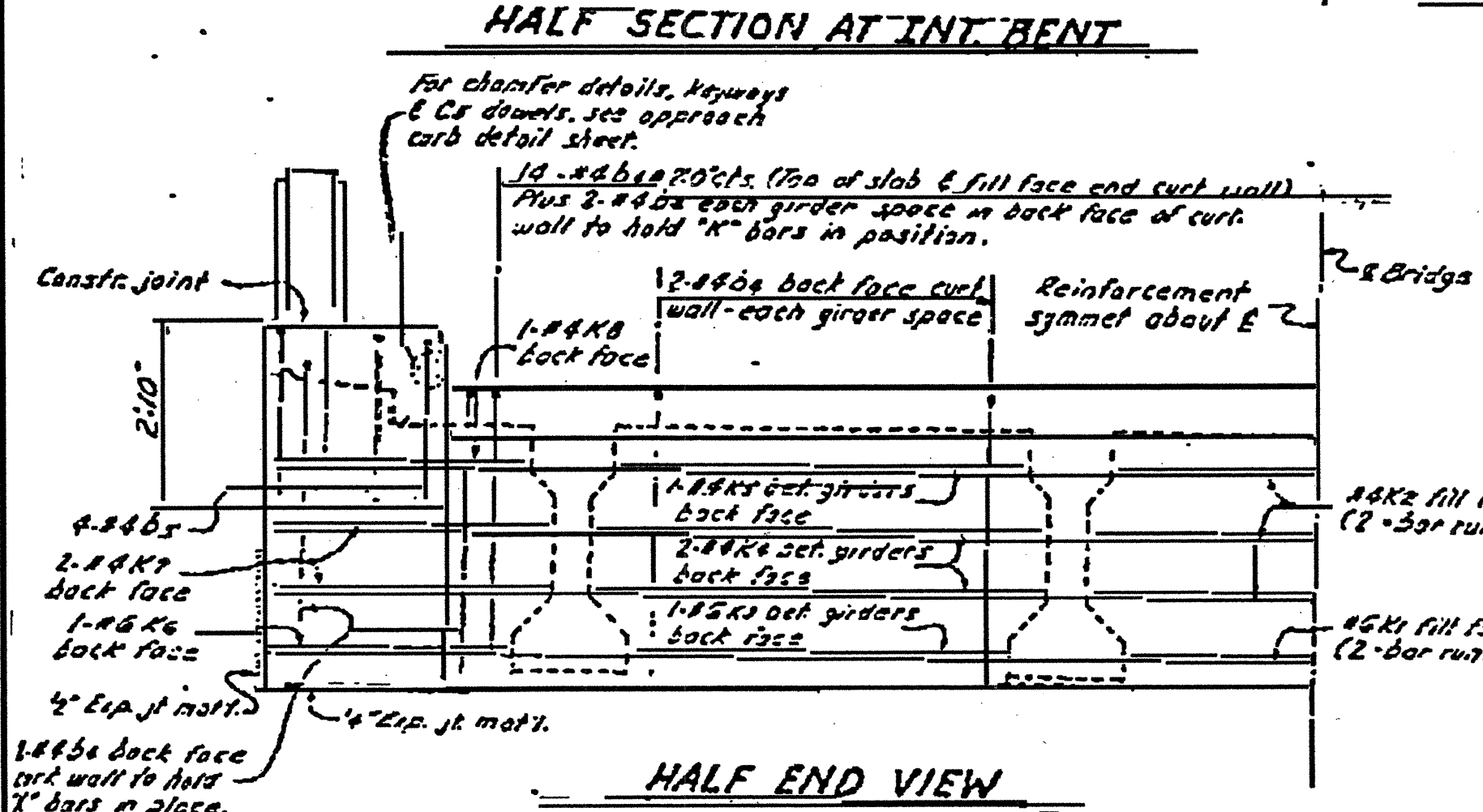
DATE	SCALE	
5-10-60	1" = 100'	
BY	CHECKED	DATE



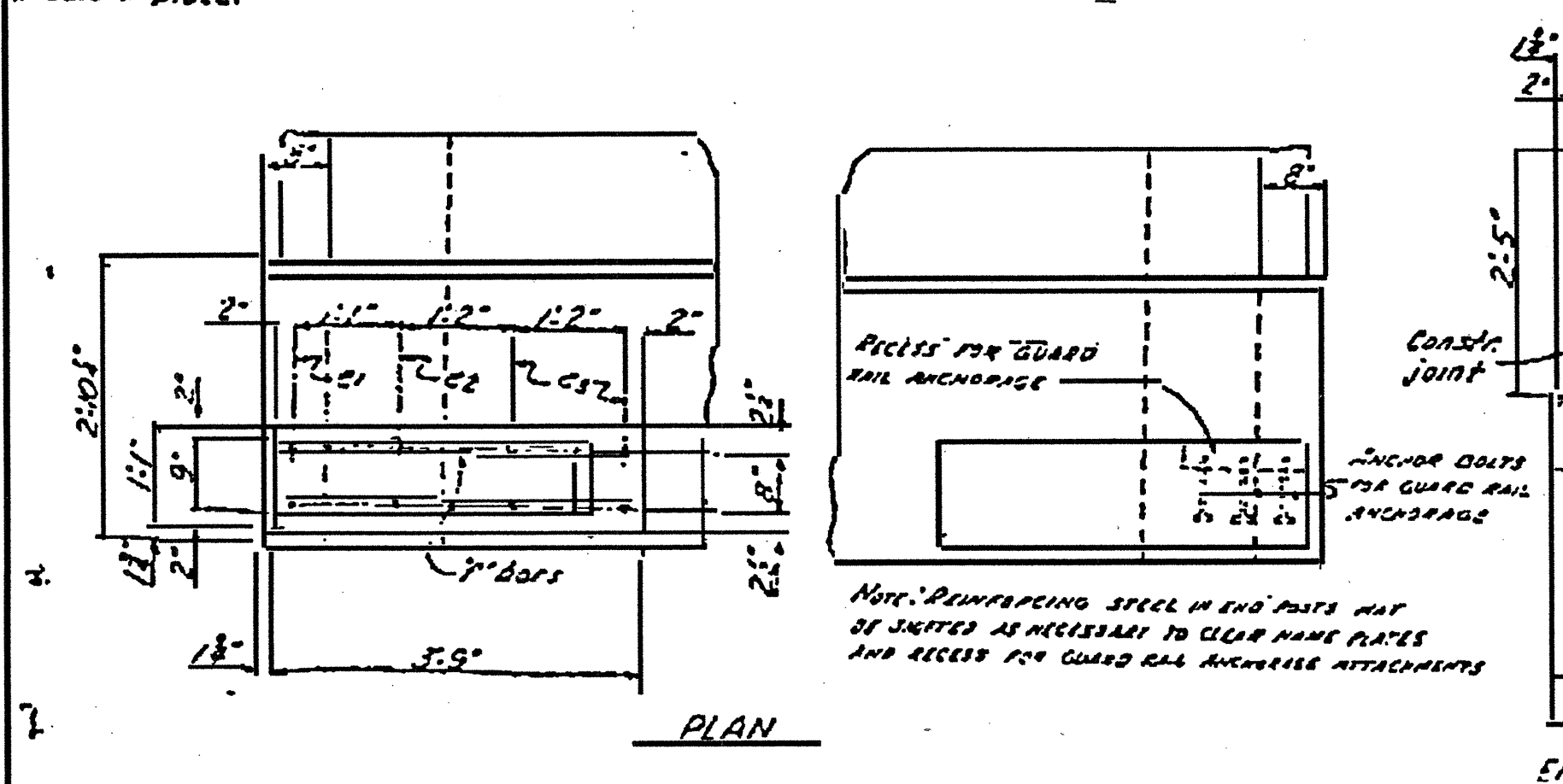
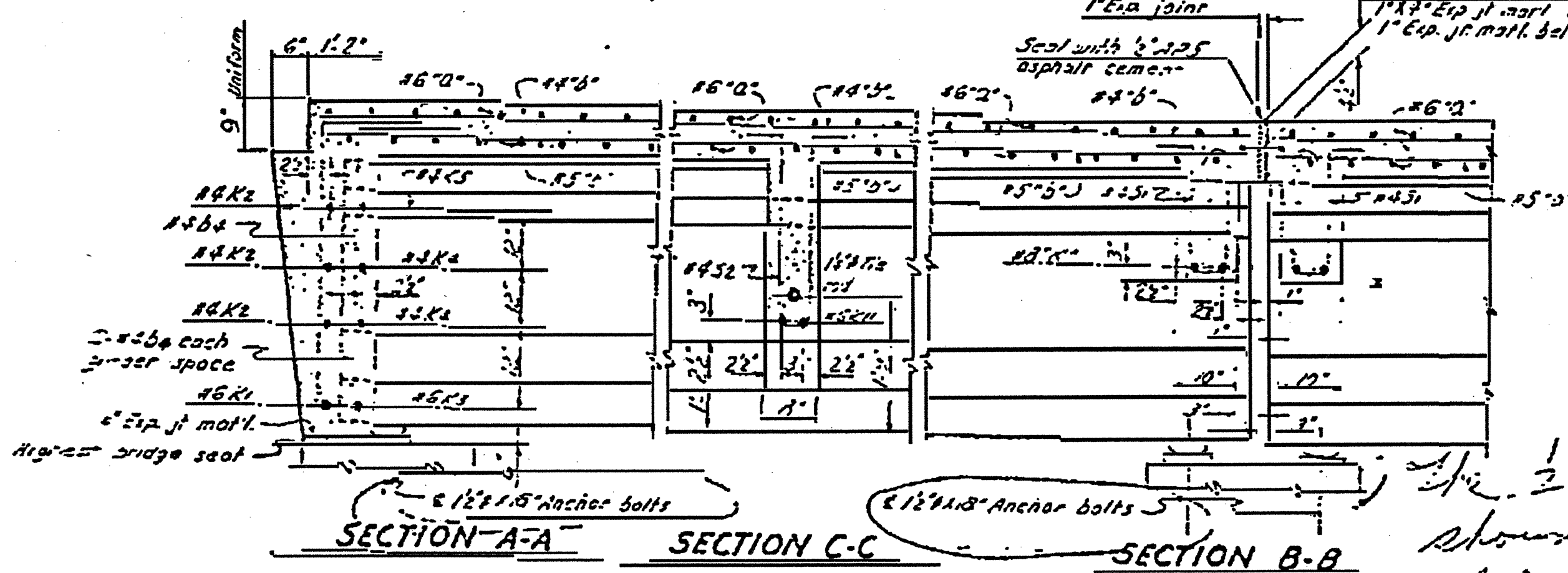
NOTES:

Assumed Live Load: H20-S16 (or alternate loading)
 for reinforcing bars indicated and no bar marks shown, see concrete plan for each span.
 Temporary struts shall be placed between prestressed concrete girders adjacent to the diaphragms and tie bars on the 16" dia rods shall be fully tensioned before the diaphragms are cast. Struts shall remain in place 3 days after concrete has been placed. The tie rods shall be retightened after the struts have been removed.
 Reinforcing Steel in tension: 20,000 lbs. per sq. inch
 Concrete in compression: 1,700 lbs. per sq. inch
 See Sheet S-N for other design data and general notes.
 Top of floor drains to be set 3" below surface of slab.

The 12" x 18" anchor bolts as shown in section A-A and B-B are in place and will not be part of this contract.



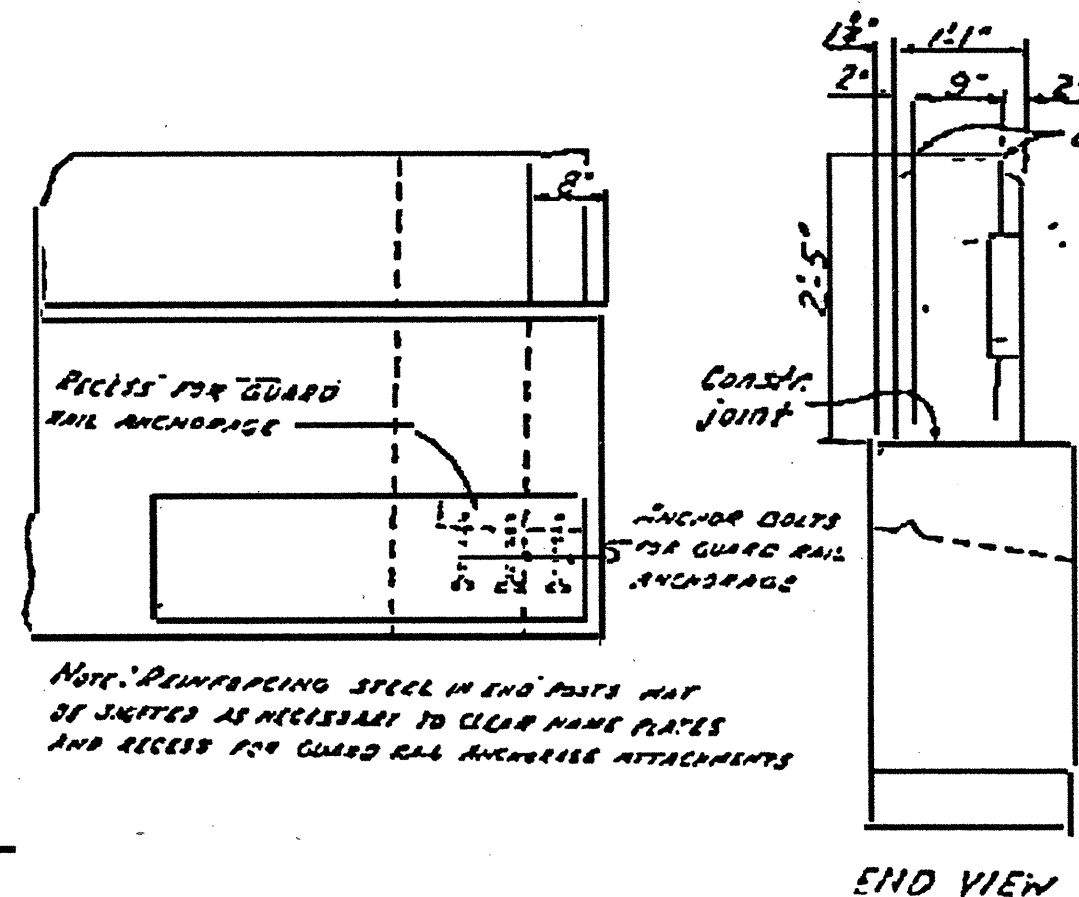
HALF SECTION AT INT. BENT



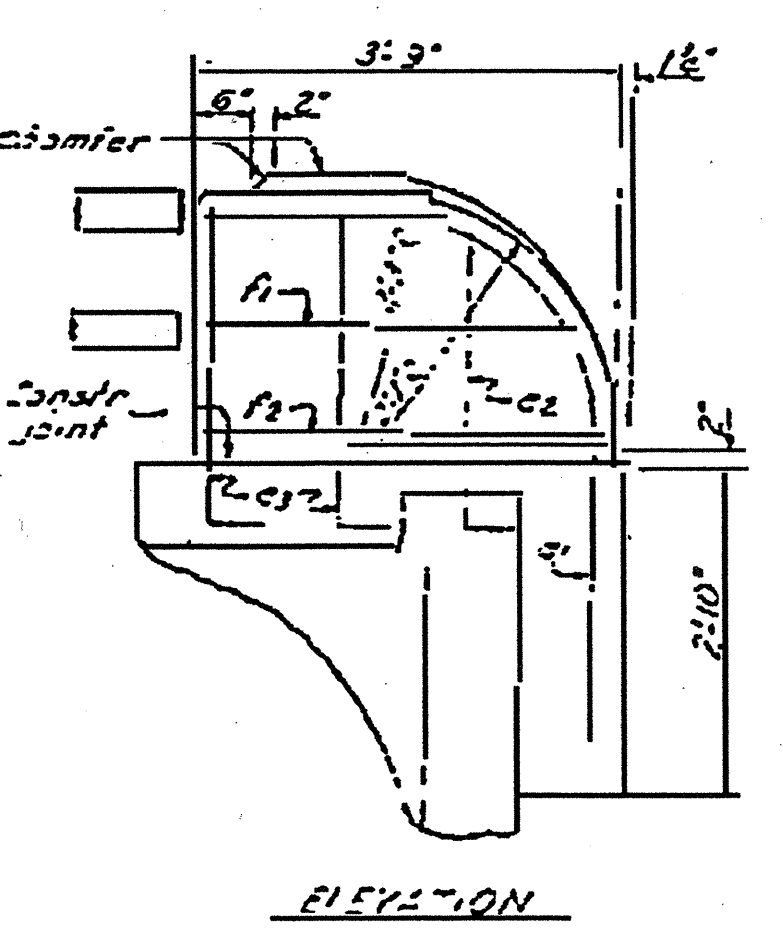
HALF END VIEW

REVISIONS

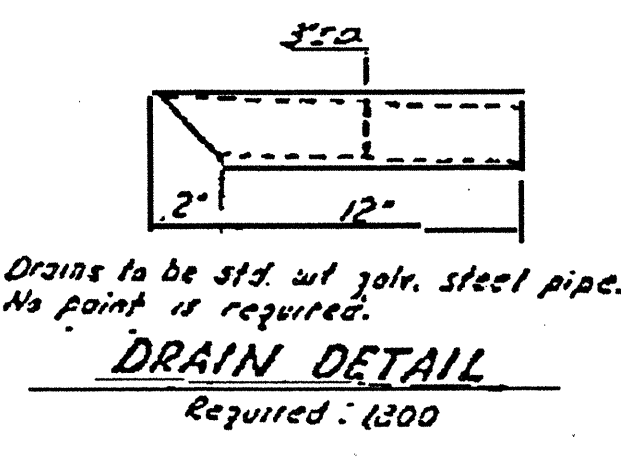
NO.	DATE	BY	DESCRIPTION
1	3-15-65
2



END POST DETAILS



ELEVATION



DRAIN DETAIL
Required: 1200

DEAD LOAD DEFLECTIONS

Girder close in place	INT.	EXT.
Defl. due to superimposed dead load	1/2"	1/2"
Total final Deflection	3/4"	3/4"

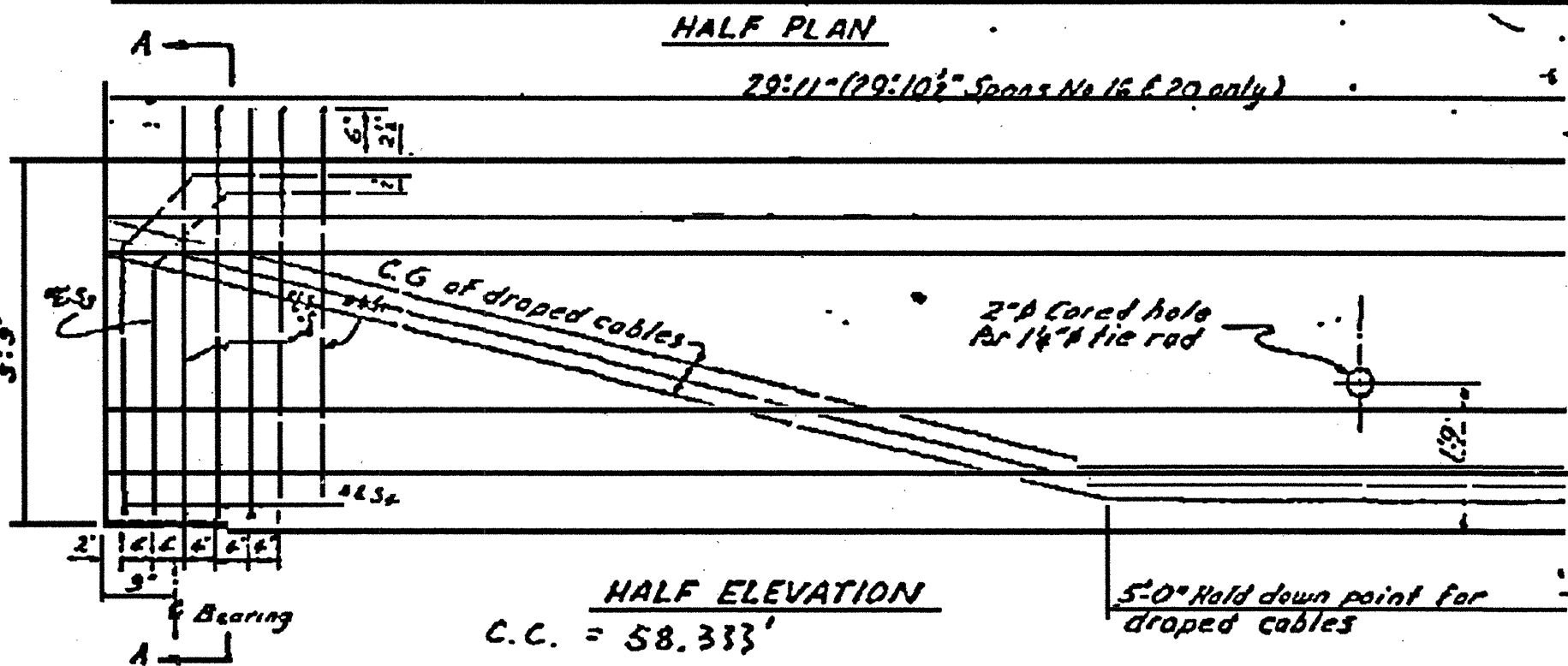
The 1/2" x 1/4" expansion joint shown in half end view. A-A will be part of this

Rec. Engr. says we should have notes on them for the contract. WASHINGTON-BERTIE COUNTY PROJECT NO. B.211.005 STATION: 193+60.

