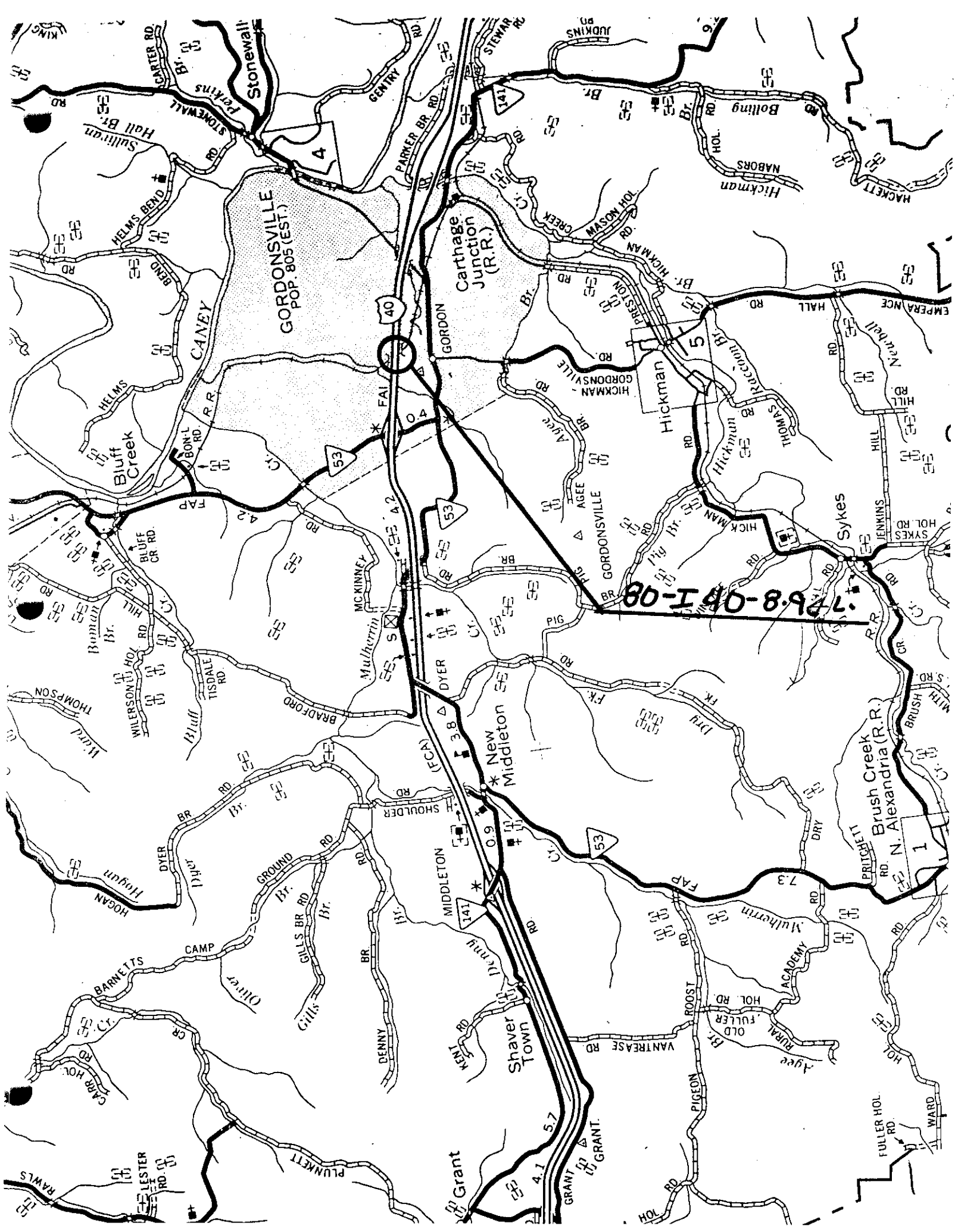




798-140-894

Bridge Maintenance Recommendations

Page No. _____

Page 1 of 1

Bridge Location No.: 80 - I0040 - 8.94 L

Co. Route Log Mile

Crossing: CSX RR & COUNTY ROAD *

Bridge Rating: GOOD

Inspection Cycle: 16

Inspection Date: 4/22/2003

Comments: -0-

Bridge Number: 80I00400018

County: Smith

Region: 03

District: 32

Maint.Resp.: 01

Spec.Case: 0

Co.Seq: 01

Maintenance Recommendations:

Maintenance Completed

By / Date

COMPLETION NOTIFICATION: RETURN WITHIN 6 MONTHS OF INSPECTION DATE.

INITIAL AND DATE RECOMMENDATIONS WHEN COMPLETED.

MAINTENANCE ACTIVITIES ARE COMPLETED (DATE) _____ BY _____

MAINTENANCE ACTIVITIES ARE PARTIALLY COMPLETED (DATE) _____ BY _____

MAINTENANCE ACTIVITIES ARE INCOMPLETE, SCHEDULED FOR (DATE) _____

EXPLANATIONS AND COMMENTS:

CONTACT:

MR. RAY MCCLELLAND
D.O.T. BRIDGE INSPECTION
6601 CENTENNIAL BLVD.
NASHVILLE, TN 37243

MR. DON GREER
D.O.T. BRIDGE INSPECTION
6601 CENTENNIAL BLVD.
NASHVILLE, TN 37243

Bridge Maintenance Recommendations

Page No. _____

Page 1 of 1

Bridge Location No.: 80 - I0040 - 8.94 L

Co. Route Log Mile

Crossing: CSX RR & COUNTY ROAD *

Bridge Rating: GOOD

Inspection Cycle: 15

Inspection Date: 6/11/01

Comments: -0-

Bridge Number: 80I00400018

County: Smith

Region: 03

District: 32

Maint.Resp.: 01

Spec.Case: 0

Co.Seq: 01

Maintenance Recommendations:

Maintenance Completed

By / Date

XXX

COMPLETION NOTIFICATION: RETURN WITHIN 6 MONTHS OF INSPECTION DATE.

INITIAL AND DATE RECOMMENDATIONS WHEN COMPLETED.

MAINTENANCE ACTIVITIES ARE COMPLETED (DATE) _____ BY _____

MAINTENANCE ACTIVITIES ARE PARTIALLY COMPLETED (DATE) _____ BY _____

MAINTENANCE ACTIVITIES ARE INCOMPLETE, SCHEDULED FOR (DATE) _____

EXPLANATIONS AND COMMENTS:

CONTACT:

MR. RAY MCCLELLAND
D.O.T. BRIDGE INSPECTION
6601 CENTENNIAL BLVD.
NASHVILLE, TN 37243

MR. DON GREER
D.O.T. BRIDGE INSPECTION
6601 CENTENNIAL BLVD.
NASHVILLE, TN 37243

BRIDGE MAINTENANCE RECOMMENDATIONS

BRIDGE SEQ. NO. : 80I00400018

BRIDGE NO. : 80 - I0040 - 0894 - L
OVER : CSX RR & COUNTY ROAD *

DATE : 08/23/95 BRIDGE RATING : GOOD COUNTY : Smith
CO. SEQ. : 01 INSPECTION CYCLE : 14 MAINT DIST : 32
SPEC. CASE : 1 INSPECTION DATE : 06/10/99 REGION : 03

007 - FACILITY CARRIED BY STRUCT : I40 349207A
021 - MAINTENANCE RESPONSIBILITY : 01
022 - OWNER : 01
042 - TYPE OF STRUCTURE : 14
043 - STRUCTURE TYPE, MAIN : 505
044 - STRUCTURE TYPE, APPROACH : 000
045 - SPANS, MAIN UNIT : 004
046 - SPANS, APPROACH : 0000
049 - STRUCTURE LENGTH : 000224
032 - APPROACH ROADWAY WIDTH : 038
034 - SKEW : 47
051 - BRDG RDWY WID, CRB-TO-CRB : 0420
052 - DECK WIDTH, OUT-TO-OUT : 0440
500 - HWY OF THE INVENTORY ROUTE : 01

: MAINTENANCE & REPAIR RECOMMENDATIONS :

1 III

: MAINTENANCE COMPLETED :

1 BY _____ DATE _____

: COMMENTS FOR BRIDGE SEQ. NO. : 80I00400018 :

COMPLETION NOTIFICATION : RETURN WITHIN 6 MONTHS OF INSPECTION DATE

MAINTENANCE ACTIVITIES ARE

--- COMPLETED (DATE) -----
--- PARTIALLY COMPLETE (DATE) -----
--- INCOMPLETE SCHEDULED FOR (DATE) -----

EXPLANATIONS AND COMMENTS:



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

Bridge Condition Coding Form

Revised 06/15/2000

Bridge Number: 80I004000181
(Includes Item 5A)

