

ESTIMATED QUANTITIES

UTILITY NOTES

THE LOCATIONS OF UTILITIES SHOWN WITHIN THESE PLANS ARE APPROXIMATE ONLY. EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD BY CONTACTING THE UTILITY COMPANIES INVOLVED.

UNLESS OTHERWISE NOTED, ALL UTILITY ADJUSTMENTS WILL BE PERFORMED BY THE UTILITY OR ITS REPRESENTATIVE. THE CONTRACTOR AND UTILITY OWNERS WILL BE REQUIRED TO CO-OPERATE WITH EACH OTHER IN ORDER TO EXPEDITE THE WORK REQUIRED BY THIS CONTRACT.

THE CONTRACTOR WILL PROVIDE ALL NECESSARY PROTECTIVE MEASURES TO SAFEGUARD EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION OF THIS PROJECT. IN THE EVENT THAT SPECIAL EQUIPMENT IS REQUIRED TO WORK OVER AND AROUND THE UTILITIES, THE CONTRACTOR WILL BE REQUIRED TO FURNISH SUCH EQUIPMENT. THE COST OF PROTECTING UTILITIES FROM DAMAGE AND FURNISHING SPECIAL EQUIPMENT WILL BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS OF CONSTRUCTION.

THE CONTRACTOR WILL BE SOLELY RESPONSIBLE FOR CONTACTING ALL AFFECTED UTILITIES PRIOR TO SUBMITTING HIS BID, IN ORDER TO DETERMINE THE EXTENT TO WHICH UTILITY RELOCATIONS AND/OR ADJUSTMENTS WILL HAVE UPON THE SCHEDULE OF THE WORK FOR THE PROJECT. SOME UTILITY FACILITIES MAY NEED TO BE ADJUSTED CONCURRENTLY WITH THE CONTRACTOR'S OPERATIONS, WHILE SOME WORK MAY BE REQUIRED "AROUND" UTILITY FACILITIES THAT WILL REMAIN IN PLACE. IT IS UNDERSTOOD AND AGREED THAT THE CONTRACTOR WILL RECEIVE NO ADDITIONAL COMPENSATION FOR ANY DELAYS OR INTERRUPTIONS CAUSED BY THE UTILITY ADJUSTMENTS.

THE CONTRACTOR SHALL NOTIFY EACH INDIVIDUAL UTILITY OWNER OF HIS PLAN TO OPERATE IN THE AREA OF THE UTILITIES. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL CONTACT THE UTILITY OWNERS AND REQUEST THEM TO PROPERLY MARK TO THE PROTECTIVE UTILITY OF THE GROUND. THIS NOTIFICATION SHALL BE GIVEN AT LEAST THREE (3) BUSINESS DAYS PRIOR TO COMMENCEMENT OF OPERATIONS AROUND THE UTILITY.

SPECIAL NOTE CONCERNING ALL JACKING AND TEMPORARY

SUPPORTS AT BENT NO. 2 (BRIDGE NO. 2)

JACKING AND TEMPORARY SUPPORTS SHALL BE PROVIDED AT BENT NO. 2. TEMPORARY SUPPORTS SHALL BE CAPABLE OF SUPPORTING FULL LOADS AND LIVE LOADS. THE CONTRACTOR SHALL TAKE EXTREME CARE WHILE JACKING THE COMPLETE BEAMS SO AS NOT TO DAMAGE THE BEAMS IN ANY FASHION. IF ANY DAMAGE OCCURS TO THE JACKING CONCRETE BEAMS DURING JACKING OPERATIONS, IT SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AND RESTORE BEAMS TO THE FULL CAPACITY OF THE ORIGINAL BEAMS. THE CONTRACTOR SHALL SUBMIT DETAILS FOR JACKING DETAILS AND DESIGN CALCULATIONS TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY SUPPORT SYSTEMS BY RETAINING THE CALCULATIONS AND DRAWINGS WHOSE DESIGN SHALL ACCORD TO THE TITLE AND SCOPE OF THE STATE OF TENNESSEE, FOR BEAMS AND PILES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FULL DESIGN AND CONSTRUCTION OF THE SUPPORT SYSTEM. THE CONTRACTOR SHALL SUBMIT ALL DRAWINGS, DETAILS, DIMENSIONS AND MATERIAL SPECIFICATIONS FOR ALL ITEMS USED. THESE CALCULATIONS AND DRAWINGS SHALL BE PREPARED AND SIGNED BY AN ENGINEER REGISTERED IN THE STATE OF TENNESSEE. ALL CALCULATIONS AND DRAWINGS SHALL BE REVIEWED BEFORE ANY JACKING AND TEMPORARY SUPPORT WORK IS STARTED. COST OF JACKING AND TEMPORARY SUPPORTS FOR SUPPORTING THE BEAMS AT BENT NO. 2 SHALL BE PAID FOR UNDER ITEM NO. 604-10.24, JACKING CONCRETE SPAN, LUMP SUM.

NOTE: THE CONCRETE BEAMS AT BENT NO. 2 SHALL BE JACKED TO THEIR ORIGINAL ELEVATION AND SUPPORTED BEFORE ANY OTHER REPAIRS TAKE PLACE AT THIS LOCATION.

PROJECT NO.	YEAR	SHEET NO.
23211-4305-04	1991	2

REVISIONS			
NO.	DATE	BY	DESCRIPTION
1	11-14-91	MCL	Added Item no. 2
2	11-19-91	MCL	Revised est. qty
3	11-25-91	MCL	ADDED NEW DRILLED HOLES PLACING OF CONCRETE.

GENERAL NOTES

SPECIFICATIONS: Standard Road and Bridge Specifications of the Tennessee Department of Transportation. (March 1981 edition).

DESIGN SPECIFICATIONS: AASHTO 1999 Edition with addenda.

STRUCTURAL STEEL: Shall conform to AASHTO M270 GRADE 36 (AISC A709 GRADE 36) unless otherwise noted.

REFLECTIVE STRIPS: To be ASTM A615 Grade 60. Standard CP51 hook details apply unless otherwise noted on Bill of Steel. Spacing dimensions are center to center and cover of sections are clear distance unless other is noted. Placing tolerances are $\pm 1/8"$ for spacing and $\pm 1/8"$ or $\pm 3/8"$ for cover. (The suffix E for bars so marked, denotes epoxy coated reinforcement.) See Special Provision 9014.

SHOP DRAWINGS: Shall be submitted according to Special Provision No. 105A, except shop drawings shall be submitted to the Headquarters Bridge Inspection and Repair Office in lieu of the Division of Structures.

BOLETS: Shall be high tensile strength bolts (ASTM A325) unless otherwise noted. Size to be as noted on plans. See AASHTO specifications, ARTICLE 10.17, DETAIL D II. Existing contact surfaces shall be cleaned to S570-10 specifications prior to attachment of new anchors.

CONCRETE: To be high early strength concrete, $f'_{c} = 5,000$ p.s.i. & 28 day strength shall not be permitted on any of the repaired areas until test specimens attain a compressive strength of 3,600 p.s.i. minimum and the concrete has been in place a minimum of ten (10) days.

BRIDGE DECK SEALANT (ASPH): To be in accordance with note (C), sheet 2, of Special Provision 604.

CONCRETE CURE: All concrete in repair shall be cured according to Special Provision 604.

WEEDING: See Special Provision No. 607.

NON-PAY ITEMS: Only items shown on the proposal as pay items will be paid for. Compensation for all labor, materials, tools, equipment, and incidentals for the entire contract shall be included in the price for pay items.

FOR ADDITIONAL GENERAL NOTES: Applicable to strip seal expansion joints, see drawing no. M-105-76. Also see Special Provision No. 604 regarding strip seal expansion joints.

CLEANING AND PAINTING (NEW STRUCTURAL STEEL ONLY): All new structural steel shall be cleaned and painted. Cleaning shall be in accordance with the Tennessee Standard Specifications, Section 603.05(b). Paint shall be system "B" - Inorganic Zinc - Paint System, except a urethane finish coat shall be used in lieu of vinyl finish coat. Color of the urethane finish coat shall comply with Federal Standard No. 595a, 24110 Bright Green. See Sections 603 and 910 of the Standard Specifications for Road and Bridge Construction of the Tennessee Department of Transportation. An intermediate tie coat shall be used, see Special Provision No. 603A regarding painting. Urethane finish coat shall be used in lieu of vinyl finish coat.

NOTE: ALL NEW STRUCTURAL STEEL SHALL BE SHOP PRIMED BEFORE DELIVERY TO THE JOB SITE.

SURFACE PREPARATION AND PAINTING (EXISTING STEEL ONLY): SEE NOTES ON DRAWING NO. BR-4-41.

ITEM NO.	DESCRIPTION	UNIT	QUANTITY		TOTAL
			BRIDGE NO. 1 STATE ROUTE 211 OVER OVERFLOW OF FORKED DEER RIVER BRIDGE NO. 23-SR211-1.31	BRIDGE NO. 2 STATE ROUTE 211 OVER NORTH FORK FORKED DEER RIVER BRIDGE NO. 23-SR211-1.71	
1	602-10.25 STRUCTURAL STEEL BEAM SUPPORTS	EACH	7		7
2	602-10.32 STRUCTURAL STEEL (REPAIRS)	LBS.	6,658	1,180	6,658
3	603-02.01 REPAIRING EXISTING STEEL STRUCTURES	L.S.		1	1
4	604-10.02 CONCRETE REPAIRS	C.Y.	13	5	18
5	604-10.06 CONCRETE HANDRAIL REPAIR	L.F.		29	29
6	604-10.09 CONCRETE	C.Y.	13	22	34
7	604-10.17 NON-PENETRATING CONCRETE SEAL	S.Y.		830	830
8	604-10.18 REINFORCING STEEL (REPAIRS)	LBS.	3,796	4,562	8,338
9	604-10.24 JACKING CONCRETE SPAN	L.S.	1		1
10	604-10.30 BRIDGE DECK REPAIRS (FULL DEPTH OF SLAB)	S.Y.		50	50
11	604-10.40 EXPANSION JOINT REPAIRS (TYPE "D")	L.F.		105	105
12	604-10.42 CONCRETE REPAIRS	C.F.		162	162
13	604-10.50 BRIDGE DECK REPAIRS (PARTIAL DEPTH OF SLAB)	S.Y.	650	660	1,110
14	604-10.53 CONCRETE REPAIRS	S.Y.	75	75	150
15	604-10.54 CONCRETE REPAIRS	S.F.	65	512	577
16	617-01 BRIDGE DECK SEALANT	S.Y.	2,165	2,162	5,157
17	705-10.20 GUARDRAIL ATTACHMENT TO CONCRETE SPINDLE RAIL	L.F.	1,083		1,083
18	712-09.01 Removable Pavement Marking Lines	L.F.			16,000
19	702-03 BORROW EXCAVATION (UNCLASS)	C.Y.			150
20	803-01 MINERAL AGGREGATE, TYPE A BASE, GRADING D	TONS			45
21	402-01 ASPHALT CEMENT (ACS) GRADING D	TONS			2
22	407-02.05 COLD PLACING BITUMINOUS PAVEMENT	S.Y.			825E
23	407-02.05 SALVAGE VALUE OF COLD PLACING	S.Y.			825E
24	411-02.01 MINERAL AGGREGATE (ACS) GRADING D	TONS			319
25	411-02.02 ASPHALT CEMENT (ACS) GRADING D	TONS			32
26	411-02.01 MINERAL AGGREGATE (ACS) GRADING E	TON			637
27	411-02.02 ASPHALT CEMENT (ACS) GRADING E	TON			41
28	712-01 TRAFFIC CONTROL	L.F.			15
29	705-03.01 SINGLE GUARDRAIL (TYPE A)	L.F.			75
30	712-01 TRAFFIC CONTROL	EACH			6
31	712-01 TRAFFIC CONTROL	L.S.			1
32	712-02.02 INTERCONNECTED PORTABLE BARRIER RAIL	L.F.			2120
33	712-04.01 FLEXIBLE DRUMS (CHANNELIZING)	EACH			90
34	712-05.01 WARNING LIGHTS (TYPE A)	EACH			17
35	712-05.02 WARNING LIGHTS (TYPE C)	EACH			21
36	712-06 SIGNS (CONSTRUCTION)	S.F.			212
37	712-05.02 WARNING LIGHTS (TYPE C)	EACH			2
38	712-06.01 VERTICAL PANELS	S.F.			64
39	716.05.01 PAINTED PAVEMENT MARKING (LINE)	L.M.			5.8
40	717-01 MOBILIZATION	L.S.			1

- 1 INCLUDES THE COST OF SEVEN (7) STRUCTURAL STEEL BEAM SUPPORTS AT BENT NO. 2, BRIDGE NO. 1 ONLY. SEE DWG. NO. BR-4-46 FOR NOTES AND DETAILS.
- 2 INCLUDES THE COST OF ALL STRUCTURAL STEEL USED IN THE BENT CAP ENCASUREMENT AT BENT NO. 2; THE RETAINER PLATES USED IN THE DIAPHRAGM REPAIR AT BENT NO. 2; AND SIXTY-SIX (66) EXISTING DECK DRAINS EXTENSIONS. SEE NOTES AND DETAILS ON DWG. NO'S. BR-4-44, BR-4-45, AND BR-4-51.
- 3 INCLUDES CLEANING AND PAINTING OF ALL NEW AND EXISTING STRUCTURAL STEEL FOR THE FULL LIMITS OF THE EXISTING BRIDGES. SEE PAINT NOTES ON DRAWING NO. BR-4-40 AND BR-4-41. ESTIMATED WEIGHT OF STRUCTURAL STEEL TO BE CLEANED AND PAINTED = 386,486 LBS. (BRIDGES NO. 1 AND 2).
- 4 INCLUDES THE COST OF NEW HIGH EARLY STRENGTH CONCRETE FOR THE BENT CAP ENCASUREMENT AT BENT NO. 2 AND THE APPROACH RAMPS AT FOUR (4) LOCATIONS. SEE NOTES AND DETAILS ON DWG. NO. BR-4-44 AND BR-4-54 (BRIDGE NO. 1 ONLY).
- 5 INCLUDES THE COST OF REMOVING THE EXISTING PORTABLE BARRIER RAIL AND REPAIRING 28'-6"± OF NEW CONCRETE BRIDGERAIL ON BRIDGE NO. 2. SEE DWG. NO. BR-4-42 FOR DETAILS AND NOTES.
- 6 INCLUDES THE COST OF REMOVING AND REPAIRING THE EXISTING DIAPHRAGMS AND TWO (2) EXTERIOR BEAM HAUNCHES (SPAN NO. 2, BENT NO. 2), AND 6'-0" SEAB AND SIDEWALK SECTION AT BENT NO. 2 AS SHOWN IN DETAILS ON DWG. NO. BR-4-43 AND BR-4-53 (BRIDGE NO. 1). ALSO INCLUDES THE COST OF REMOVING AND REPAIRING TWO (2) 6'-0" SLAB SECTIONS OVER THE EXISTING HINGED EXPANSION JOINTS IN SPAN NO. 17 AND REMOVING AND REPAIRING DIAPHRAGMS AT BENTS NO. 15 AND 16 (BRIDGE NO. 2). SEE NOTES AND DETAILS ON DWG. NO. BR-4-48 AND BR-4-50.
- 7 INCLUDES THE COST OF CLEANING AND APPLYING NON-PENETRATING CONCRETE SEALER TO BENTS NO. 15 AND 16 (BRIDGE NO. 2). SEE DWG. NO. BR-4-47 FOR NOTES AND DETAILS.

- 8 INCLUDES THE COST OF EPOXY COATED REINFORCING STEEL. SEE BILLS OF STEEL ON DWG. NO'S. BR-4-42, BR-4-44, BR-4-45, BR-4-48, BR-4-49, BR-4-50, BR-4-51, BR-4-53, AND BR-4-54.
- 9 INCLUDES THE COST OF JACKING AND SUPPORTING SPAN NO. 2 WHILE MAKING REPAIRS AT BENTS NO. 2 AS SHOWN IN DETAILS ON DWG. NO'S. BR-4-44, BR-4-45, AND BR-4-46. SEE SPECIAL NOTE THIS SHEET PERTAINING TO TEMPORARY JACKING AND SUPPORTING.
- 10 INCLUDES THE COST OF FULL AND PARTIAL DEPTH DECK REPAIRS TO BRIDGES NO. 1 AND NO. 2. SEE DETAIL AND NOTES ON DWG. NO. BR-4-47.
- 11 INCLUDES THE COST OF NEW TYPE "D" STRIP SEAL EXPANSION JOINTS AT BENT'S NO. 15 AND 16 (BRIDGE NO. 2). SEE NOTES AND DETAILS ON DWG. NO. BR-4-47.
- 12 INCLUDES THE COST OF REPAIRING 12'-6"± AREA OF EXTERIOR BEAM NO. 1 ON BRIDGE NO. 2, AS SHOWN IN DETAILS ON DWG. NO. BR-4-51. ALSO INCLUDES 68'-0"± OF CURB REPAIR IN SPANS NO. 16 AND 17 ON BRIDGE NO. 2, AS SHOWN IN DETAILS ON DWG. NO. BR-4-49.
- 13 INCLUDES THE COST OF REPAIRING THE CONCRETE SIDEWALK AND CURB IN AREAS DESIGNATED BY THE ENGINEER (BRIDGE NO. 1 AND NO. 2). SEE SIDEWALK REPAIR DETAIL AND NOTES ON DWG. NO. BR-4-51.
- 14 INCLUDES THE COST OF MISCELLANEOUS SPALLED CONCRETE REPAIR TO BENT CAPS AND RISER BLOCKS AT BENTS NO. 15 AND 16 ON BRIDGE NO. 2 AND BENT CAP REPAIR TO BENT NO. 18 ON BRIDGE NO. 1. SEE NOTES AND DETAILS ON DWG. NO. BR-4-50 AND BR-4-52.
- 15 INCLUDES THE COST OF BRIDGE DECK SEALANT MEMBRANE FOR THE FULL BRIDGE WIDTH AND LENGTH, PLUS 2'-0" BEYOND EACH END OF BRIDGE (TYPICAL BRIDGES NO. 1 AND NO. 2). ALSO INCLUDES THE TOTAL COST OF CLEANING AND SEALING THE EXISTING BITUMINOUS JOINTS, INCLUDING THE DECK SEALANT MEMBRANE PLACED TRANSVERSELY ACROSS THE BRIDGE DECK. FOR THE FULL ROADWAY WIDTH, AT THIRTY-TWO (32) TOTAL LOCATIONS. SEE NOTES AND DETAILS ON DWG. NO. BR-4-53.
- 16 PLACE NEW METAL GUARDRAIL ACROSS THE EXISTING CONCRETE SPINDLE RAILS (TYPICAL EACH SIDE OF THE BRIDGE). SEE DETAILS ON DWG. NO. BR-4-54 AND STD. DWG. NO. M-131-141. (BRIDGE NO. 1)

- 18 ITEM FOR INSTALLATION OF TYPE II TERMINALS, AS REQUIRED.
- 19 ITEM FOR REBUILDING SHOULDERS, AS REQUIRED.
- 20 EXISTING ASPHALT DEPTH TO BE REMOVED:
BRIDGE NO. 23-211-1.31, 3.5"
BRIDGE NO. 23-211-1.71, 2.5"

17 INCLUDES COST OF DRILLING HOLES AND PLACING 5 C.Y. OF CONCRETE UNDER THE NORTH APPROACH SLAB, BRIDGE NO. 2.

DESIGNED BY Mike Lawson DATE 3-91
 DRAWN BY [Signature] DATE 4-91
 SUPERVISED BY [Signature] DATE 4-91
 CHECKED BY [Signature] DATE 4-91

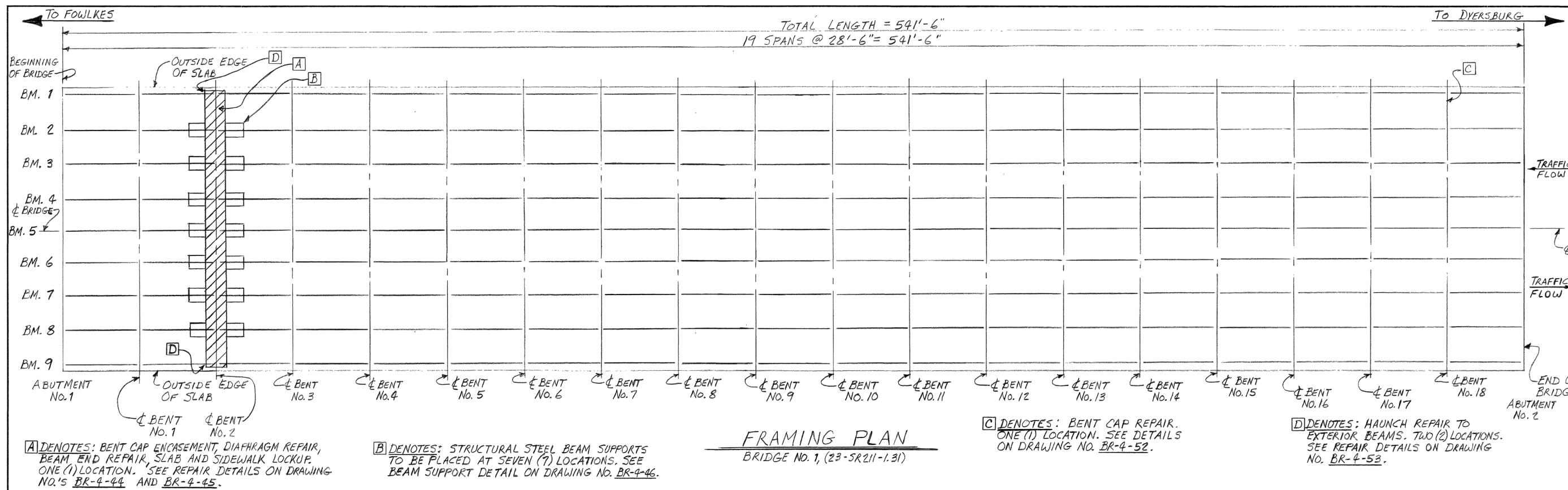
STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAYS

Estimated Quantities + General Notes
 BRIDGE NO. 1: S.R. 211 OVER OVERFLOW
 OF NORTH FORK FORKED DEER RIVER
 BRIDGE NO. 23-SR211-1.31
 BRIDGE NO. 2: STATE ROUTE 211 OVER
 NORTH FORK FORKED DEER RIVER
 BRIDGE NO. 23-SR211-1.71
 DEER COUNTY 1991

CORRECT [Signature]
 C.E. MANAGER - INSPECTION & REPAIR

APPROVED [Signature]
 DEPUTY COMMISSIONER

BR-4-40



PROJECT NO.	YEAR	SHEET NO.	
23211-4305-04	1991		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION

A DENOTES: BENT CAP ENCASUREMENT, DIAPHRAGM REPAIR, BEAM END REPAIR, SLAB AND SIDEWALK LOCKUP. ONE (1) LOCATION. SEE REPAIR DETAILS ON DRAWING NO.'S BR-4-44 AND BR-4-45.

B DENOTES: STRUCTURAL STEEL BEAM SUPPORTS TO BE PLACED AT SEVEN (7) LOCATIONS. SEE BEAM SUPPORT DETAIL ON DRAWING NO. BR-4-46.

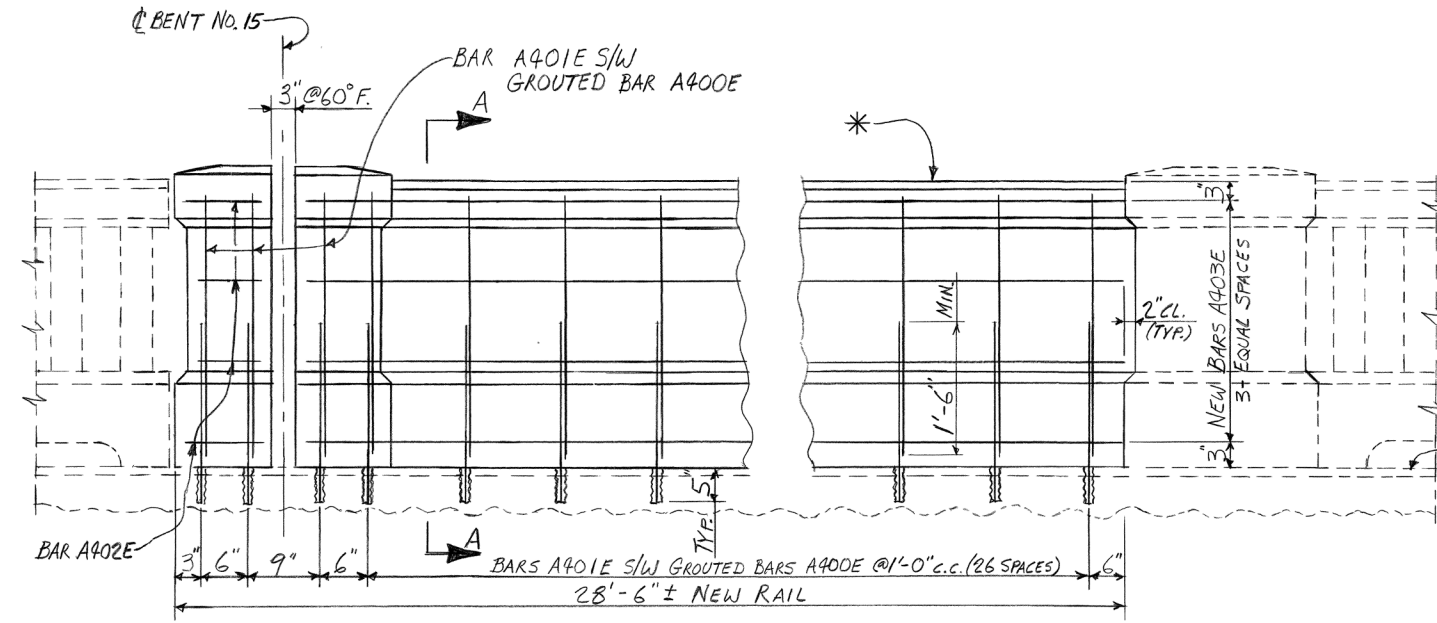
FRAMING PLAN
BRIDGE NO. 1, (23-SR211-1.31)

C DENOTES: BENT CAP REPAIR. ONE (1) LOCATION. SEE DETAILS ON DRAWING NO. BR-4-52.

D DENOTES: HAUNCH REPAIR TO EXTERIOR BEAMS. TWO (2) LOCATIONS. SEE REPAIR DETAILS ON DRAWING NO. BR-4-53.

NOTE: COST OF REMOVING EXISTING PORTABLE BARRIER RAIL, AND NEW HIGH EARLY STRENGTH (F'c = 4500 p.s.i. @28 DAY STRENGTH) CONCRETE SHALL BE PAID FOR UNDER ITEM NO. 604-10.06 CONCRETE HANDRAIL REPAIR, L.F.

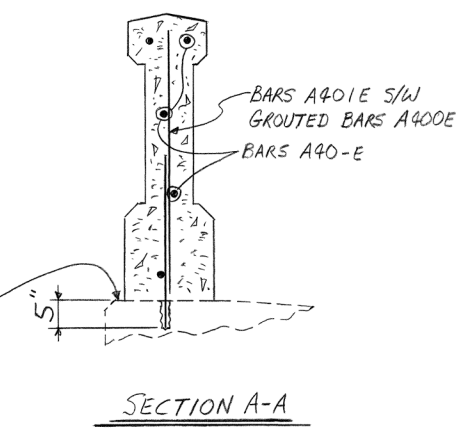
NOTE: COST OF DRILLING, GROUT, FORMING, LABOR AND ANY MISCELLANEOUS MATERIALS NECESSARY TO COMPLETE REPAIRS SHOWN IN DETAILS THIS SHEET SHALL BE INCLUDED IN ITEMS BID ON.



PART ELEVATION

SHOWING BRIDGERAIL REPAIRS AT BENT No. 15

*NOTE: THE EXISTING CONCRETE PORTABLE BARRIERS IN THIS AREA SHALL NOT BE REMOVED UNTIL TRAFFIC CONTROL HAS BEEN PLACED AND REPAIRS TO REPLACE THIS MISSING SECTION OF RAIL HAS BEGUN. THE EXISTING CONCRETE PORTABLE BARRIERS ARE TO BE STOCK PILED AT THE JOB SITE AND PICKED UP BY STATE MAINTENANCE FORCES.

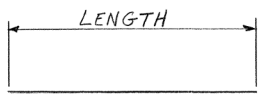


SECTION A-A

NOTE: SEE REFERENCE DRAWING NO. A-13-47 FOR DIMENSIONS.

BILL OF STEEL

BARS	SIZE	NO.	LENGTH
A400E	4	30	2'-0"
A401E	4	30	2'-10"
A402E	4	5	0'-8"
A403E	4	5	27'-0"



"A" BARS
(1'-6" MIN. LAP)

NOTE: COST OF ALL REINFORCING STEEL SHALL BE PAID FOR UNDER ITEM NO. 604-10.18 REINFORCING STEEL REPAIRS, LBS.

BRIDGERAIL REPAIR DETAILS

BRIDGE No. 2, (23-SR211-1.71)
ONE (1) LOCATION ONLY

GROUTED BARS IN DRILLED HOLES: HOLES FOR GROUTED BARS A400E SHALL BE DRILLED WITH A HIGH SPEED DRILL. THE DRILL BIT SHALL BE CAPABLE OF DRILLING THROUGH REINFORCING BARS AND CONCRETE. THE VERTICALLY DRILLED HOLES SHALL BE DRILLED 1/2" IN DIAMETER LARGER THAN THE BAR, CLEANED, PACKED WITH EPOXY GROUT AND THE BAR DRIVEN TO ITS SEAT. A LIST OF APPROVED GROUTS MAY BE OBTAINED FROM THE TENNESSEE DEPARTMENT OF TRANSPORTATION, DIVISION OF MATERIALS AND TEST.