STATE OF NORTH CAROLINA
 STATE HIGHWAY COMMISSION
 SUPERSTRUCTURE
 SECTIONS & DETAILS
 SPAN NO. 1 THRU 15
 & SPAN NO. 20 THRU 25

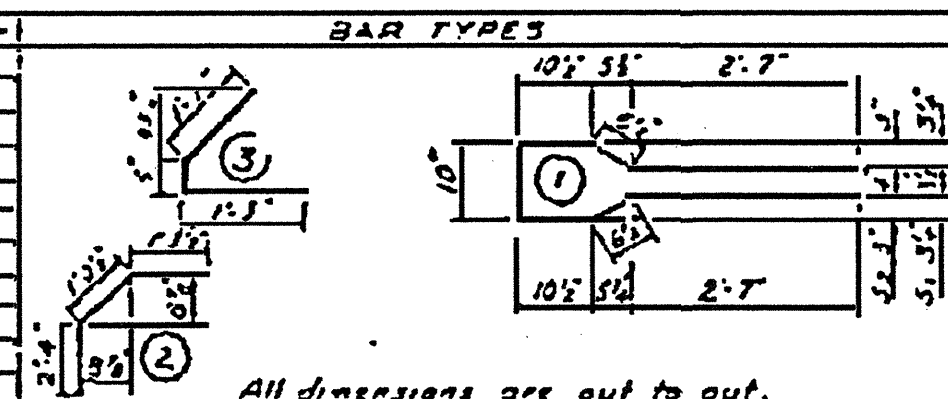
NO.	SECTION		DATE
	BY	CHKD.	
1			3-15-65
2			...

1'-10"	9'-0"	15 Spans @ 12'-0" = 180'-0"	2 Spans @ 21'-0" = 42'-0"	Interior Girder
1'-10"	9'-0"	15 Spans @ 12'-0" = 180'-0"	2 Spans @ 21'-0" = 42'-0"	Exterior Girder



Note: See next sheet for other girder details & fill plate thickness.

REINFORCING STEEL FOR ONE GIRDER					
Bar	No.	Size	Type	Length	Weight
Interior Girder	47	#4	1	9'-12"	277
Exterior Girder	47	#4	1	9'-12"	277
	8	#3	1	9'-10"	132
	8	#3	2	4'-9"	52
	10	#2	2	3'-3"	37

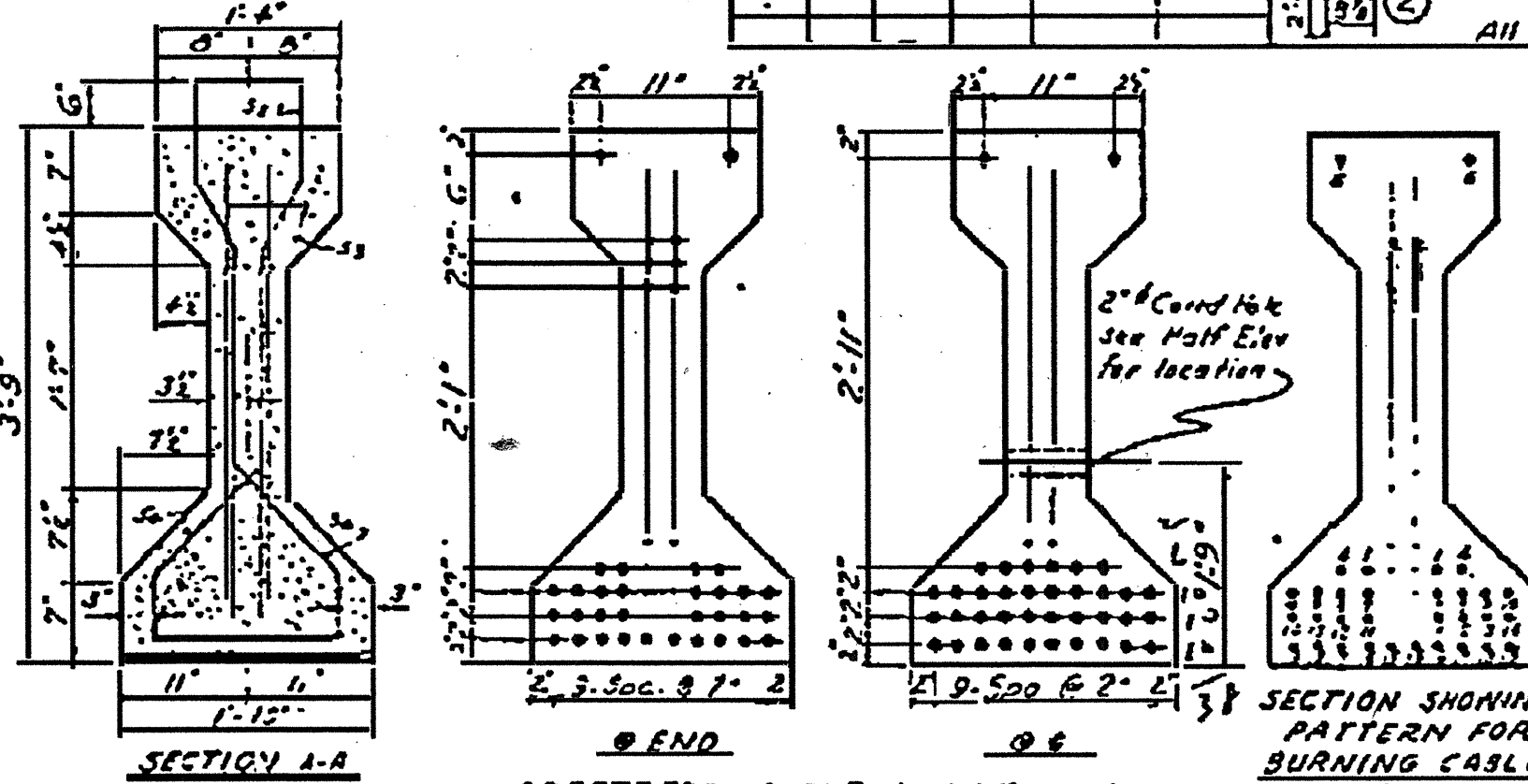


NOTES

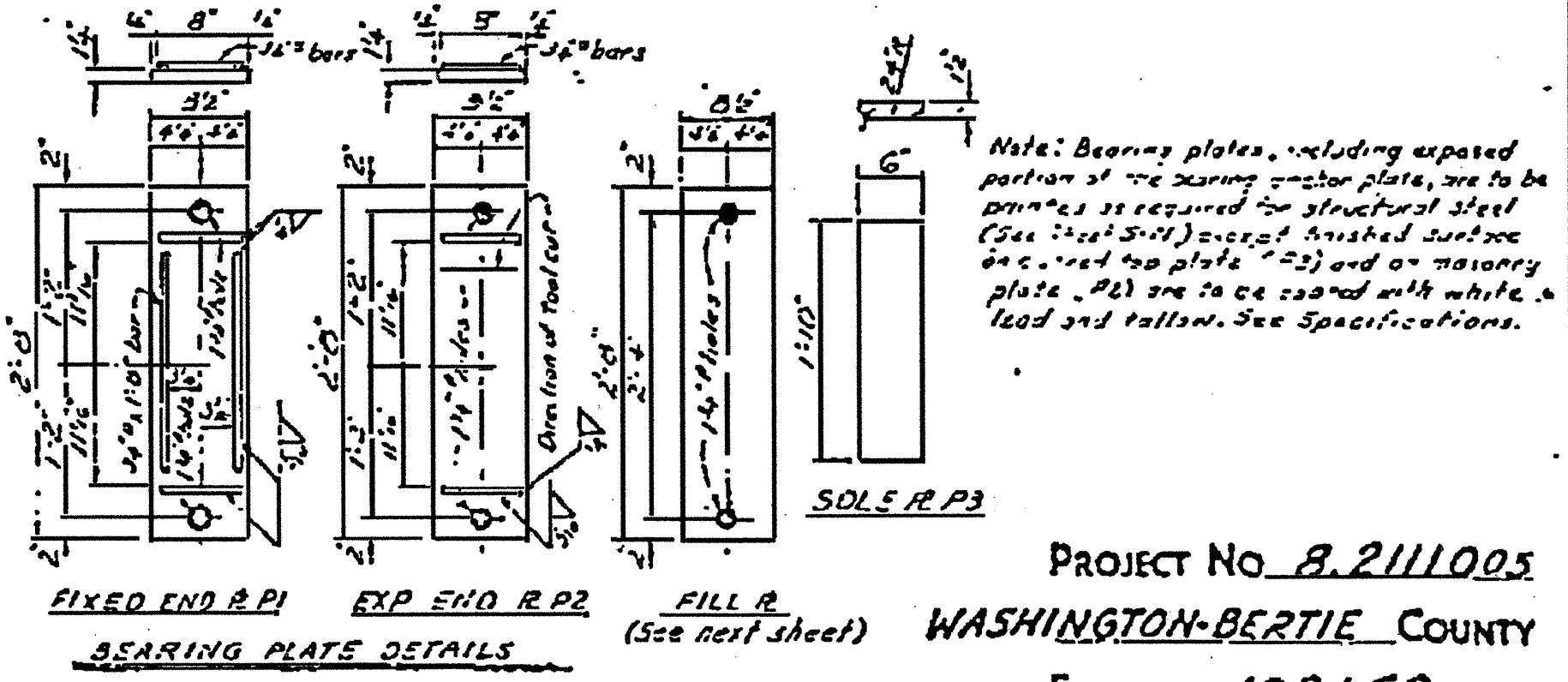
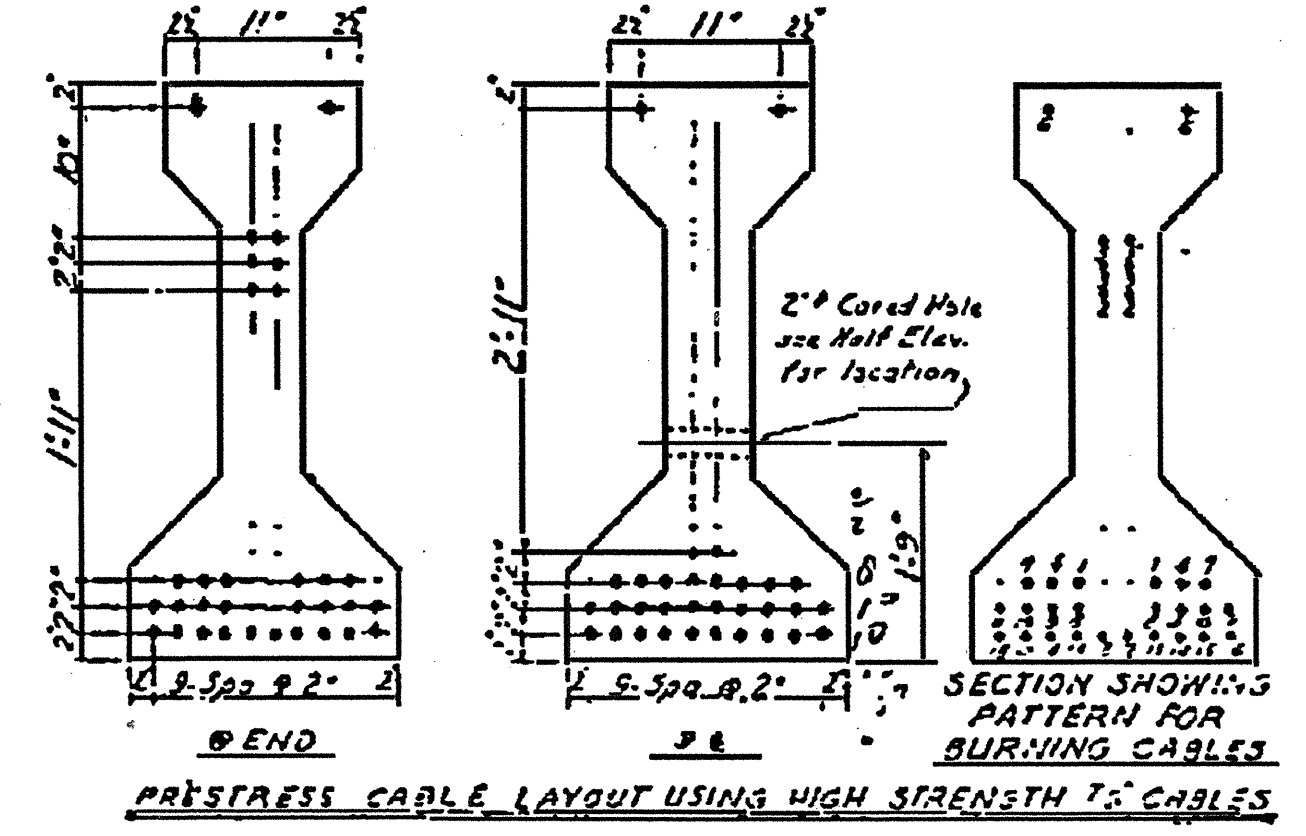
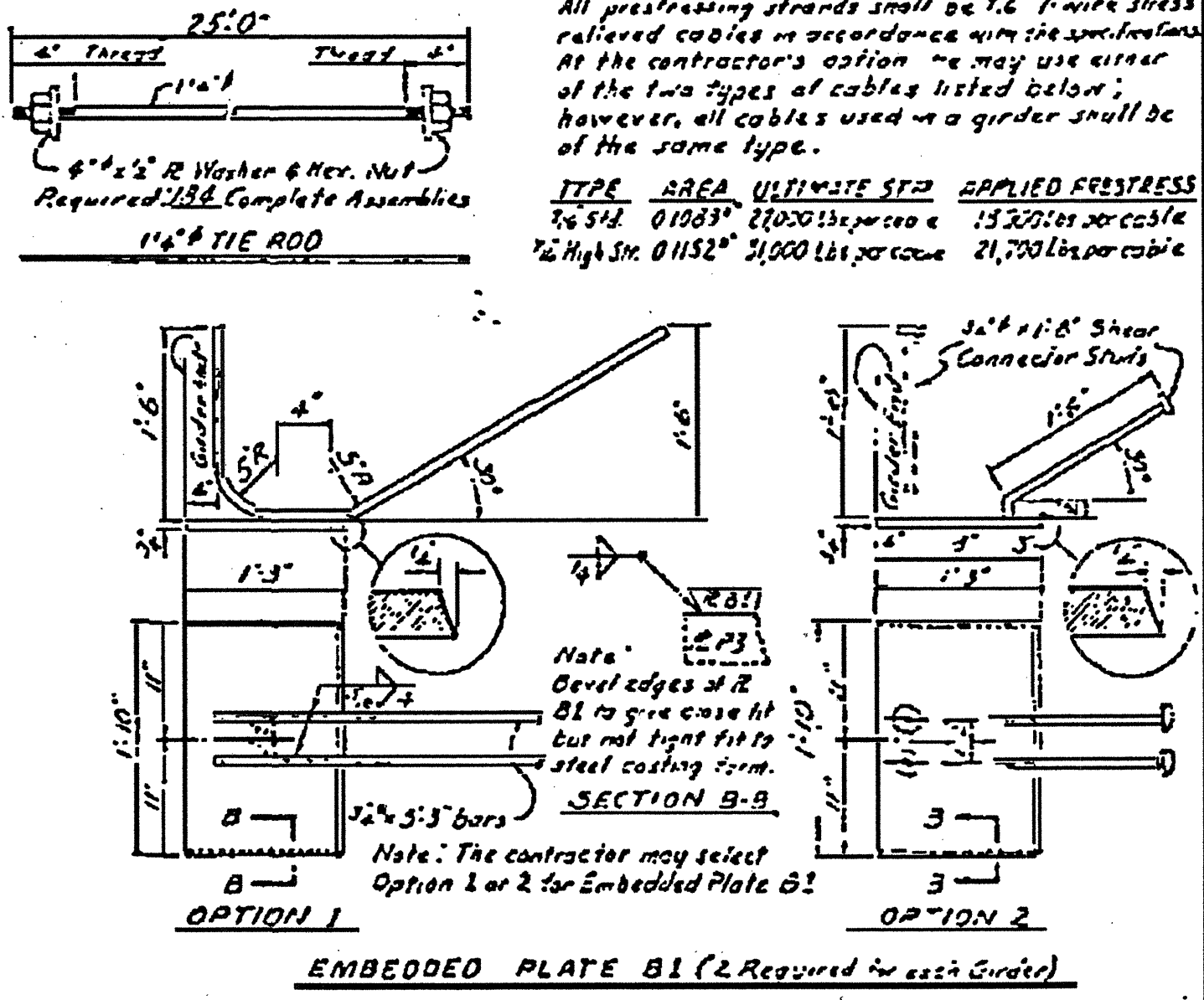
All prestressing strand shall meet the requirements of A.S.T.M. A416. Cables to be cut off flush with end of girder. No surface finish will be required for prestressed concrete girders. However the outside face of the exterior girders shall be carefully cleaned of drippings and other discolorations. See Specifications.

All prestressing strands shall be 7/16" wire stress relieved cables in accordance with the specifications. At the contractor's option he may use either of the two types of cables listed below; however, all cables used in a girder shall be of the same type.

TYPE	AREA	ULTIMATE STRENGTH	APPLIED PRESTRESS
7/16 High Str. 01083	21,000 lbs. per cable	153,700 lbs. per cable	
7/16 High Str. 01152	21,000 lbs. per cable	217,000 lbs. per cable	



- PRESTRESS CABLE LAYOUT USING STANDARD 7/16 CABLES**
- Note: If cable stress is relieved by burning, each pair of cables shall be burned at ends of bed and between all girders before burning any of the next pair of cables. The following order of burning shall be strictly adhered to:
- For Standard 7/16 Cables:
- (1) Bottom Cables 1-1
 - (2) Draped Cables 2-2
 - (3) Draped Cables 3-3
 - (4) Bottom Cables 4-4
 - (5) Draped Cables 5-5
 - (6) Top Cables 6-6
 - (7) Release Hold-downs
- For High Strength 7/16 Cables:
- (1) Bottom Cables 1-1
 - (2) Draped Cables 2-2
 - (3) Draped Cables 3-3
 - (4) Bottom Cables 4-4
 - (5) Draped Cables 5-5
 - (6) Top Cables 6-6
 - (7) Release Hold-downs



PROJECT No. 8.2111005
WASHINGTON-BERTIE COUNTY
STATION: 193+60

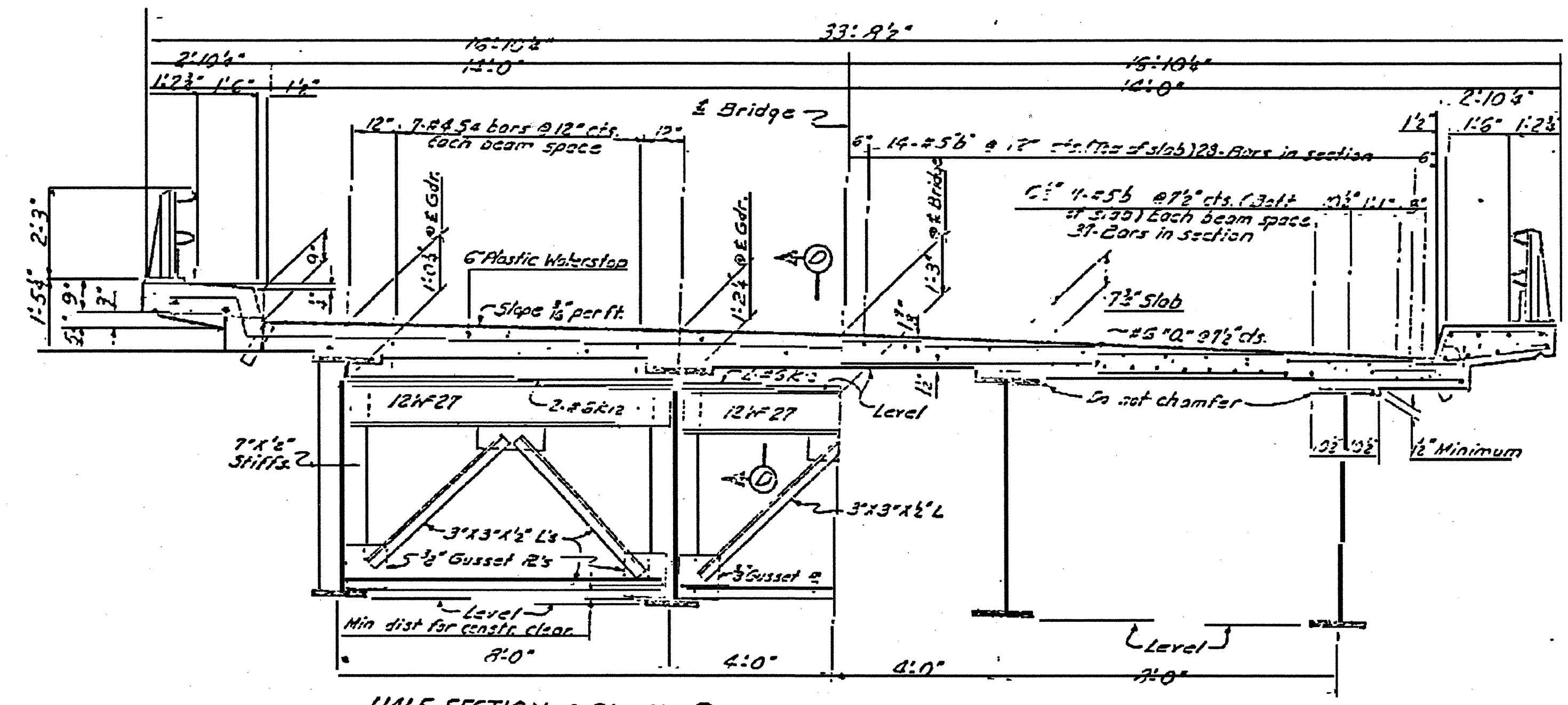
STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
Raleigh
EXTERIOR & INTERIOR
45" PRESTRESSED
CONCRETE GIRDERS
MAR 1965

	QUANTITIES FOR ONE GIRDER			SPANS NO. 1 THRU 15 AND 21 THRU 25		SPANS NO. 16 & 20 ONLY	
	Reinforcing Steel	5.257 cu Concrete	Standards High Strength 7/16 Cables	GIRDERS REQUIRED	SPANS REQUIRED	GIRDERS REQUIRED	SPANS REQUIRED
Interior Girder	476	0.6	33	1	1	1	1
Exterior Girder	476	0.6	33	1	1	1	1