Feature Intersected: CSX RR & COUNTY ROAD

County: 80
Route: 10040
Special Case: 0
County Sequence: 01
Log Mile: 8.94

CODE ONLY THOSE VALUES WHICH HAVE CHANGED

ITEM #	DESCRIPTION	VALUE	CONDITION CODING GUIDELINES (Values for Coding Items 58, 59, 60 and 62)
90	INSPECTION DATE	<u>06/11/2001</u> <u>4 122 1 03</u>	N NOT APPLICABLE
10	MINIMUM V.C. OVER DECK (ROADWAY + SHOULDERS)	99 FT. 99 IN. _____ FT. _____ IN.	9 EXCELLENT CONDITION
520	MINIMUM V.C. OVER DECK (EXCLUDES SHOULDERS)	99 FT. 99 IN. _____ FT. _____ IN.	8 VERY GOOD CONDITION - NO PROBLEMS NOTED.
36	TRAFFIC SAFETY FEATURES		7 GOOD CONDITION - SOME MINOR PROBLEMS.
	Br. Rail Trans. Appr. Rail Appr. Rail Ends		6 SATISFACTORY CONDITION - MINOR DETERIORATION OF STRUCTURAL ELEMENTS.
	1 1 1 1		5 FAIR CONDITION - ALL PRIMARY STRUCTURAL ELEMENTS ARE SOUND BUT MAY HAVE MINOR SECTION LOSS, CRACKING, SPALLING OR SCOUR.
41	STRC OPEN/CLOSED/POSTED A K P	A	4 POOR CONDITION - ADVANCED SECTION LOSS, DETERIORATION, SPALLING OR SCOUR.
58	DECK	7	3 SERIOUS CONDITION - LOSS OF SECTION, DETERIORATION, SPALLING OR SCOUR HAVE SERIOUSLY AFFECTED PRIMARY STRUCTURAL COMPONENTS. LOCAL FAILURES ARE POSSIBLE. FATIGUE CRACKS IN STEEL OR SHEAR CRACKS IN CONCRETE MAY BE PRESENT.
59	SUPERSTRUCTURE	7	2 CRITICAL CONDITION - ADVANCED DETERIORATION OF PRIMARY STRUCTURAL ELEMENTS. FATIGUE CRACKS IN STEEL OR SHEAR CRACKS IN CONCRETE MAY BE PRESENT OR SCOUR MAY HAVE REMOVED SUBSTRUCTURE SUPPORT. UNLESS CLOSELY MONITORED IT MAY BE NECESSARY TO CLOSE THE BRIDGE UNTIL CORRECTIVE ACTION IS TAKEN.
60	SUBSTRUCTURE	6	1 "IMMINENT" FAILURE CONDITION - MAJOR DETERIORATION OR SECTION LOSS PRESENT IN CRITICAL STRUCTURAL COMPONENTS OR OBVIOUS VERTICAL OR HORIZONTAL MOVEMENT AFFECTING STRUCTURAL STABILITY. BRIDGE IS CLOSED TO TRAFFIC BUT CORRECTIVE ACTION MAY PUT BACK IN LIGHT SERVICE.
61	CHANL/CHANL PROTECTION	N	0 FAILED CONDITION - OUT OF SERVICE AND BEYOND CORRECTIVE ACTION.
62	CULVERT AND RETAIN WALL	N	
71	WATERWAY ADEQUACY	N	
72	APPROACH RDWY ALIGNMENT (USE VALUES OF 3, 6, OR 8)	8	
521	OVERALL CONDITION (Circle One)		
	<u>GOOD</u> FAIR POOR CRITICAL		

Martin Daniel
TEAM LEADER SIGNATURE

4 122 1 03
REVIEW DATE



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

Underpass Condition Coding Form

Revised 06/15/2000

Bridge Number: 80I004000182
(Includes Item 5A)

Feature Intersected: I40/CSX RR& A252 HOGAN R

County: 80

Route: 0A252

Special Case: 0

County Sequence: 01

Log Mile: 0.29

CODE ONLY THOSE VALUES WHICH HAVE CHANGED

ITEM #	DESCRIPTION	VALUE	UNDERPASS SAFETY FEATURES
90	INSPECTION DATE	<u>06/11/2001</u> <u>4 1221 03</u>	515 (A) TYPE UNDERPASS BARRIER None Exists but Needed
10	MINIMUM V.C. OVER DECK (ROADWAY + SHOULDERS)	<u>29</u> FT. <u>0</u> IN. <u>18</u> FT. <u>11</u> IN.	Revised Barrier Type
520	MINIMUM V.C. OVER DECK (EXCLUDES SHOULDERS)	<u>19</u> FT. <u>1</u> IN. ____ FT. ____ IN.	(B) ADEQUACY OF BARRIER OR RAIL 0
47	TOTAL HORIZONTAL UNDERCLEARANCE	<u>40</u> FT. <u>4</u> IN. ____ FT. ____ IN.	(C) ADEQUACY OF TRANSITIONS 0
54	MINIMUM VERTICAL UNDERCLEARANCE (EXCLUDES SHOULDERS)	<u>18</u> FT. <u>11</u> IN.	(D) ADEQUACY OF TERMINALS 0
55	MINIMUM LATERAL UNDERCLEARANCE ON RIGHT SIDE Circle One: <u>(H)</u> R	<u>8</u> FT. <u>0</u> IN.	554 VERTICAL CLEARANCE LISTED ON HEIGHT POSTING 99 FT. 99 IN.
56	MINIMUM LATERAL UNDERCLEARANCE ON LEFT SIDE	<u>0</u> FT. <u>0</u> IN.	____ FT. ____ IN.
521	OVERALL CONDITION (Circle One) <u>(GOOD)</u> FAIR POOR CRITICAL	HEIGHT POSTED AT BOTH APPROACHES?	YES [] NO <u>(X)</u> N/A []

555 COMMENTS _____

Martin Daniel
TEAM LEADER SIGNATURE

4 1221 03
REVIEW DATE



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

Bridge Condition Coding Form

Revised 06/15/2000

Bridge Number: 80I004000181
(Includes Item 5A)

Feature Intersected: CSX RR & COUNTY ROAD

County: 80

Route: 10040

Special Case: 0

County Sequence: 01

Log Mile: 8.94

CODE ONLY THOSE VALUES WHICH HAVE CHANGED

ITEM #	DESCRIPTION	VALUE	CONDITION CODING GUIDELINES (Values for Coding Items 58, 59, 60 and 62)
90	INSPECTION DATE	<u>06/10/1999</u> <u>6 / 11 / 01</u>	N NOT APPLICABLE
10	MINIMUM V.C. OVER DECK (ROADWAY + SHOULDERS)	99 FT. 99 IN. ____ FT. ____ IN.	9 EXCELLENT CONDITION
520	MINIMUM V.C. OVER DECK (EXCLUDES SHOULDERS)	99 FT. 99 IN. ____ FT. ____ IN.	8 VERY GOOD CONDITION - NO PROBLEMS NOTED.
36	TRAFFIC SAFETY FEATURES		7 GOOD CONDITION - SOME MINOR PROBLEMS.
	Br. Rail Trans. Appr. Rail Appr. Rail Ends		6 SATISFACTORY CONDITION - MINOR DETERIORATION OF STRUCTURAL ELEMENTS.
	1 1 1 1		5 FAIR CONDITION - ALL PRIMARY STRUCTURAL ELEMENTS ARE SOUND BUT MAY HAVE MINOR SECTION LOSS, CRACKING, SPALLING OR SCOUR.
41	STRC OPEN/CLOSED/POSTED A K P	A	4 POOR CONDITION - ADVANCED SECTION LOSS, DETERIORATION, SPALLING OR SCOUR.
58	DECK	7	3 SERIOUS CONDITION - LOSS OF SECTION, DETERIORATION, SPALLING OR SCOUR HAVE SERIOUSLY AFFECTED PRIMARY STRUCTURAL COMPONENTS. LOCAL FAILURES ARE POSSIBLE. FATIGUE CRACKS IN STEEL OR SHEAR CRACKS IN CONCRETE MAY BE PRESENT.
59	SUPERSTRUCTURE	7	2 CRITICAL CONDITION - ADVANCED DETERIORATION OF PRIMARY STRUCTURAL ELEMENTS. FATIGUE CRACKS IN STEEL OR SHEAR CRACKS IN CONCRETE MAY BE PRESENT OR SCOUR MAY HAVE REMOVED SUBSTRUCTURE SUPPORT. UNLESS CLOSELY MONITORED IT MAY BE NECESSARY TO CLOSE THE BRIDGE UNTIL CORRECTIVE ACTION IS TAKEN.
60	SUBSTRUCTURE	6	1 "IMMINENT" FAILURE CONDITION - MAJOR DETERIORATION OR SECTION LOSS PRESENT IN CRITICAL STRUCTURAL COMPONENTS OR OBVIOUS VERTICAL OR HORIZONTAL MOVEMENT AFFECTING STRUCTURAL STABILITY. BRIDGE IS CLOSED TO TRAFFIC BUT CORRECTIVE ACTION MAY PUT BACK IN LIGHT SERVICE.
61	CHANL/CHANL PROTECTION	N	0 FAILED CONDITION - OUT OF SERVICE AND BEYOND CORRECTIVE ACTION.
62	CULVERT AND RETAIN WALL	N	
71	WATERWAY ADEQUACY	N	
72	APPROACH RDWY ALIGNMENT (USE VALUES OF 3, 6, OR 8)	8	
521	OVERALL CONDITION (Circle One)		
	<u>GOOD</u> FAIR POOR CRITICAL		
	<u>Martin Daniel</u>	<u>6 / 11 / 01</u>	
	TEAM LEADER SIGNATURE	REVIEW DATE	



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

Underpass Condition Coding Form

Revised 06/15/2000

Bridge Number: 80I004000182
(Includes Item 5A)

Feature Intersected: 140/CSX RR& A252 HOGAN R

County: 80
Route: 0A252
Special Case: 0
County Sequence: 01
Log Mile: 0.29

CODE ONLY THOSE VALUES WHICH HAVE CHANGED

ITEM #	DESCRIPTION	VALUE	UNDERPASS SAFETY FEATURES
90	INSPECTION DATE	<u>06/10/1999</u> <u>6 / 11 / 01</u>	515 (A) TYPE UNDERPASS BARRIER None Exists but Needed
10	MINIMUM V.C. OVER DECK (ROADWAY + SHOULDERS)	19 FT. 0 IN. <u>18</u> FT. <u>11</u> IN.	Revised Barrier Type
520	MINIMUM V.C. OVER DECK (EXCLUDES SHOULDERS)	19 FT. 1 IN. <u>18</u> FT. <u>11</u> IN.	(B) ADEQUACY OF BARRIER OR RAIL 0
47	TOTAL HORIZONTAL UNDERCLEARANCE	40 FT. 4 IN. ____ FT. ____ IN.	(C) ADEQUACY OF TRANSITIONS 0
54	MINIMUM VERTICAL UNDERCLEARANCE (EXCLUDES SHOULDERS)	Circle One: (H) R <u>18</u> FT. <u>11</u> IN.	(D) ADEQUACY OF TERMINALS 0
55	MINIMUM LATERAL UNDERCLEARANCE ON RIGHT SIDE Circle One: (H) R <u>6</u> FT. <u>0</u> IN.	554 VERTICAL CLEARANCE LISTED ON HEIGHT POSTING 99 FT. 99 IN.	
56	MINIMUM LATERAL UNDERCLEARANCE ON LEFT SIDE	<u>0</u> FT. <u>0</u> IN.	____ FT. ____ IN.
521	OVERALL CONDITION (Circle One) <u>GOOD</u> FAIR POOR CRITICAL	HEIGHT POSTED AT BOTH APPROACHES?	YES [] NO [] N/A [X]