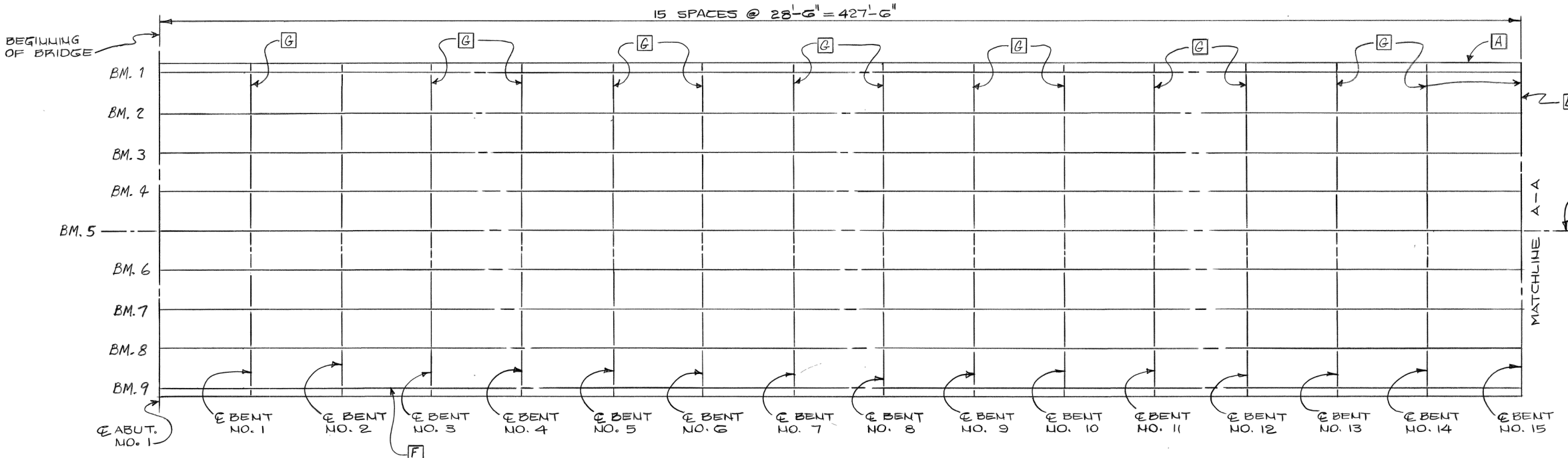
NOTE: ALL WORK MUST MEET WITH THE FULL SATISFACTION OF THE ENGINEER.

DESIGNED BY M. LAWSON DATE 4-91
DRAWN BY G. ISBELL DATE 4-91
SUPERVISED BY GENTRY DATE 4-91
CHECKED BY GRAVES DATE 4-91

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS
BRIDGE REPAIR DETAILS
BRIDGE NO. 1 STATE ROUTE 211 OVER OVERFLOW OF NORTH FORK OF FORKED DEER RIVER
BRIDGE NO. 23-SR211-1.31
BRIDGE NO. 2 SR211 OVER NORTH FORK OF FORKED DEER RIVER
BRIDGE NO. 23-SR211-1.71
DYER COUNTY
1991
CORRECT *Larry E. Hinds*
C.E. MANAGER - INSPECTION & REPAIR
APPROVED *Flavis Evans*
DEPUTY COMMISSIONER

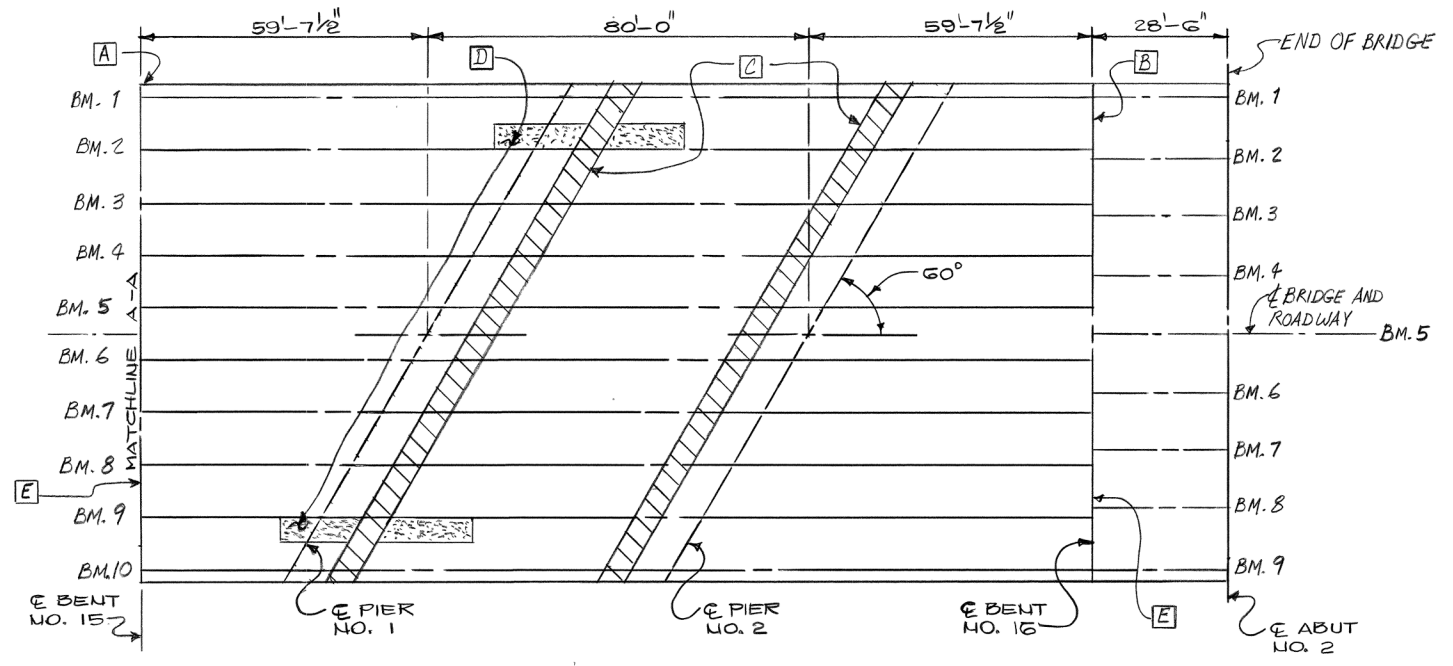
← TO FOWLKES

PROJECT NO.	YEAR	SHEET NO.	
23211-4305-04	1991		
REVISIONS			
NO	DATE	BY	BRIEF DESCRIPTION



PART FRAMING PLAN SPANS NO. 1 THRU NO. 15
BRIDGE NO. 2 (23-SR211-1.71)

TO DYERSBURG →



PART FRAMING PLAN SPANS NO. 16 THRU 19
BRIDGE NO. 2 (23-SR211-1.71)

- A** DENOTES: CONCRETE RAIL REPAIR ONE (1) LOCATION. SEE REPAIR DETAILS ON DRAWING NO. BR-4-42.
- B** DENOTES: PLACEMENT OF NEW STRIP SEAL EXPANSION JOINTS. TWO (2) LOCATIONS. SEE DETAILS ON DRAWING NO. BR-4-42 AND REFERENCE DRAWING NO.'S M-106-76, M-106-77, AND M-106-78.
- C** DENOTES: SLAB LOCK-UP AT TWO (2) LOCATIONS. SEE DETAILS ON DRAWING NO. BR-4-48.
- D** DENOTES: CURB AND SIDEWALK REPAIR AT TWO (2) LOCATIONS. SEE DETAILS ON DRAWING NO. BR-4-49.
- E** DENOTES: DIAPHRAGM, AND MISCELLANEOUS CONCRETE REPAIRS TO RISER BLOCKS. SEE DETAILS ON DRAWING NO. BR-4-50.
- F** DENOTES: BEAM REPAIR AT ONE (1) LOCATION. SEE REPAIR DETAILS ON DRAWING NO. BR-4-51.
- G** DENOTES: MISCELLANEOUS CONCRETE REPAIRS TO BENT CAPS. SEE DETAILS ON DRAWING NO. BR-4-52.

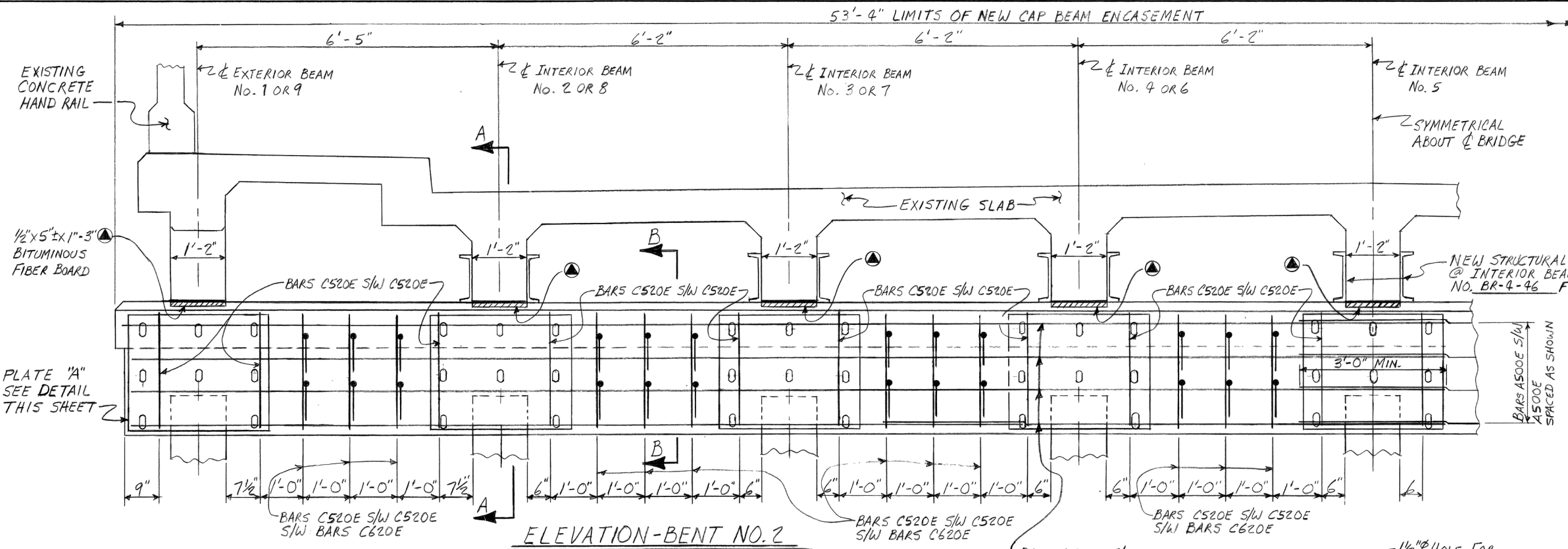
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS
BRIDGE REPAIR DETAILS
BRIDGE NO. 2 STATE ROUTE 211 OVER NORTH
FORK FORKED DEER RIVER
BRIDGE NO. 23-SR211-1.71
DYER COUNTY
1991

DESIGNED BY MIKE LAWSON DATE 4-91
DRAWN BY AMIR SHARIFI DATE 4-91
SUPERVISED BY R. GENTRY DATE 4-91
CHECKED BY GRAVES DATE 4-91

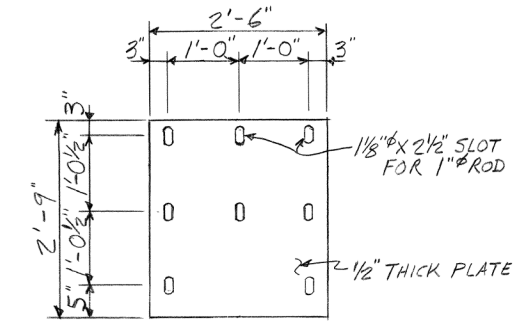
CORRECT *Larry E. Hardy*
C.E. MANAGER - INSPECTION & REPAIR
APPROVED *Larry E. Hardy*
DEPUTY COMMISSIONER

BR-4-43

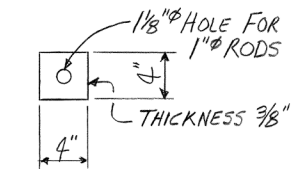
PROJECT NO.	YEAR	SHEET NO.	
23211-4305-04	1991		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION



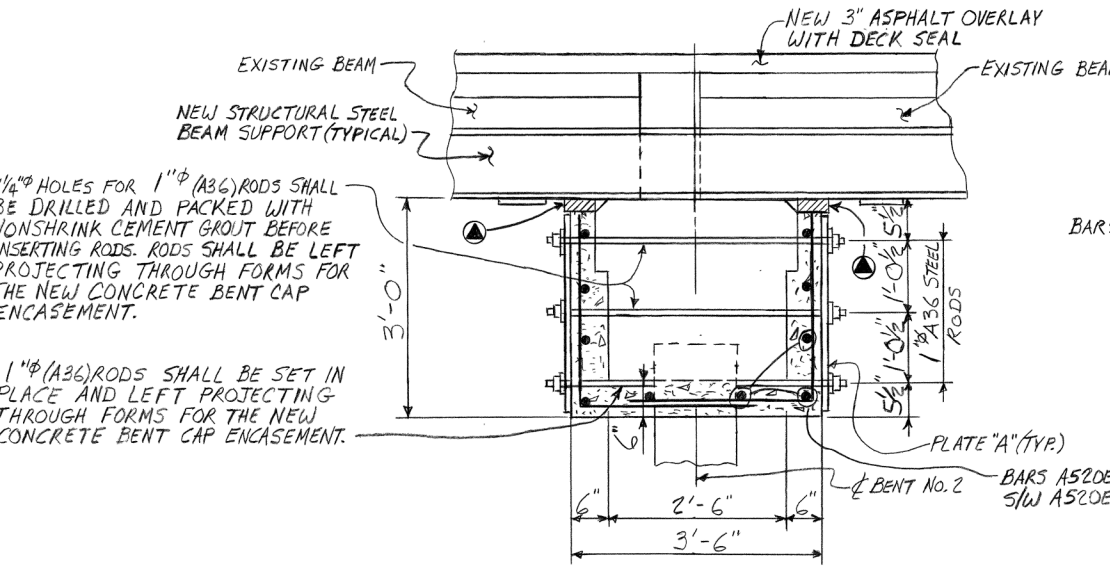
ELEVATION-BENT NO. 2



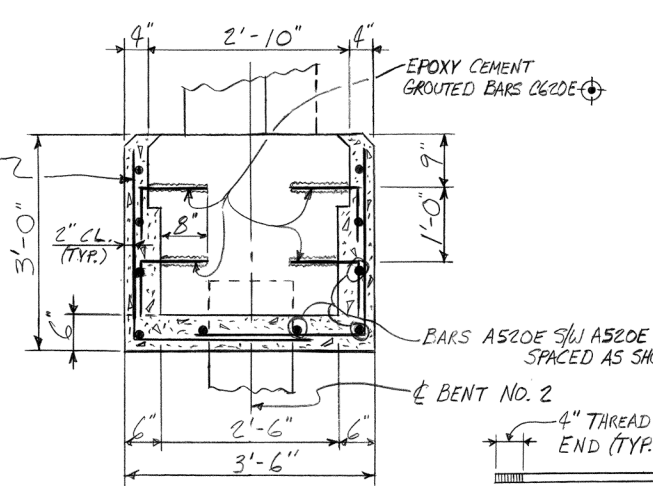
ENCASEMENT PLATE "A" DETAIL
(18 PLATES REQUIRED)



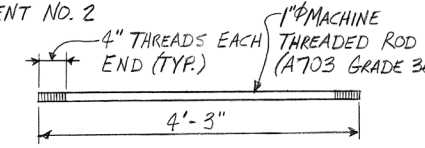
SQUARE WASHER DETAIL
(A36)



SECTION A-A



SECTION B-B
(SHOWING REINFORCING STEEL)

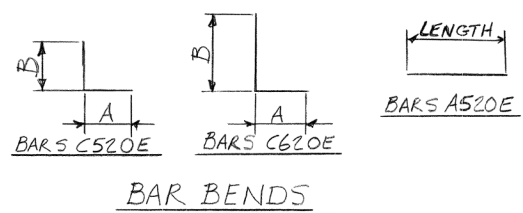


THREADED ROD DETAIL
(72 REQ. AT BENT NO. 2)

BILL OF STEEL
ONE (1) LOCATION ONLY

BAR SIZE	NO.	DIM. "A"	DIM. "B"	LENGTH
A520E	5	20	-	28'-3"
C520E	5	84	2'-6"	5'-2"
C620E	6	96	1'-0"	2'-0"

"E" DENOTES: EPOXY COATED REINFORCING STEEL.



BAR BENDS

NOTE: COST OF NEW HIGH EARLY STRENGTH (F_c = 4500 p.s.i. @ 28 DAY STRENGTH) CONCRETE SHALL BE PAID FOR UNDER ITEM NO. 604-10.02, CONCRETE REPAIRS, C.Y.

NOTE: COST OF DRILLING, GROUT, FIBER BOARD, FORMING, LABOR AND ANY MISCELLANEOUS MATERIALS NECESSARY TO COMPLETE ALL REPAIRS SHOWN IN DETAILS THIS SHEET SHALL BE INCLUDED IN ITEMS BID ON.

NOTE: COST OF ALL REINFORCING STEEL SHALL BE PAID FOR UNDER ITEM NO. 604-10.18, REINFORCING STEEL (REPAIRS), LBS.

NOTE: COST OF NEW STRUCTURAL STEEL PLATES, THREADED RODS, NUTS AND WASHERS SHALL BE PAID FOR UNDER ITEM NO. 602-10.32, STRUCTURAL STEEL (REPAIRS), LBS.

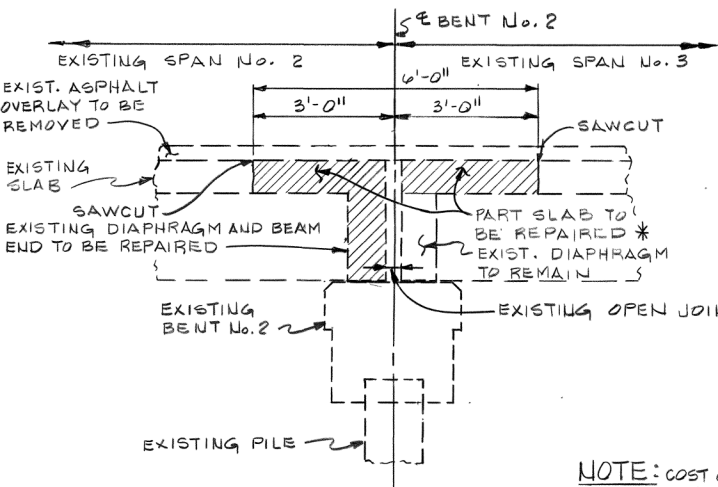
GRouted BARS IN DRILLED HOLES: HOLES FOR GROUTED BARS C600E SHALL BE DRILLED WITH HIGH SPEED DRILL. THE DRILL BIT SHALL BE CAPABLE OF DRILLING THROUGH REINFORCING BARS AND CONCRETE. THE HORIZONTALLY DRILLED HOLES SHALL BE DRILLED 1/2" IN DIAMETER LARGER THAN THE BAR, CLEANED, PACKED WITH A NON-SHRINK CEMENT GROUT AND THE BAR DRIVEN TO ITS SEAT. A LIST OF APPROVED GROUTS MAY BE OBTAINED FROM THE TENNESSEE DEPARTMENT OF TRANSPORTATION, DIVISION OF MATERIALS AND TESTS.

NOTE: 8" DEEP 1/4" HOLES FOR GROUTED BARS C620E.

DESIGNED BY M. LAWSON DATE 4-91
 DRAWN BY G. ISBELL DATE 4-91
 SUPERVISED BY GENTRY DATE 4-91
 CHECKED BY GRAVER DATE 4-91

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAYS
 BENT NO. 2 REPAIR DETAILS
 BRIDGE NO. 1 S.R. 211 OVER OVERFLOW
 OF NORTH FORK FORKED DEER RIVER
 BRIDGE NO. 23-SR211-1.31
 DYER COUNTY
 1991
 CORRECT *Larry E. Hinds*
 C.E. MANAGER - INSPECTION & REPAIR
 APPROVED *Lewis Evans*
 DEPUTY COMMISSIONER
 BR-4-44

PROJECT NO.	YEAR	SHEET NO.	
23211-4305-04	1991		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION



ELEVATION
SHOWING AREAS OF REPAIR AT BENT No. 2.

NOTE: SEE SPECIAL NOTE PERTAINING TO JACKING AND TEMPORARY SUPPORTS ON DWG. No. BR-4-40.

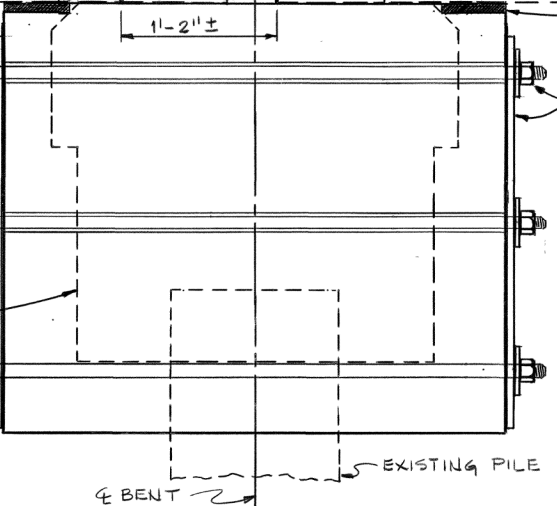
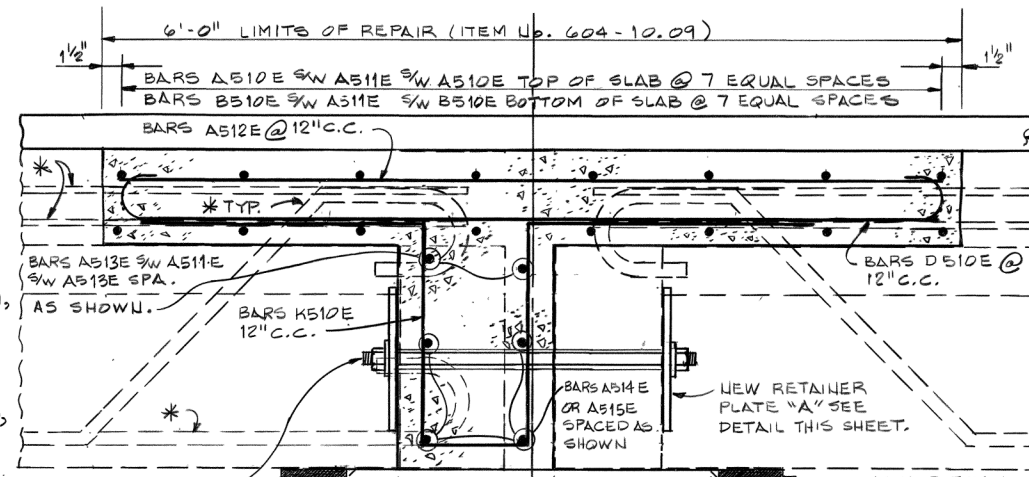
*NOTE: WHEN REMOVING EXISTING CONCRETE SLAB, DIAPHRAGMS AND BEAM ENDS, EXTREME CARE SHALL BE TAKEN SO AS NOT TO DAMAGE THE EXISTING LONGITUDINAL REINFORCING STEEL. ALL EXISTING LONGITUDINAL REINFORCING STEEL SHALL BE BLAST CLEANED AND INCORPORATED IN WITH NEW REINFORCING STEEL. ALL WORK MUST MEET WITH THE FULL SATISFACTION OF THE ENGINEER.

NOTE: COST OF NEW HIGH EARLY STRENGTH (F_c = 4500 p.s.i. @ 28 DAY STRENGTH) CONCRETE SHALL BE PAID FOR UNDER ITEM No. 604-10.09, CONCRETE, C.Y.

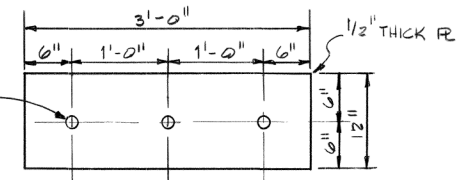
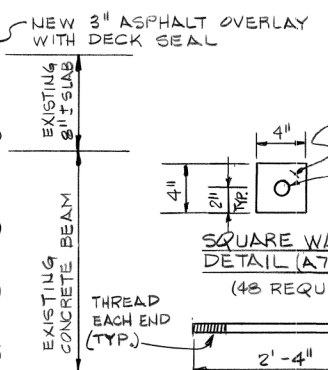
NOTE: COST OF NEW STRUCTURAL STEEL PLATES, THREADED RODS, HEX NUTS AND WASHERS SHALL BE PAID FOR UNDER ITEM No. 602-10.32, STRUCTURAL STEEL (REPAIRS), LBS.

NOTE: COST OF ALL EPOXY COATED REINFORCING STEEL SHALL BE PAID FOR UNDER ITEM No. 604-10.18, REINFORCING STEEL (REPAIRS), LBS.

DRILL A 1/2" Ø HOLE FOR 1" Ø RODS (A36) WITH HEX NUTS AND WASHERS. PACK WITH NON-SHRINK CEMENT GROUT BEFORE INSERTING RODS. LEAVE RODS PROJECTING THROUGH FORMS FOR NEW RETAINER PLATE "A".



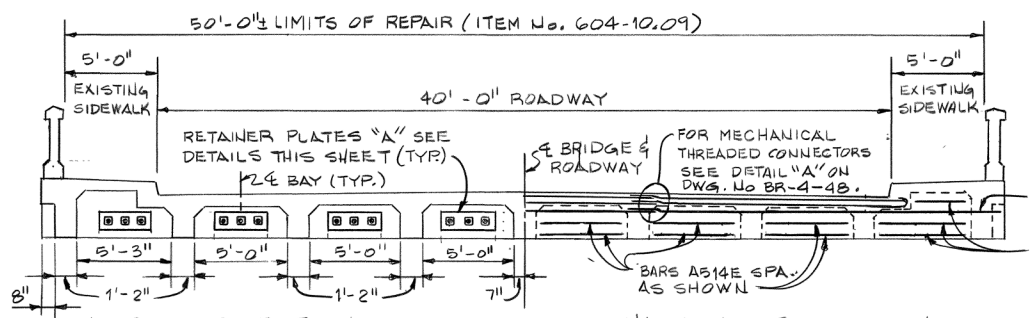
ELEVATION
SHOWING NEW REPAIRS TO BENT No. 2.



RETAINER PLATE "A" DETAIL
16 PLATES REQUIRED = (2 PER DIAPHRAGM)

NOTE: ALL NEW TRANSVERSE REINFORCING STEEL SHALL SPLICE WITH MECHANICAL THREADED CONNECTORS. SEE DETAIL "A" ON DWG. No. BR-4-48.

NOTE: COST OF REMOVING THE EXISTING SLAB, DIAPHRAGMS AND BEAM ENDS FOR THE LIMITS SHOWN SHALL BE INCLUDED UNDER ITEM No. 604-10.09, CONCRETE, C.Y.

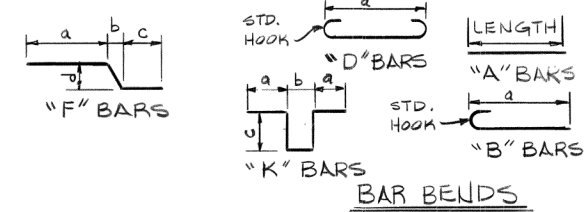


CROSS SECTION
SHOWING NEW RETAINERS IN PLACE (LEFT) AND SHOWING DIAPHRAGM AND SLAB REPAIR (RIGHT)

EXISTING BENT CAP TO BE ENCASED SEE DWG. No. BR-4-44 FOR DETAILS.

BILL OF STEEL

BARS	SIZE	No REQD	BENDING DIMENSIONS				LENGTH
			a	b	c	d	
A510E	5	16	—	—	—	—	14'-3"
A511E	5	18	—	—	—	—	12'-9"
A512E	5	43	—	—	—	—	5'-9"
A513E	5	4	—	—	—	—	19'-5"
A514E	5	24	—	—	—	—	4'-9"
A515E	5	12	—	—	—	—	5'-0"
B510E	5	16	14'-3"	—	—	—	14'-10"
D310E	3	12	5'-9"	—	—	—	6'-7"
D510E	5	43	5'-9"	—	—	—	6'-11"
F410E	4	16	4'-9"	1"	1'-0"	10"	6'-7"
K510E	5	43	2'-0"	10"	1'-10"	—	8'-6"
K511E	5	8	2'-0"	10"	2'-7"	—	10'-0"



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

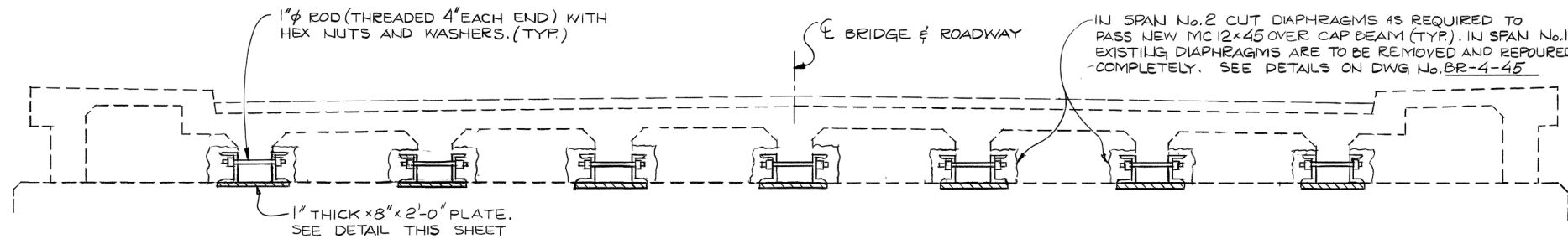
BENT No. 2 REPAIR DETAILS
BRIDGE No. 1
STATE ROUTE 211 OVER OVERFLOW OF
NORTH FORK FORKED DEER RIVER
BRIDGE No. 23-SR211-1.31
DYER COUNTY
1991

DESIGNED BY MIKE LAWSON DATE 4-91
DRAWN BY DON KIMBER DATE 4-91
SUPERVISED BY GENTRY DATE 4-91
CHECKED BY MOUNTURFF & GLASGOW DATE 4-91

CORRECT Larry E. Hinder
C.E. MANAGER - INSPECTION & REPAIR
APPROVED Lewis Evans
DEPUTY COMMISSIONER

BR-4-45

PROJECT NO.	YEAR	SHEET NO.	
23211-4305-04	1991		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION

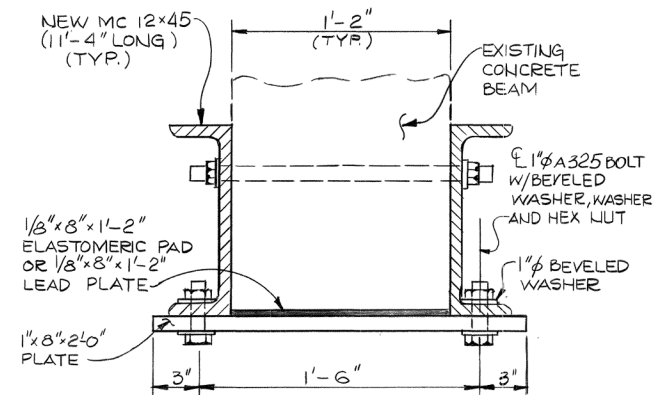


TYPICAL CROSS SECTION SHOWING STRUCTURAL STEEL BEAM SUPPORTS

AT BENT No. 2 ONLY. TOTAL SEVEN (7) REQ'D
BRIDGE No. 1 (BR. No. 23-SR211-1.31)

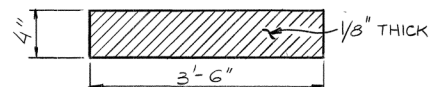
NOTE: THE CONTRACTOR SHALL REPOUR THE AREAS WHERE THE EXISTING CONCRETE DIAPHRAGM IS REMOVED, TO ACCOMMODATE THE NEW STRUCTURAL STEEL BEAM SUPPORTS. THESE AREAS SHALL BE REPOURED WITH HIGH EARLY STRENGTH CONCRETE, $f'c = 4,500$ P.S.I., BACK TO ORIGINAL LINES.