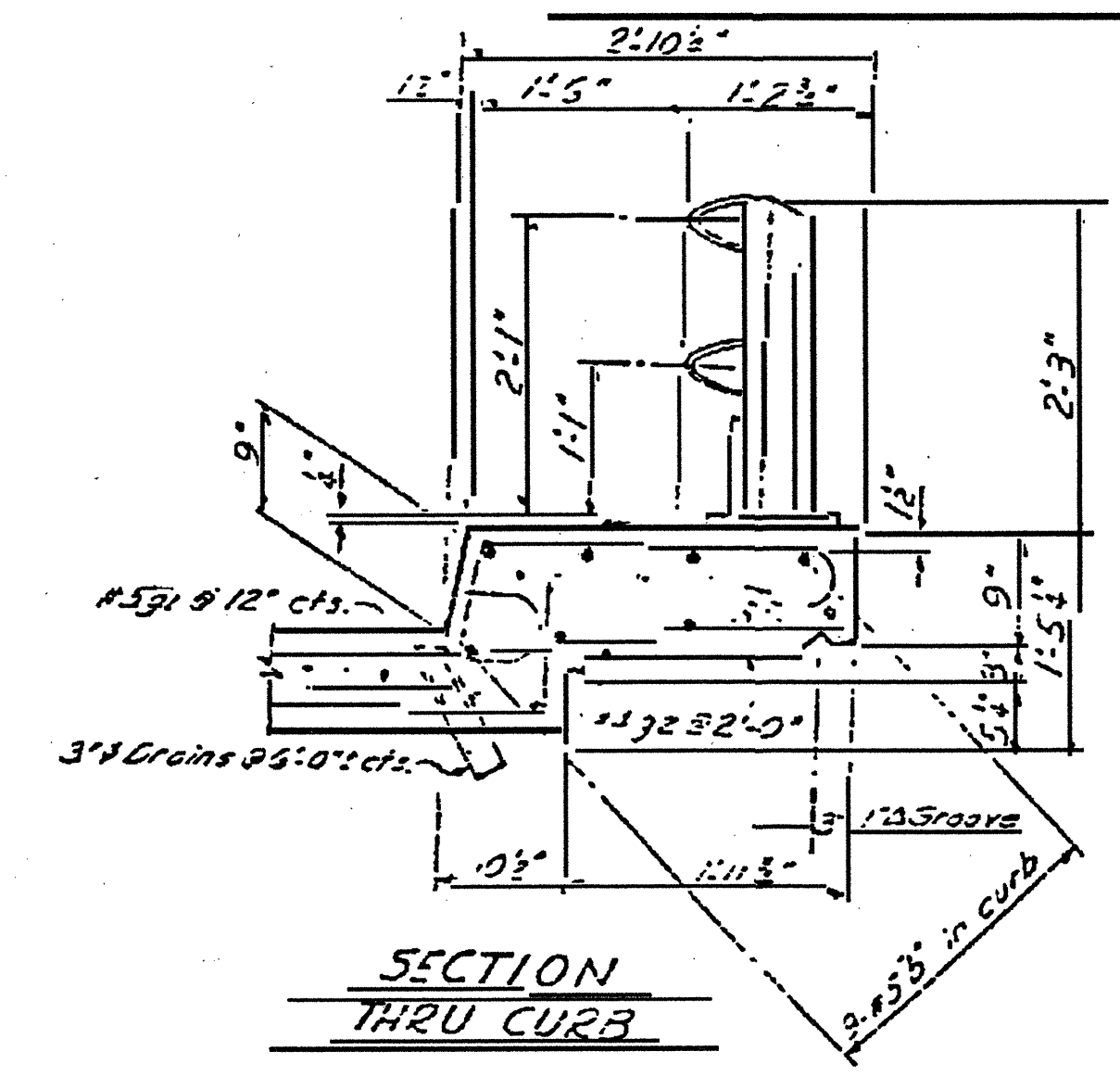
SPECIAL
Assembled By: [Signature]
Checked By: [Signature]
Date: 3-11-65
Scale: 1/4" = 1'-0"

Note: Bars may be welded to plates by method used prior to Oct 23 1964 on this project.

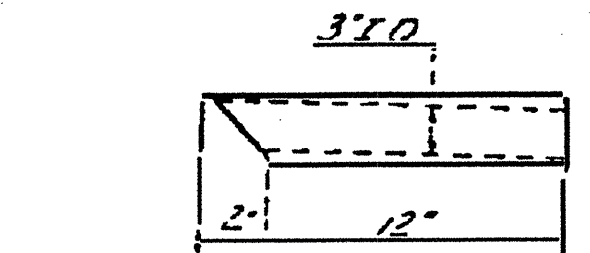
1 1/2" x 11" anchor bolts with nuts
and will not be part of this contract.



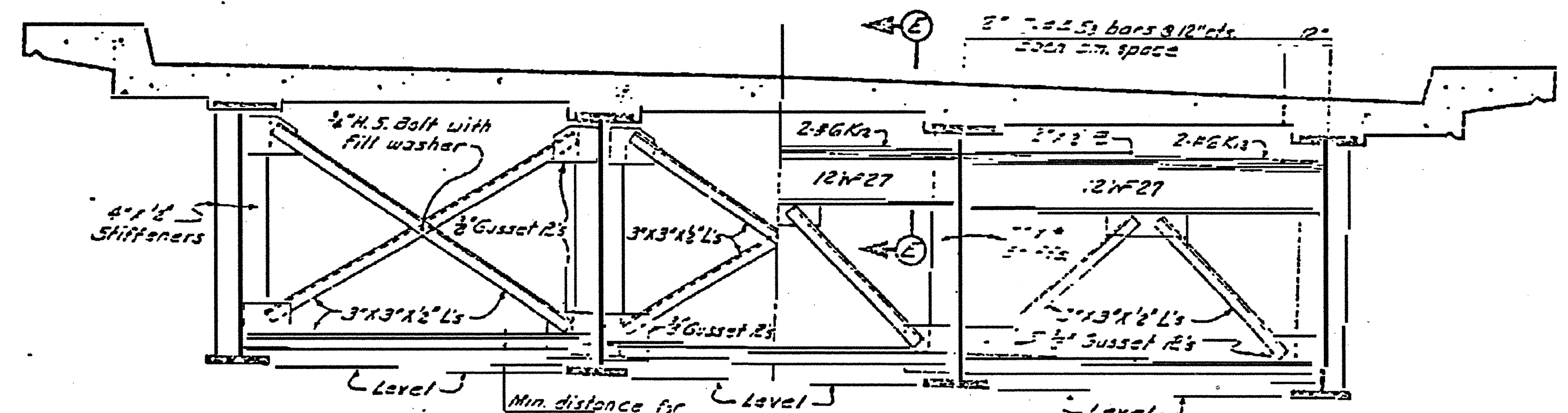
HALF SECTION @ PANEL ①
HALF SECTION BETWEEN PANELS



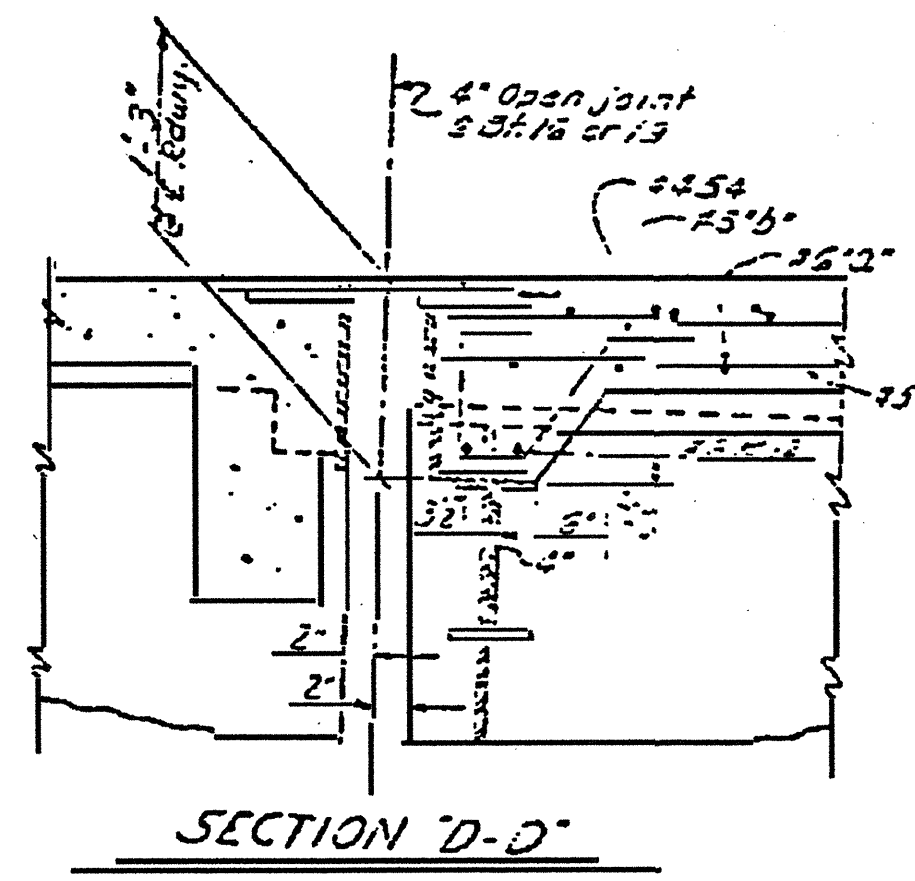
SECTION THRU CURB



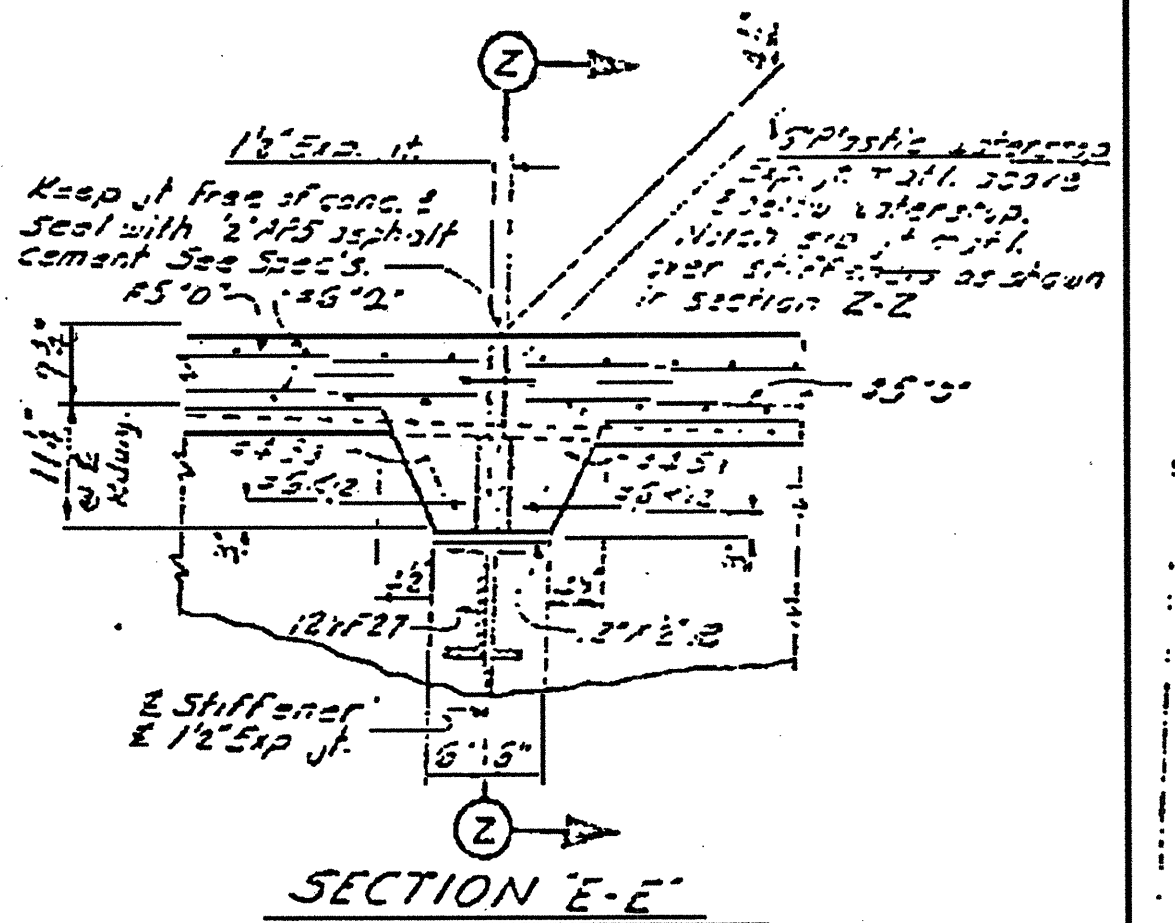
DRAIN DETAIL
Required: 124



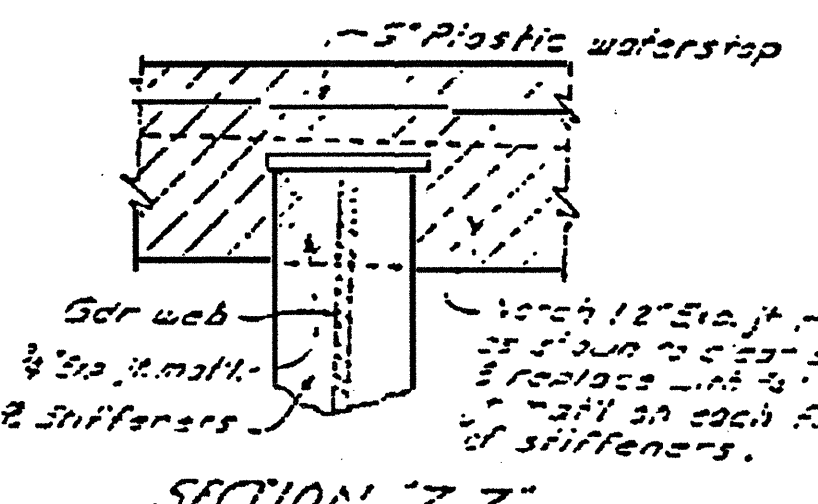
HALF SECTION @ PANELS ②③⑤⑦⑧
HALF SECTION @ PANELS ④⑥



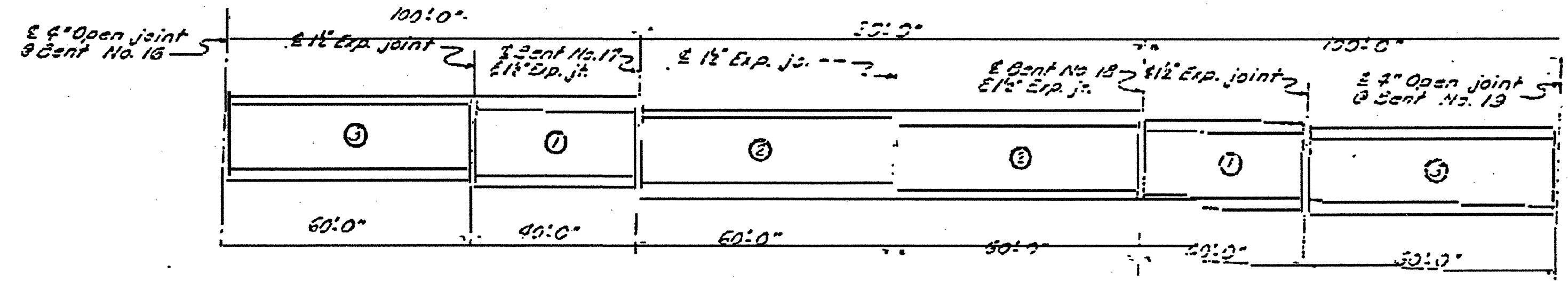
SECTION D-D



SECTION E-E



SECTION Z-Z

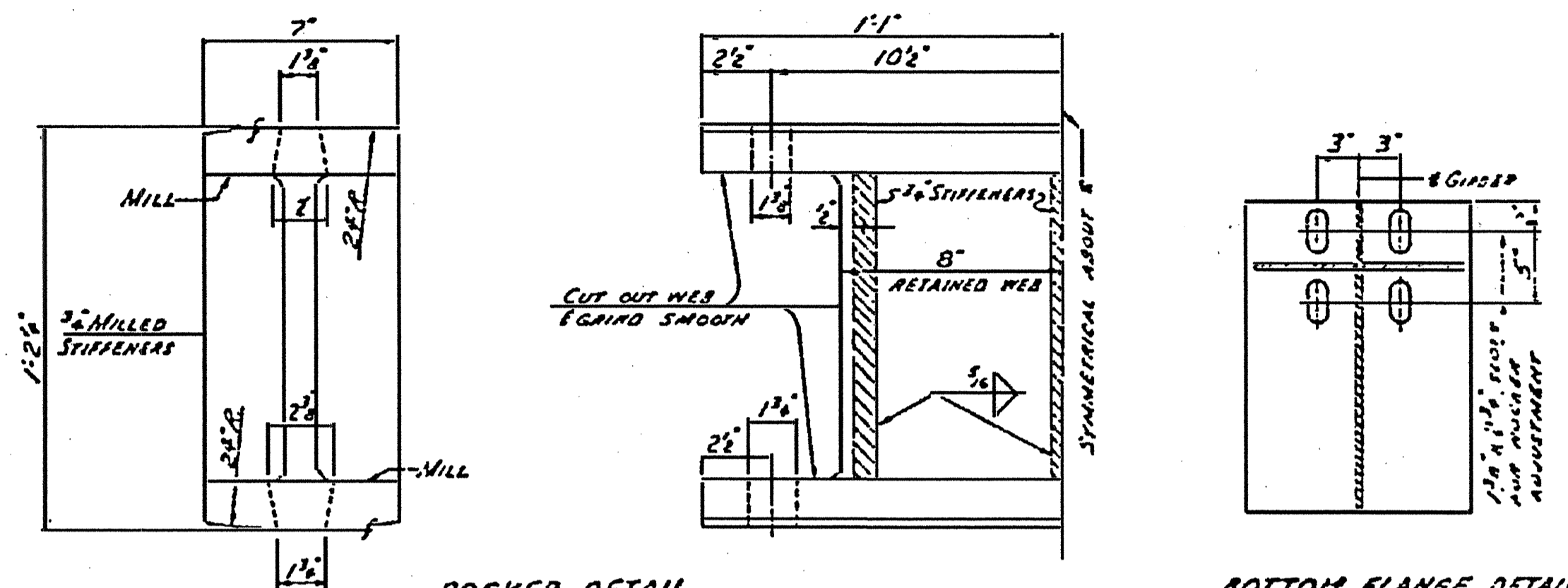


ORDER OF CASTING SLAB

PROJECT NO. B. 2111025
WASHINGTON-BERTIE COUNTY
STATION: 193+60

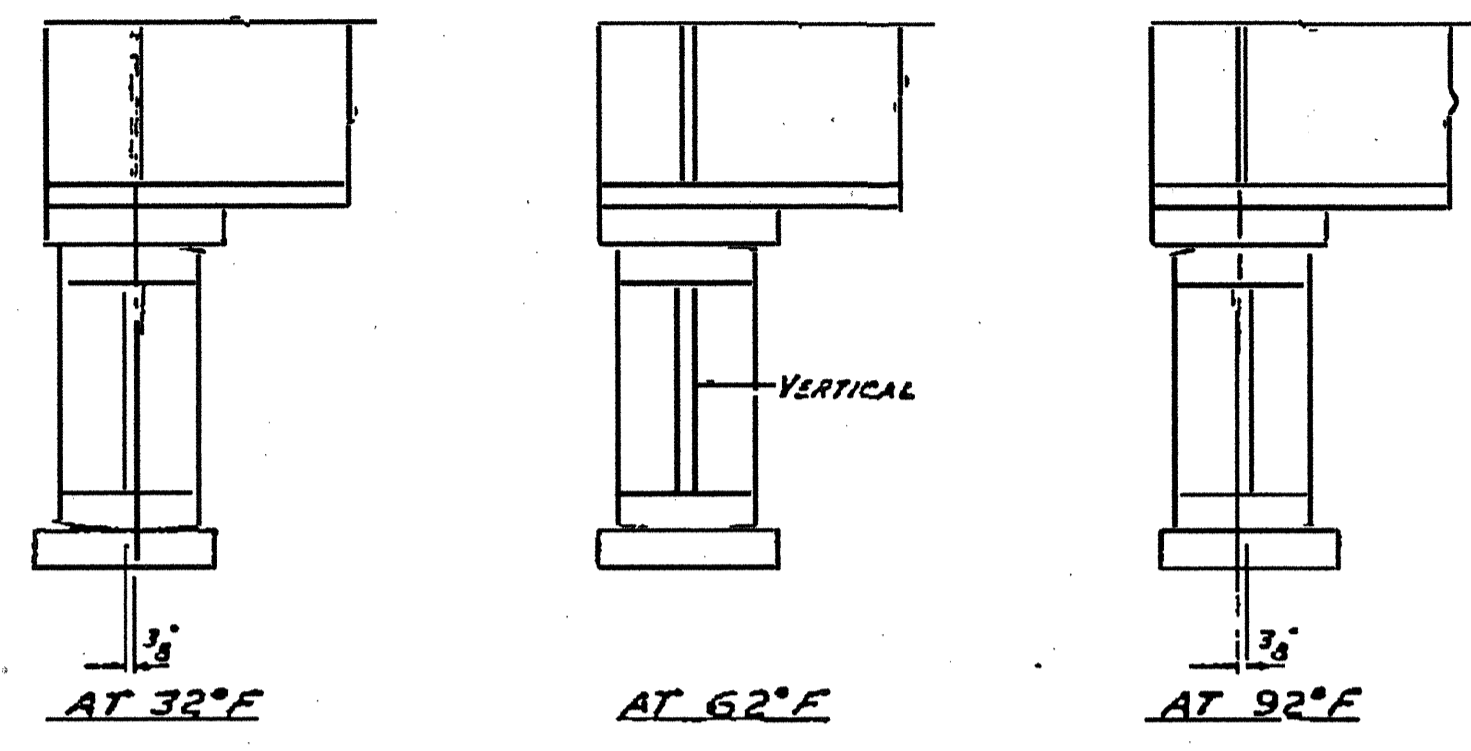
STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
PLATE GIRDER
SECTIONS & DETAILS