555 COMMENTS _____

Martini Daniel
TEAM LEADER SIGNATURE

6 / 11 / 01
REVIEW DATE



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

Bridge Condition Coding Form

County: 80

Route: 10040

Special Case: 0

County Sequence: 1

Log Mile: 8.94

Bridge Number: 80I004000181
(Includes Item 5A)

Feature Intersected: CSX RR & COUNTY ROAD

CODE ONLY THOSE NUMBERS WHICH HAVE CHANGED

ITEM #	DESCRIPTION	VALUE	COMMENTS
90	INSPECTION DATE	5/1/97	RATINGS FOR CODING ITEMS 58, 59, 60 AND 62
		6/10/99	N NOT APPLICABLE
10	MINIMUM V.C. OVER DECK (ROADWAY + SHOULDERS)	99 FT. 99 IN.	9 EXCELLENT CONDITION
		FT. IN.	8 VERY GOOD CONDITION - NO PROBLEMS NOTED.
520	MINIMUM V.C. OVER DECK (EXCLUDES SHOULDERS)	99 FT. 99 IN.	7 GOOD CONDITION - SOME MINOR PROBLEMS.
		FT. IN.	6 SATISFACTORY CONDITION - MINOR DETERIORATION OF STRUCTURAL ELEMENTS.
54	MINIMUM VERTICAL UNDERCLEARANCE (EXCLUDES SHOULDERS)	R 19 FT. 0 IN.	5 FAIR CONDITION - ALL PRIMARY STRUCTURAL ELEMENTS ARE SOUND BUT MAY HAVE MINOR SECTION LOSS, CRACKING, SPALLING OR SCOUR.
	Circle One: H R N	FT. IN.	4 POOR CONDITION - ADVANCED SECTION LOSS, DETERIORATION, SPALLING OR SCOUR.
36	TRAFFIC SAFETY FEATURES		3 SERIOUS CONDITION - LOSS OF SECTION, DETERIORATION, SPALLING OR SCOUR HAVE SERIOUSLY AFFECTED PRIMARY STRUCTURAL COMPONENTS. LOCAL FAILURES ARE POSSIBLE. FATIGUE CRACKS IN STEEL OR SHEAR CRACKS IN CONCRETE MAY BE PRESENT.
	Br. Rail Trans. Appr. Rail Appr. Rail Ends		2 CRITICAL CONDITION - ADVANCED DETERIORATION OF PRIMARY STRUCTURAL ELEMENTS. FATIGUE CRACKS IN STEEL OR SHEAR CRACKS IN CONCRETE MAY BE PRESENT OR SCOUR MAY HAVE REMOVED SUBSTRUCTURE SUPPORT. UNLESS CLOSELY MONITORED IT MAY BE NECESSARY TO CLOSE THE BRIDGE UNTIL CORRECTIVE ACTION IS TAKEN.
	1 1 1 1		1 "IMMINENT" FAILURE CONDITION - MAJOR DETERIORATION OR SECTION LOSS PRESENT IN CRITICAL STRUCTURAL COMPONENTS OR OBVIOUS VERTICAL OR HORIZONTAL MOVEMENT AFFECTING STRUCTURAL STABILITY. BRIDGE IS CLOSED TO TRAFFIC BUT CORRECTIVE ACTION MAY PUT BACK IN LIGHT SERVICE.
41	STRC OPEN/CLOSED/POSTED	A	0 FAILED CONDITION - OUT OF SERVICE AND BEYOND CORRECTIVE ACTION.
	A K P		
58	DECK	7	
59	SUPERSTRUCTURE	7	
60	SUBSTRUCTURE	6	
61	CHANL/CHANL PROTECTION	N	
62	CULVERT AND RETAIN WALL	N	
72	APPROACH RDWY ALIGNMENT (USE VALUES OF 3, 6, OR 8)	8	
	OVERALL CONDITION (Circle One)		
	GOOD FAIR POOR CRITICAL		
	SIGNATURE	DATE	
	Albert Wayne Hunter	6/10/99	



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

Underpass Condition Coding Form

County: 80

Route: 0A252

Special Case: 0

County Sequence: 1

Log Mile: 0.29

Bridge Number: 80I004000182
(Includes Item 5A)

Feature Intersected: I40/CSX RR& A252 HOGAN R

CODE ONLY THOSE NUMBERS WHICH HAVE CHANGED

ITEM #	DESCRIPTION	VALUE	UNDERPASS SAFETY FEATURES
90	INSPECTION DATE	5/1/97 <u>06/10/99</u>	(A) TYPE UNDERPASS BARRIER None Exists but Needed
10	MINIMUM V.C. OVER DECK (ROADWAY + SHOULDERS)	19 FT. 0 IN. <u>18</u> FT. <u>11</u> IN.	Revised Barrier Type
520	MINIMUM V.C. OVER DECK (EXCLUDES SHOULDERS)	19 FT. 1 IN. <u>18</u> FT. <u>11</u> IN.	(B) ADEQUACY OF BARRIER OR RAIL 0
47	TOTAL HORIZONTAL UNDERCLEARANCE	40 FT. 4 IN. <u>38</u> FT. <u>0</u> IN.	(C) ADEQUACY OF TRANSITIONS 0
55	MINIMUM LATERAL UNDERCLEARANCE ON RIGHT SIDE ☒ R	7 FT. 6 IN.	(D) ADEQUACY OF TERMINALS 0
	Circle One: ☒ H ☐ R ☐ N	<u>6</u> FT. <u>0</u> IN.	VERTICAL CLEARANCE LISTED ON HEIGHT POSTING SIGNS
56	MINIMUM LATERAL UNDERCLEARANCE ON LEFT SIDE	0 FT. 0 IN. ____ FT. ____ IN.	99 FT. 99 IN. ____ FT. ____ IN.
OVERALL CONDITION (Circle One)			
☒ GOOD ☐ FAIR ☐ POOR ☐ CRITICAL		HEIGHT POSTED AT BOTH APPROACHES?	YES [] NO [] N/A [X]

NOTE: DESCRIBE ANY PROBLEMS ON BRIDGES THAT THE STATE DOES NOT INSPECT (SUCH AS RAILROAD OR PRIVATE BRIDGES) THAT WOULD AFFECT THE ROADWAY SUCH AS LOOSE MEMBERS, SEVERELY SPALLED OR CRACKED CONCRETE, EXCESSIVE SECTION LOSS ON STEEL, EXCESSIVE TIMBER DECAY, ETC. ALSO, DESCRIBE ANY UNSAFE ITEMS.

COMMENTS

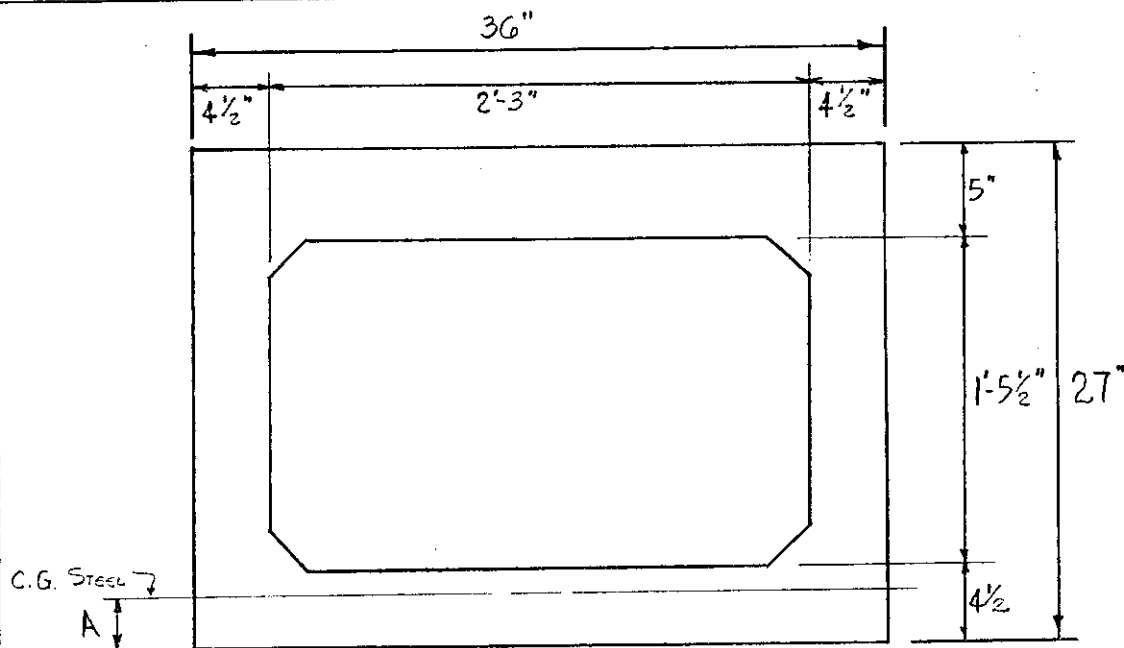
SIGNATURE

6/10/99
DATE

80-I40-9.01

04-2-79

C.A.J.