NOTE "A": THE CONTRACTOR SHALL DRILL $1\frac{1}{4}$ " ϕ HOLES THROUGH THE EXISTING CONCRETE BEAM TO ACCOMMODATE $1\frac{1}{4}$ " ϕ THREADED ROD. HOLES SHALL BE DRILLED WITH A HIGH SPEED DRILL. THE DRILL BIT SHALL BE CAPABLE OF DRILLING THROUGH EXISTING CONCRETE AND REINFORCING STEEL. AFTER DRILLING, FILL THE HOLES WITH APPROVED NON-SHRINK CEMENT GROUT JUST PRIOR TO PLACING RODS. $1\frac{1}{8}$ " ϕ HOLES FOR THE $1\frac{1}{4}$ " ϕ RODS SHALL NOT BE DRILLED IN THE MC 12x45 CHANNELS UNTIL THE $1\frac{1}{4}$ " ϕ HOLES HAVE BEEN DRILLED IN THE EXISTING CONCRETE BEAMS. THE CONTRACTOR SHALL TIGHTEN NUTS TO A SNUG FIT AND BUFF THE THREADS.

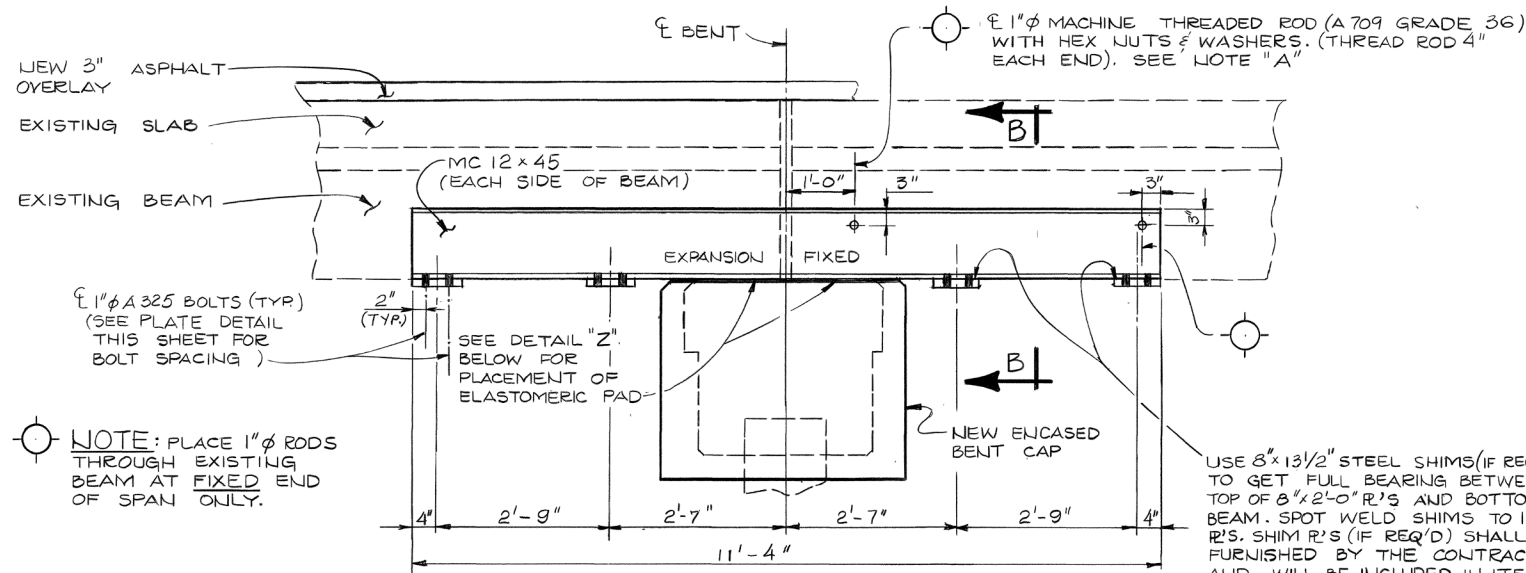


SECTION B-B

(SHOWING NEW MC 12x45, NEW ELASTOMERIC PAD, AND NEW 1"x8"x2'-0" R.)

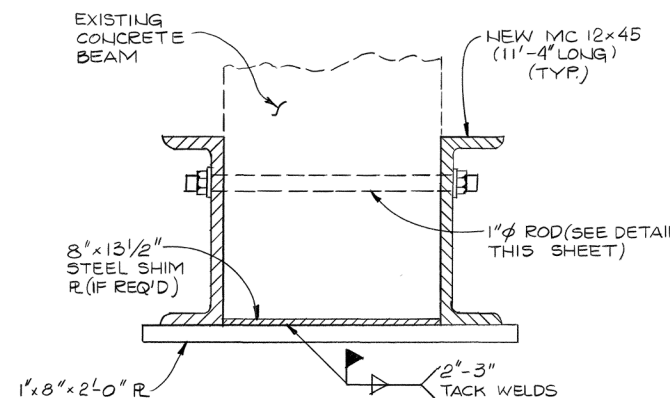


ELASTOMERIC PAD DETAIL



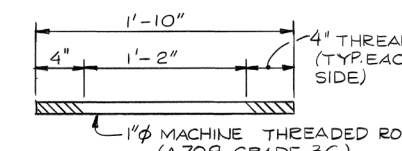
PARTIAL ELEVATION

SHOWING STRUCTURAL STEEL BEAM SUPPORTS AT BENT No. 2 ONLY. TOTAL SEVEN (7) REQ'D.



SECTION B-B

SHOWING NEW MC 12x45, NEW STEEL SHIM R, AND NEW 1"x8"x2'-0" R.



THREADED ROD DETAIL

PAINTING THE NEW WORK: PAINT SHALL BE SYSTEM "B"-INORGANIC ZINC-PAINT SYSTEM, EXCEPT A URETHANE FINISH COAT SHALL BE USED IN LIEU OF VINYL FINISH COAT. COLOR OF THE URETHANE FINISH COAT SHALL COMPLY WITH FEDERAL STANDARD No. 595a, 24110 BRIGHT GREEN. SEE SECTIONS 603 AND 910 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION. SEE SPECIAL PROVISION No. 603A REGARDING PAINTING.

NOTE: A LIST OF APPROVED GROUTS MAY BE OBTAINED FROM THE TENNESSEE DEPARTMENT OF TRANSPORTATION, DIVISION OF MATERIALS AND TESTS.

NOTE: THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE HEADQUARTERS BRIDGE INSPECTION AND REPAIR OFFICE FOR APPROVAL PRIOR TO ANY SHOP FABRICATION.

STRUCTURAL STEEL: SHALL CONFORM TO AASHTO M 270 GRADE 36 (ASTM A 709 GRADE 36)

NOTE: COST OF ALL STRUCTURAL STEEL, RODS AND BOLTS WITH HEX NUTS AND WASHERS, REPOURING PORTIONS OF THE CONCRETE DIAPHRAGMS, PAINTING AND ELASTOMERIC BEARING PADS SHALL BE PAID FOR UNDER ITEM No. 602-10.25, STRUCTURAL STEEL BEAM SUPPORTS, EACH.

NOTE: COST OF REMOVING AND REPOURING PORTIONS OF CONCRETE DIAPHRAGMS, CONCRETE GROUTS, BITUMINOUS FIBER BOARD, LABOR AND ANY MISCELLANEOUS MATERIALS NECESSARY FOR THE COMPLETE INSTALLATION OF THE STRUCTURAL STEEL BEAM SUPPORTS SHALL BE INCLUDED IN ITEMS BID ON.

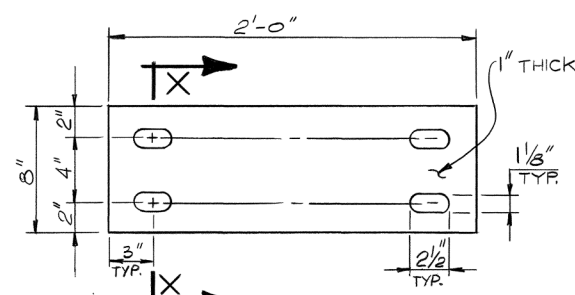
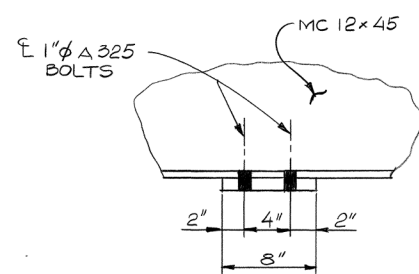
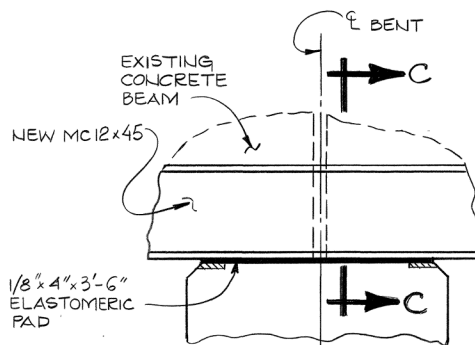


PLATE DETAIL

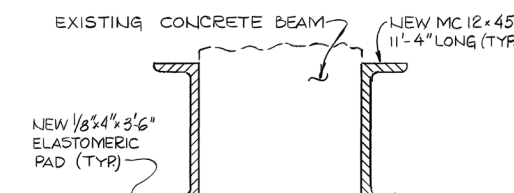


SECTION "X-X"



DETAIL "Z"

SHOWING PLACEMENT OF ELASTOMERIC PADS AT ALL STRUCTURAL STEEL BEAM SUPPORT LOCATIONS (7 REQ'D)



SECTION "C-C"

SHOWING PLACEMENT OF ELASTOMERIC PADS AT ALL STRUCTURAL STEEL BEAM SUPPORT LOCATIONS (2 REQ'D PER LOCATION)

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

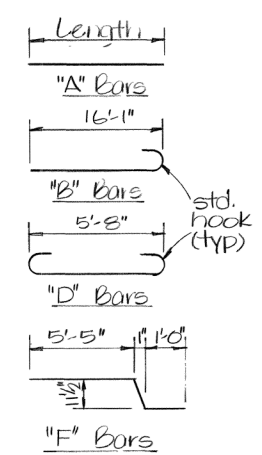
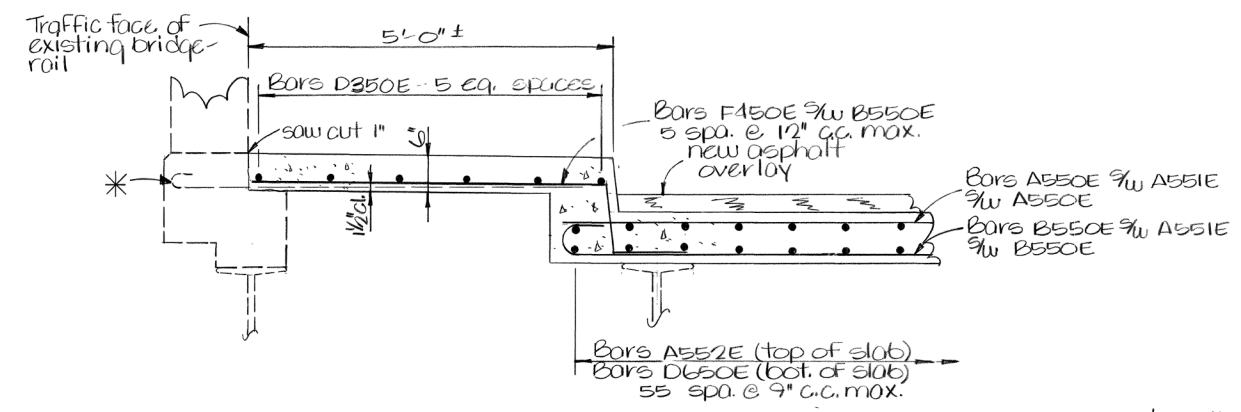
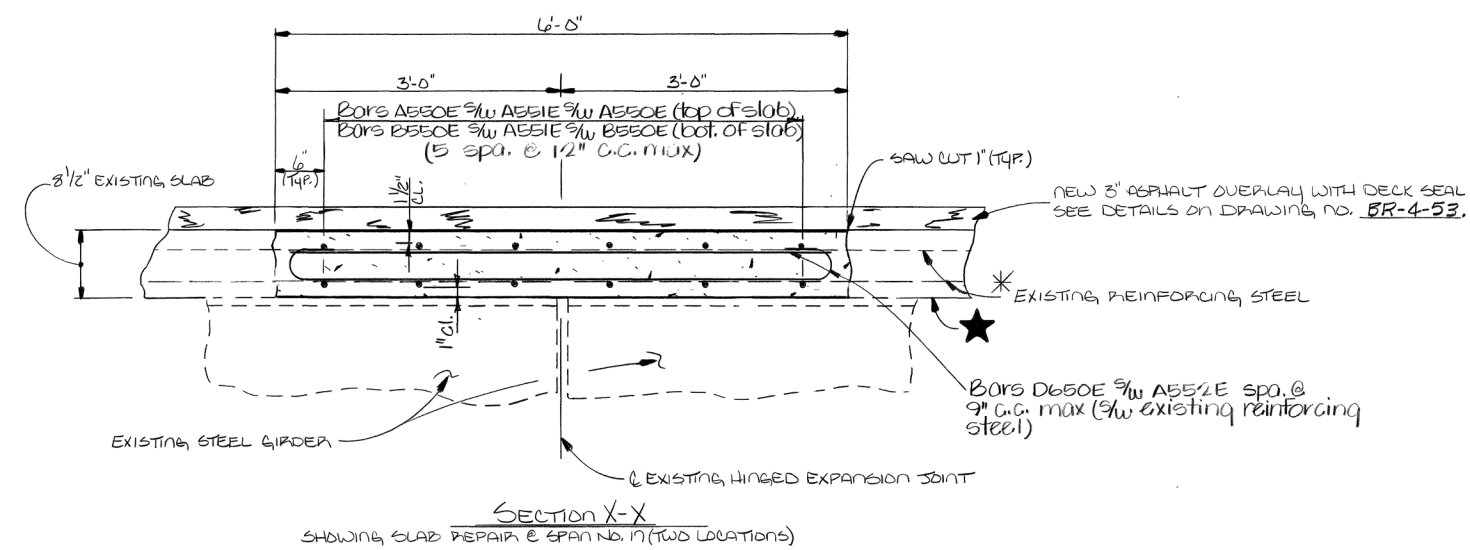
STRUCTURAL STEEL BEAM SUPPORT DETAILS
BRIDGE No. 1: S.R. 211 OVER OVERFLOW OF
NORTH FORK FORKED DEER RIVER
BRIDGE No. 23-SR211-1.31
DYER COUNTY
1991

DESIGNED BY MIKE LAWSON DATE 4-91
DRAWN BY L. LUBARSKY DATE 4-91
SUPERVISED BY R. GENTRY DATE 4-91
CHECKED BY W. GRAVES DATE 4-91

CORRECT *Larney & Hinds*
C.E. MANAGER - INSPECTION & REPAIR
APPROVED *Larney & Hinds*
DEPUTY COMMISSIONER

BR-4-46

PROJECT NO.	YEAR	SHEET NO.	
23211-4305-04	1991		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION



Bill of Steel

Bars	Size	No. Req'd	Length
A552E	5	24	16'-1"
A551E	5	24	14'-8"
A552E	5	112	6'-7"
B550E	5	24	16'-8"
D350E	3	24	6'-6"
D650E	6	112	7'-0"
F450E	4	24	7'-5"

"E" Denotes: Epoxy coated reinforcing steel.

*NOTE: EXTREME CARE SHALL BE TAKEN WHEN REMOVING CONCRETE SO AS NOT TO DAMAGE THE EXISTING REINFORCING STEEL. ALL EXISTING REINFORCING STEEL SHALL BE BLAST CLEANED AND INCORPORATED IN WITH NEW REINFORCING STEEL. ALL WORK MUST MEET WITH THE FULL SATISFACTION OF THE ENGINEER.

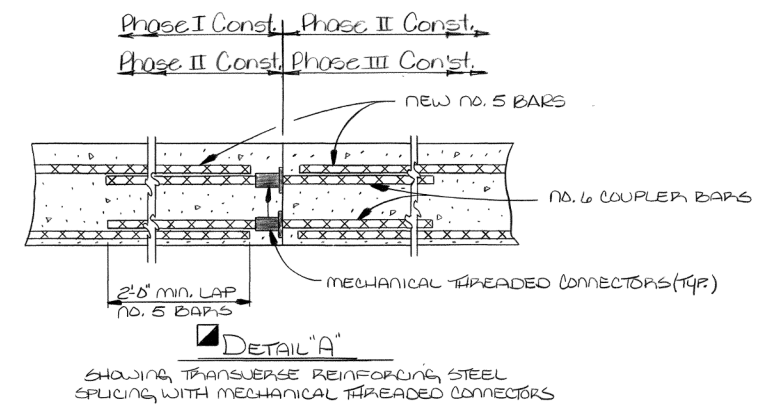
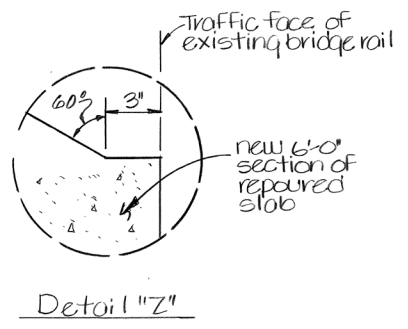
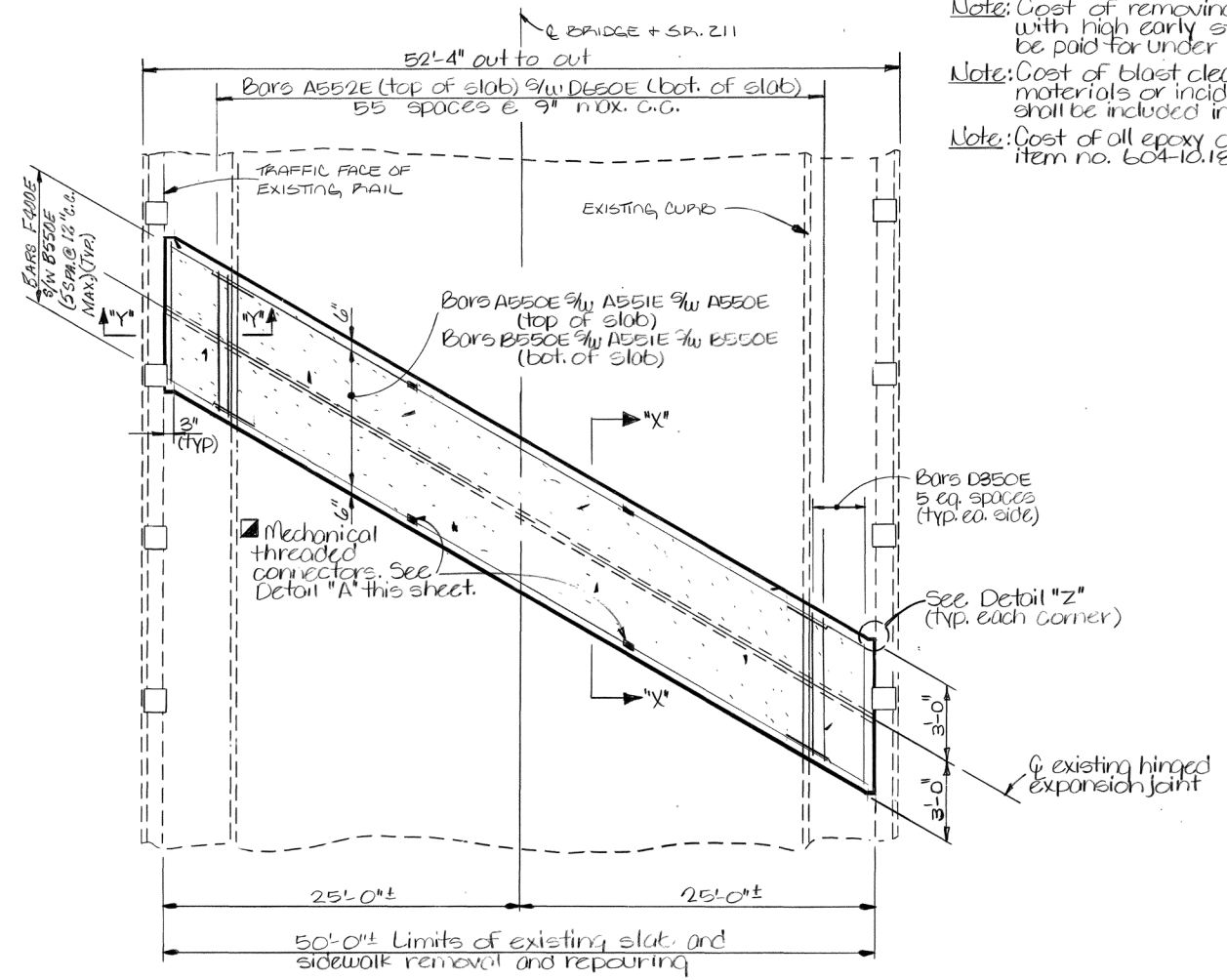
*NOTE: THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR SUPPORTING THE PORTIONS OF THE SLAB WHICH ARE NOT TO BE REMOVED WHEN MAKING REPAIRS WHICH REQUIRE THE REMOVAL OF THE END SUPPORT OF A SLAB SPAN. DETAILS OF THE SUPPORT SYSTEM SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. COST OF THE SUPPORT SYSTEM TO BE INCLUDED IN ITEMS BID ON.

Note: Transverse reinforcing steel shall be spliced with mechanical threaded connectors. Installation must meet with the full approval of the Engineer. Cost to be included in item no. 604-10.18, Reinforcing Steel (Repairs), Lbs. See detail "A" this sheet.

Note: Cost of removing the existing slab and sidewalks and repairing with high early strength concrete, for the limits shown, shall be paid for under item no. 604-10.09, Concrete, C.Y.

Note: Cost of blast cleaning, saw cutting, and any other miscellaneous materials or incidentals required to complete the repairs as shown, shall be included in items bid on.

Note: Cost of all epoxy coated reinforcing steel shall be paid for under item no. 604-10.18, Reinforcing Steel (Repairs), Lbs.



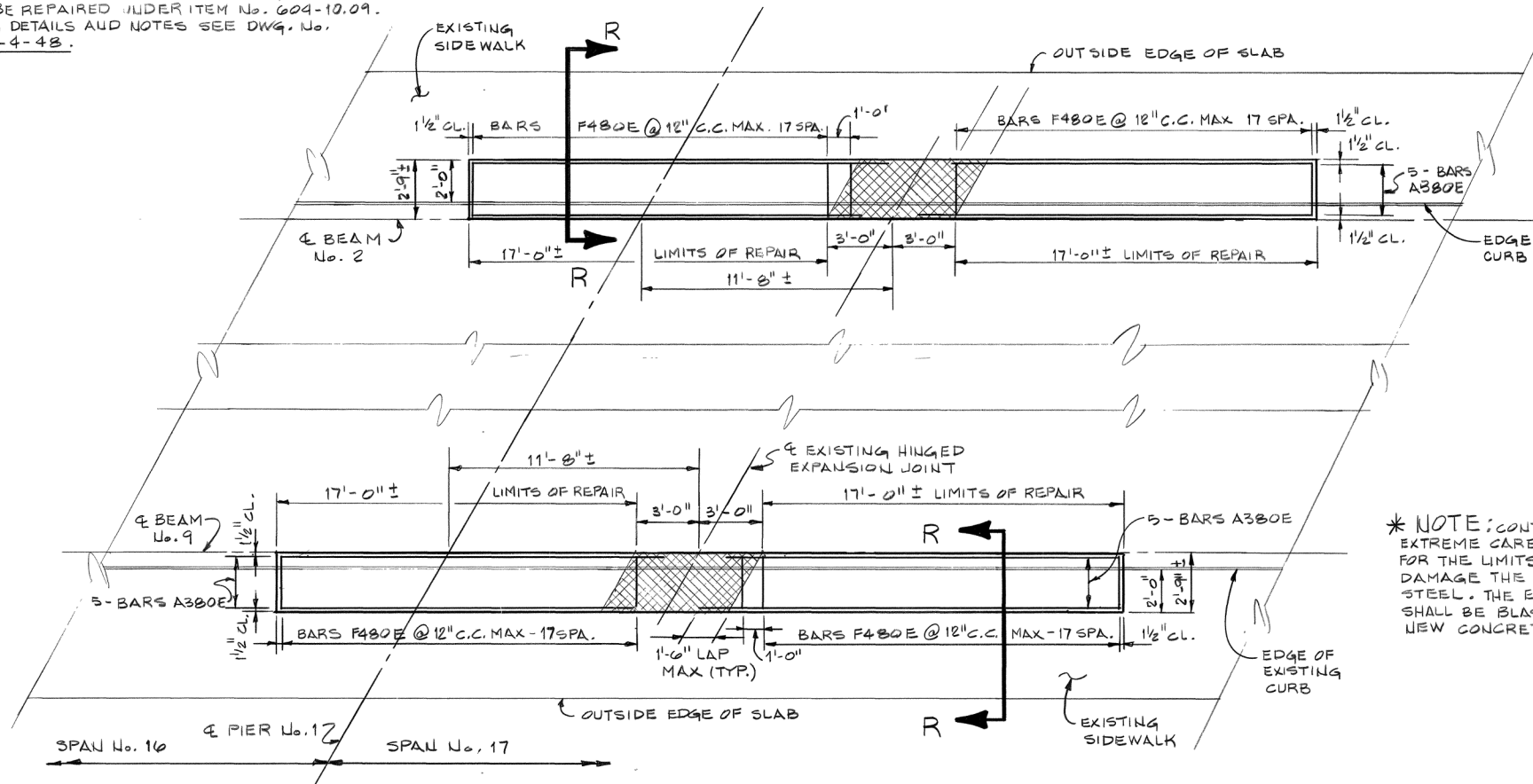
DESIGNED BY Mike Lawson DATE 3-91
 DRAWN BY [Signature] DATE 4-91
 SUPERVISED BY [Signature] DATE 4-91
 CHECKED BY [Signature] DATE 4-91

CORRECT [Signature] JERRY E. HINDS
 C.E. MANAGER - INSPECTION & REPAIR
 APPROVED [Signature] DEPUTY COMMISSIONER

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAYS
 SLAB LOCK-UP DETAILS
 BRIDGE No. 2, S.R. 211 OVER
 NORTH FORK FORKED DEER RIVER
 BRIDGE No. 23-5P211-.71
 DYER COUNTY
 1991

BR-4-48

DENOTES: AREA OF BRIDGE TO BE REPAIRED UNDER ITEM No. 604-10.09. FOR DETAILS AND NOTES SEE DWG. No. BR-4-43.



PARTIAL SLAB PLAN

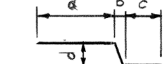
SHOWING ADDITIONAL CURB AND SIDEWALK REPAIR AT PIER No. 1 FOR LOCATION SEE FRAMING PLAN ON DRAWING No. BR-4-43.

BILL OF STEEL

BARS	SIZE	No REQ'D	BENDING DIMENSIONS				LENGTH
			a	b	c	d	
A380E	3	20					20'-0"
F480E	4	74	1'-5"	1"	1'-0"	1'-0"	3'-5"

LENGTH

"A" BARS



"F" BARS

BAR BENDS

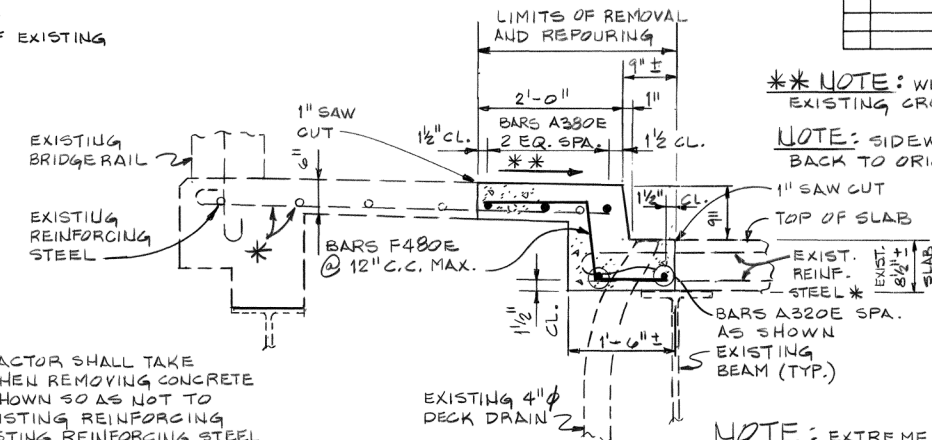
E DENOTES EPOXY COATED REINFORCING STEEL

NOTE: COST OF ALL EPOXY COATED REINFORCING STEEL SHALL BE PAID FOR UNDER ITEM No. 604-10.18, REINFORCING STEEL (REPAIRS), LBS.

PROJECT NO.	YEAR	SHEET NO.
23211-4305-04	1991	

REVISIONS

NO	DATE	BY	BRIEF DESCRIPTION



** NOTE: WHEN REPAIRING TOP OF SIDEWALK, EXISTING CROSS SLOPE SHALL BE MAINTAINED.

NOTE: SIDEWALK AND CURB SHALL BE POURED BACK TO ORIGINAL LINES.

NOTE: COST OF REMOVING PORTIONS OF THE EXISTING CURBS AND SIDEWALKS, REPAIRING WITH HIGH EARLY STRENGTH CONCRETE FOR THE LIMITS SHOWN SHALL BE PAID FOR UNDER ITEM No. 604-10.42, CONCRETE REPAIRS, C.F.

* NOTE: CONTRACTOR SHALL TAKE EXTREME CARE WHEN REMOVING CONCRETE FOR THE LIMITS SHOWN SO AS NOT TO DAMAGE THE EXISTING REINFORCING STEEL. THE EXISTING REINFORCING STEEL SHALL BE BLAST CLEANED BEFORE POURING NEW CONCRETE.

NOTE: EXTREME CARE SHALL BE TAKEN WHEN REMOVING EXISTING CURBS SO AS NOT TO DAMAGE THE EXISTING METAL DECK DRAINS. CONTRACTOR TO INSURE THAT ALL DECK DRAINS STAY INTACT AND ARE CLEANED OF ALL DEBRIS. COST OF CLEANING DRAINS SHALL BE INCLUDED IN ITEMS BID ON.