FED. ROAD DIST. NO.	STATE	PROJECT NO.
3	N.C.	8211005
R.A. PROJECT 5-12-71		



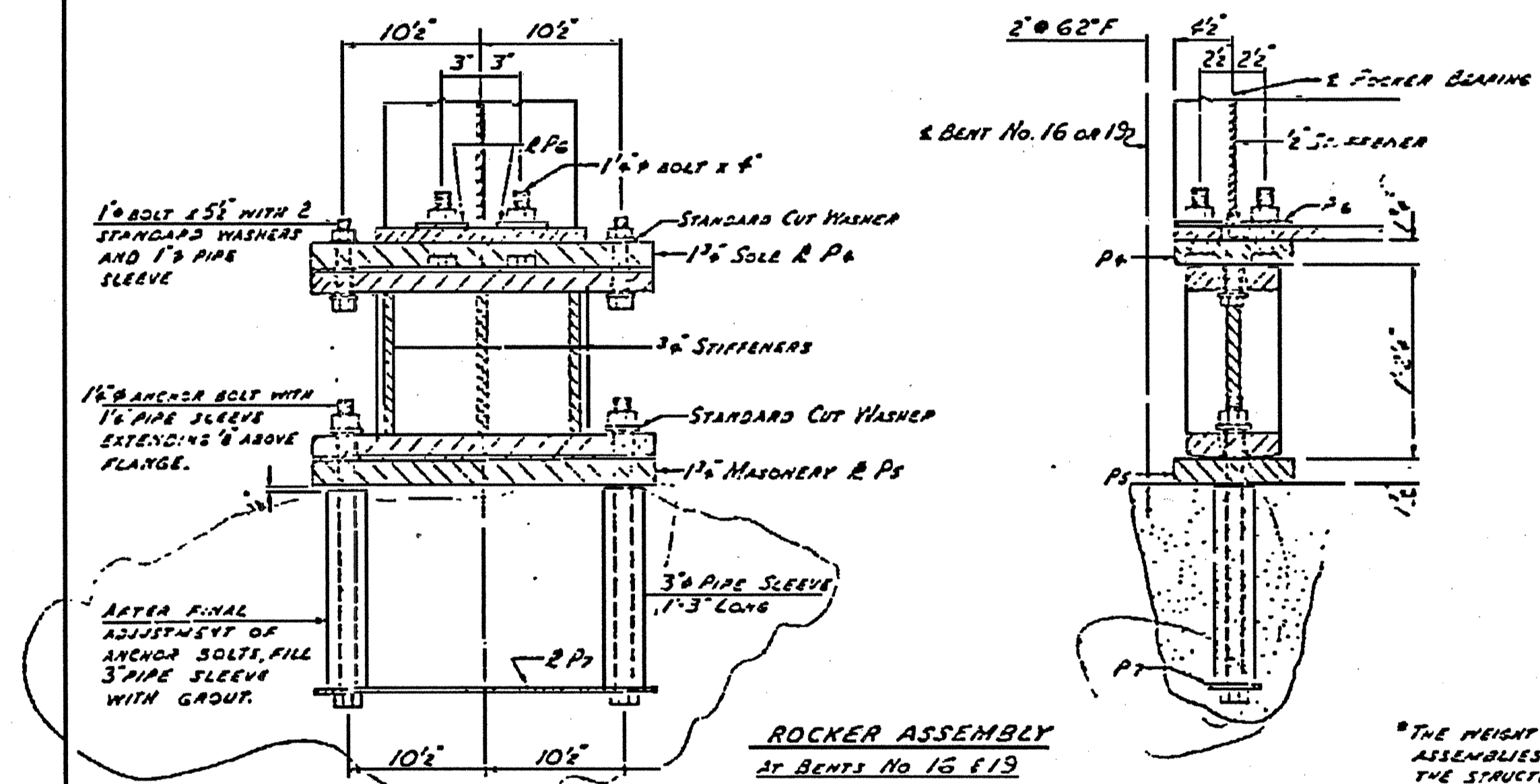
ROCKER DETAIL
 THE ROCKER MAY BE FABRICATED FROM A 12 W-150 BEAM AND PLATES AS SHOWN, OR BUILT UP USING PLATES THE SAME THICKNESS AS THE BEAM WEB AND FLANGE. IF PLATES ARE USED ALL WELDS SHALL BE 1/8".

BOTTOM FLANGE DETAIL
 AT BENTS No 16 & 19



FOR TEMPERATURES OTHER THAN THOSE SHOWN, ADJUSTMENTS ARE PROPORTIONAL TO DEPARTURE FROM 62°F.

ROCKER ADJUSTMENT FOR TEMPERATURE VARIATION



ROCKER ASSEMBLY
 AT BENTS No 16 & 19
 TOTAL NO. ASSEMBLIES = 8

*THE WEIGHT OF THE BEARING ASSEMBLIES IS INCLUDED IN THE STRUCTURAL STEEL TOTAL FOR THE PLATE GIRDER SPANS.

*APPROX. WEIGHT OF 1 ASSEMBLY = 575 LBS

The 1 1/2" x 1-9" Anchor Bolts as shown in the Plate Assm. and Rocker Assm. with standard nut & washer, R.P. & 3" pipe sleeve are in place and will not be a part of this contract.

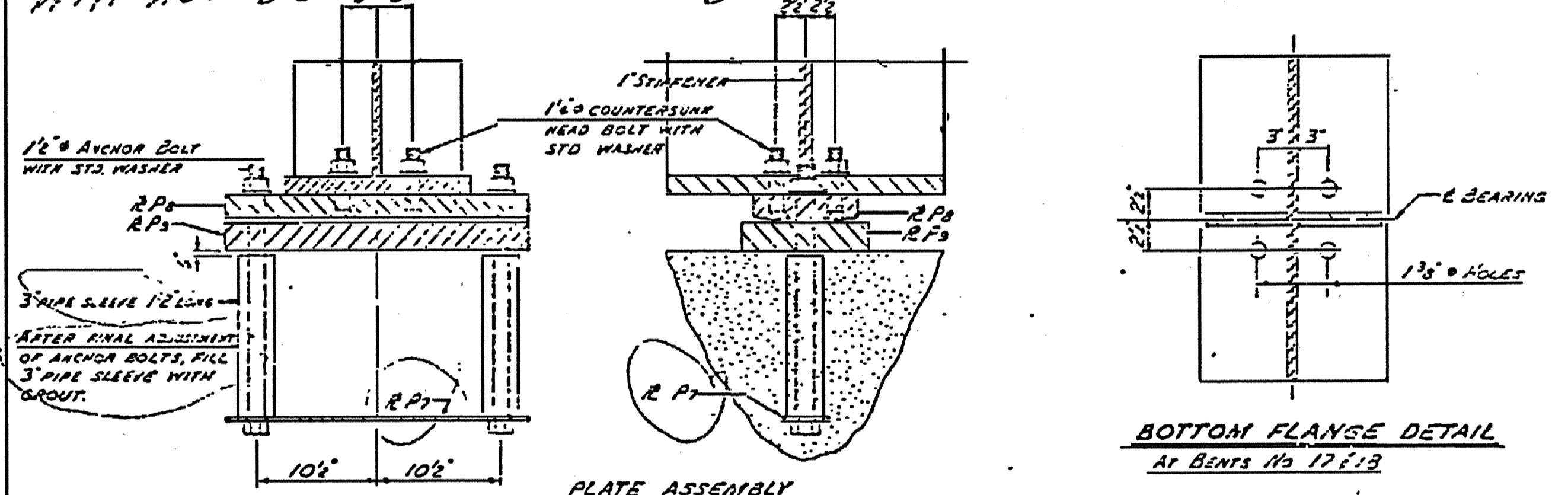
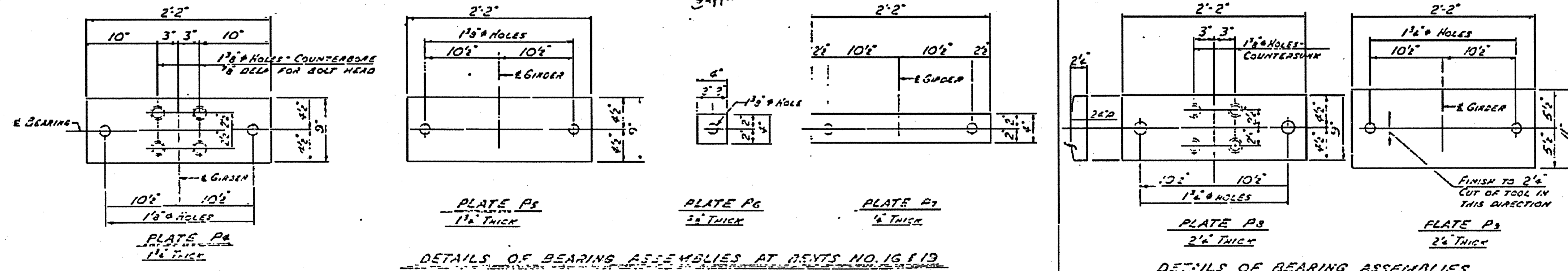


PLATE ASSEMBLY
 AT BENTS No 17 & 18
 TOTAL NO. ASSEMBLIES = 8

*APPROX. WEIGHT OF 1 ASSEMBLY = 400 LBS.

The 1 1/2" pipe sleeve shown in the Rocker Assembly will be supplied by the superstructure contractor.



DETAILS OF BEARING ASSEMBLIES AT BENTS NO. 16 & 19

DETAILS OF BEARING ASSEMBLIES AT BENTS NO. 17 & 18

PROJECT No. 8211005
 WASHINGTON-BERTIE COUNTY
 STATION 193+60

STATE OF NORTH CAROLINA
 STATE HIGHWAY COMMISSION
 RALEIGH

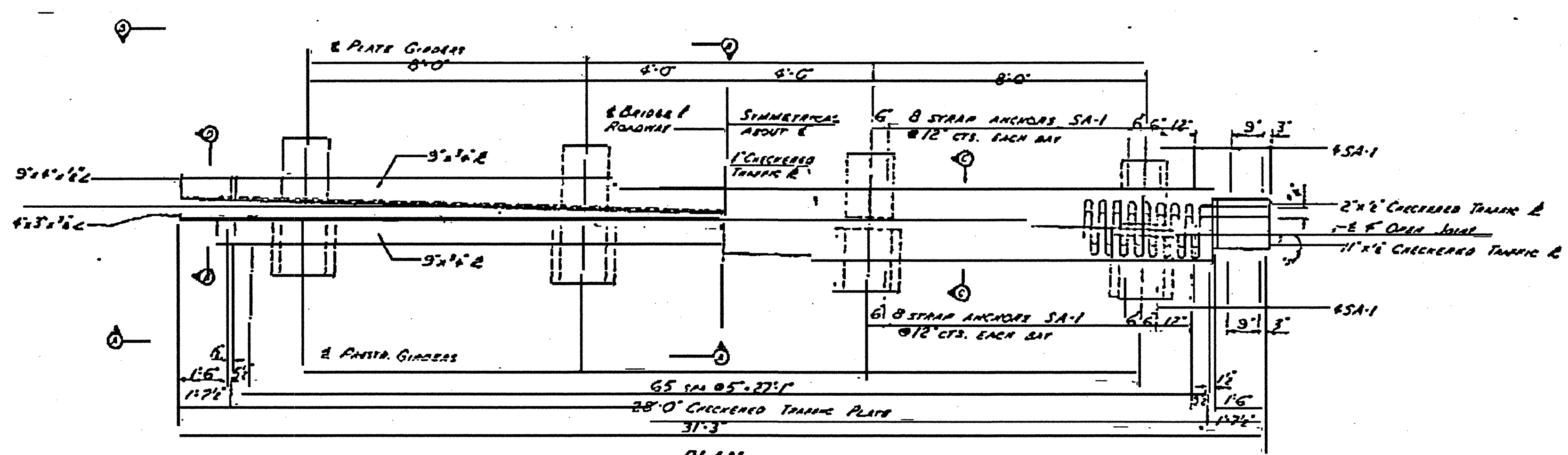
DETAILS OF BEARING ASSEMBLIES

2311.1325

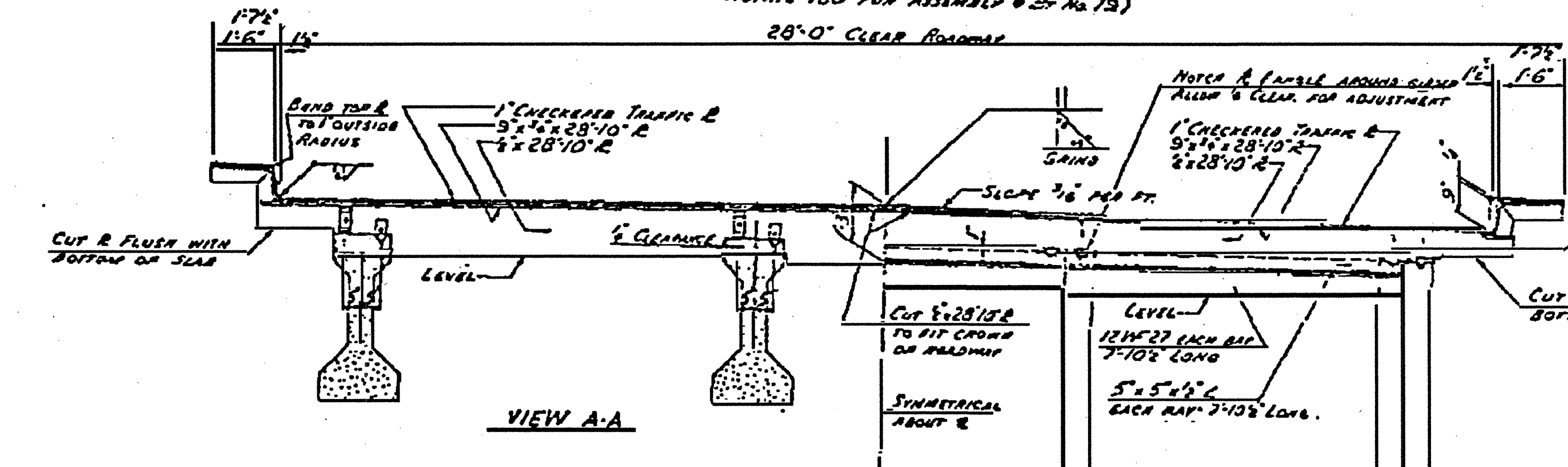
NO.	BY	DATE	NO.	BY	DATE
1			2		
2			3		
3			4		

DRAWN BY: [Signature] DATE: 5-12-71
 CHECKED BY: [Signature] DATE: 5-12-71

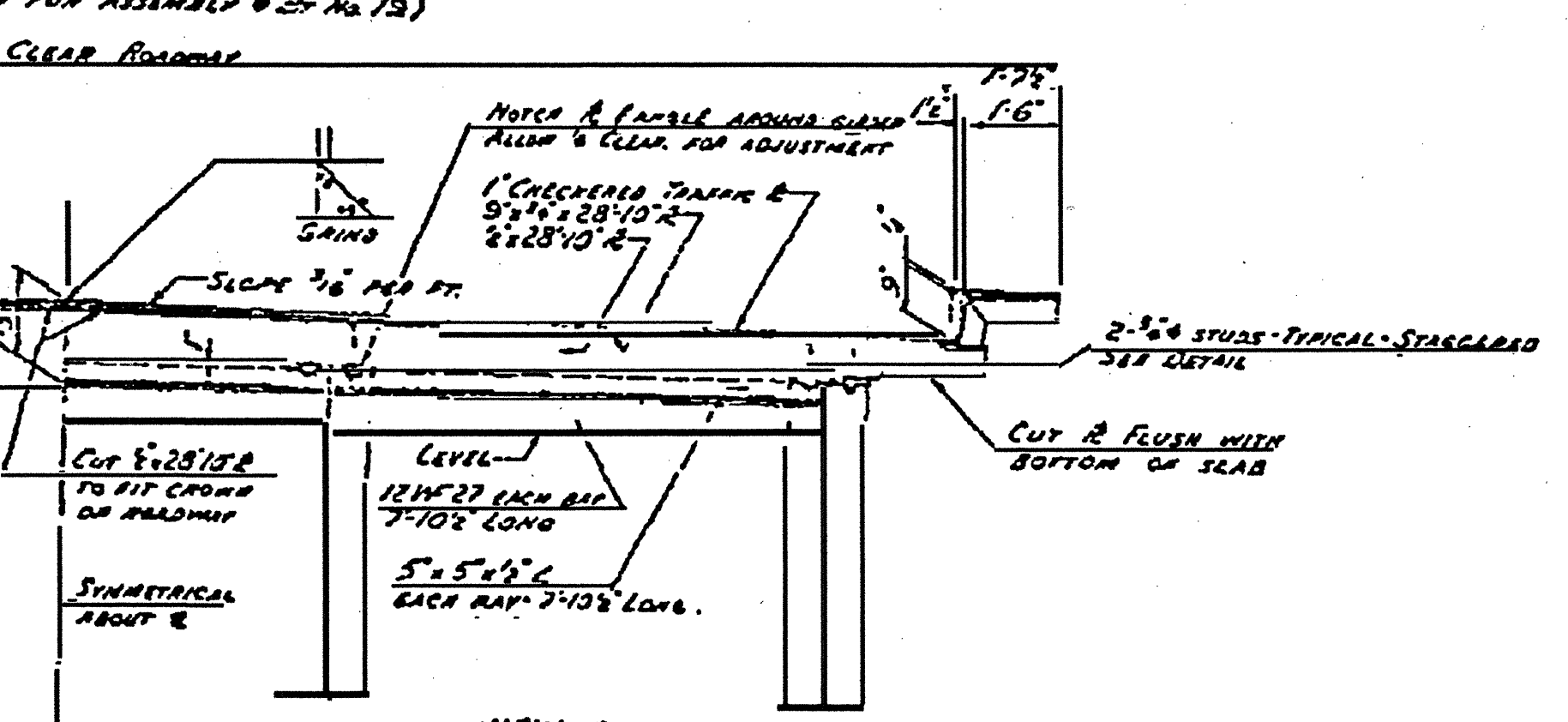
FED. ROAD DIST. NO.	STATE	PROJECT NO.
2	NC	82111005
P.A. PROJECT 3-12-13		



PLAN
(FOR EXP. B ASSEMBLY @ BENT NO. 16,
ROTATE 180° FOR ASSEMBLY @ ST. NO. 13)



VIEW A-A



VIEW B-B

NOTES

FLAME CUT FINNERS IN TRAFFIC PLATE FROM 1'-0\"/>

THE ROADWAY SECTION IS TO BE FABRICATED FULL LENGTH. THE TRAFFIC PLATE MAY BE SHOP WELDED AS INDICATED AT THE ROADWAY.

THE CURB SECTION IS TO BE SHIPPED AS A SEPARATE ASSEMBLY.

WHERE FIELD WELDS ARE INDICATED, THE EDGES SHALL BE PREPARED IN THE SHOP.

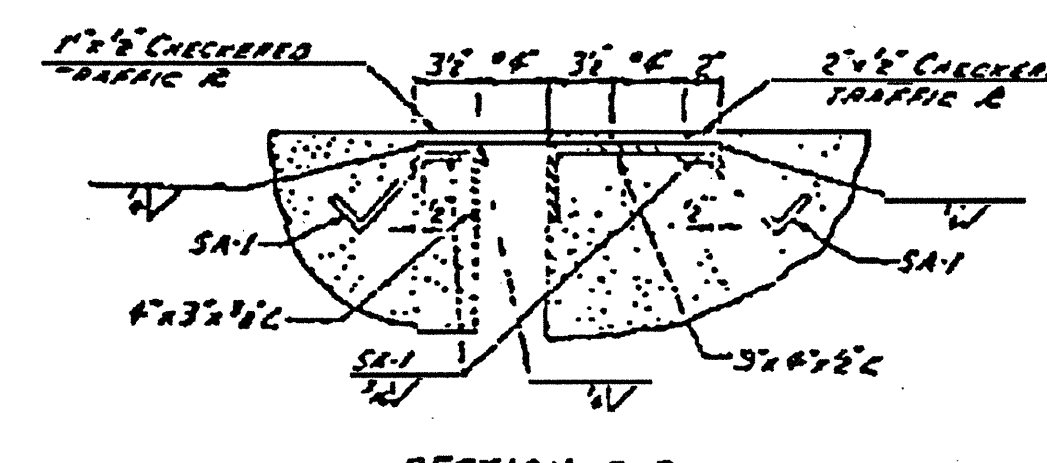
THESE DIMENSIONS SHOWN ARE FOR 62°F AND MUST BE ADJUSTED FOR OTHER TEMPERATURES. SEE ROCKER SETTING DATA ON DETAILS OF BEARING ASSEMBLIES SHEET.

CHECKERED TRAFFIC PLATES ARE TO BE OF OPEN HEARTH QUALITY STEEL WITH THE CARBON CONTENT NOT EXCEEDING 0.15%. MILL REPORTS SHOWING THE CARBON CONTENT ARE REQUIRED, BUT NO PHYSICAL TESTS OF THE STEEL WILL BE REQUIRED.

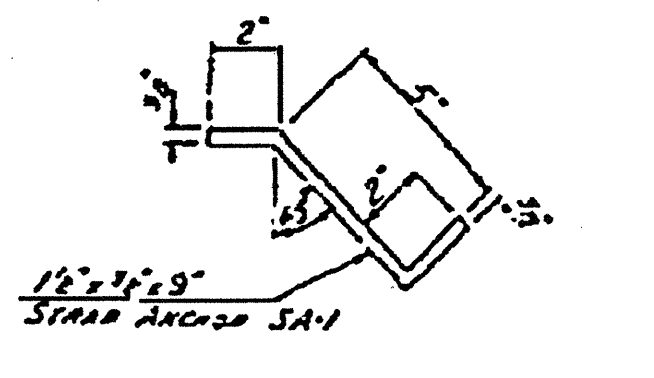
TWO ASSEMBLIES ARE REQUIRED. APPROXIMATE TOTAL WEIGHT OF TWO ASSEMBLIES 10,200 LBS.

THE WEIGHT OF THE TWO EXPANSION ASSEMBLIES IS INCLUDED IN THE STRUCTURAL STEEL TOTAL FOR THE PLATE GIRDER SPANS.