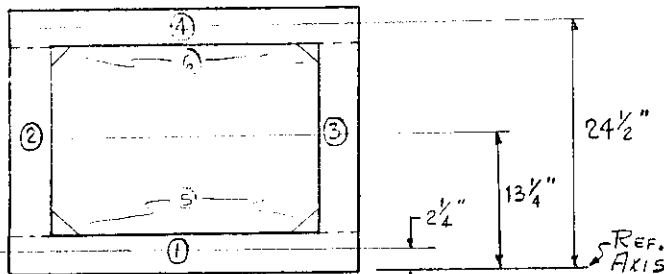


C.G. STEEL = 3.23"

No. of PRESTRESSING
STRANDS →Wt of member
→ 33,400 #PRESTRESSED
STEEL AREA = 2.80 in²

35 @ 3/8"

INITIAL FORCE - 14,000 #

CONCRETE - 5,000 PSI. $e = 10.49$ @ $\frac{1}{4}$ SPAN. ULTIMATE - 20,000 #

AREA:

$$\begin{aligned}
 1 &= 36 \times 4\frac{1}{2} = 162.0 \\
 2 \& 3 &= 17\frac{1}{2} \times 4\frac{1}{2} = 78.75 \times 2 = 157.5 \\
 4 &= 36 \times 5 = 180.0 \\
 5 &= 2 \times .5 (3 \times 3) = 9.0 \\
 6 &= 2 \times .5 (3 \times 3) = 9.0
 \end{aligned}
 \left. \begin{array}{l} \\ \\ \\ \\ \end{array} \right\} \text{centroid is } 15\frac{1}{2} \text{ height}$$

$$\begin{array}{rcl}
 \text{N.A.} & = & 162.0 \times 2.25 = 364.50 \\
 & & 157.5 \times 13.25 = 2,086.88 \\
 & & 180.0 \times 24.50 = 4,410.00 \\
 & & 9.0 \times 5.50 = 49.50 \\
 & & 9.0 \times 21.00 = 189.00 \\
 \hline
 & & 517.50 \qquad 7,099.88
 \end{array}$$

$$\text{N.A.} = 7099.88 / 517.50$$

$$\text{N.A.} = 13.7196 = 13.72$$

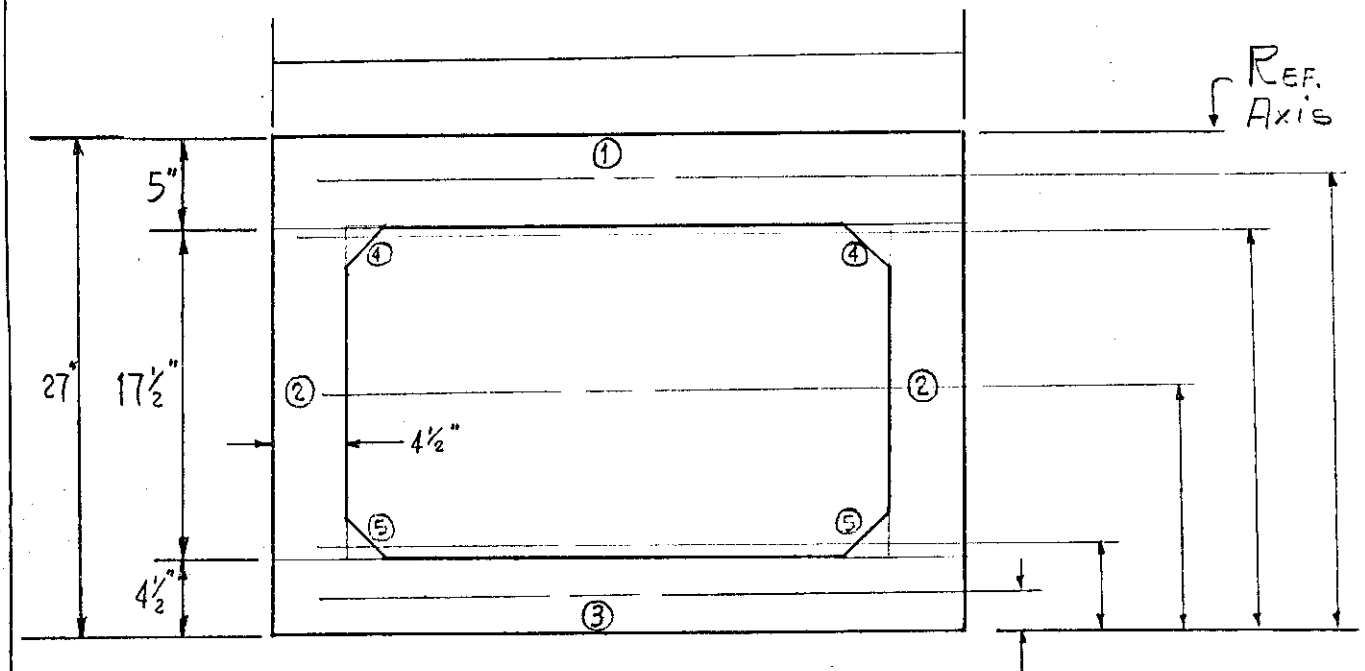
$$e = \text{N.A.} - \text{c.g. STEEL} \rightarrow e = 13.72 - 3.23 = e = 10.49$$

80-I40-9.01

04-02-77

C.G.J.

(2)



SECTION	AREA - A	y	A _y	A _y ²	I _o
1	180.0	2.50	450.0	1,125.00	375.00
2	157.5	13.75	2,165.625	29,777.34	2,009.77
3	162.0	24.75	4,009.500	99,235.13	273.38
4 - 1/2"	9.0	6.00	54.00	324.00	4.50
5	9.0	21.00	189.00	3,969.00	4.50
	<u>517.50</u>		<u>6,868.13</u>	<u>134,430.47</u>	<u>2,667.15</u>

$$I_T = I_o + A_y^2 = 137,097.62$$

80-I40-9.01 01-03-79

C.G.J.

$$I_T = I_o + A y^2$$

$$y_t = A y \div A = 6868.13 \div 517.50$$

$$y_b = h - y_t = 27.00 - 13.27$$

$$I_c = I_T - A (y_t)^2 = 137,097.62 - 517.5(13.27)^2$$

$$Z_t = I_c \div y_t = 45,969.54 \div 13.27$$

$$Z_b = I_c \div y_b = 45,969.54 \div 13.73$$

$$W_G = A / 144 \times 150 = (517.50 / 144) \times 150$$

$$I_T = 137,097.62 \text{ in}^4$$

$$y_t = 13.27 \text{ in.}$$

$$y_b = 13.73 \text{ in.}$$

$$I_c = 45,969.54 \text{ in}^4$$

$$Z_t = 3,464.17 \text{ in}^3$$

$$Z_b = 3,348.11 \text{ in}^3$$

$$W_G = 539.06 \text{ \#}$$

STEP #2 → COMPUTE STRESSES IN THE GIRDER AT CENTER SPAN DUE TO ITS OWN DEAD LOAD.

$$M_G = W_G \cdot L^2 \cdot 12\% / 8 = (539.06 \times 56)^2 \cdot 12 / 8 \quad M_G = 2,535,738.24 \text{ in-LBS}$$

$$f_G^t = M_G / Z_t = 2,535,738.24 / 3,464.17$$

$$f_G^t = 731.99 \text{ PSI. (+) COMP.}$$

$$f_G^b = M_G / Z_b = 2,535,738.24 / 3,348.11$$

$$f_G^b = 757.36 \text{ PSI. (-) TENSION}$$

STEP #3 → COMPUTE STRESSES IN THE BEAM AT CENTER SPAN DUE TO APPLIED LOADS.

$$3" \text{ ASPHALT} \rightarrow \text{THE BEAM IS 3' WIDE} \rightarrow W_S = (3 \times 36 \times 144 / 144)$$

$$W_{S_R} = 108 \text{ \#}$$

$$M_{S_R} = W_S \cdot L^2 \cdot 12\% / 8 = (108 \times 56)^2 \cdot 12 / 8$$

$$M_S = 508,032 \text{ in-LBS.}$$

TOTAL SUPERIMPOSED MOMENT CARRIED BY BEAM.

$$M_S = 508,032$$

$$\rightarrow M_S = 508,032 \text{ in-LBS.}$$

$$f_G^t = M_S \div Z_t = 508,032 \div 3,464.17$$

$$f_s^t = 146.65 \text{ PSI. (+)}$$

$$f_G^b = M_S \div Z_b = 508,032 \div 3,348.11$$

$$f_s^b = 151.74 \text{ PSI. (-)}$$

FIND L.L. MOMENT.

FROM AASHO TABLES $\rightarrow$ L.L. BENDING MOMENT PER LADE
 IS $\rightarrow$ PG. 296 & 299. $\rightarrow$ H15 $\rightarrow 370.1 \times 1000 = 370,100$ FT-LBS.
 H20 $\rightarrow 735.1 \times 1000 = 735,100$ FT-LBS.

$$\text{IMPACT} = 50/L + 125 \rightarrow L = 56' \rightarrow 50/56 + 125 \quad \text{IMPACT} = 0.2762$$

WHEEL LOAD/STRINGER = MOST SEVERE CASE 1 LINE OF WHEELS/1 BEAM = 1.0000

WHEEL LOAD = ONE-HALF LADE LOAD FROM WHICH THE NET LIVE-LOAD
 MOMENT PER STRINGER IS:

$$M_{L_{H15}} = 370,100 \times 1.0000 \times 0.50 \times 1.2762 \times 12\% \quad M_{L_{H15}} = 2,833,929.72 \text{ in. lbs.}$$

$$f_{L_{H15}}^t = M_{L_{H15}} \div Z_t = 2,833,929.72 \div 3,464.17 \quad f_{L_{H15}}^t = 818.07 \text{ PSI (+)}$$

$$f_{L_{H15}}^b = M_{L_{H15}} \div Z_b = 2,833,929.72 \div 3,348.11 \quad f_{L_{H15}}^b = 846.43 \text{ PSI (-)}$$

$$M_{L_{H20}} = 735,100 \times 1.0000 \times 0.50 \times 1.2762 \times 12\% \quad M_{L_{H20}} = 5,628,807.72 \text{ in. lbs.}$$

$$f_{L_{H20}}^t = M_{L_{H20}} \div Z_t = 5,628,807.72 \div 3,464.17 \quad f_{L_{H20}}^t = 1,624.86 \text{ PSI (+)}$$

$$f_{L_{H20}}^b = M_{L_{H20}} \div Z_b = 5,628,807.72 \div 3,348.11 \quad f_{L_{H20}}^b = 1,681.19 \text{ PSI (-)}$$

80-140-9.01

04-01-77

C.G.J.