SECTION "R-R"

NOTE: COST OF SAW CUTTING, BLAST CLEANING, ALL MISCELLANEOUS MATERIALS AND/OR INCIDENTALS NECESSARY TO COMPLETE THE REPAIRS SHOWN SHALL BE INCLUDED UNDER ITEMS BID ON.

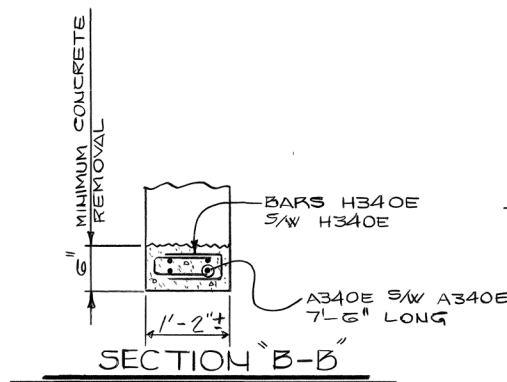
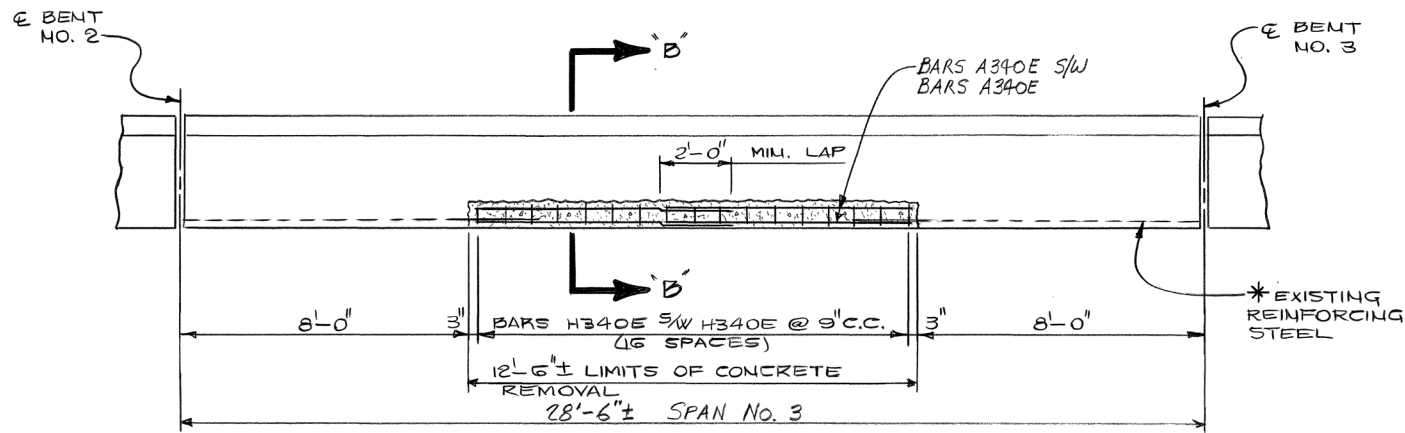
DESIGNED BY MIKE LAWSON DATE 4-91
 DRAWN BY DON KIMBER DATE 4-91
 SUPERVISED BY RICHARD GENTRY DATE 4-91
 CHECKED BY N. GLASGOW DATE 4-91

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAYS

BRIDGE REPAIR DETAILS
 BRIDGE No. 2
 STATE ROUTE 211 OVER NORTH FORK
 FORKED DEER RIVER
 BRIDGE No. 23-SR211-1.71
 DYER COUNTY
 1991

CORRECT *Larry E. Hinds*
 C.E. MANAGER - INSPECTION & REPAIR
 APPROVED *Louis Evans*
 DEPUTY COMMISSIONER

BR-4-49



NOTE: ALL AREAS OF REPAIR SHALL BE POURED BACK TO ORIGINAL LINES.

CONCRETE: SEE NOTE ON DWG. NO. BR-4-40.

NOTE: COARSE AGGREGATE FOR THE CONCRETE USED IN REPAIRS AS SHOWN. THESE DETAILS SHALL BE SIZE 67 STONE.

*DENOTES: EXTREME CARE SHALL BE TAKEN WHEN REMOVING THE EXISTING SPALLED CONCRETE SO AS NOT TO DAMAGE THE EXISTING REINFORCING STEEL. ALL EXPOSED EXISTING REINFORCING STEEL SHALL RECEIVE A COMPLETE BLAST CLEANING TO REMOVE ALL RUST. ALL EXISTING REINFORCING STEEL SHALL REMAIN IN PLACE. ALL WORK MUST MEET WITH THE FULL APPROVAL OF THE ENGINEER.

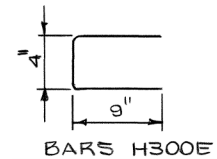
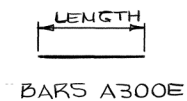
PROJECT NO.	YEAR	SHEET NO.	
23211-4305-04	1991		
REVISIONS			
NO	DATE	BY	BRIEF DESCRIPTION

NOTE: COST OF CONCRETE REMOVAL, BEAM SUPPORT SYSTEM, AND NEW HIGH EARLY STRENGTH CONCRETE SHALL BE PAID FOR UNDER ITEM NO. 604-10.42 CONCRETE REPAIRS C.F.

NOTE: COST OF SAW CUTTING EXISTING SPALLED CONCRETE, BLAST CLEANING EXISTING REINFORCING STEEL, FORMING, LABOR AND ANY MISCELLANEOUS MATERIALS NECESSARY TO COMPLETE THE REPAIRS AS SHOWN IN THESE DETAILS SHALL BE INCLUDED IN ITEMS BID ON.

NOTE: COST OF EPOXY COATED REINFORCING STEEL SHALL BE PAID FOR UNDER ITEM NO. 604-10.18, REINFORCING STEEL (REPAIRS) LBS.

SPECIAL NOTE TO CONTRACTOR: THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPORTING THE SUPERSTRUCTURE WHILE PERFORMING REPAIRS TO THE BEAM. COST OF THE SUPPORT SYSTEM TO BE INCLUDED IN ITEM NO. 604-10.42 CONCRETE REPAIRS C.F.



BILL OF STEEL

BAR SIZE	NO.	LENGTH
A340E	3	8
H340E	3	34

*E DENOTES: EPOXY COATED REINFORCING STEEL.

CONCRETE BEAM REPAIR

BEAM NO. 1, SPAN NO. 3, BRIDGE NO. 2 (23-SR211-1.71) ONLY

NOTE: THE REPAIRED AREAS SHALL CONFORM TO ORIGINAL SIDEWALK AND CURB FACE LINES AND MEET WITH THE FULL APPROVAL OF THE ENGINEER.

*MIN. LAP #3 BARS TO BE 1'-6". ALL NEW REINFORCING STEEL TO BE INCLUDED IN ITEM NO. 604-10.53, S.Y.

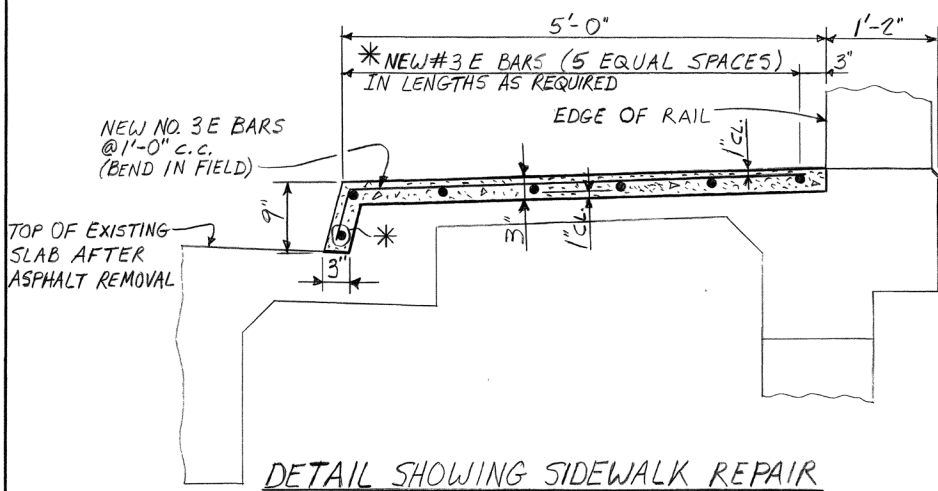
NOTE: COST OF REMOVING PORTIONS OF THE EXISTING CURBS AND SIDEWALKS, REPOURING WITH HIGH EARLY STRENGTH CONCRETE $f'_c = 4500$ P.S.I., AND REINFORCING STEEL SHALL BE PAID FOR UNDER ITEM NO. 604-10.53, CONCRETE REPAIRS, S.Y.

NOTE: COST OF BLAST CLEANING EXISTING REINFORCING STEEL, FORMING, LABOR AND ALL MISCELLANEOUS MATERIALS NECESSARY TO COMPLETE REPAIRS AS SHOWN THESE DETAILS SHALL BE INCLUDED IN ITEMS BID ON.

NOTE: COST OF 66 (SIXTY-SIX) STEEL DRAIN EXTENSIONS, COMPLETE AND IN PLACE AS SHOWN IN DETAILS THIS SHEET, TO BE INCLUDED UNDER ITEM NO. 602-10.32 STRUCTURAL STEEL (REPAIRS), LBS.

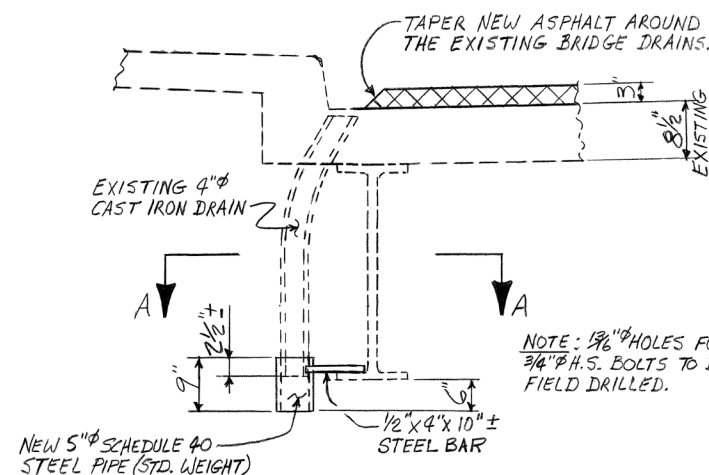
NOTE TO CONTRACTOR: THE EXISTING BRIDGE DECK DRAINS ON THE BRIDGE SHALL BE CLEANED. WHEN PLACING NEW 3" ASPHALT, TAPER THE NEW ASPHALT AROUND THE EXISTING BRIDGE DECK DRAIN OPENINGS. COST OF CLEANING THE DRAINS TO BE INCLUDED IN COST OF ITEMS BID ON.

NOTE: CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL DIMENSIONS AND NO. OF DRAINS REQUIRED BEFORE ORDERING NEW PIPE OR BEGINNING FABRICATION.

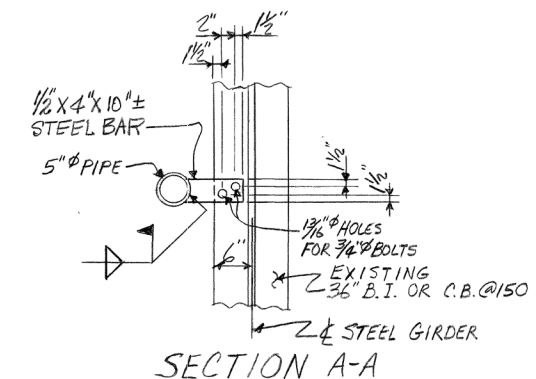


NOTE: THE ENGINEER WILL FIELD DESIGNATE ALL LOCATIONS OF CONCRETE CURB AND SIDEWALK REPAIRS. APPROXIMATELY 150 SQUARE YARDS OF CONCRETE SURFACE AREA WILL BE REQUIRED ON THE BRIDGES FOR CURB AND SIDEWALK REPAIR, ITEM NO. 604-10.53. ITEM NO. SHALL BE BID WITH THE CONTINGENCY THAT THIS ITEM MAY BE INCREASED OR DECREASED AS DIRECTED BY THE ENGINEER. ALL WORK MUST MEET WITH THE FULL APPROVAL OF THE ENGINEER.

*DENOTES: AREAS OF DETERIORATED CONCRETE TO BE REMOVED AND REPOURED WITH HIGH EARLY STRENGTH CONCRETE, $f'_c = 4500$ P.S.I. @ 28 DAY STRENGTH. (SEE CONCRETE NOTE ON DRAWING NO. BR-4-40.) CARE SHALL BE TAKEN SO AS NOT TO DAMAGE EXISTING REINFORCING STEEL WHEN REMOVING PORTIONS OF CURBS AND SIDEWALKS BEFORE POURING NEW CURB AND SIDEWALKS. THE EXISTING REINFORCING STEEL SHALL BE BLAST CLEANED.



NOTE: THE DRAIN EXTENSION DETAILS, AS SHOWN ABOVE, WILL BE REQUIRED IN THE STEEL SPAN NO.'S 16, 17, AND 18 ONLY. TOTAL NUMBER OF DRAIN EXTENSIONS REQUIRED IS 66 (SIXTY-SIX).



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

BRIDGE REPAIR DETAILS
BRIDGE NO. 1: S.R. 211 OVER OVERFLOW OF NORTH FORK FORKED DEER RIVER
BRIDGE NO. 23-SR211-1.31
BRIDGE NO. 2: S.R. 211 OVER NORTH FORK FORKED DEER RIVER
BRIDGE NO. 23-SR211-1.71
DYER COUNTY
1991

CORRECT *Larry E. Hinkle*
C.E. MANAGER - INSPECTION & REPAIR
APPROVED *Steve Evans*
DEPUTY COMMISSIONER

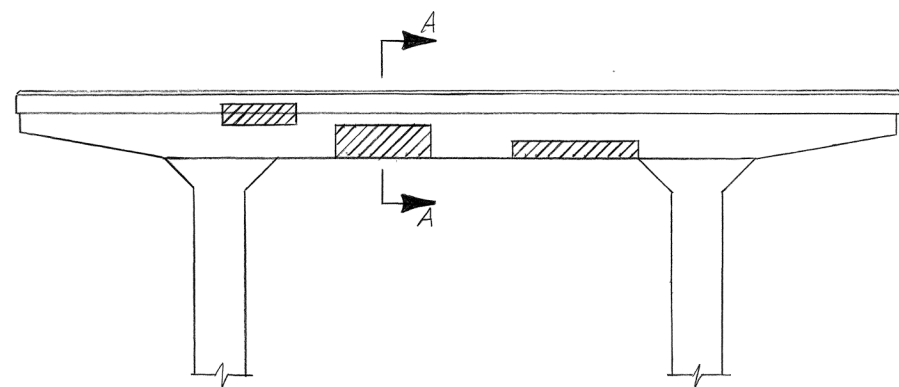
BR-4-51

DESIGNED BY M. LAWSON DATE 4-91
DRAWN BY AMIR SHARIFI & ISBELL DATE 4-91
SUPERVISED BY R. GENTRY DATE 4-91
CHECKED BY GRAVES DATE 4-91

PROJECT NO.	YEAR	SHEET NO.	
23211-4305-04	1991		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION

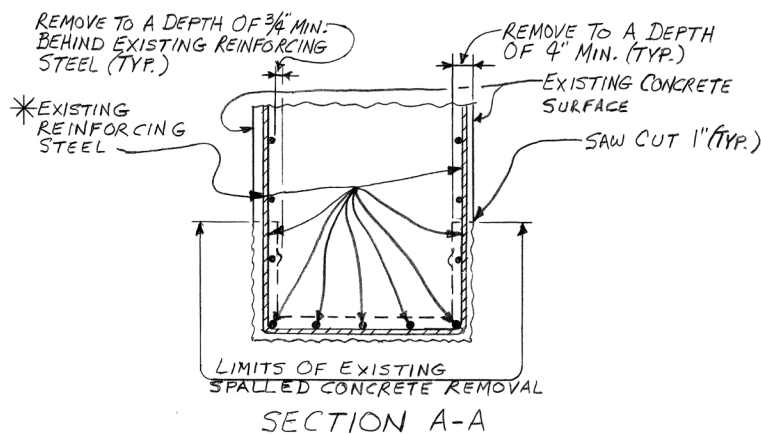
TABLE SHOWING LOCATION AND APPROXIMATE QUANTITIES OF CONCRETE REPAIR BRIDGE NO. 23-SR211-1.71

LOCATION	SQ. FT. AREA
BENT No. 1	25
BENT No. 2	-
BENT No. 3	12
BENT No. 4	8
BENT No. 5	25
BENT No. 6	10
BENT No. 7	12
BENT No. 8	25
BENT No. 9	55
BENT No. 10	25
BENT No. 11	35
BENT No. 12	25
BENT No. 13	35
BENT No. 14	15
BENT No. 15	25

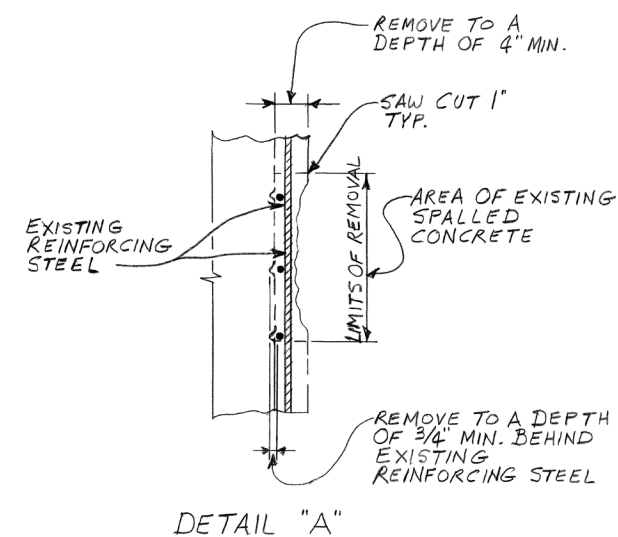


ELEVATION OF BENTS

(SHOWING SPALLED CONCRETE REPAIRS FOR BRIDGE NO. 23-SR211-1.71)



SECTION A-A



DETAIL "A"

NOTE: THE ENGINEER HAS THE OPTION OF DESIGNATING ADDITIONAL AREAS OF BENT REPAIR ON BOTH BRIDGES.

NOTE: COST OF SAW CUTTING EXISTING SPALLED CONCRETE, BLAST CLEANING EXISTING REINFORCING STEEL, FORMING, LABOR AND ANY MISCELLANEOUS MATERIALS NECESSARY TO COMPLETE THE REPAIRS AS SHOWN IN THESE DETAILS SHALL BE INCLUDED IN ITEMS BID ON.

NOTE: ITEM NO. 604-10.54 SHALL BE BID WITH THE CONTINGENCY THAT THIS ITEM MAY BE INCREASED OR DECREASED AS DIRECTED BY THE ENGINEER.

NOTE: COST OF CONCRETE REMOVAL AND NEW HIGH EARLY STRENGTH CONCRETE SHALL BE PAID FOR UNDER ITEM NO. 604-10.54, CONCRETE REPAIRS, S.F.

CONCRETE REPAIR DETAILS TYPICAL AT BENTS

BRIDGE NO. 2 (23-SR211-1.71)
FOURTEEN (14) LOCATIONS

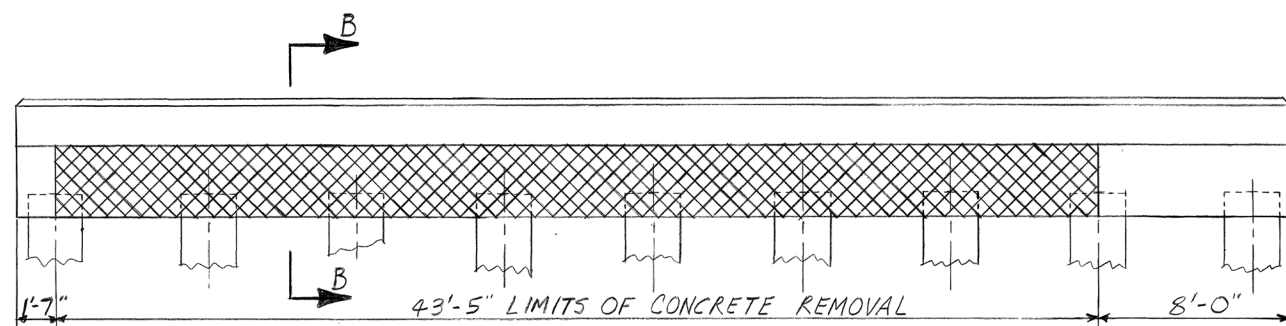
NOTES: SPALLED CONCRETE TO BE REMOVED AND REPOURED AS SHOWN THESE DETAILS. THE ENGINEER SHALL BE RESPONSIBLE FOR FIELD DESIGNATING ALL AREAS OF EXISTING SPALLED CONCRETE TO BE REMOVED.

NOTE: ALL AREAS OF REPAIR SHALL BE POURED BACK TO ORIGINAL LINES.

CONCRETE: SEE NOTE ON DWG. NO. BR-4-40.

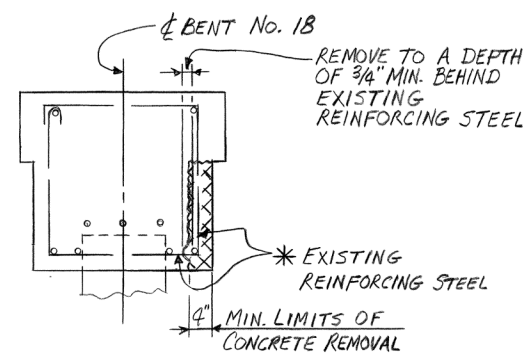
NOTE: COARSE AGGREGATE FOR THE CONCRETE USED IN REPAIRS AS SHOWN THESE DETAILS SHALL BE SIZE 67 STONE.

*DENOTES: EXTREME CARE SHALL BE TAKEN WHEN REMOVING THE EXISTING SPALLED CONCRETE SO AS NOT TO DAMAGE THE EXISTING REINFORCING STEEL. ALL EXPOSED EXISTING REINFORCING STEEL SHALL RECEIVE A COMPLETE BLAST CLEANING TO REMOVE ALL RUST. ALL EXISTING REINFORCING STEEL SHALL REMAIN IN PLACE. ALL WORK MUST MEET WITH FULL APPROVAL OF THE ENGINEER.



ELEVATION OF BENT NO. 18

BRIDGE NO. 1 (23-SR211-1.31) LOOKING NORTH
ONE (1) LOCATION ONLY



SECTION B-B

NOTE: COST OF CONCRETE REMOVAL AND NEW HIGH EARLY STRENGTH CONCRETE SHALL BE PAID FOR UNDER ITEM NO. 604-10.54, CONCRETE REPAIRS, S.F.

NOTE: COST OF SAW CUTTING EXISTING SPALLED CONCRETE, BLAST CLEANING EXISTING REINFORCING STEEL, FORMING, LABOR AND ANY MISCELLANEOUS MATERIALS NECESSARY TO COMPLETE THE REPAIRS AS SHOWN IN THESE DETAILS SHALL BE INCLUDED IN ITEMS BID ON.

NOTE: ALL AREAS OF REPAIR SHALL BE POURED BACK TO ORIGINAL LINES.

CONCRETE: SEE NOTE ON DWG. NO. BR-4-40.

NOTE: COARSE AGGREGATE FOR THE CONCRETE USED IN REPAIRS AS SHOWN THESE DETAILS SHALL BE SIZE 67 STONE.

SPECIAL NOTE TO CONTRACTOR: THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPORTING THE SUPERSTRUCTURE WHILE PERFORMING REPAIRS TO THE BENT CAP. COST OF THE SUPPORT SYSTEM SHALL BE INCLUDED IN ITEM 604-10.54 CONCRETE REPAIRS, S.F.

*DENOTES: EXTREME CARE SHALL BE TAKEN WHEN REMOVING THE EXISTING SPALLED CONCRETE SO AS NOT TO DAMAGE THE EXISTING REINFORCING STEEL. ALL EXPOSED EXISTING REINFORCING STEEL SHALL RECEIVE A COMPLETE BLAST CLEANING TO REMOVE ALL RUST. ALL EXISTING REINFORCING STEEL SHALL REMAIN IN PLACE. ALL WORK MUST MEET WITH FULL APPROVAL OF THE ENGINEER.

DENOTES: SPALLED CONCRETE TO BE REMOVED AND REPOURED AS SHOWN THIS SHEET.

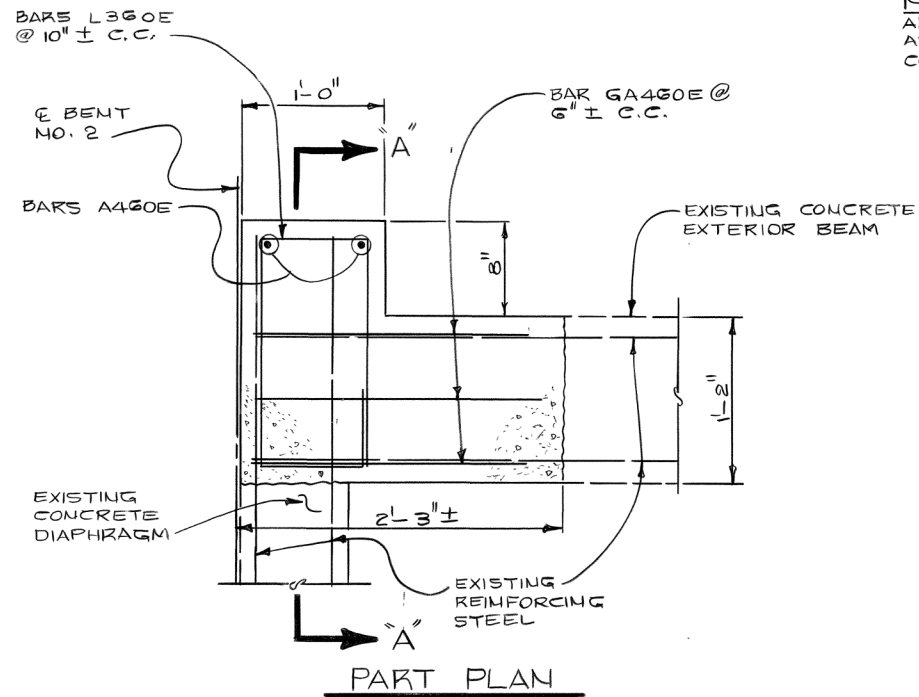
CONCRETE REPAIR DETAILS AT BENT NO. 18

BRIDGE NO. 1 (23-SR211-1.31)
ONE (1) LOCATION ONLY

DESIGNED BY M. LAWSON DATE 4-91
DRAWN BY G. ISBELL DATE 4-91
SUPERVISED BY GENTRY DATE 4-91
CHECKED BY GRAVES DATE 4-91

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS
BRIDGE REPAIR DETAILS
BRIDGE NO. 1: S.R. 211 OVER OVERFLOW OF NORTH FORK FORKED DEER RIVER
BRIDGE NO. 23-SR211-1.31
BRIDGE NO. 2: S.R. 211 OVER NORTH FORK FORKED DEER RIVER
BRIDGE NO. 23-SR211-1.71
DYER COUNTY
1991
CORRECT Larry E. Hinds
C.E. MANAGER - INSPECTION & REPAIR
APPROVED Lewis Evans
DEPUTY COMMISSIONER

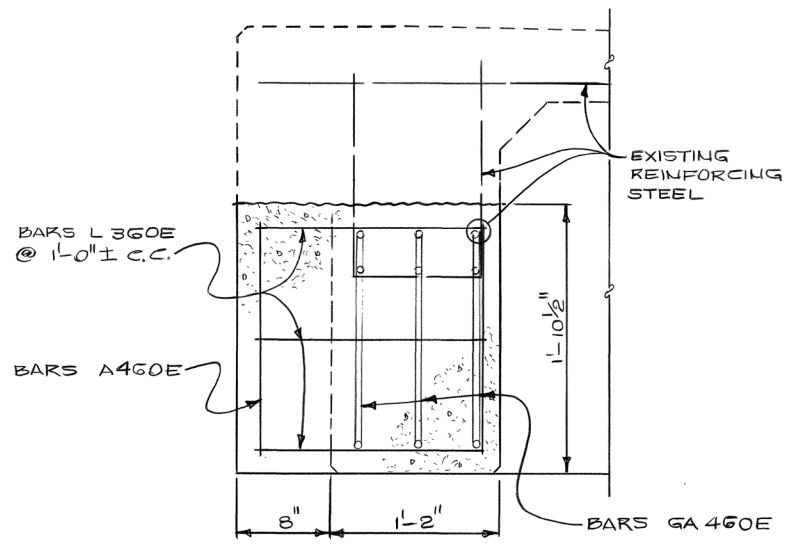
BR-4-52



PART PLAN

NOTE: WHEN REMOVING EXISTING DETERIORATED CONCRETE, CARE SHALL BE TAKEN SO AS NOT TO DAMAGE ANY OF THE EXISTING REINFORCING STEEL IN THE BEAM. ALL EXISTING REINFORCING STEEL SHALL BE BLAST CLEANED, REMAIN IN PLACE, AND TO BE INCORPORATED IN WITH NEW EPOXY COATED REINFORCEMENT. COST OF ALL NEW REINFORCING STEEL FOR THESE DETAILS TO BE INCLUDED IN REINFORCING STEEL (REPAIRS), ITEM NO. 604-10.18, LBS.

NOTE: COST OF REMOVING EXISTING DETERIORATED CONCRETE, AND REPAIRING WITH NEW HIGH EARLY STRENGTH CONCRETE AS SHOWN SHALL BE PAID FOR UNDER ITEM NO. 604-10.09, CONCRETE, C.Y.



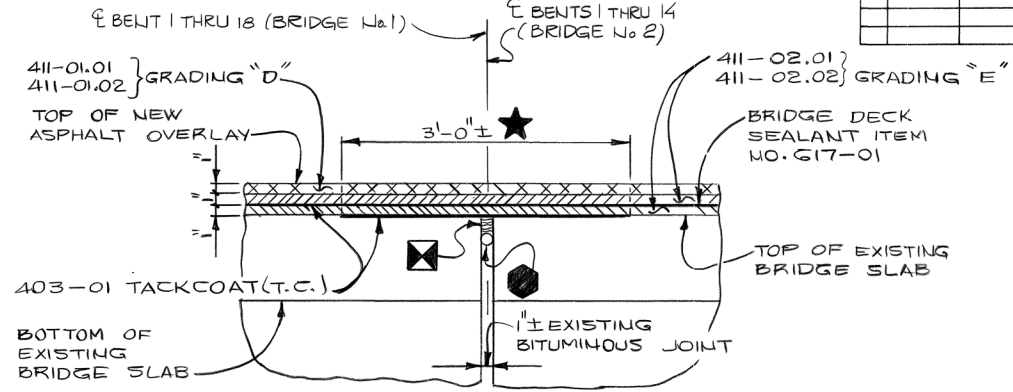
SECTION A-A

NOTE: NEW CONCRETE TO BE POURED BACK TO ORIGINAL LINES.