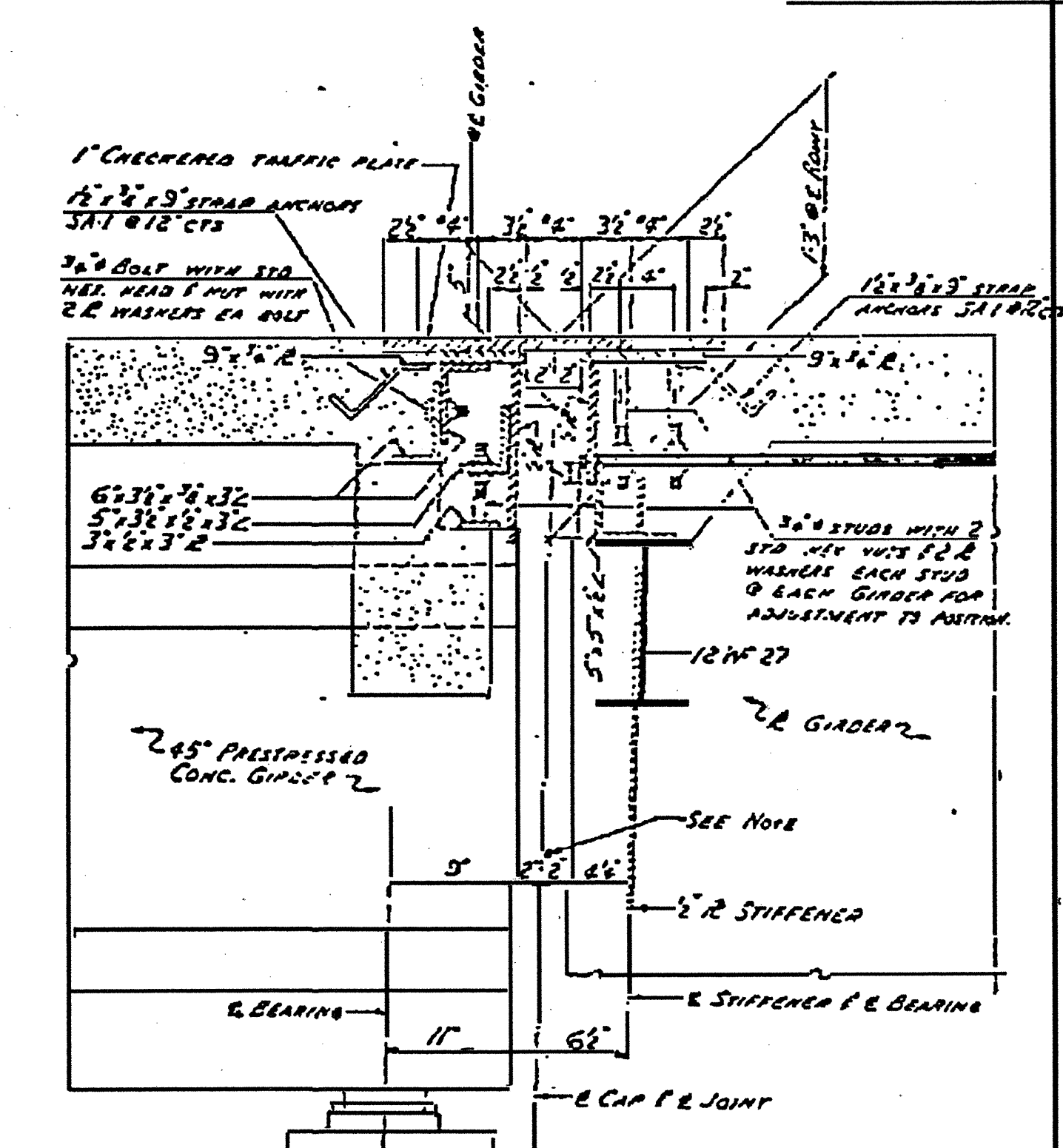
DO NOT PAINT STRAP ANCHORS.



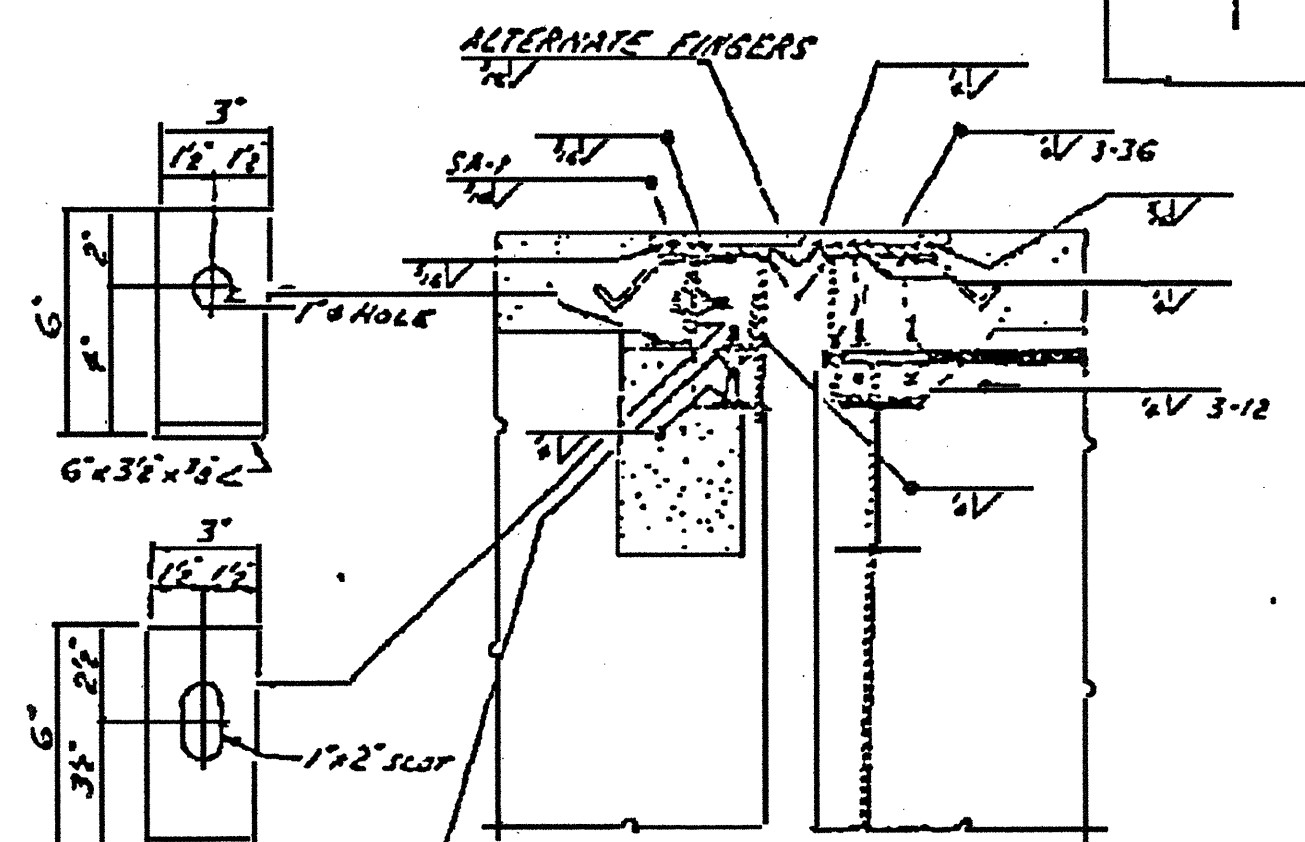
SECTION D-D



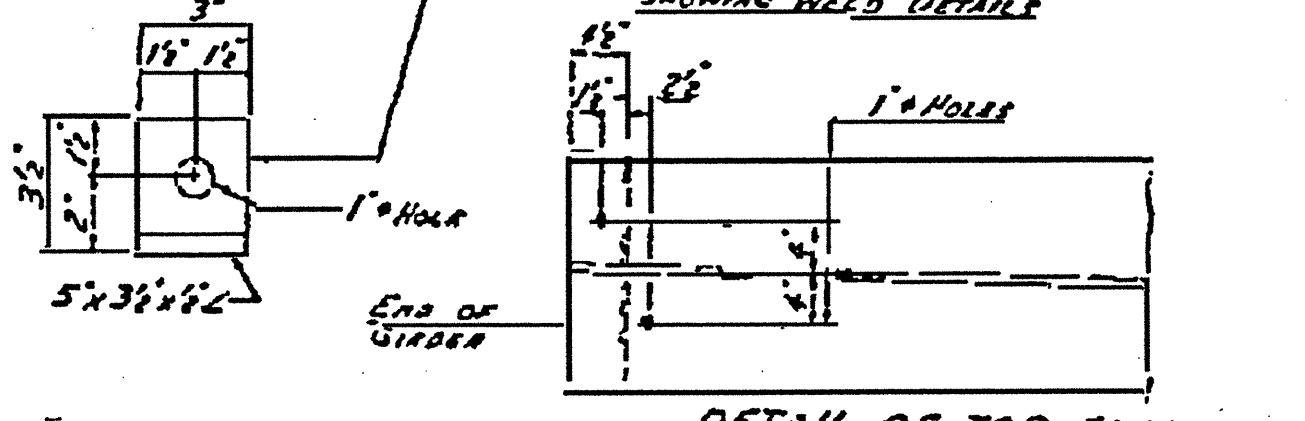
STRAP ANCHOR DETAIL
NO. REQUIRED FOR 2 ASSEMBLIES = 128



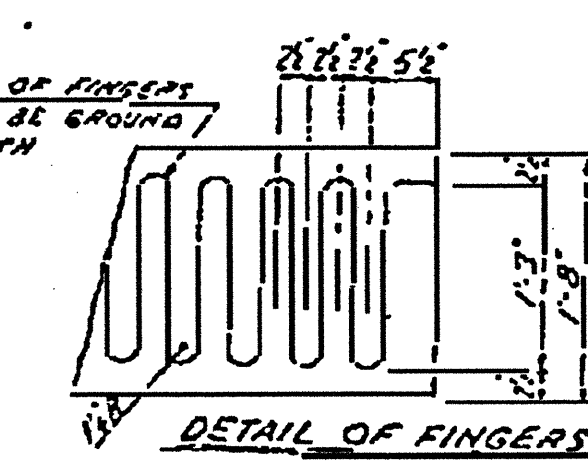
SECTION C-C
AT ST. NO. 13 & 16



SECTION C-C
SHOWING WELD DETAILS



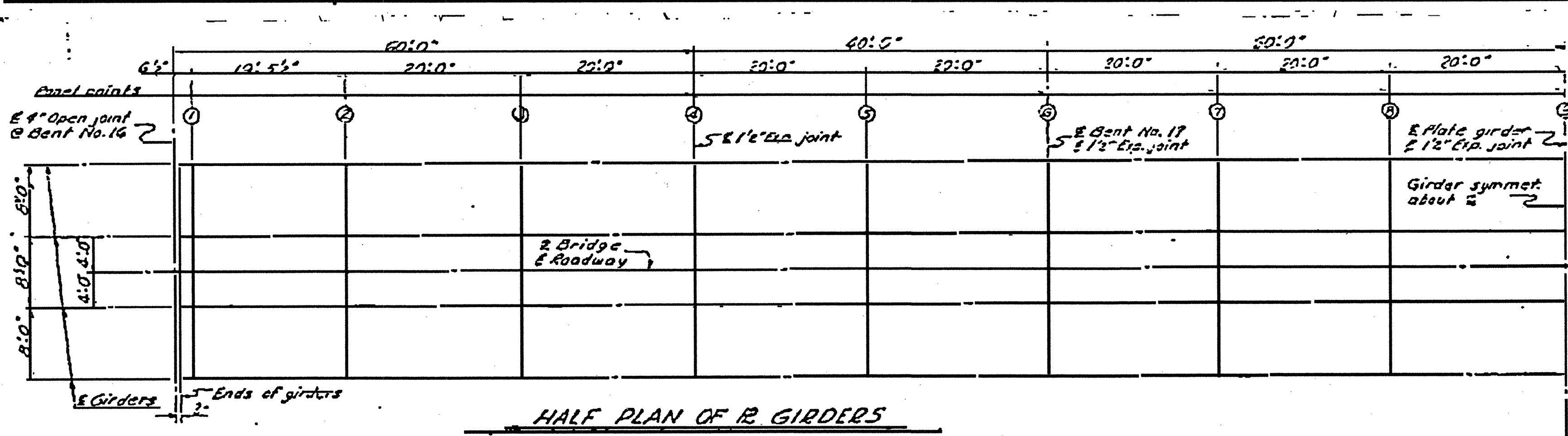
DETAIL OF TOP FLANGE
SHOWING LOCATION OF HOLES FOR 1/2\"/>



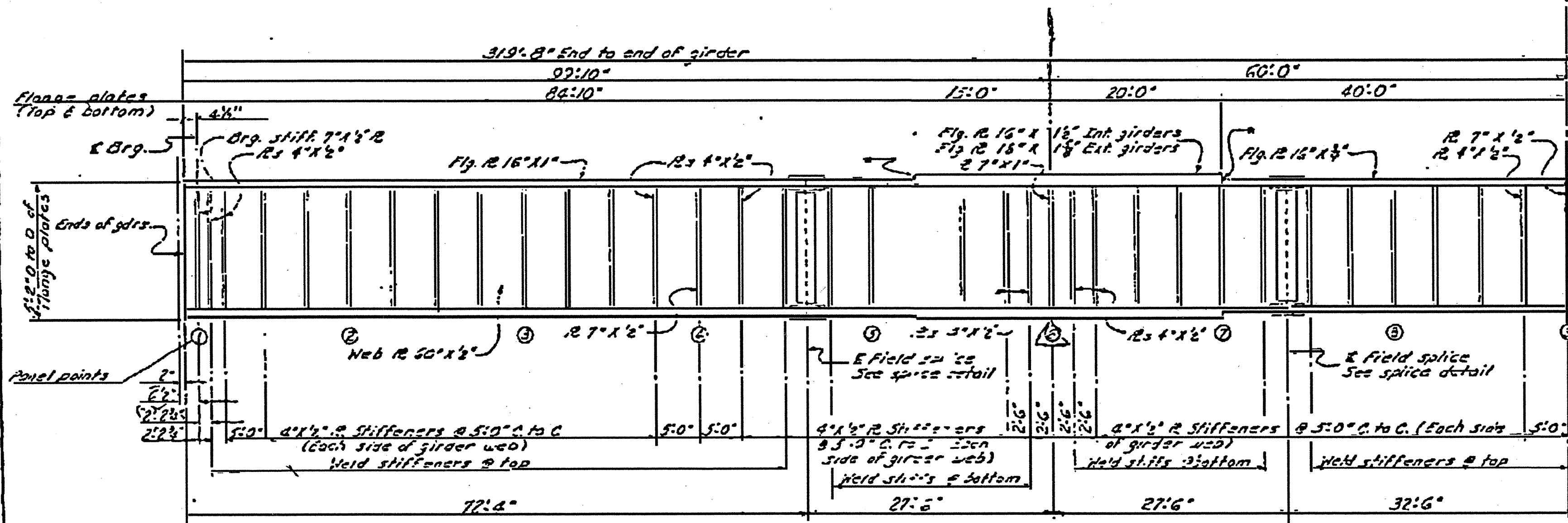
DETAIL OF FINGERS

PROJECT NO. 82111005
WASHINGTON-BERTIE COUNTY
STATION 193+60

STATE OF NORTH CAROLINA		
STATE HIGHWAY COMMISSION		
DETAILS OF EXPANSION PLATE ASSEMBLY FOR SPANS 16 & 17 AND SPANS 19 & 20		
MARCH 1966		
NO.	DATE	BY
1		
TOTAL SHEETS		57
		24

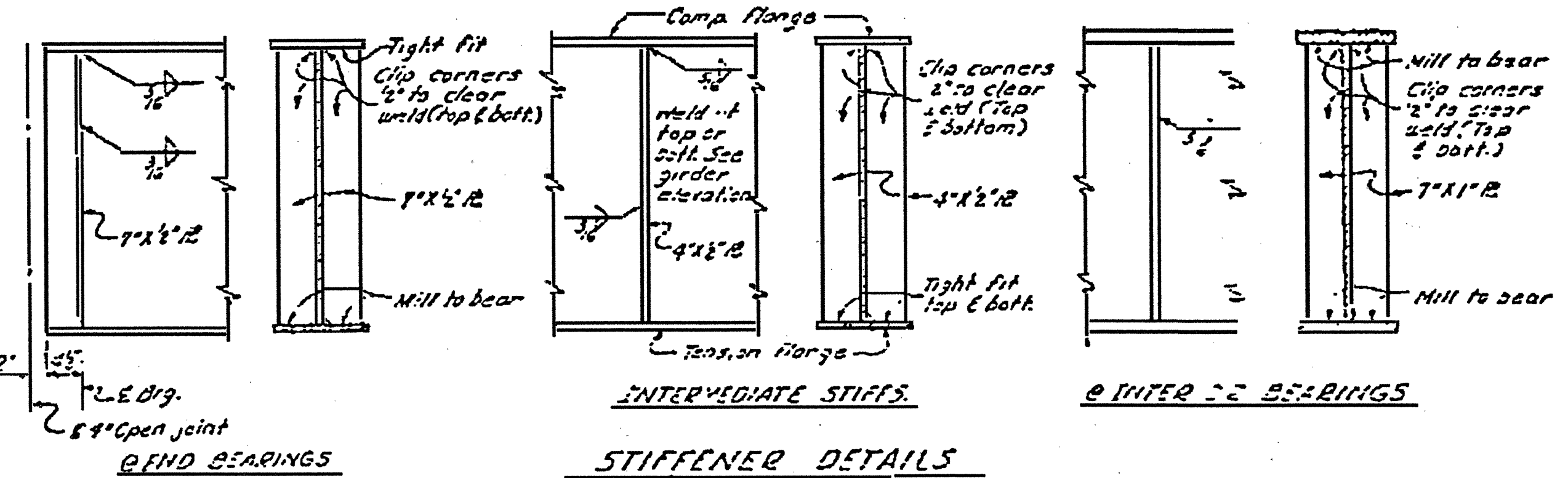


HALF PLAN OF R GIRDERS

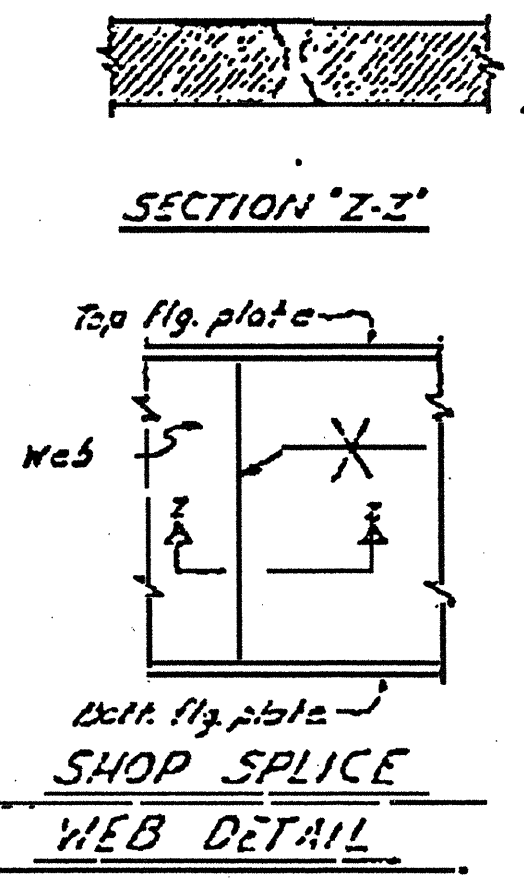


HALF ELEVATION OF R GIRDER

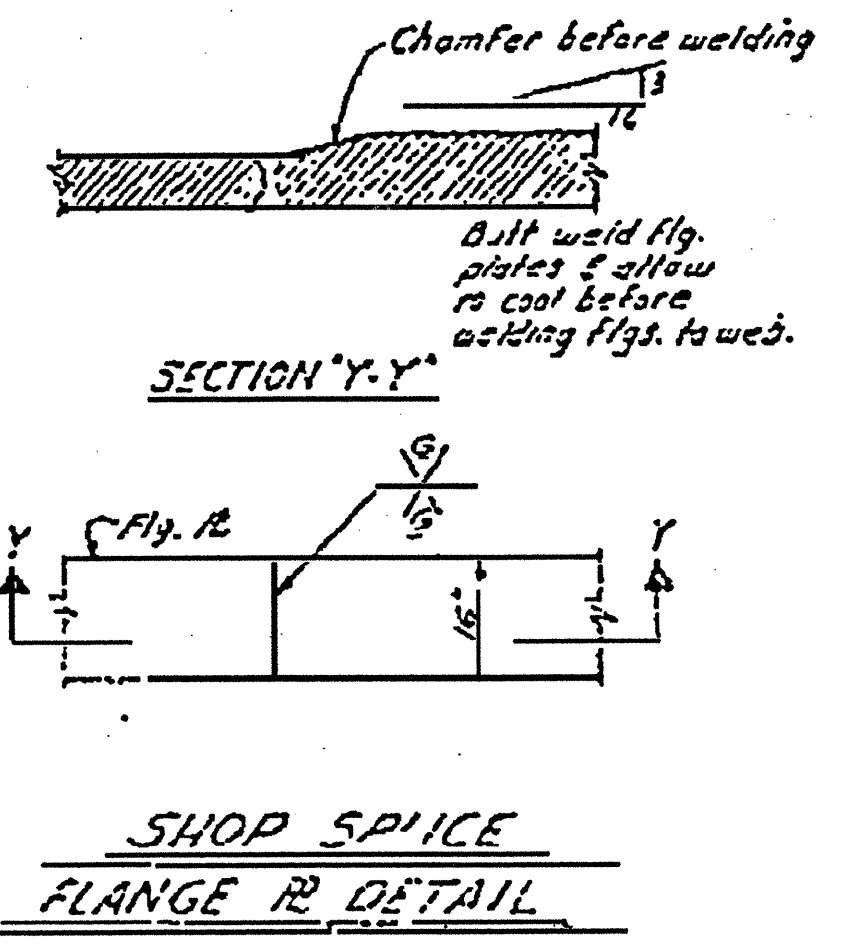
*Indicates "Radiographic Inspection" of flange butt welds. Radiographic inspection is required of all butt welds on tension flanges. See Special Provisions.