STEP #4 → DETERMINE THE MAGNITUDE AND LOCATION OF THE PRESTRESSING FORCE AT THE CENTER OF THE SPAN.

$$\frac{F}{A_c} + \frac{F_e}{Z_b} = -\int_G^b -\int_s^b -\int_{L-HS20}^b + \int_{t,P}$$

$$\frac{F}{517.5} + \frac{F(10.49)}{3,348.11} = -(-757.36) - (-151.74) - (-1681.19) + 0$$

$$\frac{F}{517.5} + \frac{10.49 F}{3,348.11} = +2,590.29 \text{ psi.}$$

$$F + 1.62F = 1,340,475.08 \rightarrow F = 511,631.71 \text{ in.-lb.}$$

FINAL PRESTRESS FORCE:

$$f_F^b = \frac{F}{A_c} + \frac{F_e}{Z_b} + 0$$

See STEP #4 ABOVE →

$$f_F^b = +2590.29 + 0 \rightarrow f_F^b = 2,590.29 \text{ psi.}$$

SUBTRACT LOSSES:

GIRDER → f_G^b & SUPERIMPOSED LOAD → f_S^b

$$\text{TOTAL} = 757.36 + 151.74 = 909.10 \text{ psi.}$$

$$\begin{array}{r} 2,590.29 \\ -909.10 \\ \hline \text{(inv.) } 1681.19 \end{array}$$

POSTING
(inv.)

$$\frac{1681.19}{846.43} \times 15 = 29.79^T$$

$$\frac{1681.19}{1681.19} \times 36 = 36^T$$

DEFLECTION:

AT TIME OF PRESTRESSING $f'_c = 4,000$ psi.

$$E_c = 1,800,000 + 500 f'_c = 1,800,000 + 500(4,000) = E_c = 3,800,000$$

9,834,496.

$$\Delta_G = \frac{5wL^4}{384EI_c} = \frac{5 \times 539\% \times (56')^4 \times (12'')^3}{384 \times 3,800,000 \times 45,969.54} = -0.6828''$$

DEFLECTION DUE TO ECCENTRICITY OF PRESTRESSING FORCE:

$$M_e = F_e \rightarrow 511,631.74'' \times 10.49'' = 5,367,016.95 \text{ in-LB}$$

@ CENTER SPAN

376.

148.

$$\Delta = \frac{(5,367,016.95) \times (28' \times 12'') \times (14' \times 12'')}{EI} = +1.7343''$$

$$\text{NET CAMBER} = +1.7343 - 0.6828 = +1.0515''$$

WHEN THE ASPHALT IS ADDED THE $f'_c = 5,000$

$$E_c = 1,800,000 + 500 f'_c = 1,800,000 + 500(5,000) = E_c = 4,300,000$$

$$\Delta_{\text{ASP.}} = \frac{5wL^4}{384EI} = \frac{5 \times (108\%) \times (56')^4 \times (12'')^3}{384 \times 4,300,000 \times 45,969.54} = -0.1209''$$

$$\text{NET CAMBER} = +1.0515 - 0.1209 = +0.9306''$$

ASSUME CAMBER GROWTH @ 150%

$$1.50 \times 0.9306 \times \frac{45,969.54}{137,097.62} = 0.4681$$

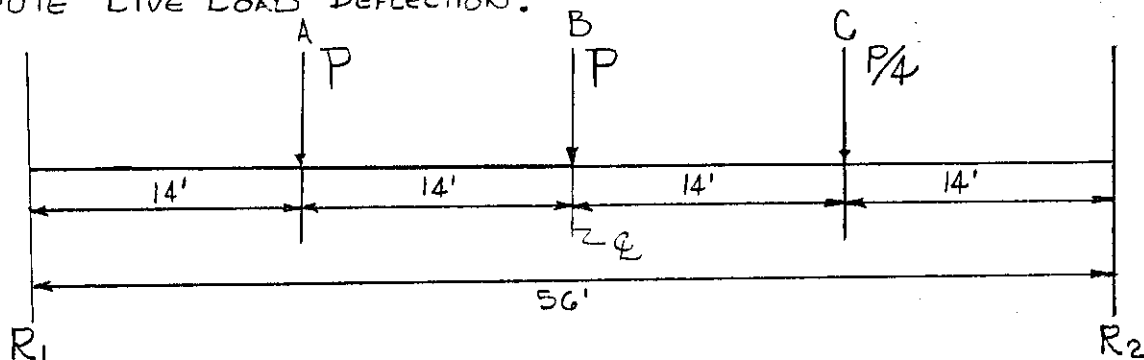
$$\text{TOTAL FINAL CAMBER} = 0.9306 + 0.4681 = +1.3987''$$

80-I40-9.01

04-9-79

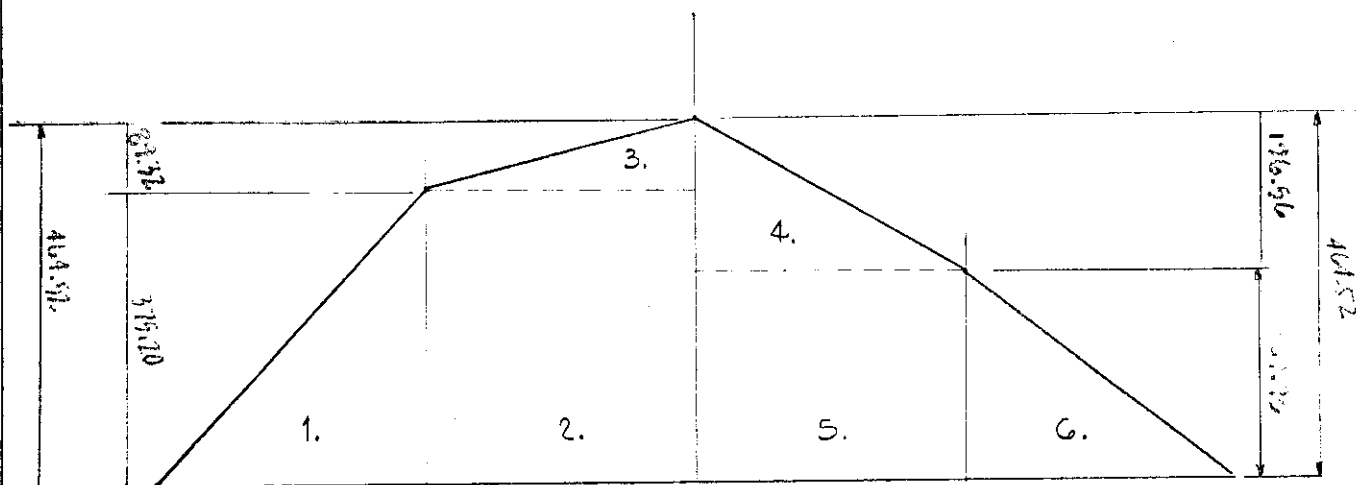
C.G.J.

COMPUTE LIVE LOAD DEFLECTION:



For 1-beam $\rightarrow 32\frac{1}{2} \times 1.0000 \times 1.2762 = 20.42^k \leftrightarrow P$

$8\frac{1}{2} \times 1.0000 \times 1.2762 = 5.10^k \leftrightarrow P/4$



$$R_1 = \frac{(5.10^k \times 14' + 20.42^k \times 28' + 20.42^k \times 42')}{56'} = R_1 = 26.80^k$$

$$R_2 = 20.42^k + 20.42^k + 5.10^k - 26.80^k = R_2 = 19.14^k$$

$$M_A = R_1 \cdot \frac{1}{4} = 26.80^k \cdot 14' = 375.20^{k \cdot ft}$$

$$M_B = R_1 \cdot \frac{1}{2} - P_A \cdot \frac{1}{4} = 26.80^k \cdot 28' - 20.42^k \cdot 14' = 464.52^{k \cdot ft}$$

$$M_C = R_2 \cdot \frac{1}{4} = 19.14^k \cdot 14' = 267.96^{k \cdot ft}$$

Compute Moments FROM R₁

	AREA			L TO CENTROID	
1.	14	$\times 375.20 \times .5$	$= 2,626.40$	$\times 9.33'$	$= 24,504.31$
2.	14	$\times 375.20$	$= 5,252.80$	$\times 21.00'$	$= 110,308.80$
3.	14	$\times 89.32 \times .5$	$= 625.24$	$\times 23.33'$	$= 14,586.85$
4.	14	$\times 196.56 \times .5$	$= 1,375.92$	$\times 32.67'$	$= 44,951.31$
5.	14	$\times 267.96$	$= 3,751.44$	$\times 35.0'$	$= 131,300.40$
6.	14	$\times 267.96 \times .5$	$= 1,875.72$	$\times 46.67'$	$= 87,539.85$
			<u>15,507.52</u>		<u>413,191.52</u>

80-I40-9.01

04-9-79

C.G.J.