NOTE: COST OF BLAST CLEANING EXISTING REINFORCING STEEL FORMING, LABOR AND ANY MISCELLANEOUS MATERIALS NECESSARY TO REPAIR BEAM HAUNCHES SHALL BE INCLUDED IN ITEMS BID OUT.

TOP 2" OF ALL EXISTING BITUMINOUS JOINTS IN THE BRIDGE SLAB TO BE CLEANED AND RESEALED WITH NEW JOINT SEALER. JOINT SEALER SHALL BE A COLD POUR ONE (1) COMPONENT JOINT SEALER AS APPROVED BY THE DIVISION OF MATERIALS AND TESTS. COST OF JOINT CLEANING AND SEALING TO BE INCLUDED UNDER ITEM NO. 617-01 (BRIDGE DECK SEALANT). THE SEALER SHALL EXTEND UP AND ACROSS THE SIDEWALK AREA TO THE OUTER EDGE OF THE BRIDGE SLAB.

NOTE: THE MOVEMENT GAP SHALL BE CAULKED WITH A BACKER ROD OF SUITABLE DIAMETER. THE ROD SHALL BE PLACED AT A DEPTH TO ENSURE THE CORRECT WIDTH/DEPTH RATIO OF THE EXISTING BRIDGE JOINT SYSTEM. BACKER ROD AND CAULK SHALL BE AS PER JOINT MANUFACTURER.



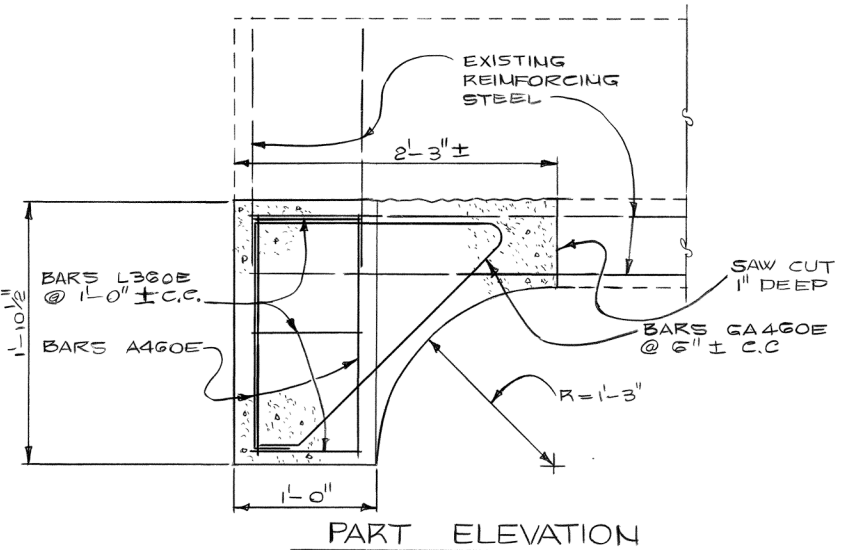
SECTION TAKEN THRU EXISTING BRIDGE SLAB JOINT

TYPICAL AT BRIDGES NO. 1 AND NO. 2 THIRTY-TWO (32) TOTAL LOCATIONS.

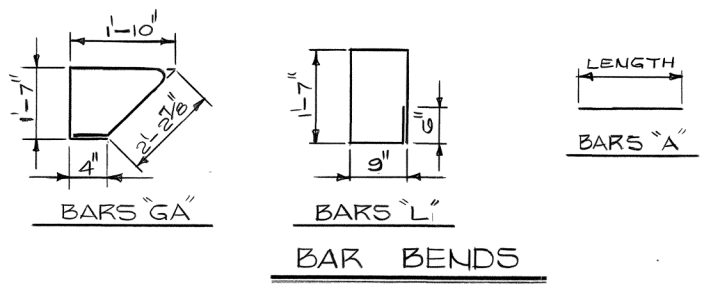
★ ONE (1) LAYER OF DECK SEALANT (ITEM NO. 617-01) SHALL BE PLACED TRANSVERSE ACROSS THE EXISTING BRIDGE SLAB FOR FULL LENGTH OF THE REPAIRED JOINT.

PROJECT NO.	YEAR	SHEET NO.
23211-4305-04	1991	

REVISIONS			
NO	DATE	BY	BRIEF DESCRIPTION



PART ELEVATION

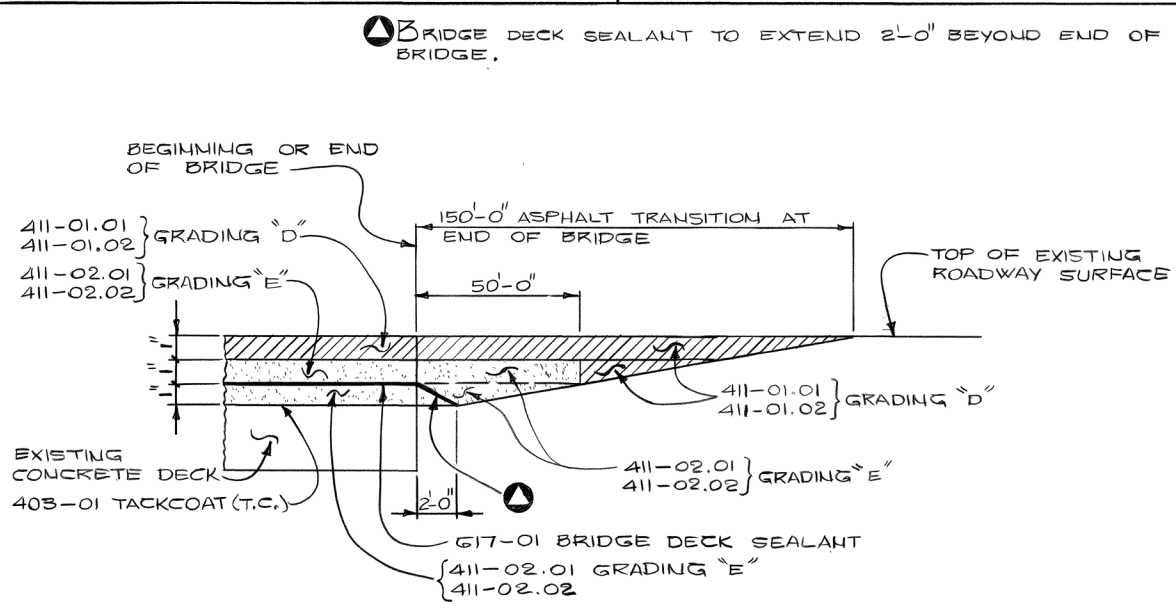


BAR BENDS

BILL OF STEEL

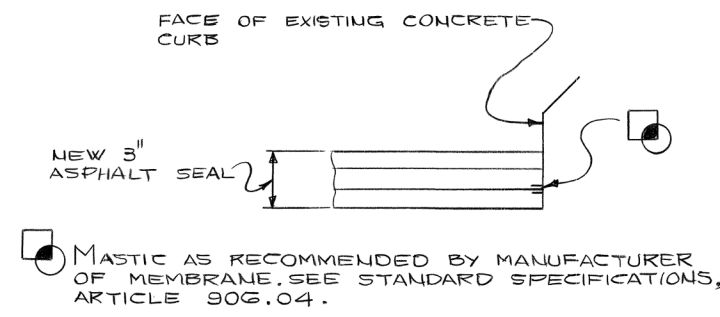
BAR	SIZE	NO. REQ'D	LENGTH
GA460E	4	6	7'-5"
L360E	3	6	5'-2"
A460E	4	4	1'-7"

NOTE: "E" DENOTES EPOXY COATED REINFORCING STEEL.



BRIDGE DECK SEALANT DETAIL

TYPICAL AT BRIDGE NO. 1 AND NO. 2



EXTERIOR BEAM HAUNCH REPAIR DETAILS

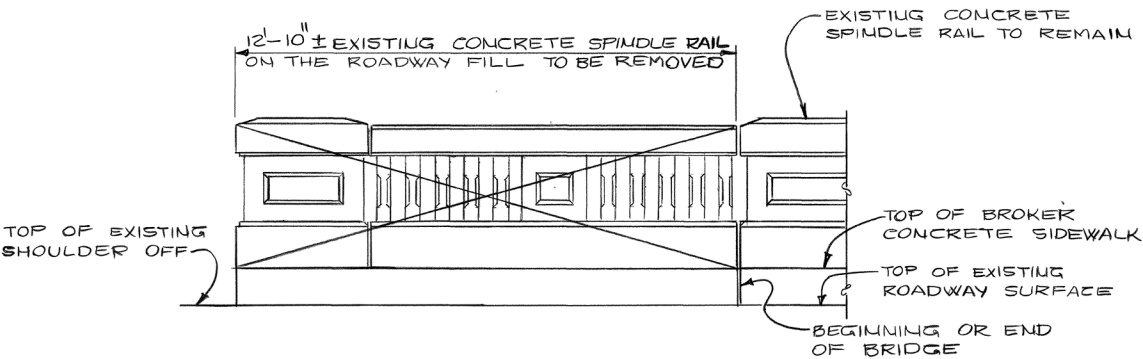
DESIGNED BY MIKE LAWSON DATE 3-91
 DRAWN BY AMIR SHARIFI DATE 3-91
 SUPERVISED BY R. GENTRY DATE 4-91
 CHECKED BY W. GRAVES DATE 4-91

BENT No. 2, 2(TWO) LOCATIONS
 BRIDGE No. 1 (23-SR 211-1.31) ONLY

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAYS
 BRIDGE REPAIR DETAILS
 BRIDGE NO. 1: S.R. 211 OVER OVERFLOW OF NORTH FORK FORKED DEER RIVER
 BRIDGE NO. 23-SR 211-1.31
 BRIDGE NO. 2: S.R. 211 OVER NORTH FORK FORKED DEER RIVER
 BRIDGE NO. 23-SR 211-1.71
 DYER COUNTY
 1991

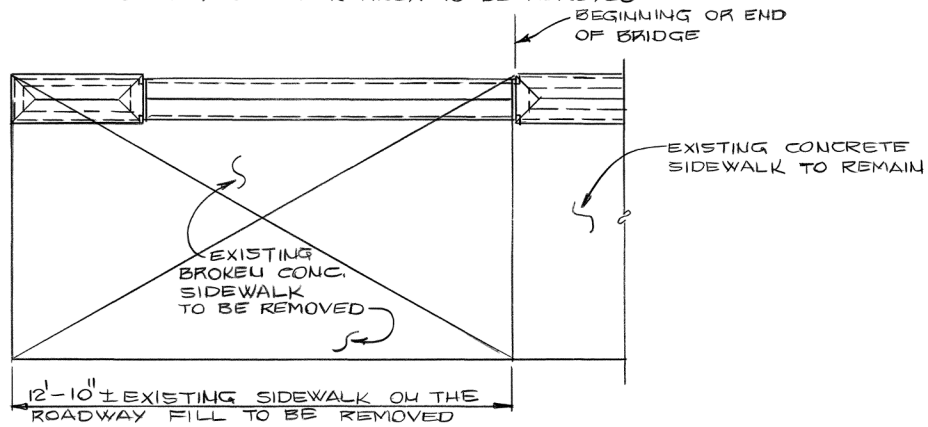
CORRECT *Larry E. Hardy*
 C.E. MANAGER - INSPECTION & REPAIR
 APPROVED *Clayton Quors*
 DEPUTY COMMISSIONER

NOTE: COST OF REMOVING EXISTING CONCRETE SPINDLE RAIL AND SIDEWALK FOR LIMITS AS SHOWN THESE DETAILS SHALL BE PAID FOR UNDER ITEM NO. 604-10.02, CONCRETE REPAIRS, C.Y.



PART ELEVATION

SHOWING LIMITS OF CONCRETE SPINDLE RAIL AND ROADWAY SIDEWALK AREA TO BE REMOVED

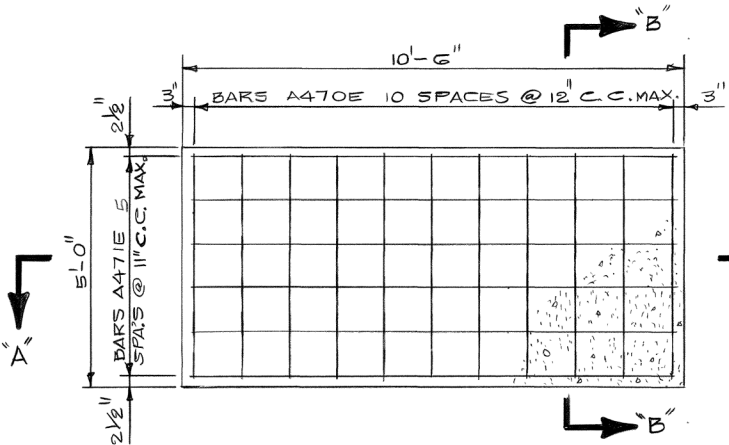


PART PLAN

SHOWING CONCRETE REMOVAL

DETAILS SHOWING REMOVAL OF EXISTING CONCRETE RAIL AND SIDEWALK AT ENDS OF BRIDGE

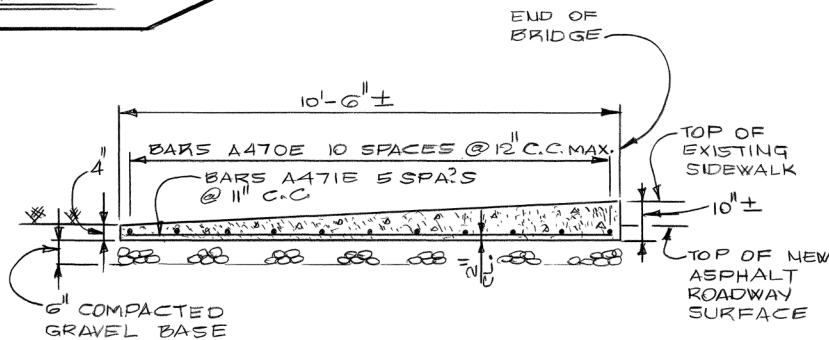
NOTE: COST OF FORMING, LABOR AND ANY MISCELLANEOUS MATERIALS NECESSARY TO COMPLETE CONCRETE RAMP AS SHOWN THESE DETAILS SHALL BE INCLUDED IN ITEMS BID ON.



PLAN

SIDEWALK APPROACH RAMP

NOTE: COST OF NEW HIGH EARLY STRENGTH FC 4500 P.S.I. CONCRETE AND COMPACTED GRAVEL BASE SHALL BE PAID FOR UNDER ITEM NO. 604-10.02, CONCRETE REPAIRS, C.Y.



SECTION "A-A"



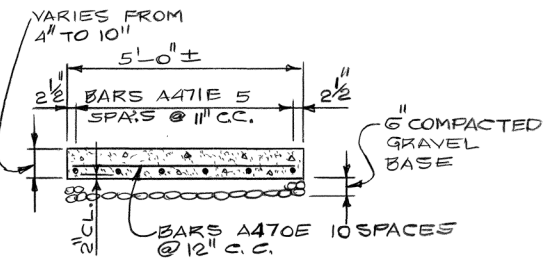
"A" BARS

BILL OF STEEL

BAR	SIZE	NO.	LENGTH
A470E	4	44	4'-8"
A471E	4	24	10'-2"

E DENOTES: EPOXY COATED REINFORCING STEEL.

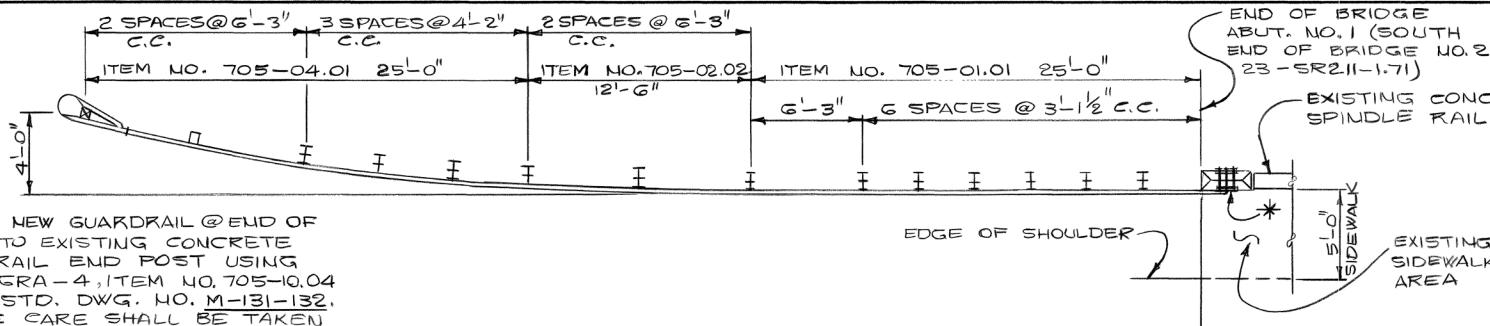
NOTE: COST OF REINFORCING STEEL SHALL BE PAID FOR UNDER ITEM NO. 604-10.18, REINFORCING STEEL LBS.



SECTION "B-B"

APPROACH RAMP AND APPROACH GUARDRAIL DETAILS AT ENDS OF BRIDGE

TYPICAL AT FOUR (4) LOCATIONS BRIDGE NO. 1, 23-SR211-1.31

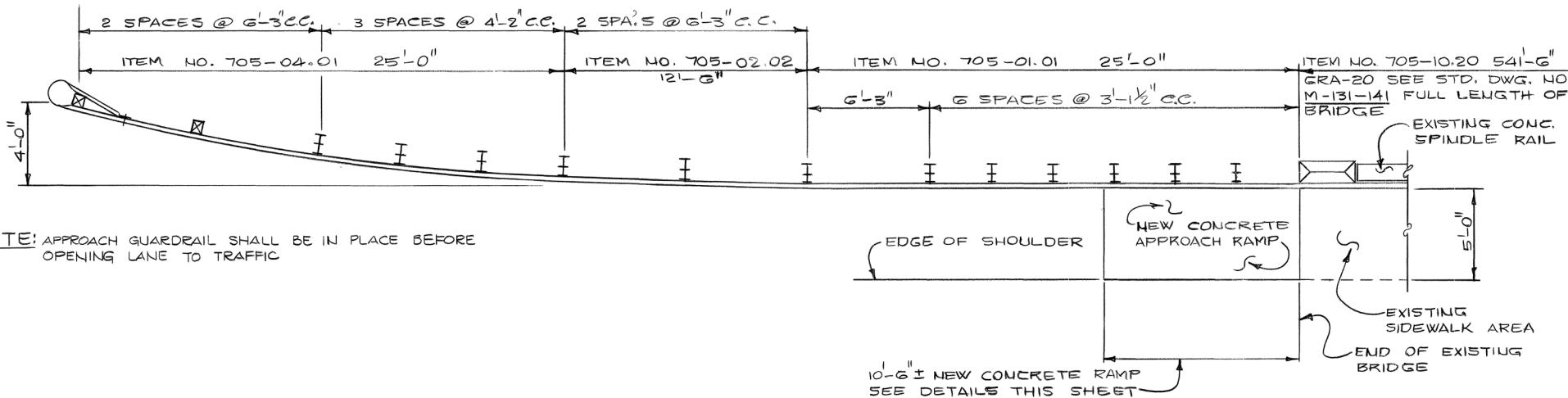


APPROACH GUARDRAIL DETAILS AT SOUTH END OF BRIDGE

TYPICAL AT TWO (2) LOCATION BRIDGE NO. 2, 23-SR211-1.71

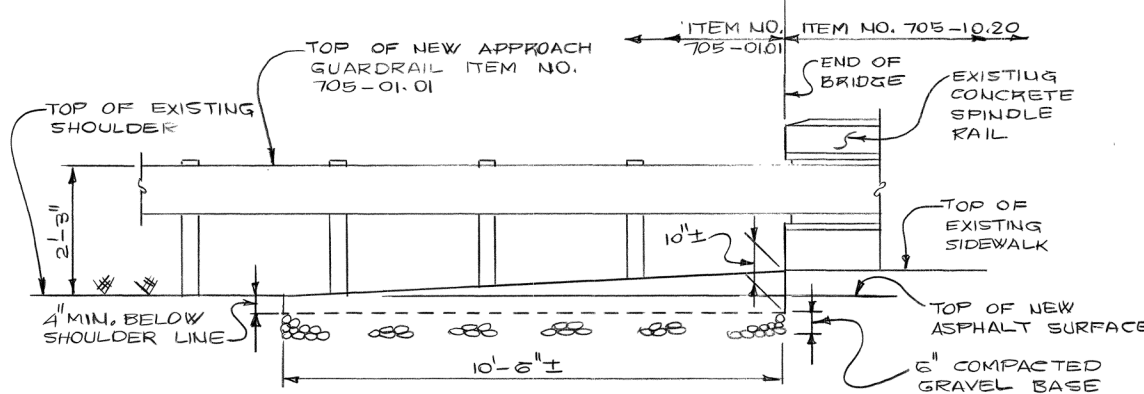
* ATTACH NEW GUARDRAIL @ END OF BRIDGE TO EXISTING CONCRETE SPINDLE RAIL END POST USING DETAIL GRA-4, ITEM NO. 705-10.04 (EACH), STD. DWG. NO. M-131-132. EXTREME CARE SHALL BE TAKEN WHEN DRILLING HOLES THROUGH EXISTING CONCRETE END POST FOR END TERMINAL SECTION (MICHIGAN SHOE) SO AS NOT TO DAMAGE EXISTING ELECTRICAL CONDUIT GOING TO THE EXISTING BRIDGE LIGHTING.

NOTE: APPROACH GUARDRAIL SHALL BE IN PLACE BEFORE OPENING LANE TO TRAFFIC



DETAIL OF GUARDRAIL HOOK UP

TYPICAL AT BRIDGE ENDS (4 LOCATIONS) BRIDGE NO. 1 (23-SR211-1.31)



ELEVATION AT BRIDGE END

SHOWING NEW RAMP TO BE PLACED AT EACH CORNER OF THE EXISTING BRIDGE (TOTAL FOUR (4) LOCATIONS) BRIDGE NO. 1 (23-SR211-1.31)

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS
BRIDGE REPAIR DETAILS
BRIDGE NO. 1: S.R. 211 OVER OVERFLOW OF NORTH FORK FORKED DEER RIVER BRIDGE NO. 23-SR211-1.31
BRIDGE NO. 2: S.R. 211 OVER NORTH FORK FORKED DEER RIVER BRIDGE NO. 23-SR211-1.71
DYER COUNTY
1991

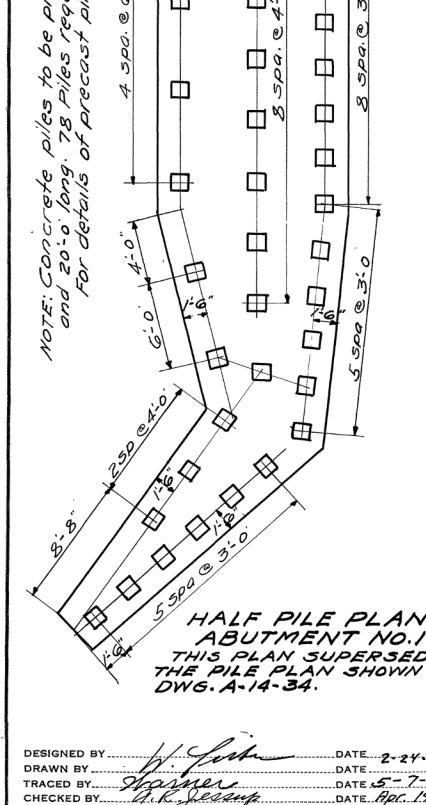
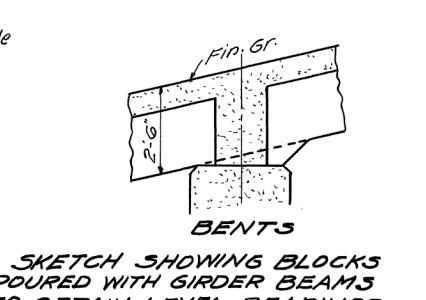
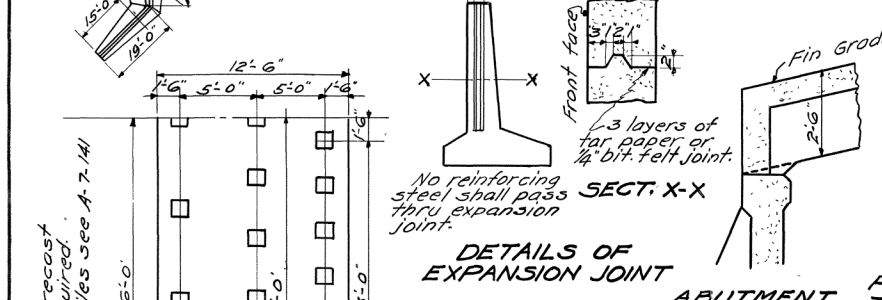
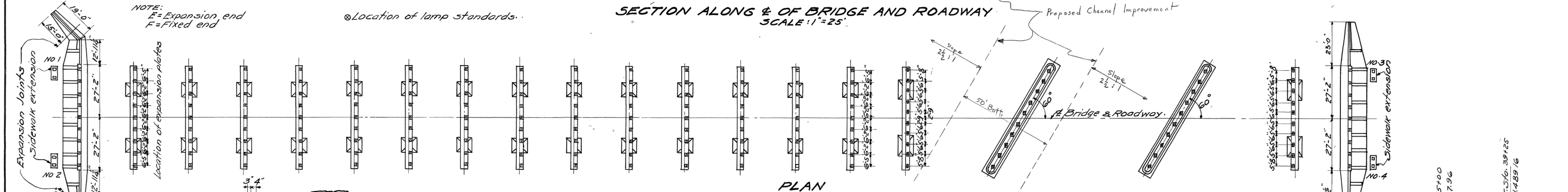
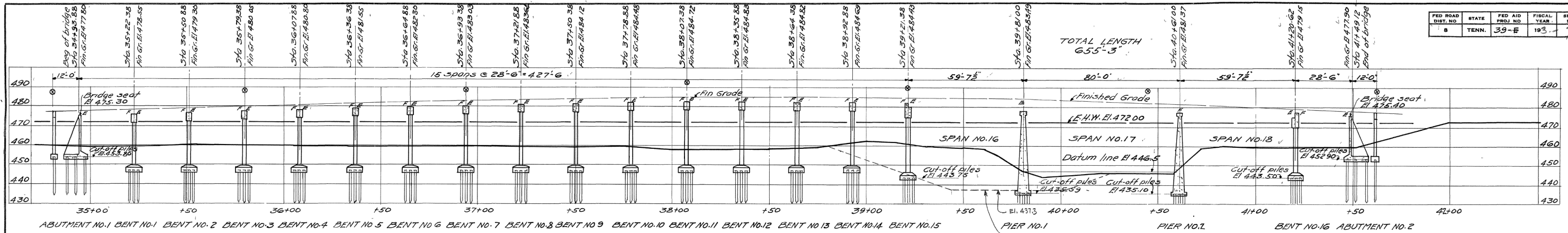
PROJECT NO.	YEAR	SHEET NO.
23211-4305-04	1991	

REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION

DESIGNED BY MIKE LAWSON DATE 4-91
DRAWN BY AMIR SHARIFI DATE 4-91
SUPERVISED BY R. GENTRY DATE 4-91
CHECKED BY W. MEINTURFF DATE 4-91

CORRECT *Larry E. Hinds*
C.E. MANAGER - INSPECTION & REPAIR
APPROVED *Larry E. Hinds*
DEPUTY COMMISSIONER

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	TENN.	39-E	1933	7	34



DESIGN DATA
 Drainage Area 933 Sq. Miles
 Use factor C = .8 in Talbot's formula
 waterway required = 17185 Sq. Ft.
 Waterway provided:
 Main Bridge 9847 Sq. Ft.
 Overflow Bridge 7402 Sq. Ft.
 Total 17249 Sq. Ft.

ESTIMATED QUANTITIES

ITEM	EXCAVATION		CONCRETE		STEEL		UNTREATED	CONGR.	
	CU.YDS.	DRY WET	CL. 3	CL. A	CL. B	REINF.	STRUCT.	PILES	
SUPERSTRUCTURE						10719			
16-CONC DECK GIRDERS @ 28'-6"			9942			251926	11248		
I-BEAM SPANS			2948			41631	351500		
SUBSTRUCTURE									
4 SIDEWALK EXTENS.	120					2740		160	
ABUTMENT NO. 1	480		2148			16200		1560	
BENT NO. 1	317	9	432			5940		360	
BENT NO. 2	340	9	436			5976		360	
BENT NO. 3	331	9	440			6011		360	
BENT NO. 4	321	9	444			6047		360	
BENT NO. 5	321	9	447			6079		360	
BENT NO. 6	321	9	451			6115		360	
BENT NO. 7	304	9	455			6150		360	
BENT NO. 8	292	9	458			6182		360	
BENT NO. 9	279	9	460			6200		360	
BENT NO. 10	295	9	462			6218		360	
BENT NO. 11	226	9	464			6232		360	
BENT NO. 12	233	9	464			6236		360	
BENT NO. 13	252	9	464			6236		360	
BENT NO. 14	367	9	463			6229		360	
BENT NO. 15	375	41	620			8081		480	
PIER NO. 1	20	302				3754	512	1240	
PIER NO. 2	109	305				3755	512	1240	
BENT NO. 16	310	44				586		480	
ABUTMENT NO. 2	508		2304			19480		1540	
TOTAL	6121	818	95.2	25157	750.9	445491	362748	8480	3260

SKETCH OF GRADES
 ELEVATIONS BASED ON FINISHED GRADE

LIST OF DRAWINGS
 For details of Handrail see DWG. A-13-47
 For details of Concrete Deck Girders, 26'-0" clear Span, 40' Rdy. & 2'-5" Sidewalks see A-14-33
 For details of Cantilever I-Beam Spans see A-13-48
 For details of Sidewalk Extensions see A-13-50
 For details of Abutment No. 1 see A-14-34 and details on this sheet, V=2'-6"
 For details of Bents No. 1-14 see A-13-51
 For details of Bents No. 15 & 16 see A-13-52
 For details of Piers No. 1 & No. 2 see A-13-53
 For details of Abutment No. 2 see A-13-54 & 55
 For details of Expansion Devices see A-13-50
 For details of Precast Concrete Piles see A-7-141
 For detour bridge see DWG. A-13-56*

SPECIAL NOTE
 This bridge shall be constructed so as to meet the requirements for navigation as prescribed by the Chief Engineer of the U.S. War Department.
 All work shall be so conducted that the free navigation of the waterway shall not be unreasonably interfered with and to the complete satisfaction of the District Engineer of the U.S. War Department.
 All falsework, piling or other obstructions and all parts of the existing bridge shall be entirely removed down to the natural river bottom and the channel cleared to the satisfaction of the U.S. District Engineer not later than ninety (90) days after the new bridge has been opened to traffic.
 All concrete parts of the structure coming into contact with the roadway fill, or backfill, shall be sealed in accordance with Specifications.
 This seal coat shall also be applied to the bridge seat of the abutments and the sides of the wingwalls, adjacent to the girders, to the bridge seats of the bents and to the bents from the bottom to a point one foot above the natural ground. This seal coat to be omitted from Piers No. 1 & 2.