STIFFENER DETAILS



SHOP SPICE WEB DETAIL



FLANGE TO WEB WELDS

FIELD SPICE DETAIL

NOTES:

- All angles to be 3X3/4 and all gusset plates to be 3/8" thick.
- All beams, web plates and flange plates shall be of ASTM A36 grade structural steel. See Sheet 3-N.
- Field connections shall be bolted using 3/4" high strength bolts in accordance with the Specifications.
- All field splices in girders shall be pinned and bolted before tightening bolts. See Standard Specifications.
- All shop splices in flange and web plates shall be made prior to welding flange plates to web plates. No splices other than those shown on plans will be permitted in the flange plates; however two shop splices will be allowed in the web plates between each pair of field splices and between the end of girder and the nearest field splice. The location of these web splices shall be indicated on the shop plans.
- All holes shall be 1/8" unless otherwise noted.
- All fillet welds in the girders shall be tested by the magnetic particle method in accordance with the special provision, "Exception to 1963 Edition of AWS Standard Specifications," except that the welds for only one of every ten stiffeners which do not serve as connectors for main members shall be inspected by this method.
- Ends of girders and bearing stiffeners to be plumb.
- Connections for cross frame bracing and gussets may be bolted using 3/4" high strength bolts or shop weld with continuous fillet weld.
- Shop plans for girders shall be submitted to the Assistant Chief Engineer-Bridges for approval.

NO. IN THIS SPEC.	REV.	DATE
1	MC	3/21/35
2	MC	3/21/35

PROJECT No. R. 2111005
WASHINGTON-BERTIE COUNTY
STATION: 193+60

STATE OF NORTH CAROLINA		
STATE HIGHWAY COMMISSION		
PLATE GIRDERS		
E DETAILS		
DATE	3/21/35	365
BY	MC	570
CHECKED	MC	24

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRABLE OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

TIME RESTRICTIONS

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

ROAD NAME

NC 45 & NC 308

HOLIDAY

1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
2. FOR NEW YEAR'S, BETWEEN THE HOURS OF 12:01 A.M. DECEMBER 31st TO 12:01 A.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 12:01 A.M. THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 12:01 A.M. THURSDAY AND 12:01 A.M. MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 12:01 A.M. FRIDAY TO 12:01 A.M. TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 12:01 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 12:01 A.M. THE DAY AFTER INDEPENDENCE DAY.

IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 12:01 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 12:01 A.M. THE TUESDAY AFTER INDEPENDENCE DAY.
6. FOR LABOR DAY, BETWEEN THE HOURS OF 12:01 A.M. FRIDAY AND 12:01 A.M. TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 12:01 A.M. TUESDAY TO 12:01 A.M. MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 12:01 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 12:01 A.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- B) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
- C) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.
- D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

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

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

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

J) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS, OR AS DIRECTED BY THE ENGINEER.

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

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

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

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

TRAFFIC CONTROL DEVICES

M) SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY WHEN LANE CLOSURES ARE NOT IN EFFECT. WHEN SKINNY DRUMS ARE ALLOWED REFER TO SECTION 1180 OF STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES OR AS SHOWN IN THE PLANS.

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

ROADWAY STANDARD DRAWINGS

STD. NO.

TITLE

1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1180.01	SKINNY - DRUM

PHASING

STEP 1

INSTALL ALL OFFSITE DETOUR SIGNING AND KEEP COVERED.

WORK IN A CONTINUOUS MANNER TO COMPLETE THE WORK IN STEP 2 THROUGH STEP 4 IN A 30 CONSECUTIVE DAY PERIOD FROM JULY 12, 2010, TO AUGUST 10, 2010.

STEP 2

USING ROADWAY STANDARD DRAWING 1101.03 (SHEET 1 OF 9), CLOSE NC 45/NC 308 AT EXISTING STRUCTURE OVER ROANOKE RIVER. UNCOVER OFFSITE DETOUR SIGNING.

STEP 3

COMPLETE BRIDGE SUPERSTRUCTURE WORK AS REQUIRED DURING ROAD CLOSURE (SEE STRUCTURE PLANS).


REPLACE ANY DAMAGED PAVEMENT MARKINGS.

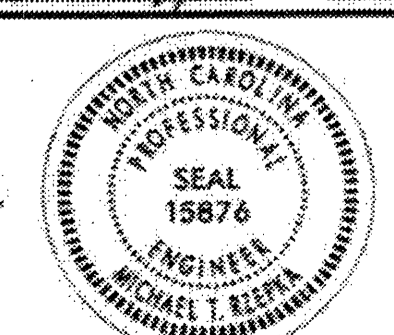
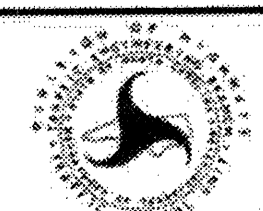
STEP 4

REOPEN NC 45/NC 308 AT EXISTING STRUCTURE OVER ROANOKE RIVER.

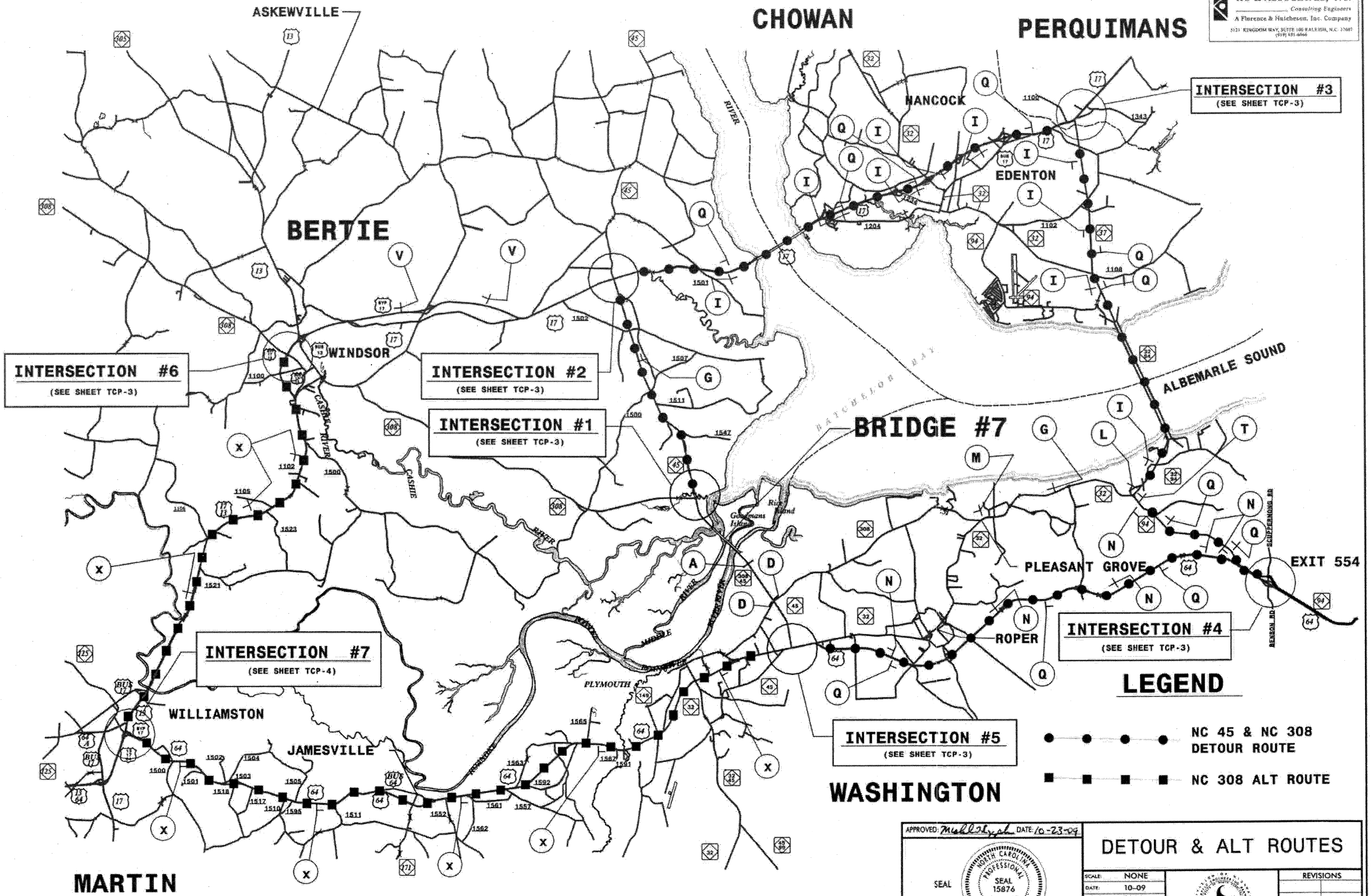
STEP 5

USING ROADWAY STANDARD DRAWING 1101.02 (SHEET 1 OF 9), COMPLETE REMAINING WORK ON BRIDGE SUPERSTRUCTURE/SUBSTRUCTURE AS REQUIRED DURING LANE CLOSURES (SEE STRUCTURE PLANS).

PROJ. REFERENCE NO. B-5194	SHEET NO. TCP-1
 KO & ASSOCIATES, P.C. Consulting Engineers A Florence & Hutcheson, Inc. Company 3125 KINGDOM WAY, SUITE 100 #415294, N.C. 27607 (919) 851-4000	

APPROVED: <i>Michael J. Keefe</i> DATE: 10-23-09	GENERAL NOTES, ROADWAY STANDARD DRAWINGS AND PHASING	
	SCALE: NONE	
	DATE: 10-09	
	DWG. BY: BLM	
	DESIGN BY: GEP	
	REVIEWED BY: MTR	
REVISIONS		

PROJ. REFERENCE NO. B-5194 SHEET NO. TCP-2
 KO & ASSOCIATES, P.C.
 Consulting Engineers
 A Florence & Hatcher, Inc. Company
 5221 KINGDOM WAY, SUITE 100, RALEIGH, N.C. 27607
 (919) 851-4666



INTERSECTION #6
(SEE SHEET TCP-3)

INTERSECTION #2
(SEE SHEET TCP-3)

INTERSECTION #1
(SEE SHEET TCP-3)

INTERSECTION #7
(SEE SHEET TCP-4)

BRIDGE #7

INTERSECTION #4
(SEE SHEET TCP-3)

INTERSECTION #5
(SEE SHEET TCP-3)