$$R_2 = 413,191.52 \div 56' = 7,378.42 \text{ ft}^2\text{-kips.}$$

$$R_1 = 15,507.52 - 7,378.42 = 8,129.10 \text{ ft}^2\text{-kips.}$$

COMPUTE MOMENTS @ $\frac{L}{4}$ SPAN. TAKE MOMENTS TO LEFT OF $\frac{L}{4}$.

$$\begin{array}{rcl} R_1 = 28' & \times & 8,129.10 = +227,614.80 \\ 1 = 23.33' & \times & 2,626.40 = -61,273.91 \\ 2 = 7.00' & \times & 5,252.80 = -36,769.60 \\ 3 = 4.67' & \times & 625.24 = -2,919.87 \end{array}$$

$$M = +126,651.42 \text{ ft}^3\text{-kips}$$

$$\text{DEFLECTION} = \frac{M}{EI}$$

$$\frac{126,651.42 \times 1,000 \times (12'')^3}{4,300,000 \times 137,097.62} = -0.3712''$$

$$\begin{aligned} \text{FINAL CAMBER UNDER LIVE LOAD} &= +1.3987 - 0.3712 \\ &= +1.0275'' \end{aligned}$$

WHAT AREA MOMENT GIVES A 1 INCH DEFLECTION?

$$\frac{M}{EI} = 1.00 \rightarrow \frac{1,000(12'')^3 M}{4,300,000 \times 137,097.62} = 1.00''$$

$$1,728,000 M = 5.89519766 \times 10''$$

$$M = 341,157.27 \text{ ft}^3\text{-kip} \rightarrow \text{THIS INCLUDES IMPACT \& DISTRIBUTION FACTOR}$$

IF AN HS20 PRODUCES AN AREA-MOMENT OF +126,651.42, WHAT SIZE VEHICLE PRODUCES AN AREA-MOMENT OF +341,157.27?

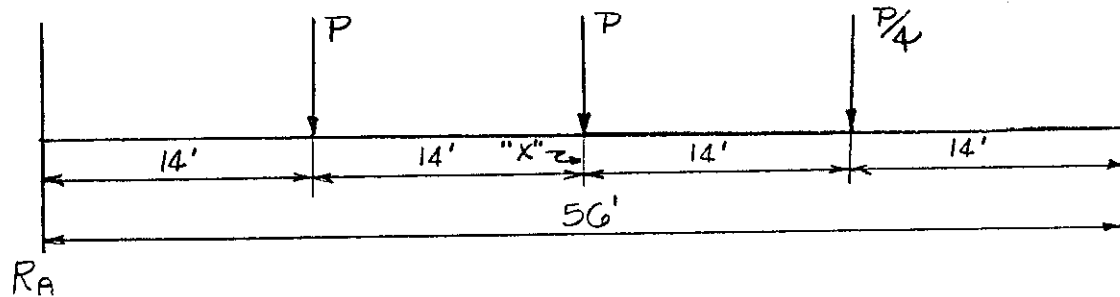
$$\frac{341,157.27}{126,651.42} (36) = 96.97^T$$

FIND THE END REACTIONS OF THE 96.97 TON VEHICLE POSITIONED IN THE MIDDLE OF THE 56' SPAN.

$$96.97 \text{ TONS} \times \frac{2,000 \#}{1 \text{ TON}} = 193,340 \# \rightarrow 193,340 \# = 2.25 \text{ AXLES}$$

$$85,928.89 \# = 1 \text{ AXLE}$$

$$42,964.45 \# = 2 \text{ LINES WHEELS / AXLE} = P$$



$$R_A = \frac{(14' \cdot 10.741^k + 28' \cdot 42.964^k + 42' \cdot 42.964^k)}{56'} = 56.39^k$$

$$M_x = R_A \cdot 28' - P \cdot \frac{1}{4} = 56.39^k \cdot 28' - 42.964^k \cdot 14' = 977.42^{k \cdot l}$$

LIVE LOAD MOMENT $\rightarrow$

$$977.42 \frac{k \cdot l}{ft} \times 12 \frac{in}{ft} \times 1000 \frac{\#}{kip} = 11,729,040 \text{ in} \cdot \text{LBS.}$$

$$\int_{L-H96.97}^b = M_{L-H96.97} \div Z_b = 11,729,040 \div 3,343.11 = \left\{ \int_L^b = 3,503.18 \frac{\#}{in^2} \right.$$

THE LIVE LOAD STRESS FOR H520 IS 1681.19 $\frac{\#}{in^2}$

$$\text{DIFFERENCE IS} \rightarrow 3,503.18 - 1681.19 = 1821.99 \frac{\#}{in^2}$$

SINCE WE ARE NOT ALLOWING ANY TENSION (ie +424) IN THE FINAL PRESTRESS FORCE EQUATION $\rightarrow$

WE ARE OVERSTRESSED $\rightarrow 1822 \text{ PSI.}$

Bridge No.: 80 — 10040 — 0894
Crossing:: CSX RR & COUNTY ROAD *
Federal No.: 80I00400018

Date:

April 22, 2003

PIC1



BRIDGE NO. AT ABUTMENT # 1

Bridge No.: 80 — I0040 — 0894
Crossing:: CSX RR & COUNTY ROAD *
Federal Nc 80I00400018

Date:

April 22, 2003

PIC2



LEFT SIDE VIEW @ UNDERPASS

PIC3



LEFT SIDE VIEW FROM R.R.

Bridge No.: 80 — 10040 — 0894
Crossing:: CSX RR & COUNTY ROAD *
Federal No.: 80I00400018

Date:

April 22, 2003

PIC4



JOINT @ B-APPR-TYP

PIC5



VIEW ACROSS DECK FROM A-APPR

Bridge No.: 80 — 10040 — 0894

Crossing:: CSX RR & COUNTY ROAD *

Federal No.: 80100400018

Date:

June 11, 2001

PIC1



BRIDGE NO. AT ABUTMENT # 1

Bridge No.: 80 — 10040 — 0894
Crossing: CSX RR & COUNTY ROAD *
Federal No 80100400018

Date:

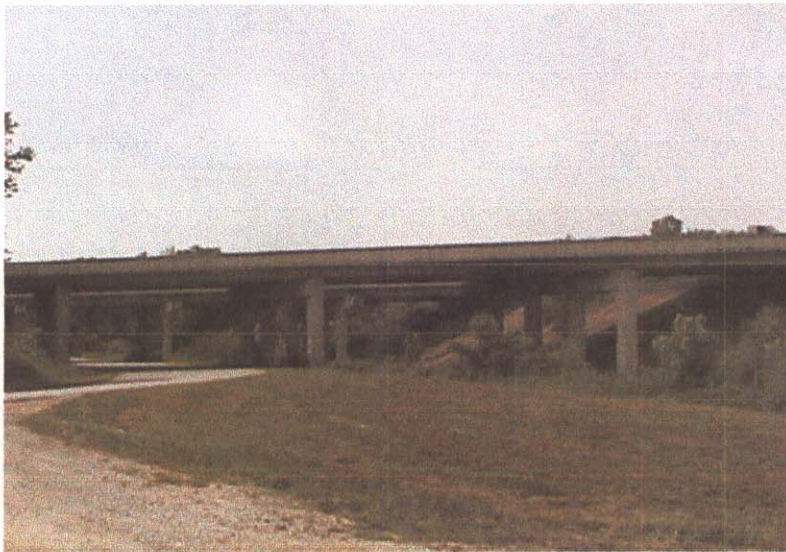
June 11, 2001

PIC2



BREAKOUT W/EXP. REBAR L.S. ABUT-1

PIC3



LEFT SIDE VIEW

Bridge No.: 80 — 10040 — 0894
Crossing:: CSX RR & COUNTY ROAD *
Federal No.: 80I00400018

Date:

June 11, 2001

PIC4



VIEW ACROSS DECK

PIC5



POTHOLE @ JOINT B-APPR-TYPICAL

Bridge No.: 80 — 10040 — 0894
Crossing:: CSX RR & COUNTY ROAD *
Federal No.: 80100400018

Date:

June 10, 1999

PIC4



ABUTMENT TYPICAL

PIC5



BRIDGE NO. AT ABUTMENT # 1

Bridge No.: 80 — 10040 — 0894
Crossing:: CSX RR & COUNTY ROAD *
Federal No.: 80I00400018

Date:

June 10, 1999

PIC1



PIER TYPICAL

Bridge No.: 80 — I0040 — 0894
Crossing: CSX RR & COUNTY ROAD *
Federal No 80I00400018

Date:

June 10, 1999

PIC2



BOTTOM OF DECK

PIC3



LEFT SIDE VIEW

Bridge No.: 80 — 10040 — 0894
Crossing:: CSX RR & COUNTY ROAD *
Federal No.: 80I00400018

Date: June 10, 1999

PIC6



ABUTMENT #1 HONEYCOMBING ON CAP

PIC7



ABUTMENT #1 BREAKOUT WITH EXPOSED REBAR LEFT SIDE

Bridge No.: 80 — I0040 — 0894
Crossing:: CSX RR & COUNTY ROAD *
Federal No.: 80I00400018

Date:

June 10, 1999

PIC8



APPROACH #1

PIC9



APPROACH #2

Bridge No.: 80 — 10040 — 0894
Crossing:: CSX RR & COUNTY ROAD *
Federal No.: 80I00400018

Date: June 10, 1999

PIC10



ACROSS TOP OF DECK

ROUTINE BRIDGE INSPECTION REPORT

Page No. _____

Form BIR 3.0C
(Rev. 9-22-98)
DT-1537

Field Report No. 16 Date 4-22-03
Previous Report No. 15 Date 6/11/2001
Plans: yes

Bridge No. 80I00400018
Eleven Digit No.