SPECIAL NOTE
 The Contractor shall construct and maintain a detour bridge, as shown on Drawing A-13-56, until the new bridge is open for traffic without additional compensation.
 When no longer needed, this detour bridge shall be removed by the contractor at his own expense and shall remain his property.
SPECIAL NOTE:
 The Contractor shall protect all existing water pipes from injury, and, where it is necessary to carry any of these pipes through any part of the new work, they shall be protected by means of a collar.

GENERAL NOTES
 Specifications: Standard Road and Bridge Specifications of the Tennessee Department of Highways and Public Works.
 Piles for abutments shall be precast and 20'-0" long.

SPECIAL NOTE
 Before any piles are ordered, an untreated timber test pile 20 feet long shall be driven in one footing of each bent No. 4, 14 and 16 in the final location as shown by the pile plan for these bents and shall be driven after the excavation has been made for these footings.
 These piles are included in the lineal feet of untreated piles for these bents and will be paid for on the unit price bid for this item.

STATE OF TENNESSEE
 DEPARTMENT OF HIGHWAYS
 AND PUBLIC WORKS
 NASHVILLE

LAYOUT OF BRIDGE
 OVER
 FORKED DEER RIVER
 STA. 34+93.88
 DYER CO
 1932

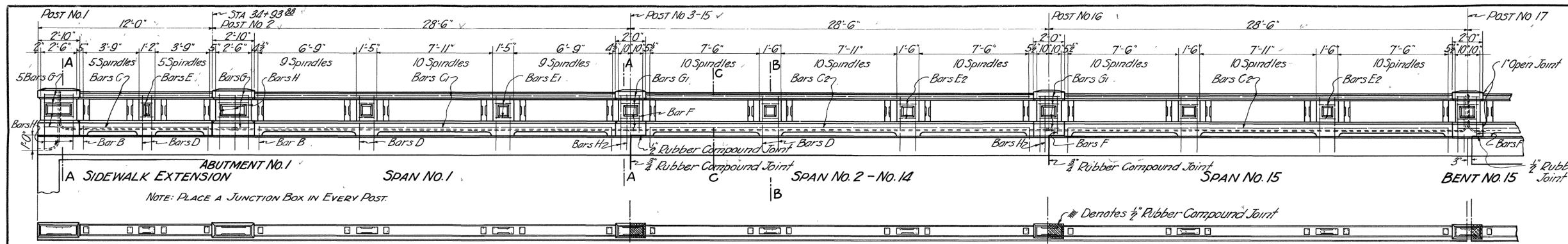
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 DRAWN BY: *[Signature]* DATE: 5-7-32
 TRACED BY: *[Signature]* DATE: 5-7-32
 CHECKED BY: *[Signature]* DATE: Apr. 1932

CORRECTED BY: *[Signature]* BRIDGE ENGINEER
 APPROVED BY: *[Signature]* STATE HIGHWAY ENGINEER

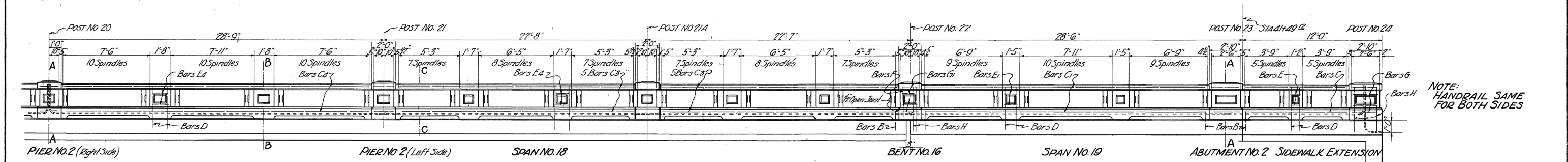
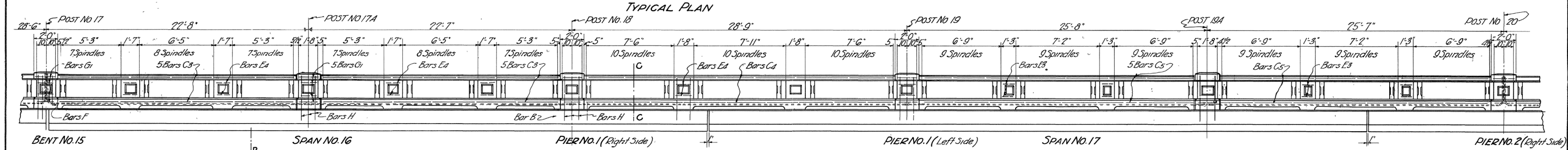
A-13-46

REPRODUCTION
 Lighting standards revised 8-4-33
 Note for removal of detour bridge 11/17/32

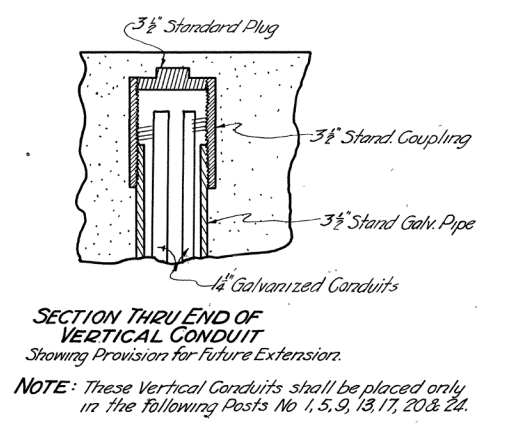
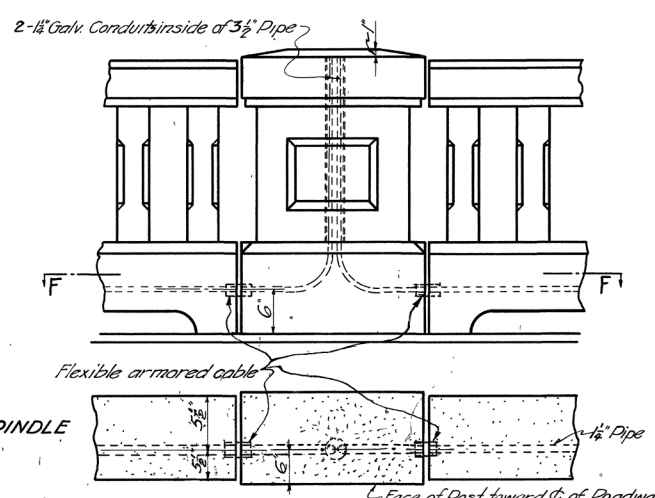
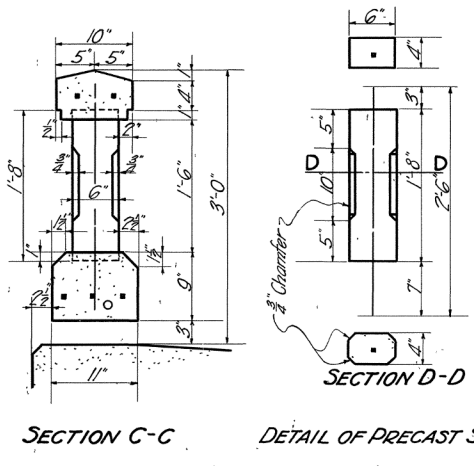
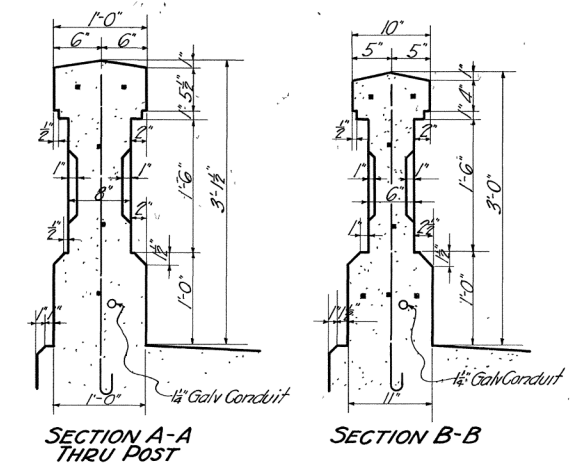
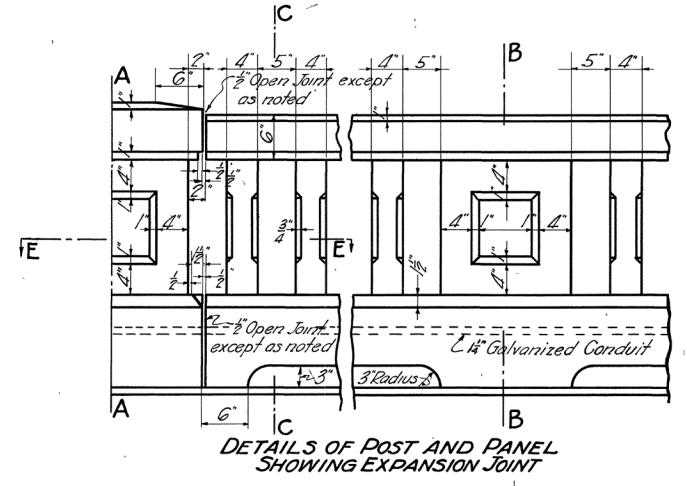
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
B	TENN.	37-2	1932	7	34



ESTIMATED QUANTITIES
 CONCRETE CLASS "5" 95.2 Cu. Yds.
 REINFORCING STEEL 10719 LBS.
 Note: Cost of Galvanized Pipe Conduits and cost of placing same shall be included in Unit Price of Class "5" Concrete.



NOTE: HANDRAIL SAME FOR BOTH SIDES



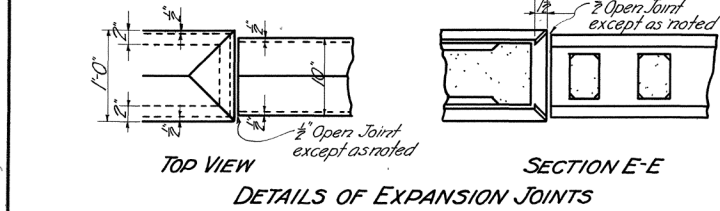
SECTION THRU END OF VERTICAL CONDUIT Showing Provision for Future Extension.
 NOTE: These Vertical Conduits shall be placed only in the following Posts No. 1, 5, 9, 13, 17, 20 & 24.

GENERAL NOTES:-
 Specifications: Standard Road and Bridge Specifications of the Tennessee Department of Highways and Public Works. Concrete shall be Class "5". Reinforcing Steel: See Specifications. Forms and Finish: See Specifications.

SPECIAL NOTE:
 All Conduit shall be 1/2 Galvanized Iron. All Junction Boxes shall be 4x4x3 in size, constructed of Cast Iron and furnished with 4 screws, Cast Iron covers and waterproof gaskets. Junction Boxes shall be the type listed as No. 950 Austins Catalogue or equal thereof, and shall be approved by the Bridge Engineer.
 NO WIRING SHALL BE INCLUDED IN THIS CONTRACT

BILL OF STEEL

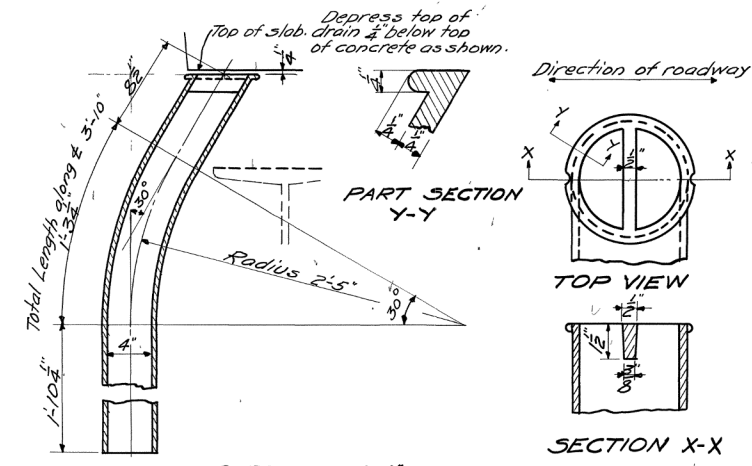
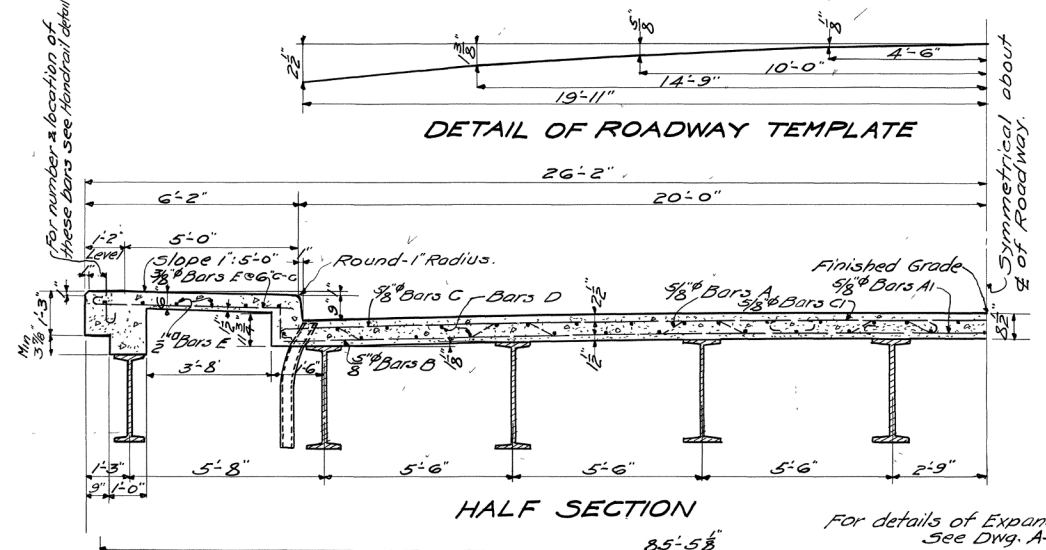
Bar No.	Size	Length	Location
A	1/2"	2'-6"	Spindles
B	1/2"	2'-0"	Next to Posts
C	1/2"	8'-10"	Sidewalk Extensions
G1	20	24'-3"	Spans 1 and 19
G2	140	26'-3"	Spans 2 - 15
G3	40	20'-3"	Spans 16 - 18
G4	20	26'-6"	Span 17 - 18
G5	20	28'-3"	Span 17
D	200	4'-3"	Panels
E	8	0'-11"	Sidewalk Extension
E1	16	1'-2"	Spans 1 and 19
E2	112	1'-3"	Spans 2 and 15
E3	16	1'-0"	Span 17
E4	48	1'-4"	Spans 16-17-18
F	32	2'-0"	Posts 3-17 and 22
G	40	2'-3"	Posts 1-2, 23 and 24
G1	280	1'-5"	Posts 3 and 22
H	180	4'-6"	All Posts



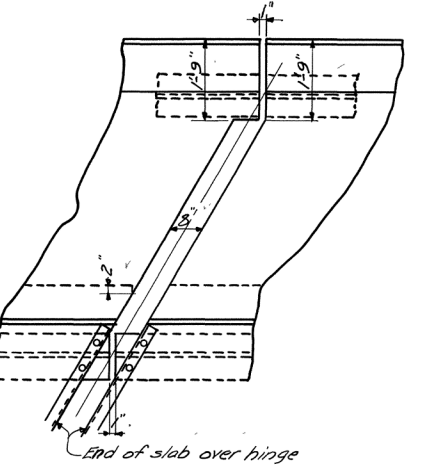
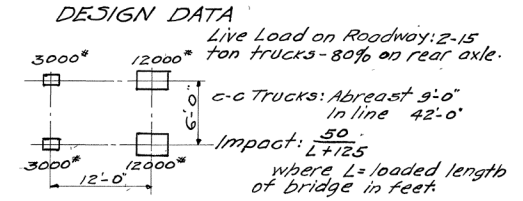
NOTE: Handrail to be built as detailed. No chamfers to be used unless specifically shown.

DESIGNED BY: [Signature] DATE: 2-23-32
 DRAWN BY: [Signature] DATE: [Signature]
 TRACED BY: [Signature] DATE: 1-26-32
 CHECKED BY: [Signature] DATE: Apr. 1932

STATE OF TENNESSEE
 DEPARTMENT OF HIGHWAYS
 AND PUBLIC WORKS
 NASHVILLE
DETAILS OF HANDRAIL
 BRIDGE AT
 STA 34+93.88
 DYER CO.
 1932
 CORRECTED BY: [Signature]
 APPROVED: [Signature] STATE HIGHWAY ENGINEER



General Notes
 Specifications: Standard Road and Bridge Specifications of the Tennessee Department of Highways and Public Works.
 Rivets: 7/8" in main beams, 3/4" in braces.
 Reaming: Splices in main beams shall be sub-punched 1/16" and reamed to 1/8" thru steel templates 1" thick.
 Shop and Field Paint: See Specifications.
 Concrete shall be Class A.
 Reinforcing Steel: See Specifications.
 Forms and Finish: See Specifications.



DETAIL OF 4" CAST IRON DRAIN
 NOTE: Cost of C.I. Drains shall be included in unit price of Class A concrete.

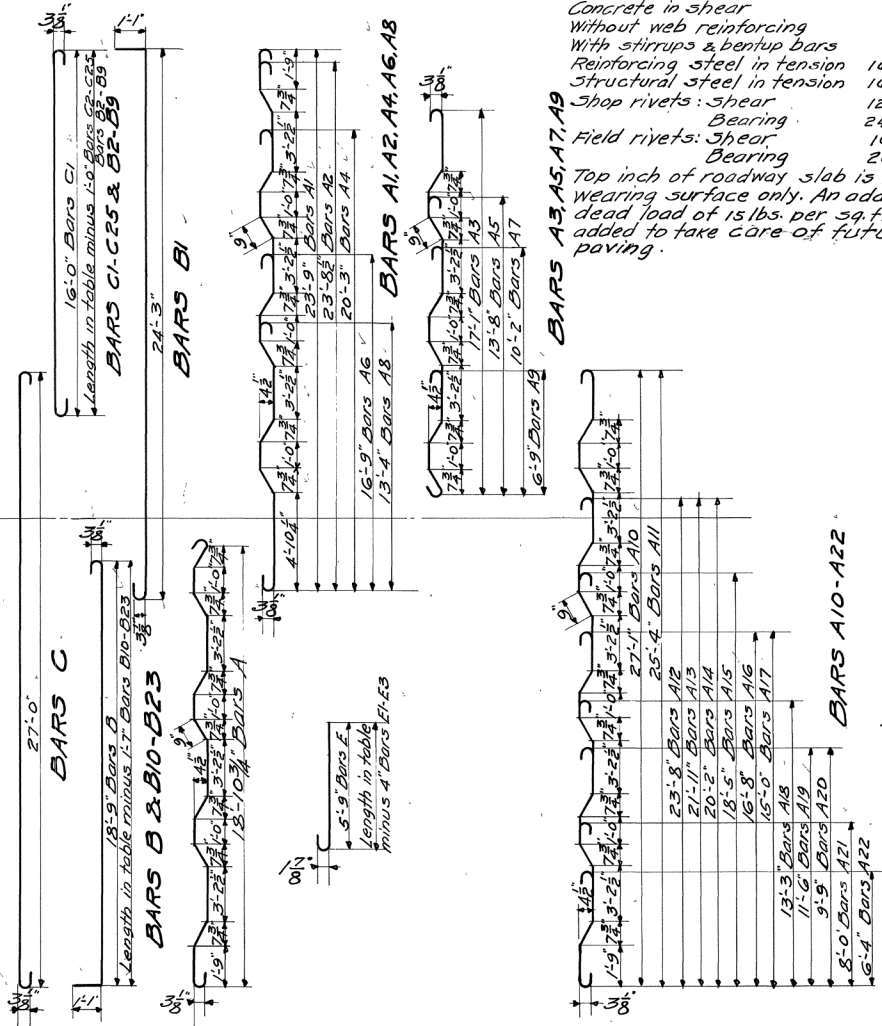
Live Load on Sidewalk: 100 #/sq ft
 No impact.

Allowable Stresses:
 Concrete in compression 6500 #/sq ft
 Concrete in shear 160 #/sq ft
 Without web reinforcing 40 #/sq ft
 With stirrups & bentup bars 16000 #/sq ft
 Reinforcing steel in tension 16000 #/sq ft
 Structural steel in tension 16000 #/sq ft
 Shop rivets: Shear 12000 #/sq ft
 Bearing 24000 #/sq ft
 Field rivets: Shear 10000 #/sq ft
 Bearing 20000 #/sq ft

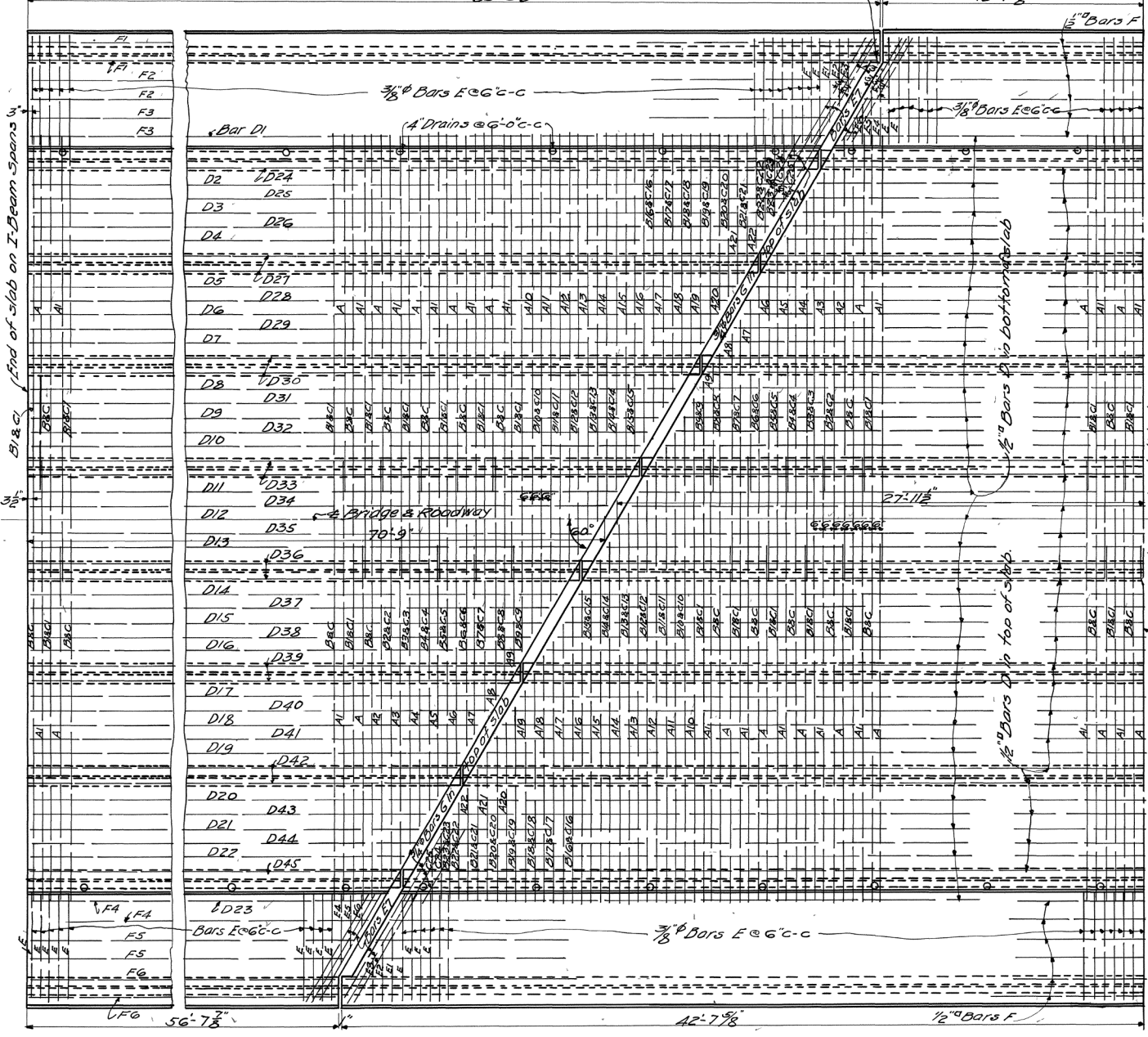
Top inch of roadway slab is for wearing surface only. An additional dead load of 15 lbs. per sq. ft. is added to take care of future paving.

BILL OF REINFORCING STEEL - SPANS NO 16-17-18

BAR NO	SIZE	LENGTH	BAR NO	SIZE	LENGTH	BAR NO	SIZE	LENGTH	
A	1/2"	20'-8"	C3	4"	25'-5"	D28	6"	26'-9"	
A1	1/2"	25'-6"	C4	4"	12'-8"	D29	6"	26'-5"	
A2	4"	25'-6"	C5	4"	22'-0"	D30	12"	26'-1"	
A3	4"	18'-9"	C6	4"	9'-0"	D31	6"	25'-8"	
A4	4"	21'-11"	C7	4"	18'-6"	D32	6"	25'-5"	
A5	4"	15'-3"	C8	4"	5'-7"	D33	12"	25'-0"	
A6	4"	18'-2"	C9	4"	15'-1"	D34	6"	24'-8"	
A7	4"	11'-7"	C10	4"	27'-3"	D35	6"	24'-4"	
A8	4"	14'-8"	C11	4"	25'-7"	D36	12"	24'-0"	
A9	4"	8'-0"	C12	4"	23'-10"	D37	6"	23'-8"	
A10	4"	29'-1"	C13	4"	22'-1"	D38	6"	23'-4"	
A11	4"	27'-4"	C14	4"	20'-4"	D39	12"	23'-0"	
A12	4"	25'-5"	C15	4"	18'-7"	DA0	6"	22'-6"	
A13	4"	23'-8"	C16	4"	16'-11"	DA1	6"	22'-3"	
A14	4"	21'-11"	C17	4"	15'-2"	DA2	12"	21'-10"	
A15	4"	20'-1"	C18	4"	13'-5"	DA3	6"	21'-6"	
A16	4"	18'-3"	C19	4"	11'-8"	DA4	6"	21'-2"	
A17	4"	16'-7"	C20	4"	10'-0"	DA5	6"	20'-10"	
A18	4"	14'-8"	C21	4"	8'-3"	E	7/8"	6'-1"	
A19	4"	12'-10"	C22	4"	6'-6"	F	7/8"	5'-2"	
A20	4"	11'-1"	C23	4"	5'-8"	G	4"	4'-3"	
A21	4"	9'-3"	C24	4"	4'-9"	H	4"	3'-5"	
A22	4"	7'-6"	C25	4"	3'-11"	I	4"	3'-8"	
B	1/2"	20'-4"	D	102	1/2"	28'-6"	E5	4"	2'-10"
B1	1/2"	25'-10"	D1	6"	28'-6"	E6	4"	1'-11"	
B2	4"	24'-4"	D2	6"	28'-0"	E7	24	3/8"	
B3	4"	17'-2"	D3	6"	27'-8"	F	24	1/2"	
B4	4"	20'-11"	DA	6"	27'-4"	F1	12	28'-6"	
B5	4"	13'-8"	D5	6"	26'-11"	F2	12	29'-6"	
B6	4"	17'-6"	D6	6"	26'-7"	F3	12	29'-0"	
B7	4"	10'-3"	D7	6"	26'-4"	F4	8	28'-9"	
B8	4"	14'-0"	D8	6"	25'-10"	F5	8	29'-9"	
B9	4"	6'-9"	D9	6"	25'-7"	F6	8	29'-6"	
B10	4"	27'-10"	D10	6"	25'-3"	F7	8	29'-0"	
B11	4"	26'-2"	D11	6"	24'-10"	G	12	3/4"	
B12	4"	24'-5"	D12	6"	24'-6"	G	12	3/4"	
B13	4"	22'-8"	D13	6"	24'-3"				
B14	4"	20'-11"	D14	6"	23'-9"				
B15	4"	19'-2"	D15	6"	23'-6"				
B16	4"	17'-6"	D16	6"	23'-2"				
B17	4"	15'-9"	D17	6"	22'-9"				
B18	4"	14'-0"	D18	6"	22'-4"				
B19	4"	12'-3"	D19	6"	22'-1"				
B20	4"	10'-7"	D20	6"	21'-8"				
B21	4"	8'-10"	D21	6"	21'-4"				
B22	4"	7'-1"	D22	6"	21'-1"				
B23	4"	6'-3"	D23	6"	20'-7"				
C	1/2"	28'-0"	D24	6"	28'-3"				
C1	1/2"	17'-0"	D25	6"	27'-10"				
C2	4"	16'-1"	D26	6"	27'-6"				
			D27	12	27'-1"				



NOTE:
 Bars D1-D23 in bottom of slab.
 Bars D24-D45 in top of slab.
 Bars G to be placed in top of slab.
 Bars E7 to be placed in bottom of sidewalk slab.
 Bars B-B23 in bottom of slab.
 Bars C-C25 in top of slab.