LEGEND

- NC 45 & NC 308 DETOUR ROUTE
- NC 308 ALT ROUTE

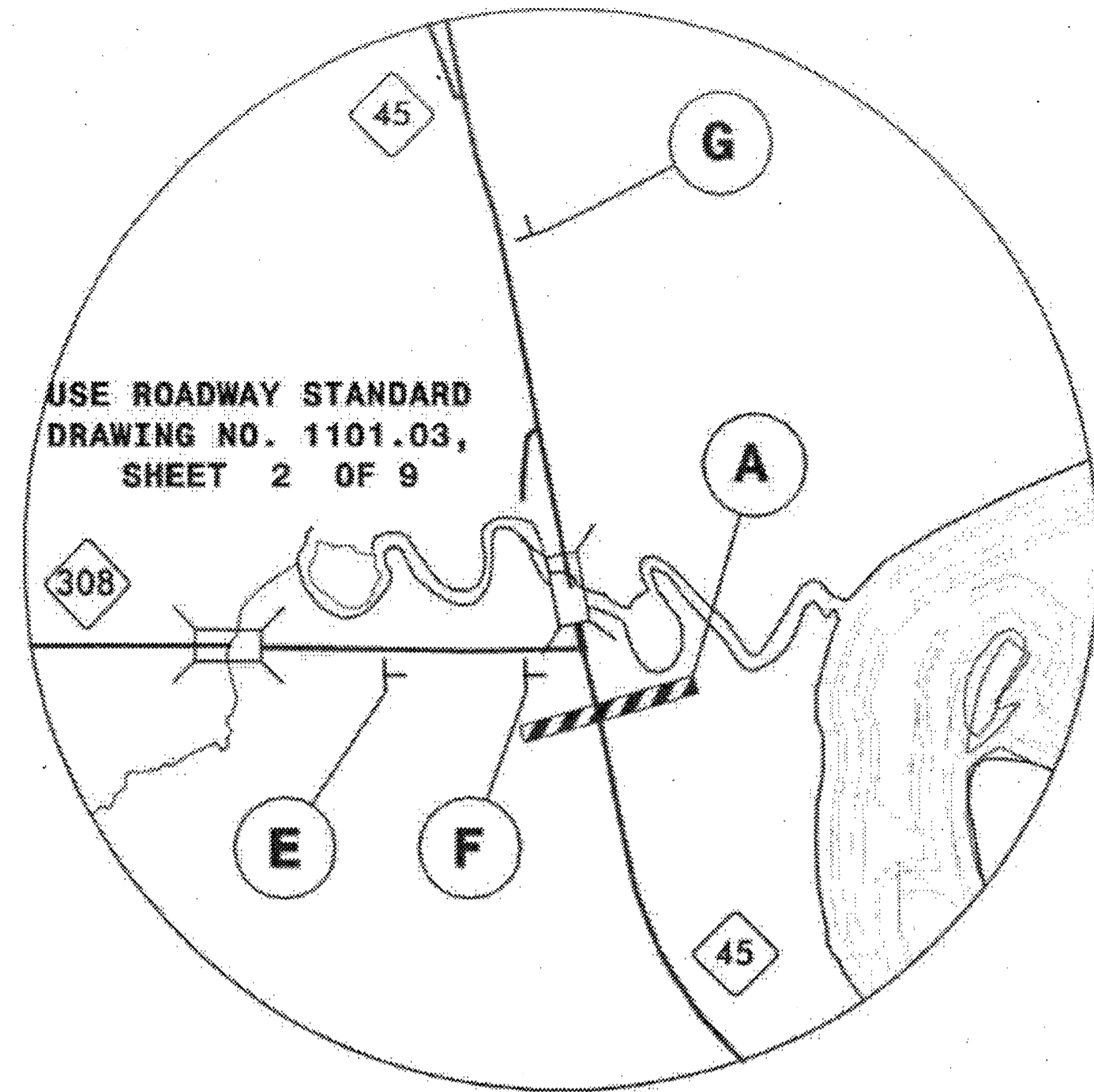
APPROVED: *[Signature]* DATE: 10-23-09



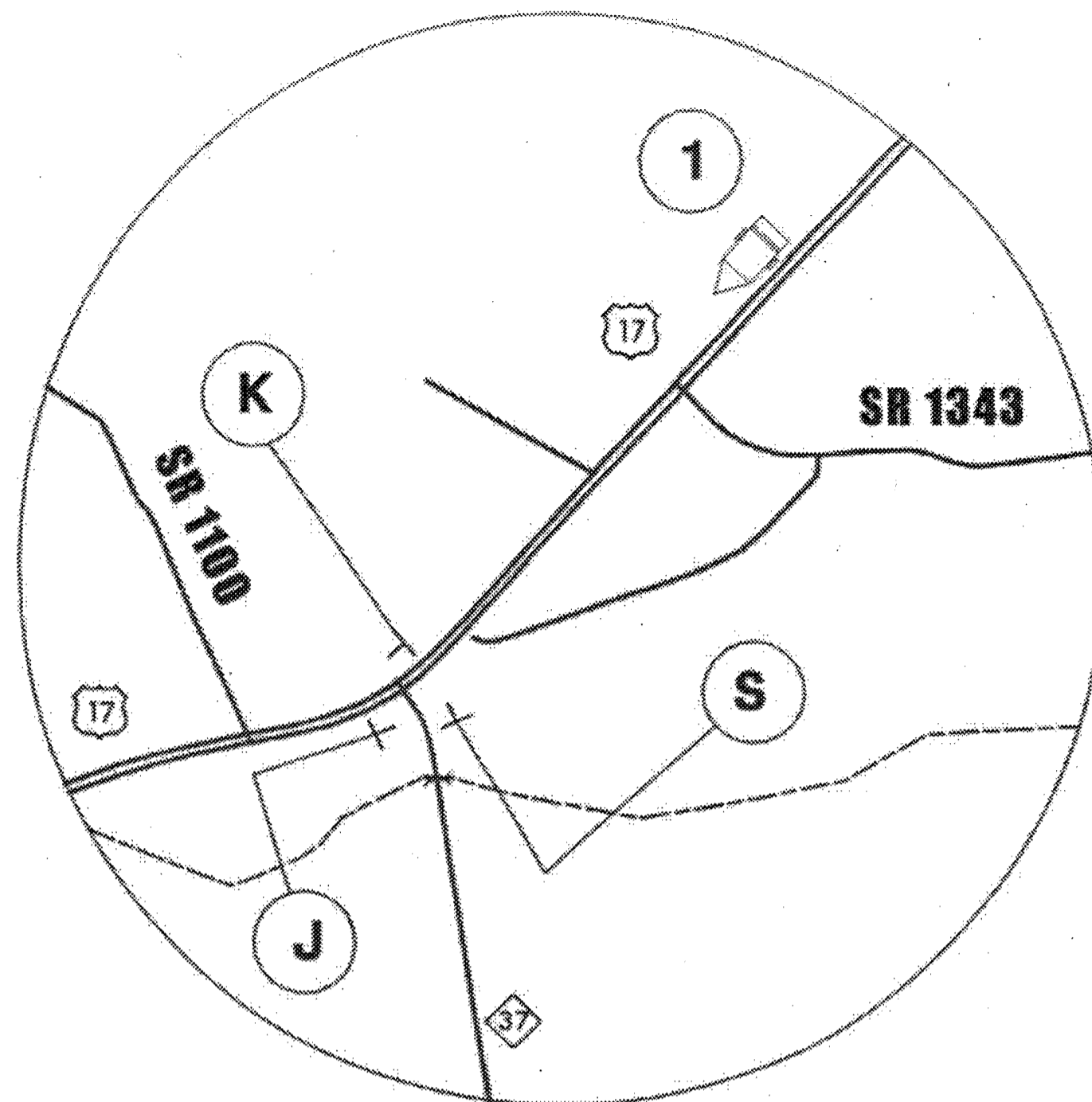
DETOUR & ALT ROUTES

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DATE: 10-09			
DWG. BY: BLM			
DESIGN BY: GEP			
REVIEWED BY: MTR			

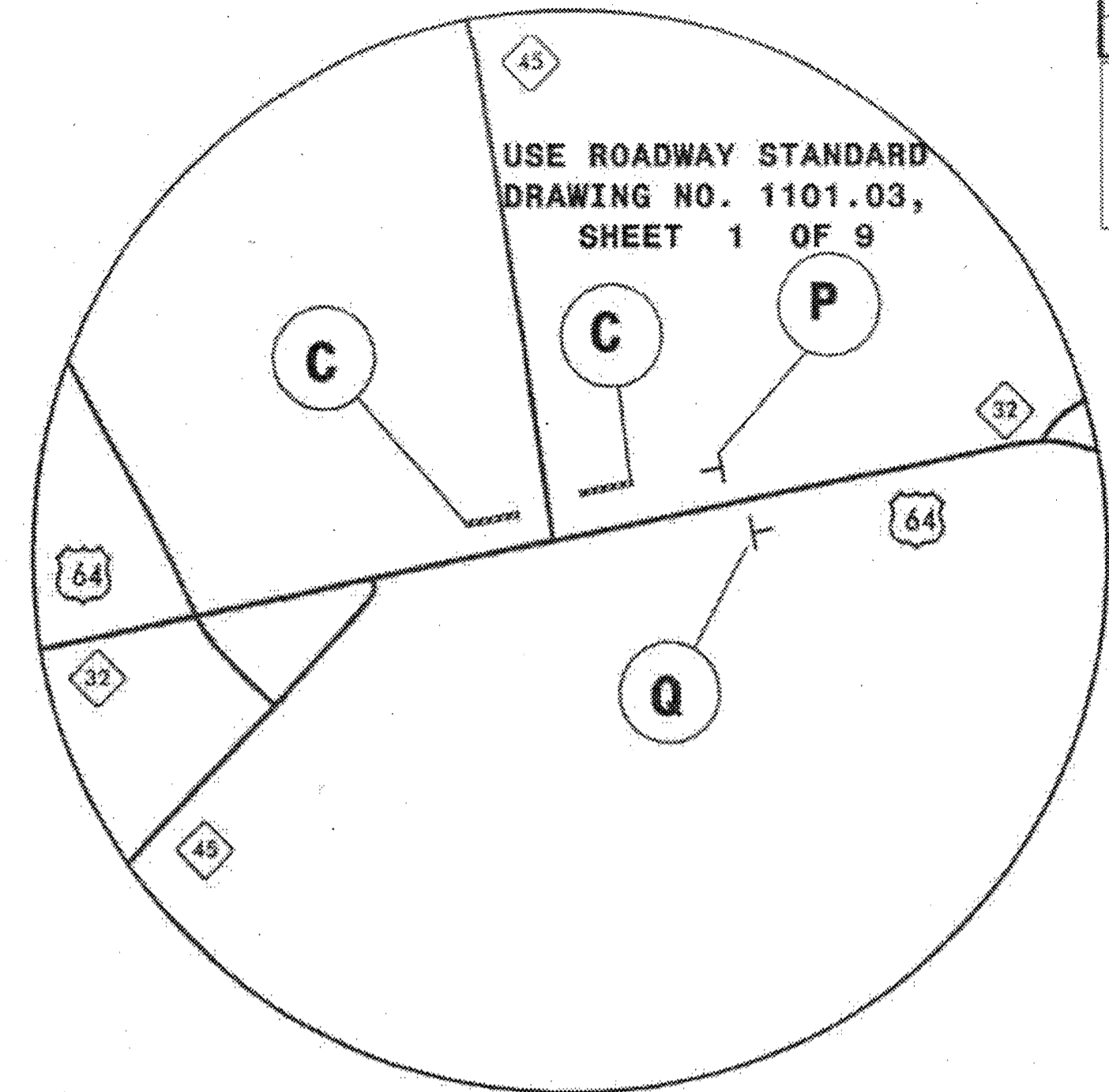
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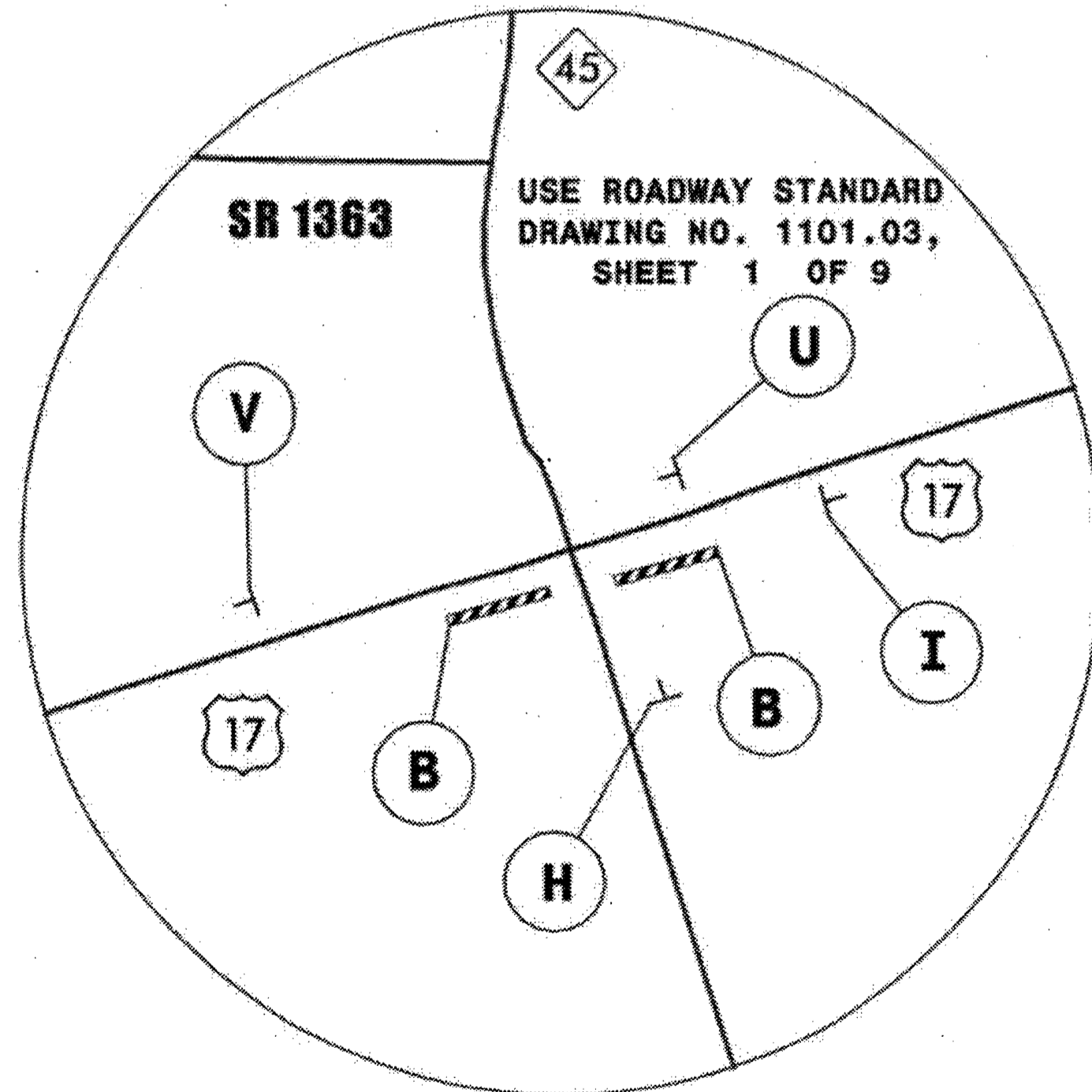
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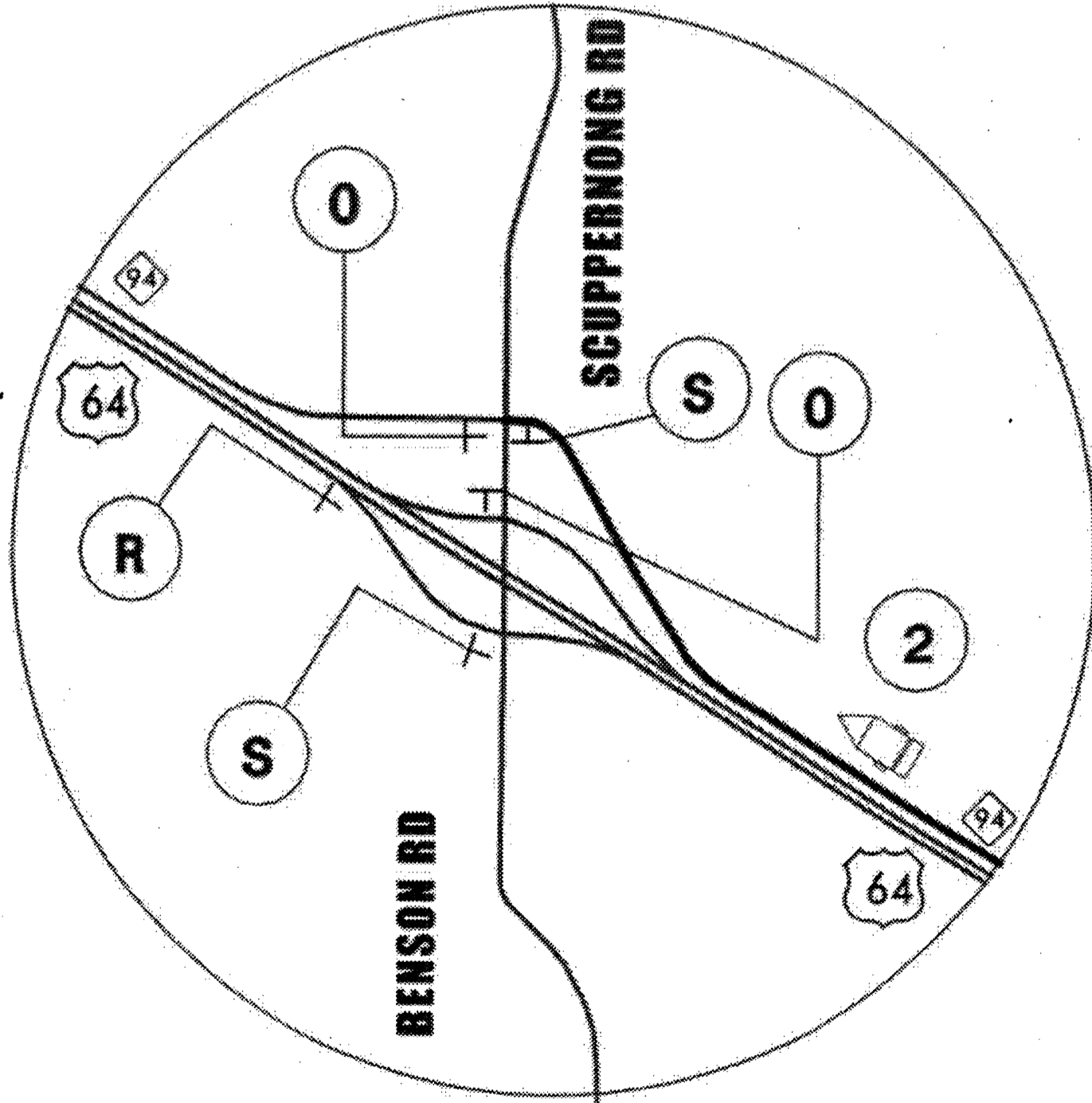
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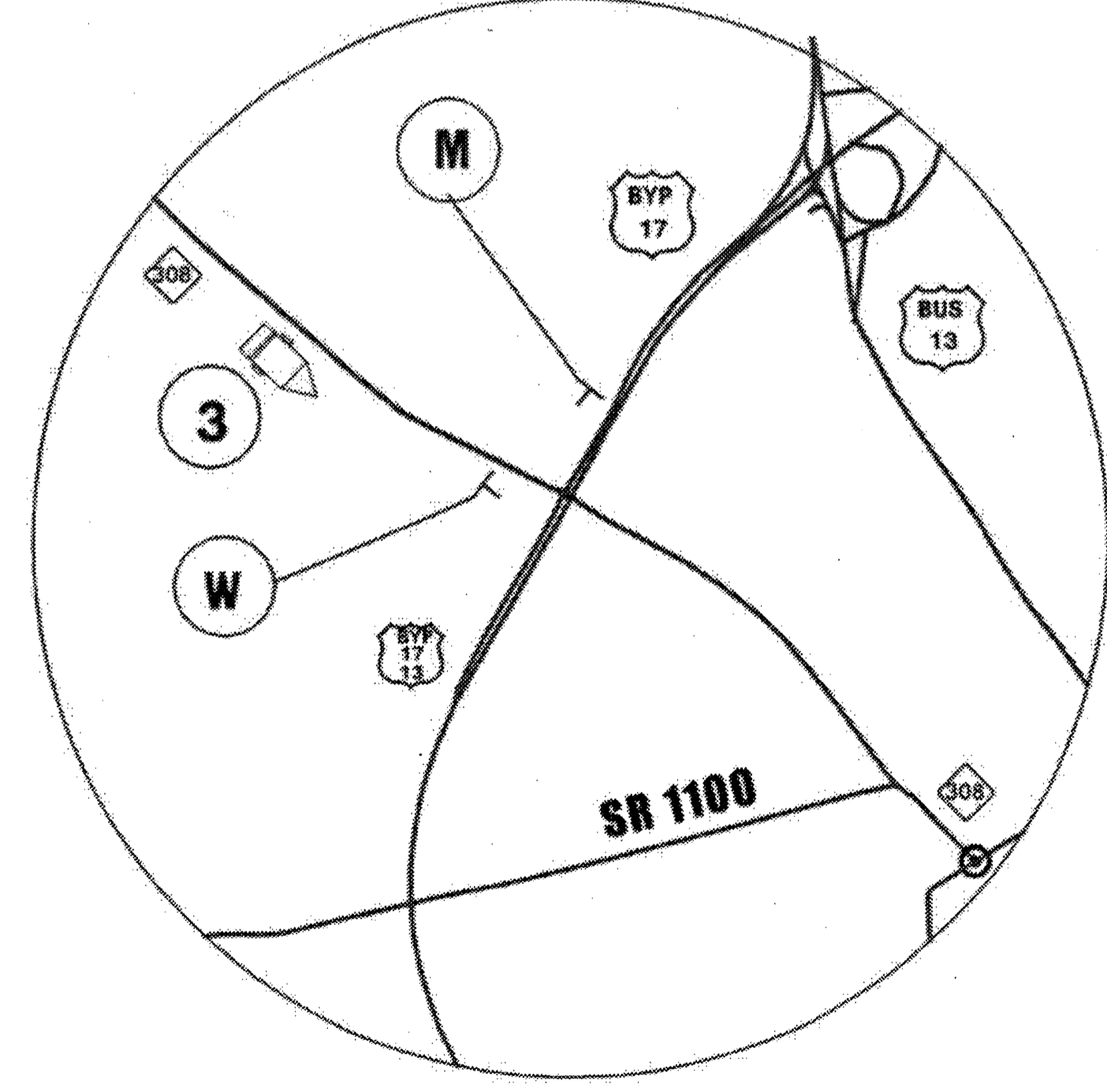
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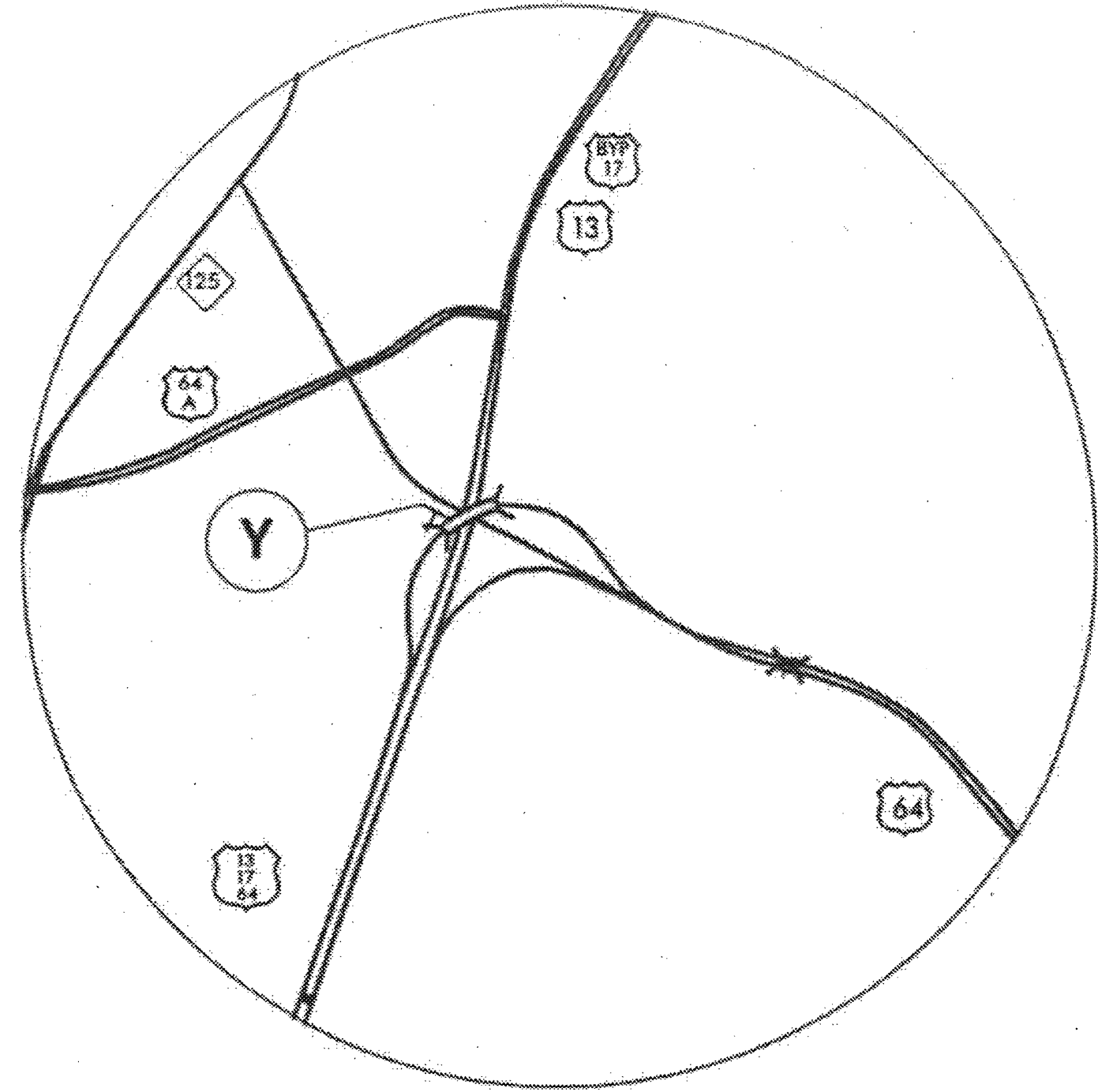
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INTERSECTION #6

APPROVED: <i>[Signature]</i> DATE: 10-23-09		INTERSECTION DETAILS	
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	DATE: 10-09		
	ENGR. BY: BLM		
	DESIGN BY: CEP		
	REVIEWED BY: MTR		

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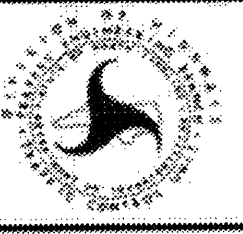
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APPROVED: *Michael J. Keenan* DATE: 10-23-09



INTERSECTION DETAILS

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 DATE: 10-09
 DWG. BY: BLM
 DESIGN BY: GEP
 REVIEWED BY: MTR



REVISIONS	

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 PLOTTED BY: MTR
 PLOT DATE: 10/23/09
 PLOT SCALE: 1"=400'
 PLOT SIZE: 11" x 17"

MESSAGE NO. 1	MESSAGE NO. 2
NC 45S CLOSED PLYMOUTH	TRAFFIC FOLLOW DETOUR

CHANGEABLE MESSAGE SIGN

1

MESSAGE NO. 1	MESSAGE NO. 2
NC 45N CLOSED PLYMOUTH	NC 45N USE EXIT 554

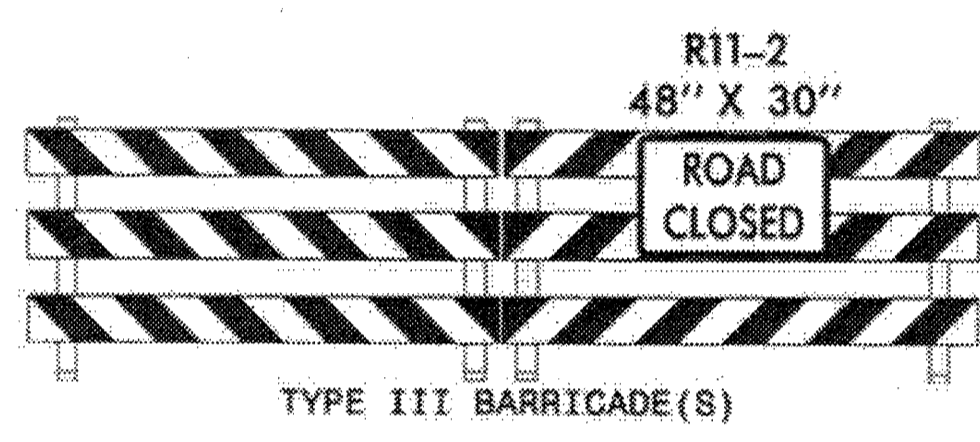
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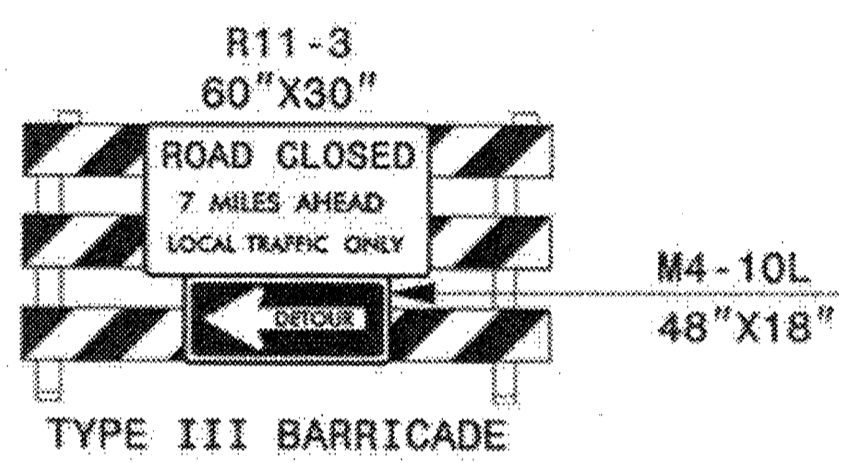
MESSAGE NO. 1	MESSAGE NO. 2
NC 45-308 CLOSED 15MI AHD	USE ALT ROUTE