Bridge Location No. 80 - I0040 - 8.94 L
Co. Route Log Mile

I 40 over CSX RR & COUNTY ROAD * Indepth Insp. Req'd: no
Road Name Crossing (If yes itemize limits under comment)

Structure Type HBB

FRACTURE CRITICAL: no

FEATURE CHANGES:

Wearing Surface / Type _____ Depth _____ (in.)
Bridge Rail / Describe changes: _____
Approach Rail /

CLEARANCE CHANGES:

(If yes make changes below)

Vertical Clearance over deck _____ (ft.-in.)
Vertical Under Clearance _____ (ft.-in.)
Horizontal Under Clearance _____ (*. ft.)
Deck Width Curb/Curb _____ (*. ft.)
Deck Width Rail/Rail _____ (*. ft.)
Sidewalk Width Rt. _____ Lt. _____

INSPECTORS

Daniel
Crutcher
Waller
Thompson

Condition: GOOD (If change describe in comments)

Comments

Approaches
Deck Condition (Item 58)
Superstructure (Item 59)
a. Beams
b. Bearings
c. Diaphragms
Substructure (Item 60)
a. Caps/Bridge Seats
b. Columns/Piles
c. Footings
d. Wing W./Breast W.
Scour/Erosion
Channel (Item 61)

G	
G	
G	
G	
G	
G	
G	
F	3' x 18" x 3" dp spall
G	
N/V	
G	
G	
N/A	

UNDERWATER INSPECTION

To Be Performed By: n/a
Date Underwater Insp. _____
BRIDGE is: open

Weight Limit Posted no
Gross..... Tons
2 Axle..... Tons
3 or more Axles.. Tons

COMMENTS:

Supervising Bridge Inspector:

Martin Daniel

BRIDGE RATING: GOOD

SUMMARY
80-I40-8.94 LT
4/22/2003

I40/C.S.X. R.R. & County Rd.
4 Span/H.B.B.

This bridge was inspected and found to be in **good** condition. The approach and approach alignment are in good condition. The approach guardrail and bridge rail are standard type and in good condition. There are no paddleboards.

The wearing surface, joint leakage, and expansion joints are good, however, there are some 1mm transverse cracks in the top deck. The bottom deck, beams, and superstructure elements are good. There was a minor 2" deep breakout at abutment #1 cap, this is rated fair. Left wing at abutment #2 is fair with a 2" deep breakout with exposed steel. Backwall also shows a 3 1/2" deep breakout at abutment #1. Bent caps #2 and #3 have transverse cracks on caps up to 1/8" open. Underpass guardrail is not in place making it sub-standard type at this time.

Martin Daniel

ROUTINE BRIDGE INSPECTION REPORT

Page No.

Form BIR 3.0C
(Rev. 9-22-98)
DT-1537

Field Report No. 14 Date 6/10/99
Previous Report No. 15 Date 6-11-01
Plans: yes

Bridge No. 80I00400018
Eleven Digit No.

Bridge Location No. 80 - 10040 - 8.94 L
Co. Route Log Mile

I 40 over CSX RR & COUNTY ROAD *
Road Name Crossing

Indepth Insp. Req'd: no
(If yes itemize limits under comment)

Structure Type HBB

FRACTURE CRITICAL: no

FEATURE CHANGES:

Wearing Surface Type Depth (in.)

Bridge Rail Describe changes:

Approach Rail

CLEARANCE CHANGES: (If yes make changes below)

Vertical Clearance over deck (ft.-in.)
Vertical Under Clearance (ft.-in.)
Horizontal Under Clearance (*. ft.)
Deck Width Curb/Curb (*. ft.)
Deck Width Rail/Rail (*. ft.)
Sidewalk Width Rt. Lt.

INSPECTORS

Daniel
Crutcher
Waller
Thompson

Condition: GOOD (If change describe in comments)

Comments

Approaches	G	potholes developing @ joints
Deck Condition (Item 58)	G	
Superstructure (Item 59)	G	
a. Beams	G	
b. Bearings	G	
c. Diaphragms	G	
Substructure (Item 60)	G	
a. Caps/Bridge Seats	F	Bent # 2 has a 10' long x 1/8" open horizontal crack in cap
b. Columns/Piles	G	
c. Footings	NIV	
d. Wing W./Breast W.	F	2" dp B.O. w/ exp steel - left wing Abut. # 2
Scour/Erosion	—	
Channel (Item 61)	—	

UNDERWATER INSPECTION

To Be Performed By: n/a

Date Underwater Insp.

BRIDGE is: open

COMMENTS:

Weight Limit Posted no

Gross..... Tons

2 Axle..... Tons

3 or more Axles.. Tons

Supervising Bridge Inspector:

Martin Daniel

BRIDGE RATING: GOOD

SUMMARY
80-I40-8.94 LT
6-11-01

I40/C.S.X. R.R. & County Rd.
4 Span/H.B.B.

This bridge was inspected and found to be in **good** condition. The approach and approach alignment are in good condition. The approach guardrail and bridge rail are standard type and in good condition. There are no paddleboards.

The wearing surface, joint leakage, and expansion joints are good, however, there are some 1mm transverse cracks in the top deck. The bottom deck, beams, and superstructure elements are good. There was a minor 2" deep breakout at abutment #1 cap, this is rated fair. Left wing at abutment #2 is fair with a 2" deep breakout with exposed steel. Backwall also shows a 3 1/2" deep breakout at abutment #1. Bent caps #2 and #3 have transverse cracks on caps up to 1/8" open. Underpass guardrail is not in place making it sub-standard type at this time.

Martin Daniel

BRIDGE INSPECTION REPORT

FORM BIR 3.0
Rev. 09/24/98
DT-0069

FIELD REPORT NO. 14 DATE 6-10-99
REVIOUS REPORT NO. 13 DATE 5-6-97
PLANS ---- YES ☒ NO ☐

BRIDGE NO. 80I00400018
ELEVEN DIGIT NO.

BRIDGE LOC. NO. 80-I40-8.94 LT
CO. ROUTE LOG MILE

I 40 OVER CSR RR = County Rd.
ROAD NAME FEATURE INTERSECTED STRUCTURE NAME (IF NAMED)
YEAR CONSTRUCTED 1962 COUNTY Smith MAINTENANCE DISTRICT NO. 32
(ESTIMATED OR ACTUAL)
☐ ☒

YEAR WIDENED 1985 YEAR REHABILITATED 1985
ESTIMATED OR ACTUAL ESTIMATED OR ACTUAL
☐ ☒ ☐ ☒

FEATURES

WEARING SURFACE-- CONCRETE ☐ TIMBER ☐ ASPHALT ☒ (DEPTH= 2")
FLARED WIDTH ----- YES ☐ NO ☒
NAVIGATIONAL CONTROL-- YES ☐ NO ☒
MEDIAN WIDTH ----- OPEN ☒ NONE ☒ CLOSED ☐

BRIDGE SKEW 47° LT ☐ RT ☒

INSPECTORS

STRUCTURE TYPE HBB NO. SPANS 4
Main Span Main Span

STRUCTURE TYPE - NO. SPANS -
Approach Spans Approach Spans

MAXIMUM SPAN LENGTH 56.6' TOTAL LENGTH 221'

1. Hunter
2. Urell
3. Daniel
4. Crutcher
5. Waller
6. _____
7. _____
8. _____
9. _____

WIDTHS
DECK OUT-TO-OUT 44'
ROADWAY CURB/CURB 42'
SIDEWALK - RT - LT
*APPROACH ROADWAY 24
APPR. SHLD. 10 RT 4 LT
*DOES NOT INCLUDE SHOULDER

CLEARANCES
MIN. VERTICAL OVER DECK -
MIN. VERTICAL UNDER CL 13'1"
MIN. LATERAL UNDER CL 7.5 RT
LT

UNDERWATER INSPECTION

INSPECTION PERFORMED BY:
DOT FIELD TEAM ☐ DATE _____
CONTRACT DIVERS ☐ DATE _____
NONE REQUIRED ☒

(<25')
NBIS BRIDGE
LENGTH >25'
(ft) (in)

CHANGE IN STRUCTURAL CONDITION YES ☐ NO ☒
MAJOR REPAIRS MADE YES ☐ NO ☒

FRACTURE CRITICAL
DETAILS: YES ☐ NO ☒
IF YES, INCLUDE BIR 3.9

COMMENTS: _____

Hilbert Wayne Hunter
SUPERVISING BRIDGE INSPECTOR

BRIDGE RATING ☒ ☐ ☐ ☐
GOOD FAIR POOR CRITICAL

PERFORMANCE EVALUATION

Time of day inspected 1100 Weather conditions 95° sunny

Vehicles observed Tractor trailer & passenger type

<u>LIVE LOAD BEHAVIOR</u>	<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
Substructure			
Horiz. & Vert. Defl. - - -	[]	[X]	
Vibration - - - - -	[]	[X]	
Superstructure			
Horiz. & Vert. Defl. - - -	[]	[X]	
Vibration - - - - -	[X]	[]	

APPROACH

Alignment	(G) F P C	
Slab	G F P C	<u>NA</u>
Joints	G F P C	<u>NU paved over</u>
Pavement	(G) F P C	<u>New AC overlay</u>
Embankment	(G) F P C	
Drains	G F P C	<u>NA</u>

TRAFFIC SAFETY FEATURES

		STANDARD	SUB-STANDARD
Bridgerailing	(G) F P C	[X]	[]
Transitions	(G) F P C	[X]	[]
Guardrail	(G) F P C	[X]	[]
Guardrail Terminal	(G) F P C	[X]	[]

SIGNING

	YES	NO	NEEDED	
Paddleboard - - - - -	[X]	[]	[]	WEIGHT LIMIT POSTED
				YES [] NO [X]
Vertical Clearance (< 14') - - - -	[]	[]	[]	
Narrow [] One Lane Bridge [] - []	[]	[]	[]	GROSS _____ TONS
				2 AXLE _____ TONS
				3 OR MORE
				AXLES _____ TONS

Other Signs or Plaques Paddleboard to decal on terminals

Comments Regarding Any Problems With Signing _____

Other Recommendations _____

FORM BIR 3.2
Rev. 09/24/98
DT-0081

BRIDGE LOC. NO. 80-I40-8.94L
CO. ROUTE L.M.