STATE OF TENNESSEE
 DEPARTMENT OF HIGHWAYS
 AND PUBLIC WORKS
 NASHVILLE

DETAILS OF BRIDGE
 SPANS NO. 16-17-18
 STA. 34+93.88
 DYER CO
 1932

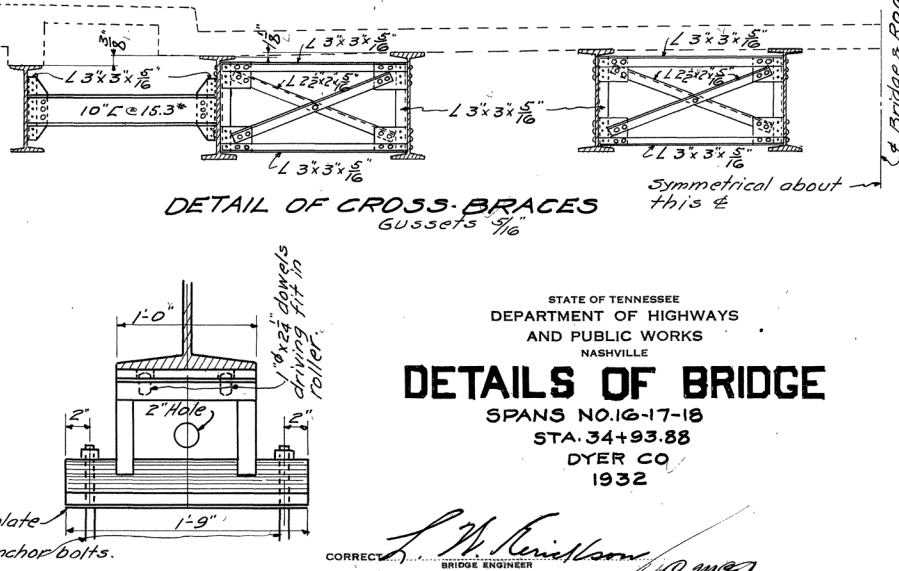
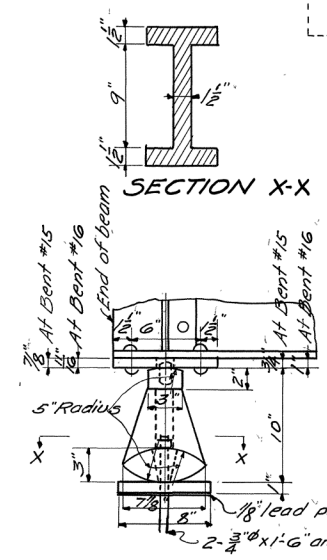
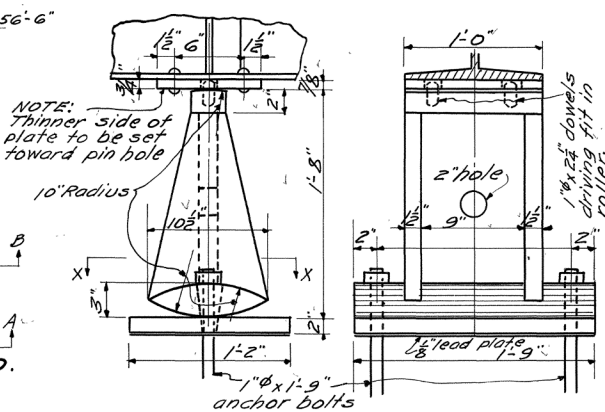
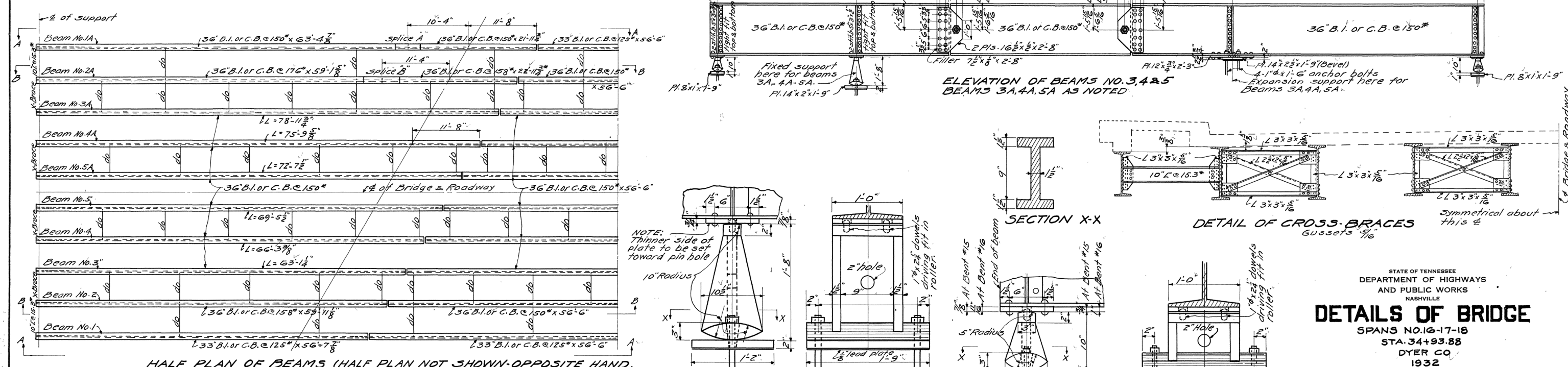
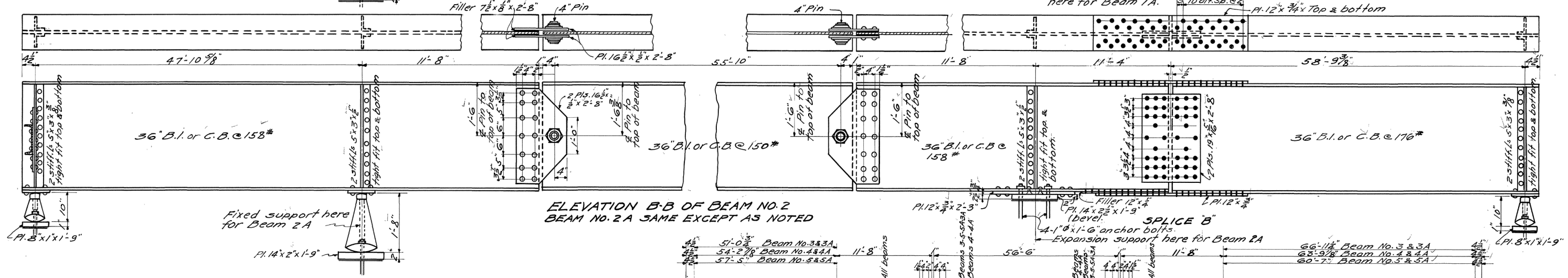
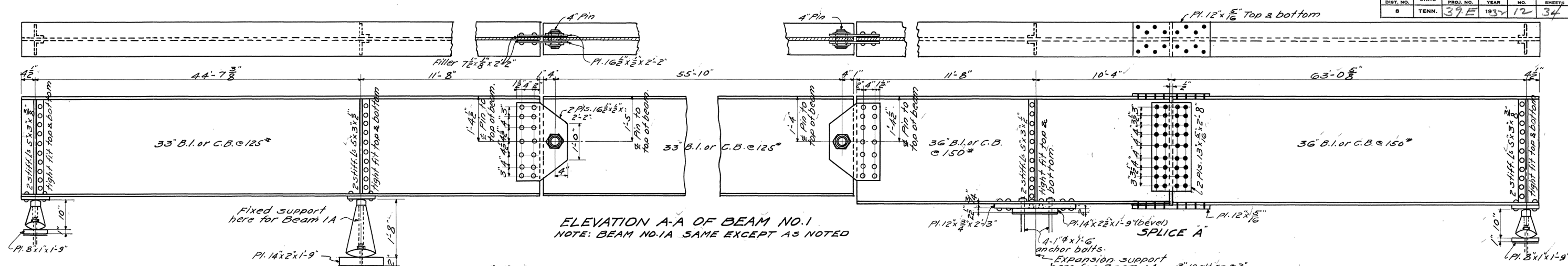
CORRECTED BY: *L. W. Henderson*
 BRIDGE ENGINEER

APPROVED BY: *[Signature]*
 STATE HIGHWAY ENGINEER

MICROFILMED

DESIGNED BY: *H. J. [Signature]* DATE: 2-2-32
 DRAWN BY: *[Signature]* DATE: []
 TRACED BY: *[Signature]* DATE: 3-22-32
 CHECKED BY: *[Signature]* DATE: 3-12-32

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	TENN.	39E	1932	12	34



STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
AND PUBLIC WORKS
NASHVILLE

DETAILS OF BRIDGE

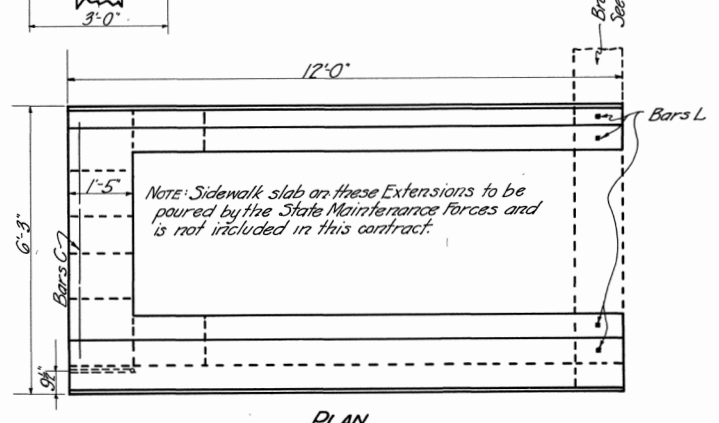
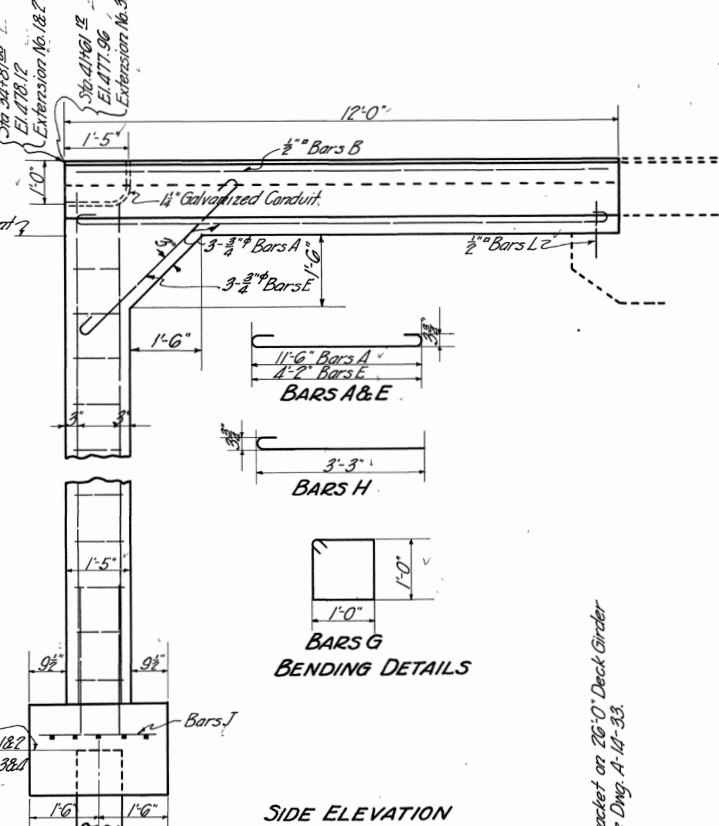
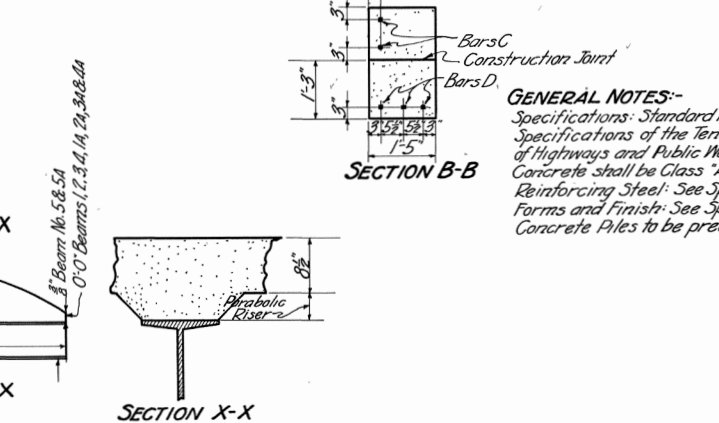
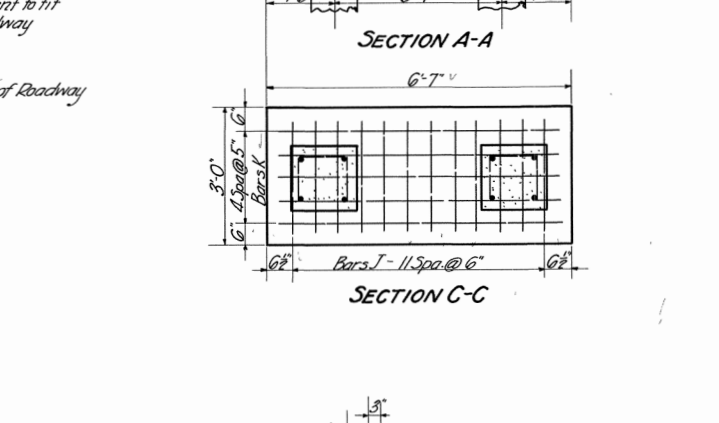
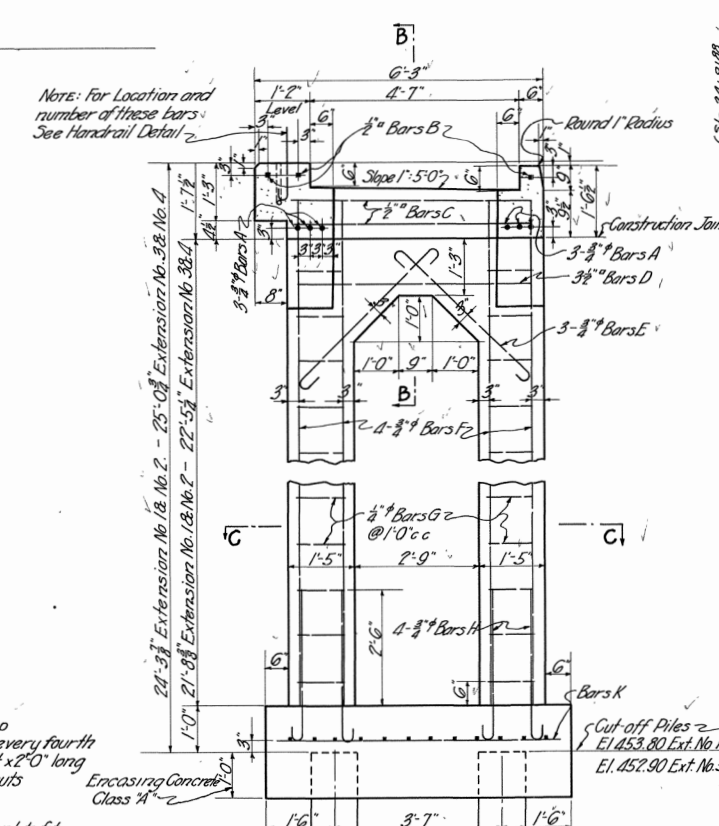
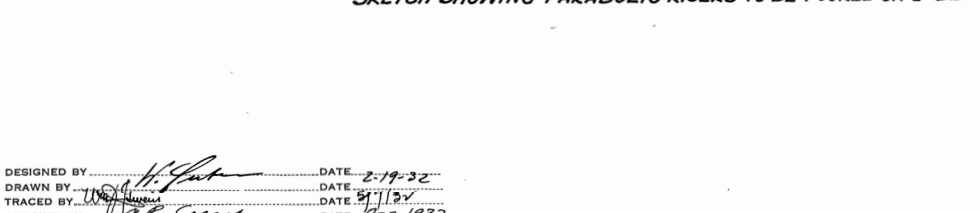
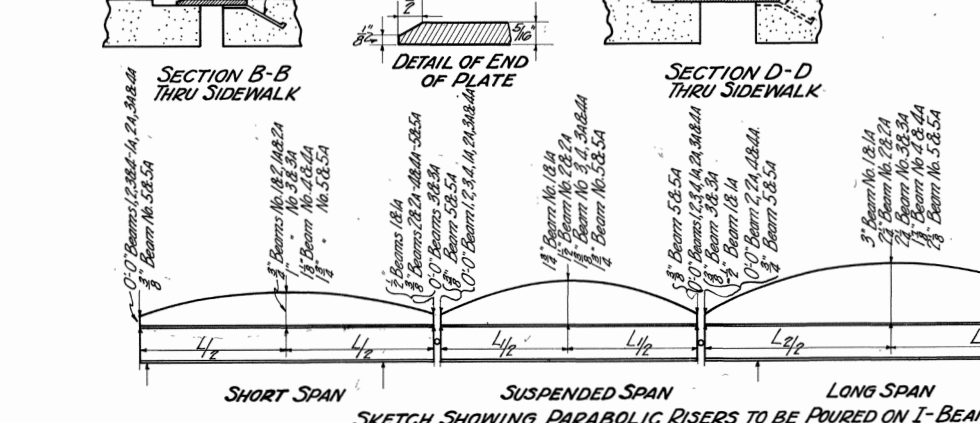
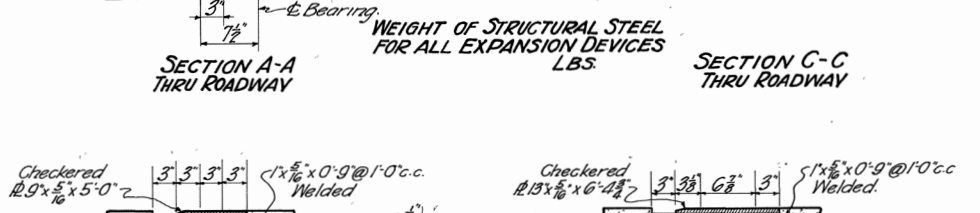
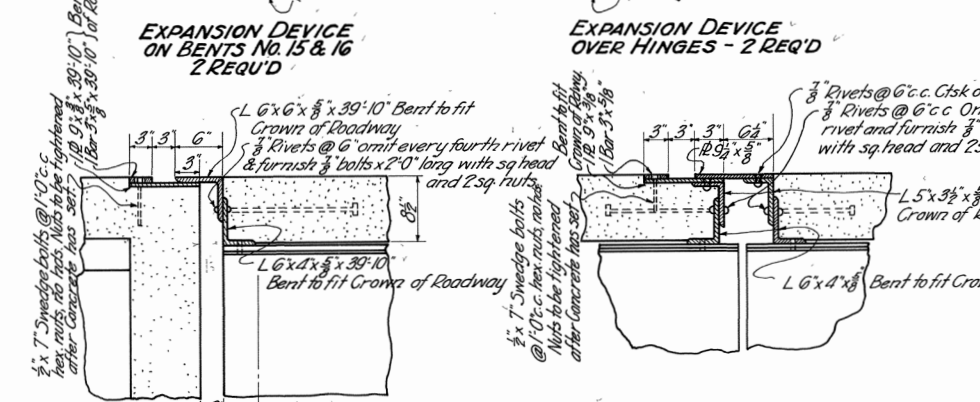
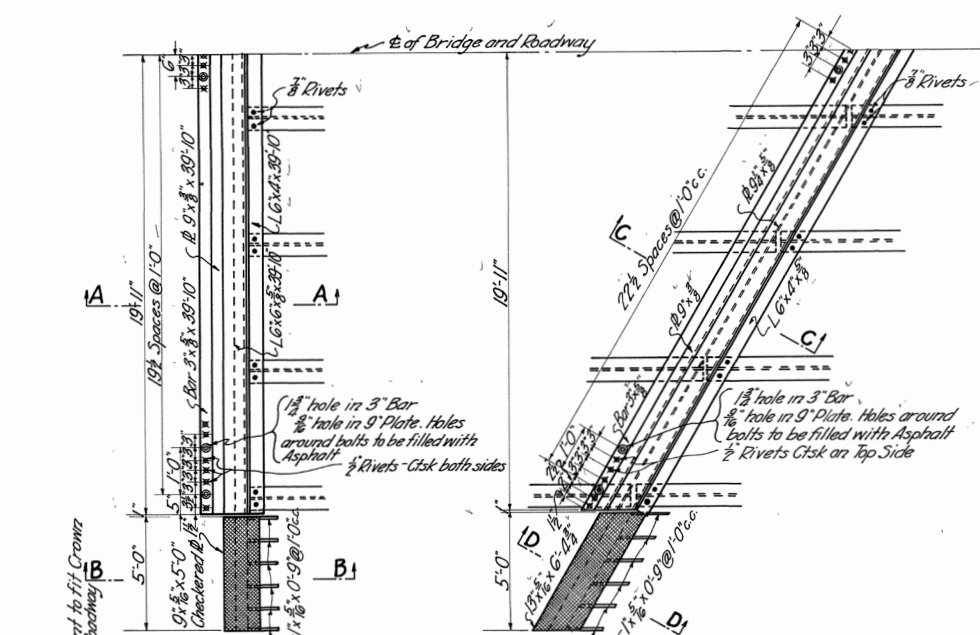
SPANS NO. 16-17-18
STA. 34+93.88
DYER CO
1932

DESIGNED BY: *H. Fisher* DATE: 2-5-32
DRAWN BY: *Shaffer* DATE: 5-7-32
CHECKED BY: *A. K. Gessner* DATE: 7-7-32

APPROVED: *L. W. Kenilworth*
BRIDGE ENGINEER
STATE HIGHWAY ENGINEER

Fills under hinge pls revised 9-26-32.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	TENN.	39-E	1932	13	34



GENERAL NOTES:-

- Specifications: Standard Road and Bridge Specifications of the Tennessee Department of Highways and Public Works.
- Concrete shall be Class "A"
- Reinforcing Steel: See Specifications.
- Forms and Finish: See Specifications.
- Concrete Piles to be precast & 20'0" long.

EXTENSION No. 18 & 2			EXTENSION No. 38 & 4		
BAR No.	SIZE	LENGTH	No.	SIZE	LENGTH
A	12	12'-10"	12	12	12'-10"
B	6	11'-6"	6	1/2"	11'-6"
C	4	5'-0"	4	1/2"	5'-0"
D	6	5'-0"	6	1/2"	5'-0"
E	24	5'-6"	24	3/4"	5'-6"
F	16	22'-6"	16	3/4"	23'-3"
G	84	4'-6"	84	1/2"	4'-6"
H	16	4'-0"	16	3/4"	4'-0"
J	24	2'-6"	24	1/2"	2'-6"
K	10	6'-0"	10	1/2"	6'-0"
L	8	1'-6"	8	1/2"	1'-6"

DETAILS OF SIDEWALK EXTENSIONS ESTIMATED QUANTITIES (Four Extensions)

CONCRETE CLASS "A"	26.9 Cu. Yds.
REINFORCING STEEL	2740 LBS.
PRECAST PILES	160 LIN. FT.

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
NASHVILLE

DETAILS OF BRIDGE

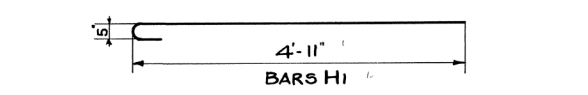
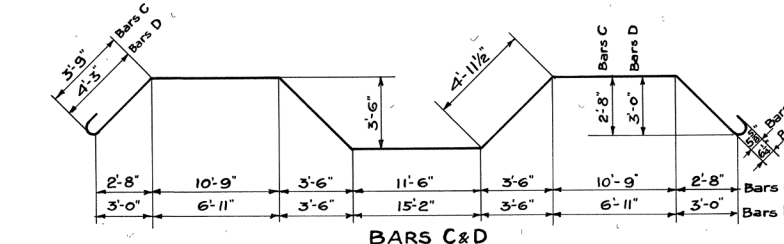
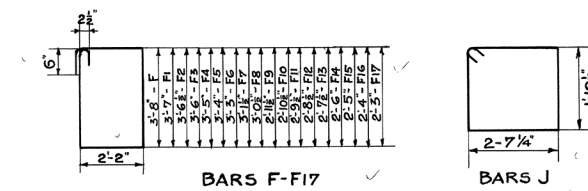
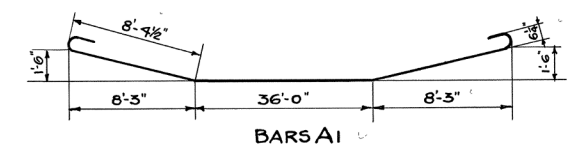
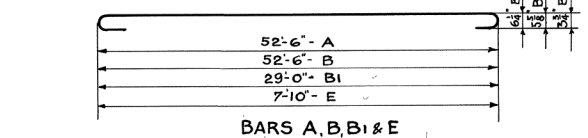
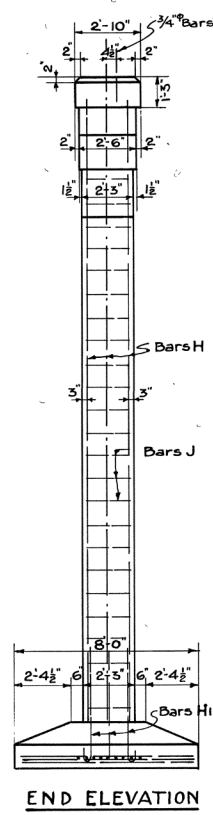
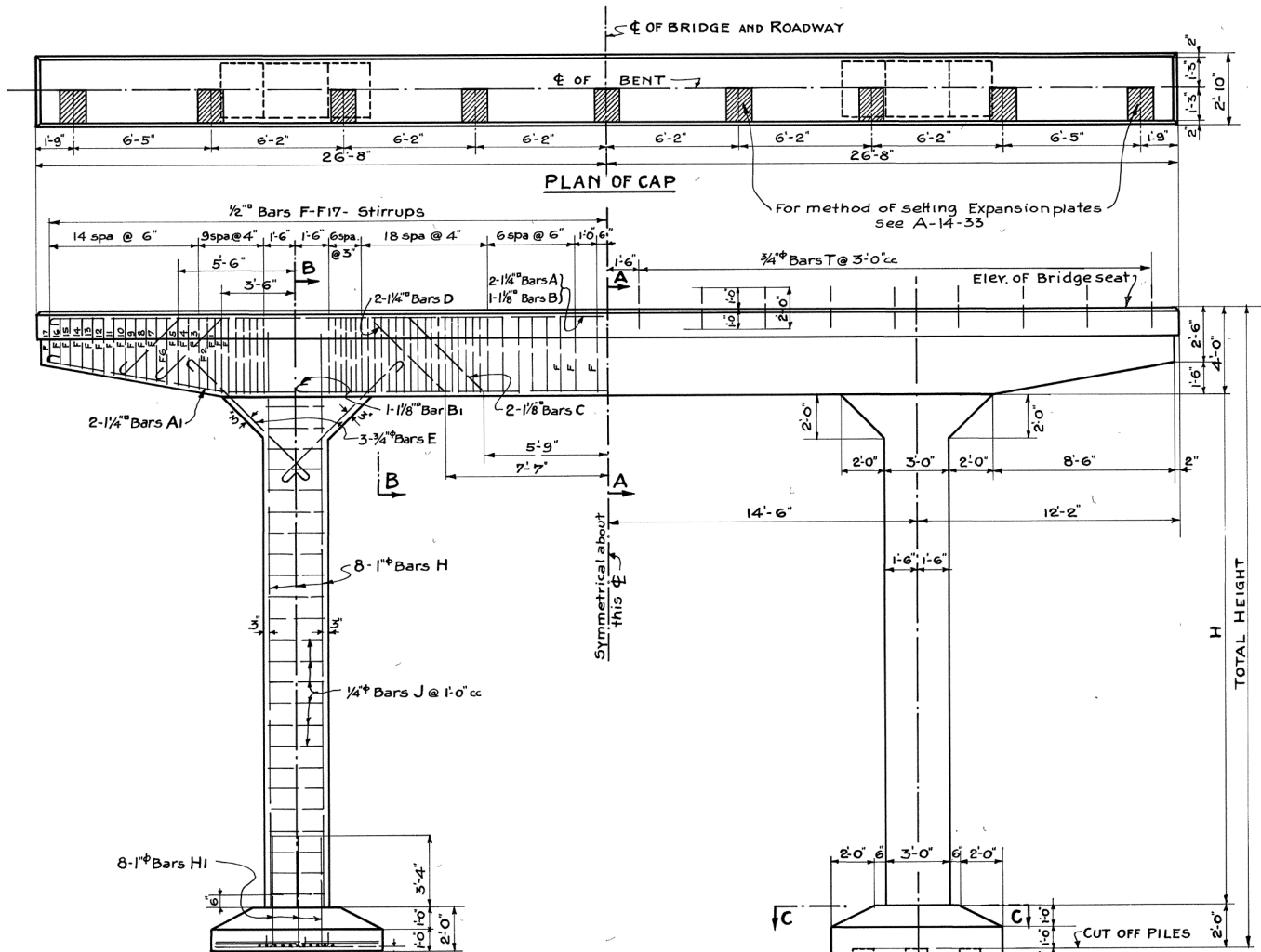
STA. 34+93.82
DYER CO.
1932

DESIGNED BY: *H. J. ...* DATE: 2-19-32
DRAWN BY: *L. H. ...* DATE: 3-1-32
CHECKED BY: *D. R. ...* DATE: Apr. 1932

CORRECTED BY: *L. H. ...* BRIDGE ENGINEER
APPROVED: *L. H. ...* STATE HIGHWAY ENGINEER

TABLE OF DIMENSIONS AND ESTIMATED QUANTITIES.

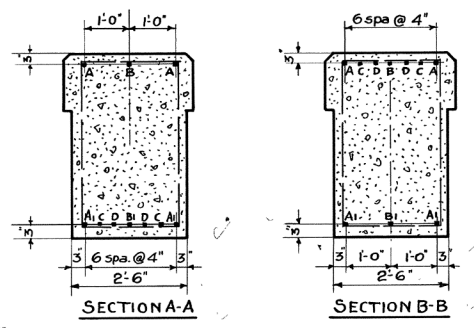
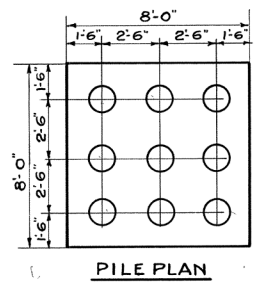
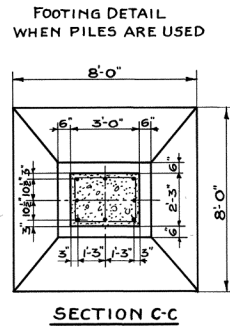
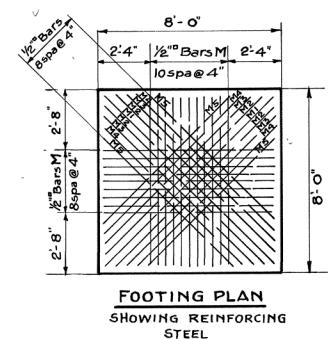
BENT NO.	BRIDGE SEAT ELEV.	CUT-OFF PILES ELEV.	TOTAL HEIGHT	H	STEEL REINFORCEMENT			QUANTITIES					
					BARS H		BARS J		CONC. CL. A	REINF. STEEL	UNT. TIMBER		
					NO.	SIZE	LENGTH	NO.	SIZE	LENGTH	CU. YDS.	LBS.	PILES LH. FT.
1	476.02	446.52	29'-6"	23'-6"	16	1"	26'-10"	46	1/4"	9'-5"	4.32	5940	360
2	476.77	446.52	30'-3"	24'-3"	16	"	27'-7"	48	"	9'-5"	4.36	5976	360
3	477.52	446.52	31'-0"	25'-0"	16	"	28'-4"	50	"	9'-5"	4.40	6011	360
4	478.27	446.52	31'-9"	25'-9"	16	"	29'-1"	52	"	9'-5"	4.44	6047	360
5	479.02	446.52	32'-6"	26'-6"	16	"	29'-10"	52	"	9'-5"	4.47	6079	360
6	479.77	446.52	33'-3"	27'-3"	16	"	30'-7"	54	"	9'-5"	4.51	6115	360
7	480.50	446.50	34'-0"	28'-0"	16	"	31'-4"	56	"	9'-5"	4.55	6150	360
8	481.11	446.44	34'-8"	28'-8"	16	"	32'-0"	58	"	9'-5"	4.58	6182	360
9	481.60	446.52	35'-1"	29'-1"	16	"	32'-5"	58	"	9'-5"	4.60	6200	360
10	481.97	446.47	35'-6"	29'-6"	16	"	32'-10"	58	"	9'-5"	4.62	6218	360
11	482.21	446.46	35'-9"	29'-9"	16	"	33'-1"	60	"	9'-5"	4.64	6232	360
12	482.33	446.50	35'-10"	29'-10"	16	"	33'-2"	60	"	9'-5"	4.64	6236	360
13	482.32	446.49	35'-10"	29'-10"	16	"	33'-2"	60	"	9'-5"	4.64	6236	360
14	482.18	446.51	35'-8"	29'-8"	16	1"	33'-0"	60	1/4"	9'-5"	4.63	6229	360



BILL OF STEEL CONSTANT FOR ALL BENTS

BAR NO.	SIZE	LENGTH	BAR NO.	SIZE	LENGTH
A	2 1/2"	54'-6"	F10	2 1/2"	11'-0"
AI	2 1/2"	54'-9"	F11	2	10'-10"
B	1 1/8"	54'-4"	F12	2	10'-8"
B1	1	30'-10"	F13	2	10'-6"
C	2 1/8"	52'-3"	F14	2	10'-3"
D	2 1/4"	49'-5"	F15	2	10'-1"
E	12 3/4"	9'-2"	F16	2	9'-11"
F	7/8"	12'-7"	F17	2 1/2"	9'-9"
F1	2	12'-5"			
F2	2	12'-4"	HI	16 1"	5'-9"
F3	2	12'-3"	M	40 1/2"	7'-6"
F4	2	12'-1"	M1	4	10'-6"
F5	2	11'-11"	M2	8	9'-10"
F6	2	11'-9"	M3	8	9'-2"
F7	2	11'-6"	M4	8	8'-6"
F8	2	11'-4"	M5	8 1/2"	7'-10"
F9	2 1/2"	11'-2"	T	18 3/4"	2'-0"

Note: Weight of above Bars included in Quantities shown in Table of Dimensions and Estimated Quantities.