CHANGEABLE MESSAGE SIGN

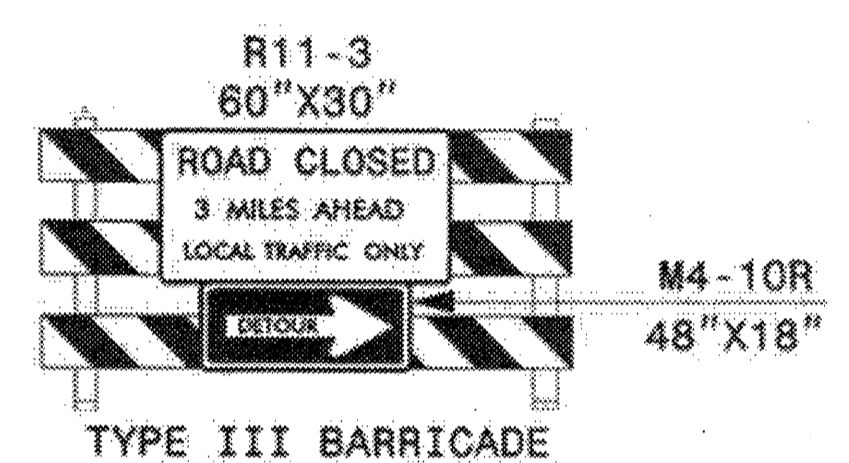
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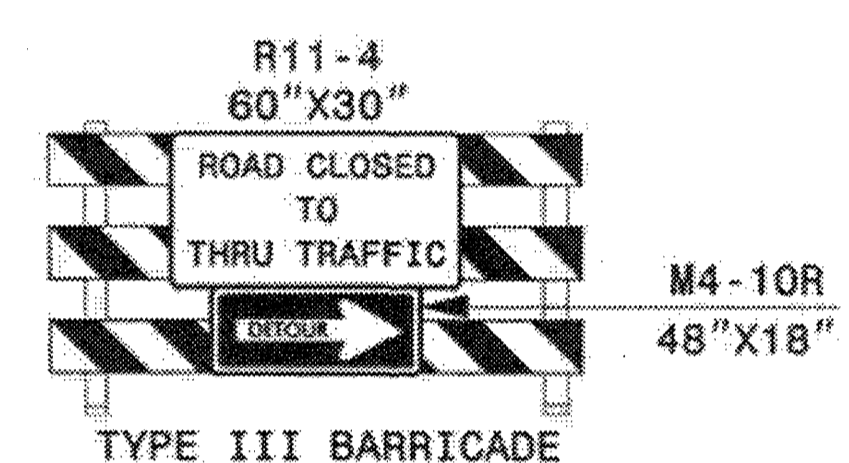
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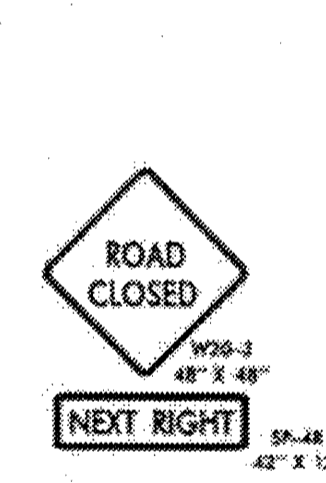
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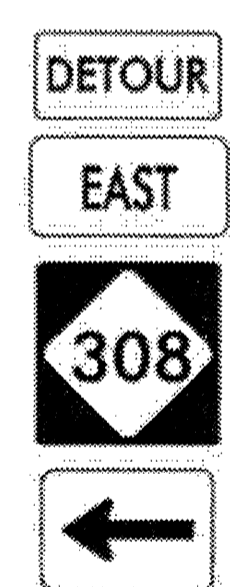
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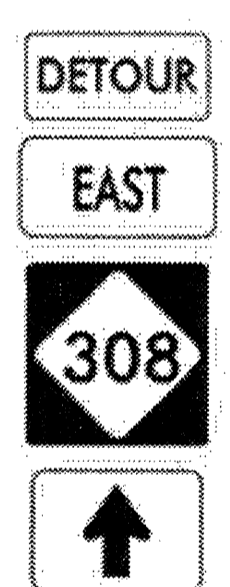
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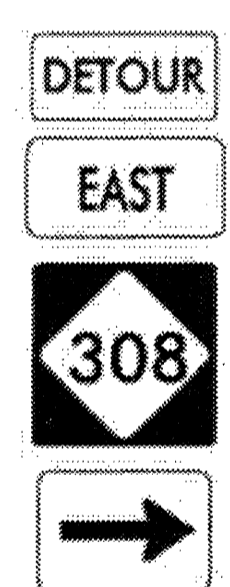
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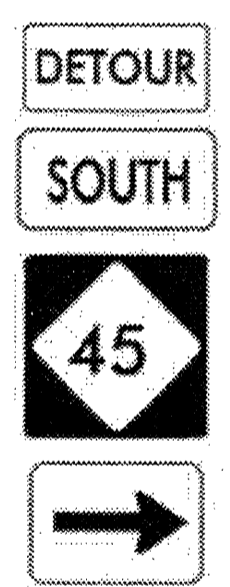
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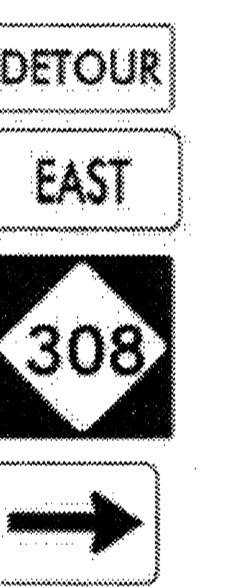
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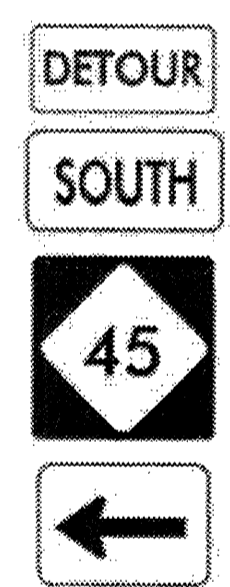
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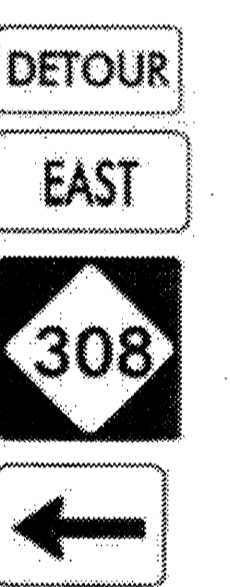
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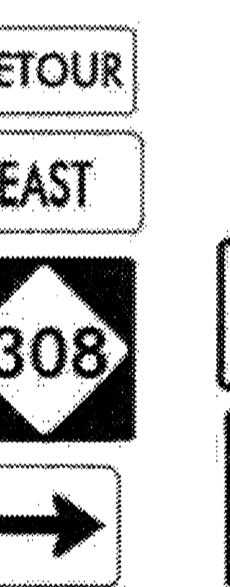
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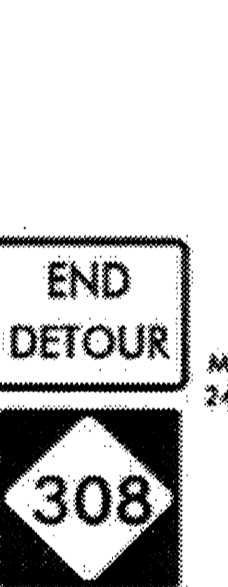
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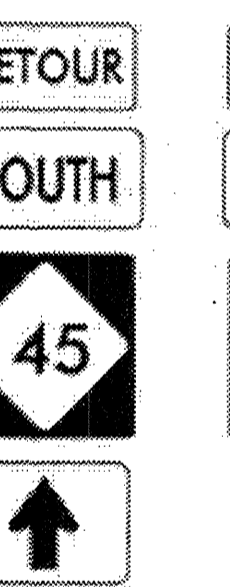
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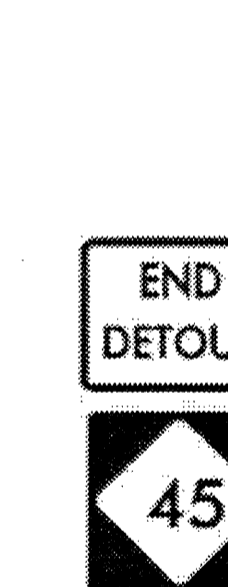
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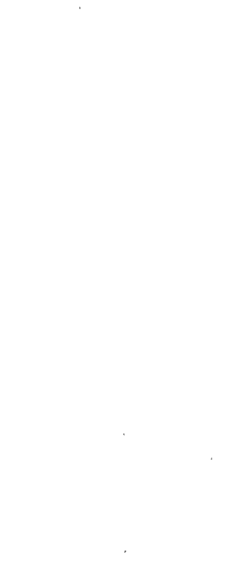
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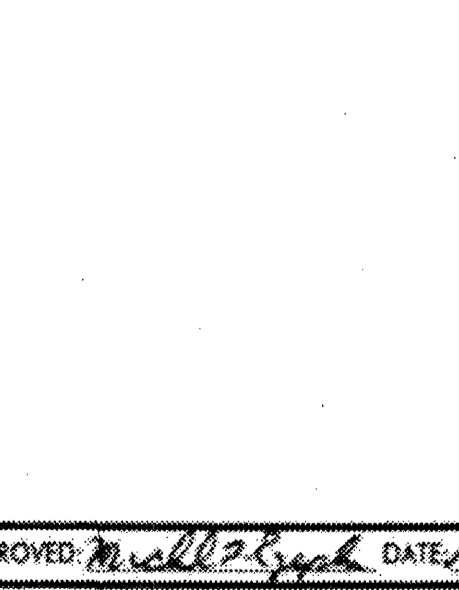
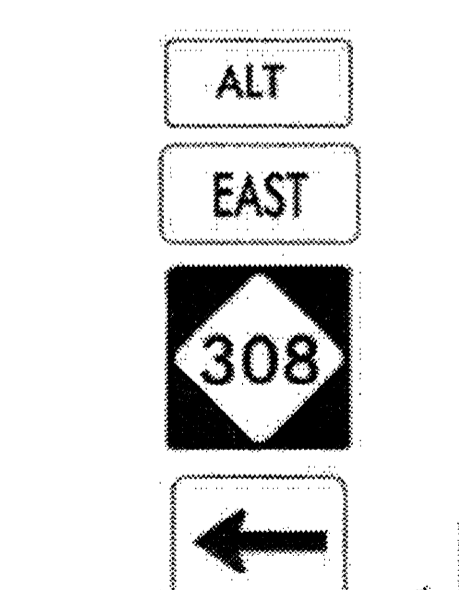
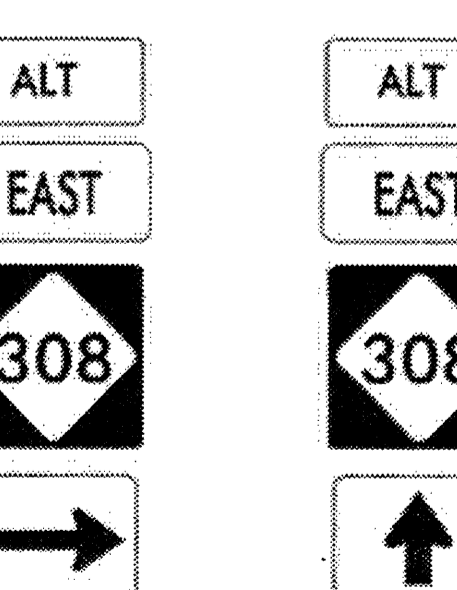
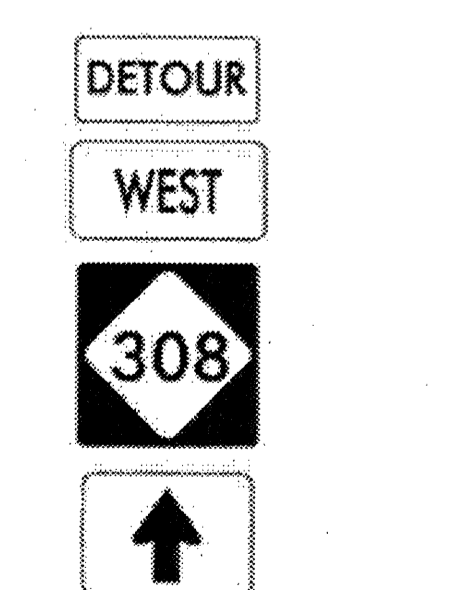
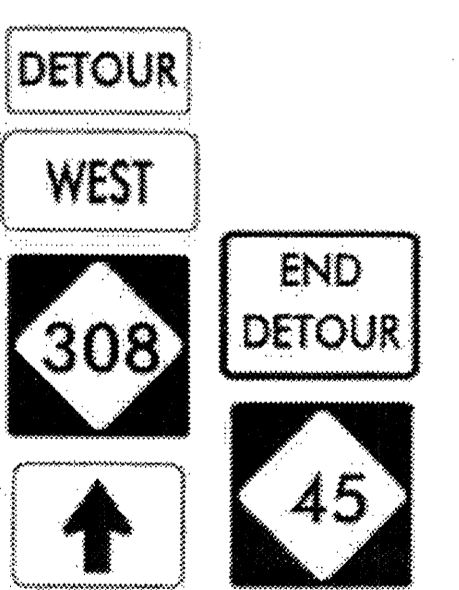
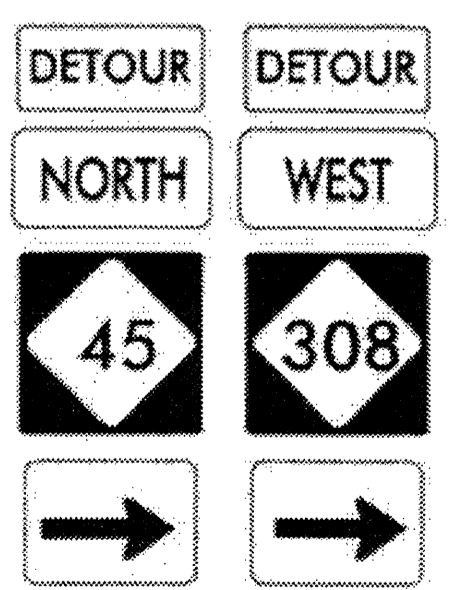
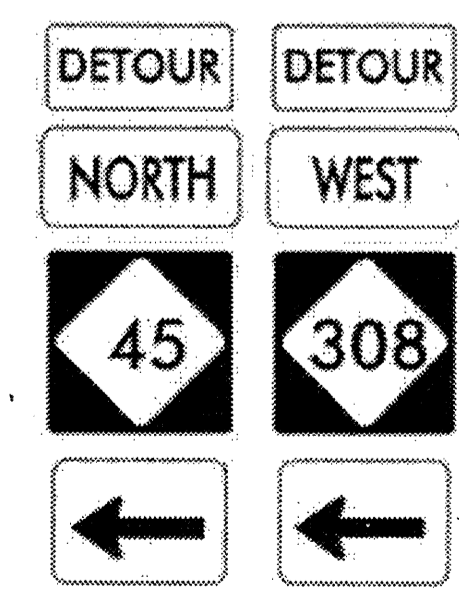
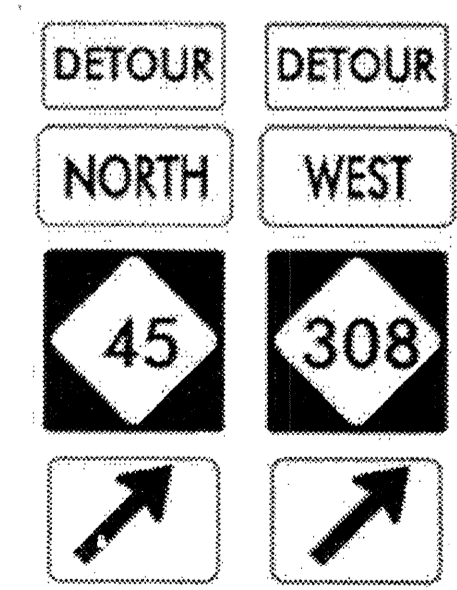
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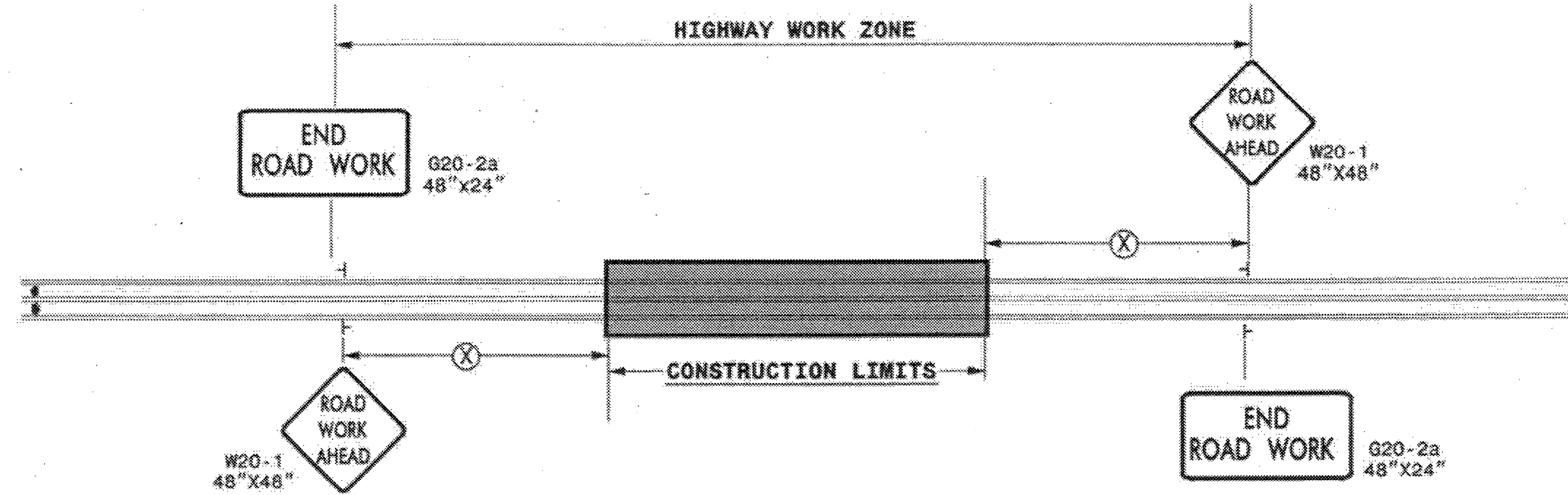
Y



APPROVED: <i>Michael T. Kelly</i> DATE: 10-23-09 	TRAFFIC CONTROL DEVICES							
	SCALE: NONE DATE: 10-09 DWG. BY: BLM DESIGN BY: GEP REVIEWED BY: MTR	REVISIONS <table border="1"> <tr> <td>NO.</td> <td>DESCRIPTION</td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </table>		NO.	DESCRIPTION			
NO.	DESCRIPTION							

10-23-09
 KO & ASSOCIATES, P.C.
 CONSULTING ENGINEERS
 A FLORENCE & HUTCHESON, INC. COMPANY
 1121 KENNEDY WAY, SUITE 100 RALEIGH, N.C. 27607
 (919) 933-4600

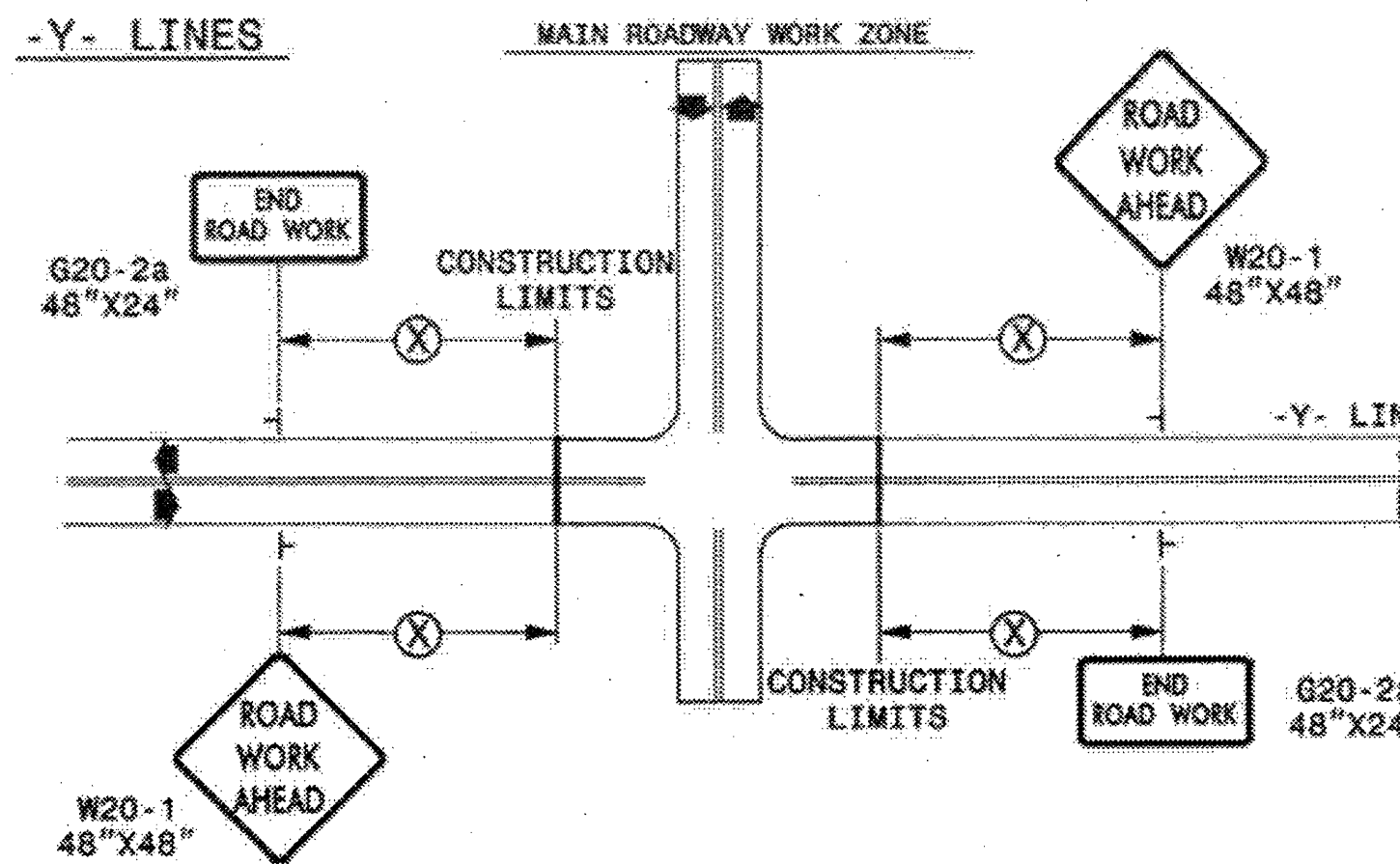
TWO-WAY UNDIVIDED ** (L-LINES)



POSTED SPEED LIMIT (M.P.H.)	RECOMMENDED MINIMUM SIGN SPACING
≤ 50	500'
≥ 55	1000'

STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

ROADWAYS INTERSECTING ALONG 2 WAY UNDIVIDED WORK ZONE (Y-LINES)



GENERAL NOTES

- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCE WORK ZONE SIGNS.
- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK.
- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT OVERNIGHT. FOR SHORT-TERM DAILY MAINTENANCE TYPE OPERATIONS, THIS SIGNING APPLICATION IS OPTIONAL; MAY USE ONLY APPLICABLE ROADWAY STANDARD DRAWINGS INSTEAD. HOWEVER, IF THIS SIGNING APPLICATION IS USED, SIGNS MAY BE PORTABLE MOUNTED.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
- USE 3LB STEEL U-CHANNEL POST OR 4" X 4" WOOD POST FOR ALL WORK ZONE SIGNS. 3LB STEEL U-CHANNEL POSTS MUST MEET THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 1094-1(B), MAY BE GALVANIZED STEEL, OR MAY BE PAINTED GREEN BY THE POST MANUFACTURER. SQUARE STEEL TUBING POSTS HAVING EQUIVALENT STRENGTH OF THE 3 LB STEEL U-CHANNEL POST ARE ALSO ACCEPTABLE FOR USE. ERECT SIGNS PER ROADWAY STANDARD DRAWING 1110.01. PAYMENT FOR WOOD POSTS, 3LB STEEL U-CHANNEL AND SQUARE STEEL TUBING POSTS WITH SIGNS WILL BE MADE ACCORDING TO STANDARD SPECIFICATION "WORK ZONE SIGNS" SECTION 1110.
- WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1110.01. REMOVE ENTIRE POST WHEN REMOVING SIGNS WITH SPLICED POSTS.
- DO NOT BACK BRACE SIGN SUPPORTS.
- ** TWO-WAY UNDIVIDED ADVANCE WARNING SIGN CONFIGURATION MAY BE USED ON URBAN MULTI-LANE FACILITIES WHERE CONDITIONS LIMIT THE USE OF DUAL MOUNTED SIGNS AS DETERMINED BY THE ENGINEER.

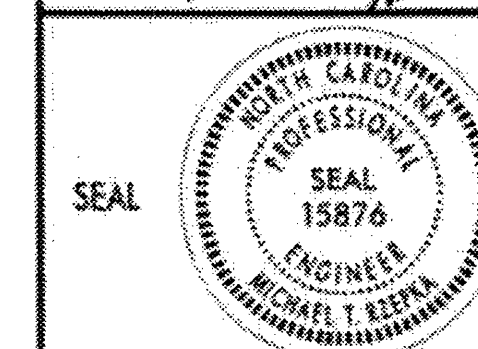
LEGEND

- STATIONARY SIGN
- ◄ DIRECTION OF TRAFFIC FLOW

SHEET 1 OF 1

DETAIL DRAWING FOR
 TWO-WAY UNDIVIDED
 WORK ZONE WARNING SIGNS

APPROVED: *Michael T. Keefer* DATE: 12-22-08



DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCE WORK ZONE WARNING SIGNS

SCALE: NONE		REVISIONS	
DATE: 12-08		7-98	10/01
DWG. BY:		10-98	03/04
DESIGN BY:		01/01	11/04
REVIEWED BY:			

01/15/2009 11:54 AM C:\Users\mkeefe\My Documents\Projects\1110.01\1110.01.dwg

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

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

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.
ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.
IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.
DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.
WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".
EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.
WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16" INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.
METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

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

ENGLISH

JANUARY, 1990

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