GENERAL NOTES
 Specifications: Standard Road and Bridge Specifications of the Tennessee Department of Highways and Public Works.
 Concrete shall be Class "A".
 Reinforcing Steel: see Specifications.
 Forms and Finish: see Specifications.
 Piles to be untreated timber and 20'-0" long.

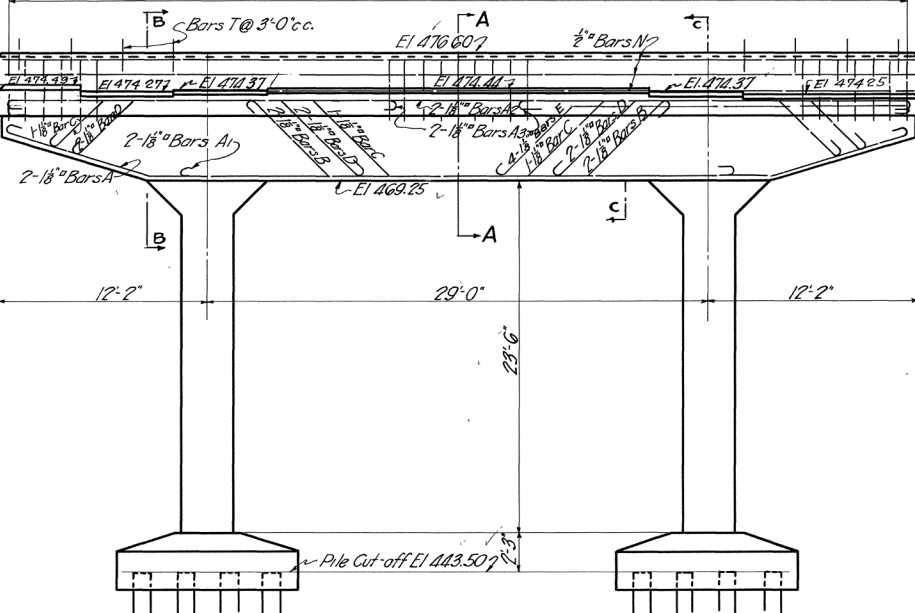
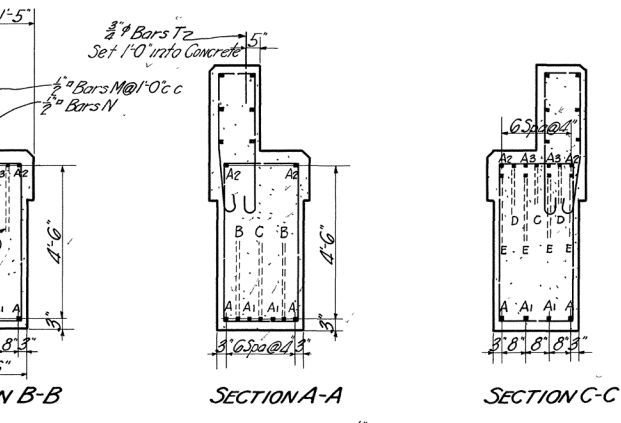
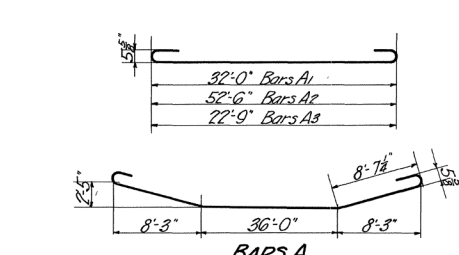
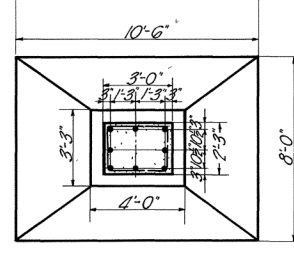
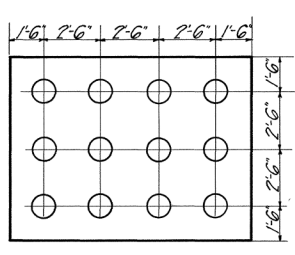
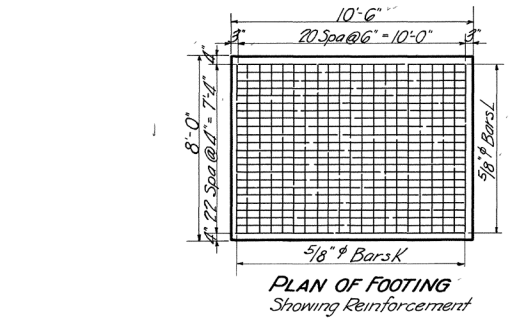
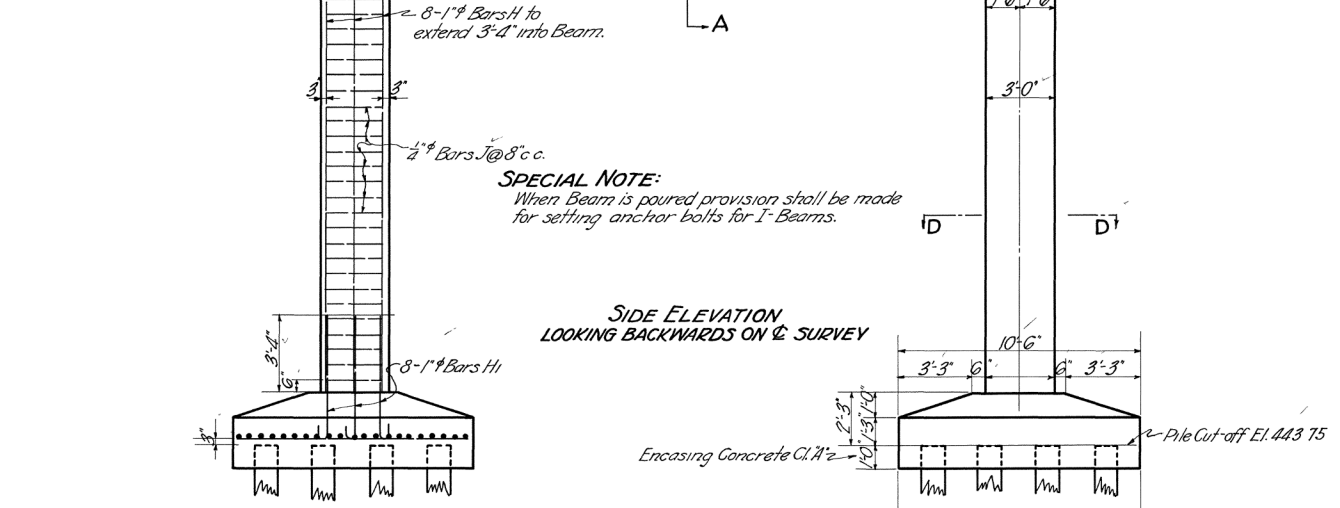
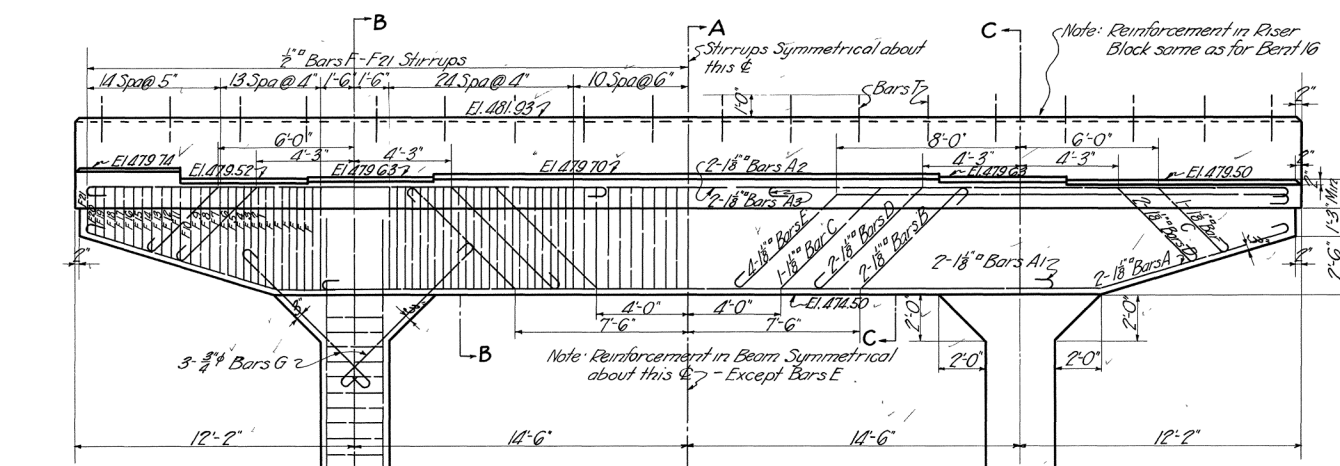
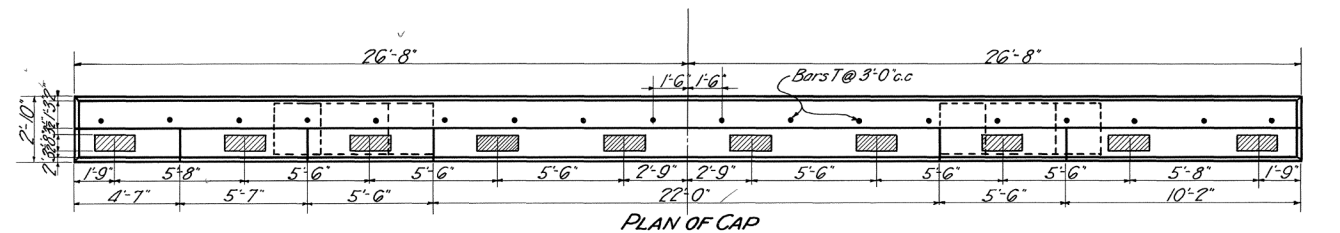
BENDING DETAILS

STATE OF TENNESSEE
 DEPARTMENT OF HIGHWAYS
 AND PUBLIC WORKS
 NASHVILLE
 DETAILS OF
BENTS NO 1-14
 BRIDGE AT STA 34+93.88
 DYER CO.
 1932

CORRECTED BY: *L. M. ...*
 BRIDGE ENGINEER
 APPROVED BY: *J. C. ...*
 STATE HIGHWAY ENGINEER

DESIGNED BY: *W. C. ...* DATE: _____
 DRAWN BY: *W. C. ...* DATE: 2-27-32
 TRACED BY: *W. C. ...* DATE: 19x 1932
 CHECKED BY: *W. C. ...* DATE: March 1932

FED. ROAD DIST. NO.	STATE	FED. AID YEAR	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	TENN.	39-E	1932	15	34



BILL OF STEEL FOR ONE BENT

Bar No.	Size	Length	Bar No.	Size	Length
A	2	55'-1"	F19	2	11'-7"
A1	2	33'-10"	F14	2	11'-4"
A2	2	54'-4"	F15	2	11'-2"
A3	4	24'-7"	F16	2	10'-11"
B	2	29'-7"	F17	2	10'-8"
C	1	54'-1"	F18	2	10'-5"
D	4	21'-4"	F19	2	10'-2"
E	4	27'-7"	F20	2	9'-11"
F	2	14'-6"	F21	2	9'-8"
F1	2	14'-3"	G	12	9'-4"
F2	2	14'-1"	H	16	1'-*
F3	2	13'-8"	I	16	1'-*
F4	2	13'-6"	J	*	9'-6"
F5	2	13'-3"	K	42	8'-6"
F6	2	13'-3"	L	46	10'-0"
F7	2	13'-1"	M	53	10'-0"
F8	2	12'-10"	N	6	52'-10"
F9	2	12'-7"	T	13	2'-0"
F10	2	12'-4"			
F11	2	12'-1"			
F12	2	11'-10"			

ADDITIONAL BILL OF STEEL

BENT	Bars H Length	Bars J No.
No. 15	31'-10"	84
No. 16	26'-10"	68

GENERAL NOTES:-
 Specifications: Standard Road and Bridge Specifications of the Tennessee Department of Highways and Public Works.
 Concrete shall be Class "A"
 Reinforcing Steel: See Specifications
 Forms and Finish: See Specifications.
 Piles shall be Untreated Timber and 20'-0" Long

ESTIMATED QUANTITIES

BENT	CONCRETE CLASS "A" CU. YDS.	REINFORCING STEEL LBS.	TIMBER PILES LIN. FT.
No. 15	62.0	8081	480
No. 16	58.6	7839	480

STATE OF TENNESSEE
 DEPARTMENT OF HIGHWAYS
 AND PUBLIC WORKS
 NASHVILLE
 DETAILS OF
BENTS NO. 15 & 16

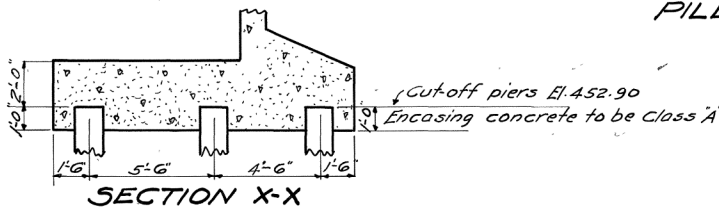
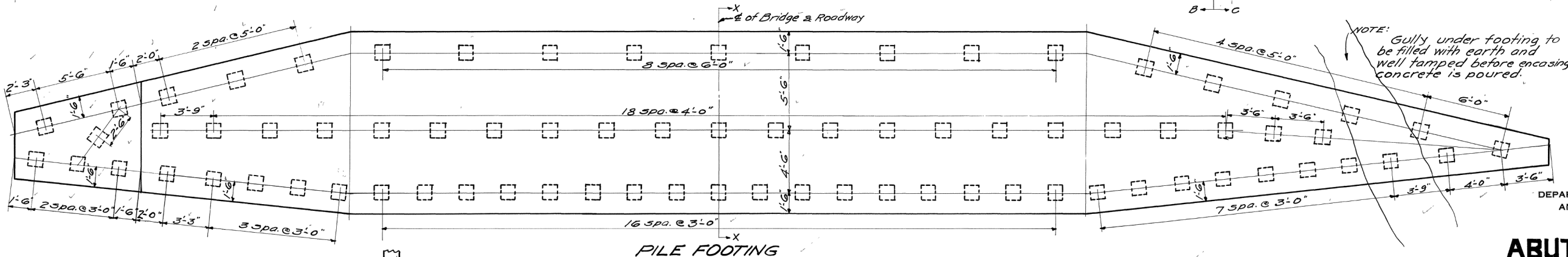
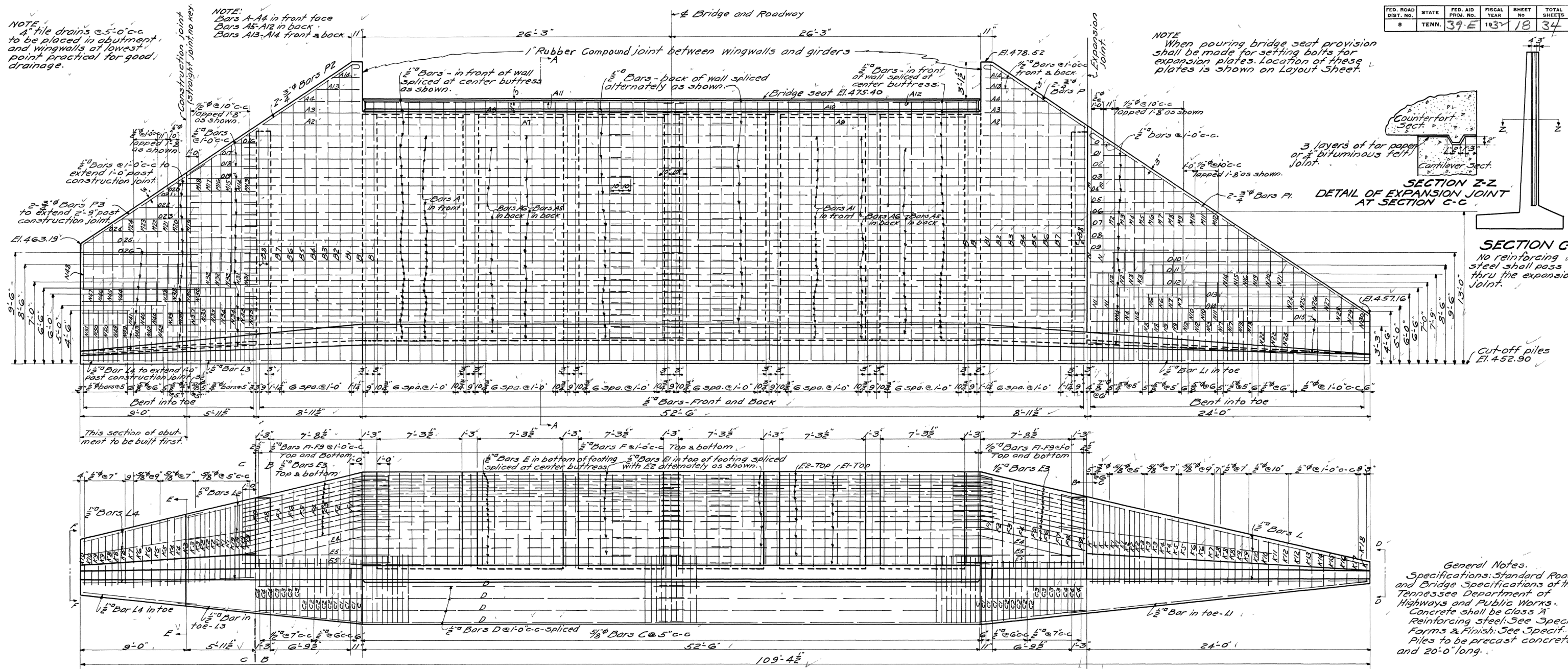
BRIDGE AT
 STA. 34+93.88
 DYER CO.
 1932

CORRECTED BY: *L. M. Christian*
 BRIDGE ENGINEER
 APPROVED: *[Signature]*
 STATE HIGHWAY ENGINEER

MICROFILMED

DESIGNED BY: *[Signature]* DATE: 2-15-32
 DRAWN BY: *[Signature]* DATE: 4-13-32
 CHECKED BY: *[Signature]* DATE: 4-6-32

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	TENN.	39 E	1932	18	34



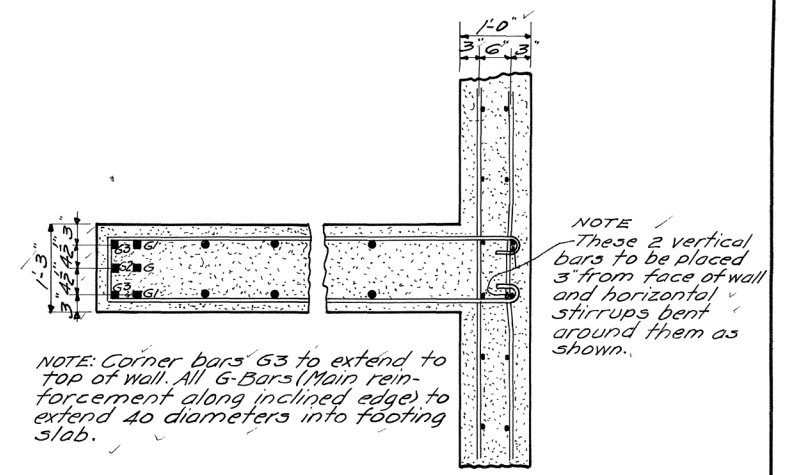
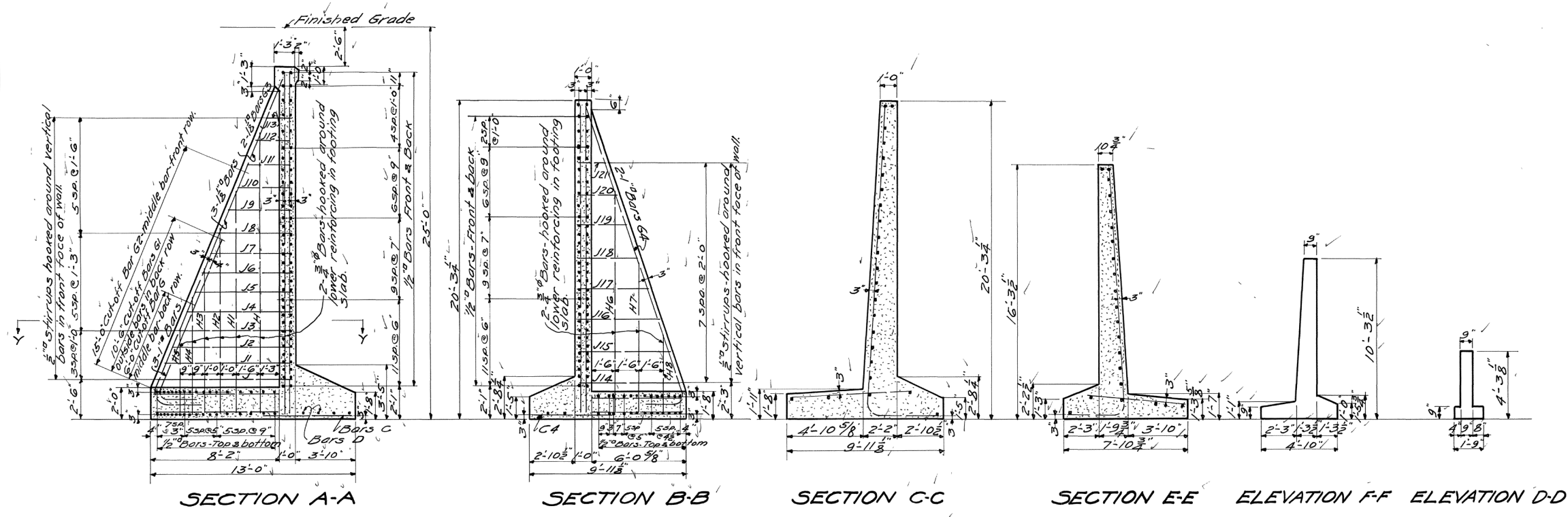
ESTIMATED QUANTITIES
 Concrete Class A 230.4 Cu. Yds.
 Reinforcing steel 134.80 Lbs.
 Precast Piles 1540 Lin. Ft.

STATE OF TENNESSEE
 DEPARTMENT OF HIGHWAYS
 AND PUBLIC WORKS
 NASHVILLE
 DETAILS OF
ABUTMENT NO. 2
 FOR BRIDGE AT STA. 34+93.88
 DYER CO.
 1932

DESIGNED BY: *H. L. Lutz* DATE: 3-25-32
 DRAWN BY: *W. J. Dyer* DATE: 5-11-32
 CHECKED BY: *A. K. Jensen* DATE: 4-20-32

CORRECTED BY: *L. W. Kridler* BRIDGE ENGINEER
 APPROVED: *J. C. McCall* STATE HIGHWAY ENGINEER

MICROFILMED



SECTION Y-Y
THIS SECTION TYPICAL FOR ALL COUNTERFORTS

BILL OF STEEL

BAR NO	SIZE	LENGTH	BAR NO	SIZE	LENGTH	BAR NO	SIZE	LENGTH	BAR NO	SIZE	LENGTH	BAR NO	SIZE	LENGTH
A1	29	37'-0"	E4	4	12'-0"	J8	7	11'-0"	L2	3	5'-9"	N8	2	9'-3"
A2	29	35'-10"	E5	8	12'-0"	J9	7	9'-9"	L3	1	8'-0"	N9	2	9'-0"
A3	2	35'-4"	F	106	1/2"	J10	7	8'-6"	L4	4	10'-0"	N10	2	9'-6"
A4	2	34'-0"	F1	4	7'-9"	J11	7	7'-3"	M	1	8'-3"	N11	1	9'-3"
A5	29	32'-6"	F2	4	7'-9"	J12	7	6'-0"	M1	1	7'-6"	N12	2	7'-6"
A6	29	32'-4"	F3	4	7'-3"	J13	7	4'-9"	M2	1	10'-6"	N13	1	7'-3"
A7	1	39'-9"	F4	4	7'-0"	J14	2	14'-5"	M3	1	10'-0"	N14	1	14'-0"
A8	1	31'-3"	F5	4	6'-9"	J15	2	13'-1"	M4	1	13'-6"	N15	1	13'-6"
A9	1	29'-9"	F6	4	6'-6"	J16	2	11'-9"	M5	1	9'-3"	N16	1	12'-9"
A10	1	38'-3"	F7	4	6'-3"	J17	2	10'-5"	M6	1	8'-9"	N17	2	6'-9"
A11	1	36'-9"	F8	4	6'-0"	J18	2	9'-1"	M7	1	9'-3"	N18	2	6'-6"
A12	1	28'-3"	F9	4	5'-9"	J19	2	7'-8"	M8	1	8'-9"	N19	1	12'-0"
A13	4	3'-9"	G	7	1'-0"	J20	2	6'-4"	M9	1	7'-6"	N20	1	11'-0"
A14	4	2'-3"	G1	14	1'-0"	J21	2	5'-0"	M10	1	8'-6"	N21	1	10'-3"
B	112	22'-0"	G2	7	1'-0"	K1	4	7'-0"	M11	1	7'-9"	N22	2	4'-9"
B1	4	25'-0"	G3	14	1'-0"	K2	6	6'-3"	M12	1	7'-3"	N23	1	4'-6"
B2	4	24'-6"	G4	8	1'-0"	K3	6	6'-0"	M13	1	11'-6"	N24	1	9'-6"
B3	4	23'-9"	H	14	3/8"	K4	4	5'-6"	M14	1	11'-0"	N25	1	8'-6"
B4	4	23'-0"	H1	14	3/8"	K5	4	5'-3"	M15	1	10'-6"	N26	1	7'-9"
B5	4	22'-6"	H2	14	3/8"	K6	4	5'-0"	M16	1	10'-6"	N27	1	7'-0"
B6	4	21'-9"	H3	14	3/8"	K7	2	9'-9"	M17	1	10'-0"	N28	1	6'-0"
B7	4	21'-0"	K3	14	3/8"	K8	6	4'-3"	M18	1	9'-6"	N29	1	5'-3"
B8	8	19'-9"	K4	14	3/8"	K9	4	4'-0"	M19	1	10'-0"	N30	1	4'-6"
C	127	5'-8"	H6	4	14'-9"	K10	4	3'-9"	M20	1	9'-6"	N31	2	13'-3"
C1	8	5'-3"	H7	4	10'-6"	K11	1	3'-6"	M21	1	8'-3"	N32	3	13'-0"
C2	10	5'-0"	H8	4	9'-9"	K12	2	3'-3"	M22	1	9'-0"	N33	2	10'-6"
C3	8	4'-9"	H9	4	8'-6"	K13	1	3'-0"	M23	1	8'-6"	N34	2	10'-3"
CA	6	4'-6"	J	7	1/2"	K14	1	2'-9"	M24	1	7'-9"	N35	2	10'-0"
D	8	36'-0"	J1	7	1/2"	K15	1	2'-6"	N	2	17'-0"	N36	2	11'-6"
E	36	28'-0"	J2	7	1/2"	K16	1	2'-0"	N1	2	11'-9"	N37	1	9'-6"
E1	18	24'-0"	J3	7	1/2"	K17	1	1'-9"	N2	2	13'-3"	N38	2	11'-6"
E2	18	32'-0"	J4	7	1/2"	K18	1	1'-6"	N3	2	13'-0"	N39	2	9'-6"
E3	44	12'-6"	J5	7	1/2"	K19	4	6'-6"	N4	2	10'-3"	N40	2	9'-6"
			J6	7	1/2"	K20	1	2'-0"	N5	1	10'-0"	N41	1	9'-3"
			J7	7	1/2"	K21	1	2'-0"	N6	2	11'-9"	N42	2	7'-9"
						L1	1	25'-6"	N7	2	11'-6"	N43	1	7'-6"
									N8	1	14'-0"	N44	1	14'-6"
									N9	2	14'-0"	N45	1	14'-0"

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
AND PUBLIC WORKS
NASHVILLE
DETAILS OF
ABUTMENT NO. 2
FOR BRIDGE AT STA. 34+93.88
DYER CO
1932

CORRECTED BY *L. W. Kristman*
BRIDGE ENGINEER
APPROVED BY *[Signature]*
STATE HIGHWAY ENGINEER

A-13-55
WITH A-13-54

DESIGNED BY *[Signature]* DATE 3-25-32
DRAWN BY *[Signature]* DATE 5-13-32
TRACED BY *[Signature]* DATE 5-13-32
CHECKED BY *[Signature]* DATE Apr. 1932

PHOTOFILMED

Tr. Cl. W. S. - 5-13-32