DATE: 6-10-99

DECK

COMMENTS

WEARING SURFACE	(G)	F	P	C	<u>new AC. overlay</u>
DECK - STRUCTURAL	(G)	F	P	C	
CONDITION					
CURBS	G	F	P	C	<u>N/A</u>
MEDIAN	G	F	P	C	<u>N/A</u>
SIDEWALKS	G	F	P	C	<u>N/A</u>
PARAPET	(G)	F	P	C	
RAILING	G	F	P	C	<u>N/A</u>
PAINT	(G)	F	P	C	
DRAINS	G	F	P	C	<u>N/A</u>
LIGHTING STD'S	G	F	P	C	<u>N/A</u>
UTILITIES	G	F	P	C	<u>N/A</u>
JOINT LEAKAGE	(G)	F	P	C	
EXPANSION JOINTS	G	F	P	C	<u>N/A</u>

SUPERSTRUCTURE

COMMENTS

BEARING DEVICES	(G)	F	P	C	
GIRDERS OR BEAMS	(G)	F	P	C	
FLOOR BEAMS	G	F	P	C	<u>N/A</u>
STRINGERS	G	F	P	C	<u>N/A</u>
DIAPHRAGMS	(G)	F	P	C	
BRACING	G	F	P	C	<u>N/A</u>
TRUSSES - GENERAL	G	F	P	C	
- PORTALS	G	F	P	C	
- BRACING	G	F	P	C	
PAINT	G	F	P	C	<u>N/A</u>
ALIGNMENT OF	(G)	F	P	C	
MEMBERS					

TEXTURE COAT

CONDITION RATING	(G)	F	P	C
OVERALL APPEARANCE	(G)	F	P	C
STAINING	(G)	F	P	C
SCALING	(G)	F	P	C
FADING	(G)	F	P	C

NEEDS SPOT PAINTING? YES ☒ NO ☐
NEEDS REPAINTING? YES ☐ NO ☐

COMMENTS: moderate buffi

COMMENDATIONS

FORM BIR 3.3
Rev. 09/24/98
DT-0082

BRIDGE LOC. NO. 80 - I40 - 8.94 LT
CO. ROUTE L.M.

DATE: 6-10-99

SUBSTRUCTURE

ABUTMENTS

COMMENTS

CAPS	G	(F)	P	C	<u>Honeycomb & scale up to 3'-0" Abut #1</u>
BREASTWALL	G	F	P	C	<u>NA</u>
WINGS	(G)	F	P	C	
BACKWALL	G	(F)	P	C	<u>Breakout with exposed rebar up to 3'-2" O X 1'-W X 2'-L Abut</u>
PLUMB	(G)	F	P	C	
FOOTING	G	F	P	C	<u>NV</u>
PILES	G	F	P	C	<u>NV</u>
EMBANKMENT	(G)	F	P	C	
BEARING SURFACE	(G)	F	P	C	
BEARINGS	(G)	F	P	C	
SLOPE PAVING	G	(F)	P	C	<u>separation & settlement on A' end LT side</u>

PIERS

CAPS	G	F	P	C	
COLUMNS	G	F	P	C	
PLUMB	G	F	P	C	
FOOTINGS	G	F	P	C	
PILES	G	F	P	C	
BEARING SURFACE	G	F	P	C	
BEARINGS	G	F	P	C	
BENTS					

CAPS	G	(F)	P	C	<u>open 1/4" cracks</u>
COLUMNS	(G)	F	P	C	
PLUMB	(G)	F	P	C	
FOOTINGS	G	F	P	C	<u>NV</u>
PILES	G	F	P	C	<u>NV</u>
BEARING SURFACE	(G)	F	P	C	
BEARINGS	(G)	F	P	C	

SCOUR CONDITION NONE [X] _____

RECOMMENDATIONS: _____

SUMMARY
80-I40-8.94 LT
6-10-99

I40/C.S.X. R.R. & County Rd.
4 Span/H.B.B.

This bridge was inspected and found to be in good condition. The approach and approach alignment are in good condition. The approach guardrail and bridge rail are standard type and in good condition. There are no paddleboards.

The wearing surface, joint leakage, and expansion joints are good, however, there are some 1mm transverse cracks in the top deck. The bottom deck, beams, and superstructure elements are good. There was a minor 51mm deep breakout at abutment #1 cap, this is rated fair. Left wing at abutment #2 is fair with a 51mm deep breakout with exposed steel. Backwall also shows a 90mm deep breakout at abutment #1. Bent caps #2 and #3 have transverse cracks on caps up to 6mm open. Underpass guardrail is not in place making is sub-standard type at this time.

Gilbert Hunter

FORM BIR 3.0A
Rev. 6-9-92
DT-1443

CURRENT FIELD REPORT NO. 14
PREVIOUS FIELD REPORT NO. 13

DATE 6-10-99
DATE 5-6-97

INSPECTION REPORT FOR UNDERPASS ROUTE

BRIDGE NO. 80I00400018
ELEVEN DIGIT NUMBER

UNDERPASS LOC. NO. 80-A252-0.29
CO. RTE. L.M.

80 - I40 - 8.94⁴ OVER 80 - A252 - 0.29
CO. RTE. L.M. CO. RTE. L.M.

STRUCTURE NAME (IF NAMED)

COUNTY Smith

YEAR CONSTRUCTED 1962 YEAR WIDENED '85 YEAR REHABILITATED '85
ESTIMATED [] ACTUAL [X]

GEOMETRIC FEATURES UNDER BRIDGE

DIVIDED HIGHWAY - - - - LEFT RDWY [] RIGHT RDWY [] N.A. [X]
TYPE OF WEARING SURFACE - - - - CONCRETE [] ASPHALT [X] GRAVEL []
WIDTH OF APPROACH TRAVELED ROADWAY 24 FT. (DOES NOT INCLUDE SHOULDERS)
WIDTH OF MEDIAN IF DIVIDED HIGHWAY — FT.
APPROACH SHOULDER WIDTH 3 FT. (RT.) 6 FT. (LT.)
*HORIZONTAL CLEARANCE UNDER BRIDGE 38 FT. 0 IN.
*DISTANCE BETWEEN PIER PROTECTION GUARDRAIL AND
SUBSTRUCTURE — FT. (RT.) — FT. (LT.)
*WIDTH OF SIDEWALK UNDER BRIDGE — FT. (RT.) — FT. (LT.)
*MINIMUM VERTICAL CLEARANCE 18 FT. 11 IN.

*SHOW ON SKETCH

TRAFFIC SAFETY FEATURES FOR UNDERPASS ROUTE

STANDARD SUB-STANDARD

PIER PROTECTION RAILING
OR PARAPET

G F P C [] [] NON EXIST [X]

APPROACH GUARDRAIL
TRANSITIONS

G F P C [] [] NON EXIST [X]

APPROACH GUARDRAIL

G F P C [] [] NON EXIST [X]

APPROACH GUARDRAIL
TERMINAL

G F P C [] [] NON EXIST [X]

SIGNING FOR UNDERPASS ROUTE

INSPECTORS

PADDLEBOARD YES [] NO [X] NEEDED []
VERTICAL CLEARANCE YES [] NO [X] NEEDED []
(< 14'6")
NARROW PASSAGE YES [] NO [X] NEEDED []
ONE LANE PASSAGE YES [] NO [X] NEEDED []
CURVE YES [] NO [X] NEEDED []
SPEED LIMIT YES [] NO [X] NEEDED []

1. HUNTER
2. URELLO
3. DAVIES
4. CANTON
5. W. L. LAR
6. —

FORM BIR 3.0A (CONTINUED)
 Rev. 6-9-92
 DT-1443

UNDERPASS LOC. NO. 80 - A252 - 0.29
 CO. RTE. L.M.

OTHER SIGNS OR PLAQUES _____

COMMENTS REGARDING ANY PROBLEM WITH SIGNING _____

BRIDGE FEATURES

BRIDGE SKEW _____
 STRUCTURE TYPE _____

NO. SPANS _____
 MAIN TYPE _____

STRUCTURE TYPE _____
 APPROACH SPAN _____

NO. SPANS _____
 APPROACH TYPE _____

MAXIMUM SPAN LENGTH _____ FT.

TOTAL LENGTH _____ FT.

WIDTH OF BRIDGE OUT-TO-OUT _____ FT. (RT. < TO L OF BRIDGE)

WIDTH OF BRIDGE ALONG SKEW _____ FT. (IF UNABLE TO MEASURE AT RT. $\frac{1}{2}$ TO L OF BRIDGE)

NUMBER OF LANES/TRACKS ON BRIDGE 2

BRIDGE CONDITION

G F P C

DOES POTENTIAL EXIST FOR ELEMENTS FROM BRIDGE FALLING ON ROADWAY BENEATH? YES [] NO [☒]

DOES POTENTIAL EXIST BECAUSE OF DETERIORATED CONDITION FOR FAILURE OF MAJOR MEMBERS? YES [] NO [☒]

COMMENT ON ANY CONDITIONS OF BRIDGE THAT WOULD EFFECT ROADWAY BENEATH _____

NOTE: IF UNDERPASS ROUTE IS DIVIDED HIGHWAY, USE TWO (2) OF THESE FORMS, ONE FOR EACH ROADWAY.

MINIMUM PICTURES REQUIRED

1. ELEVATION VIEW OF BRIDGE ON BOTH SIDES SHOWING UNDERPASS
2. VIEW SHOWING BOTH APPROACHES TO BRIDGE
3. VIEW SHOWING SAFETY FEATURES
4. VIEW SHOWING ANY PROBLEMS

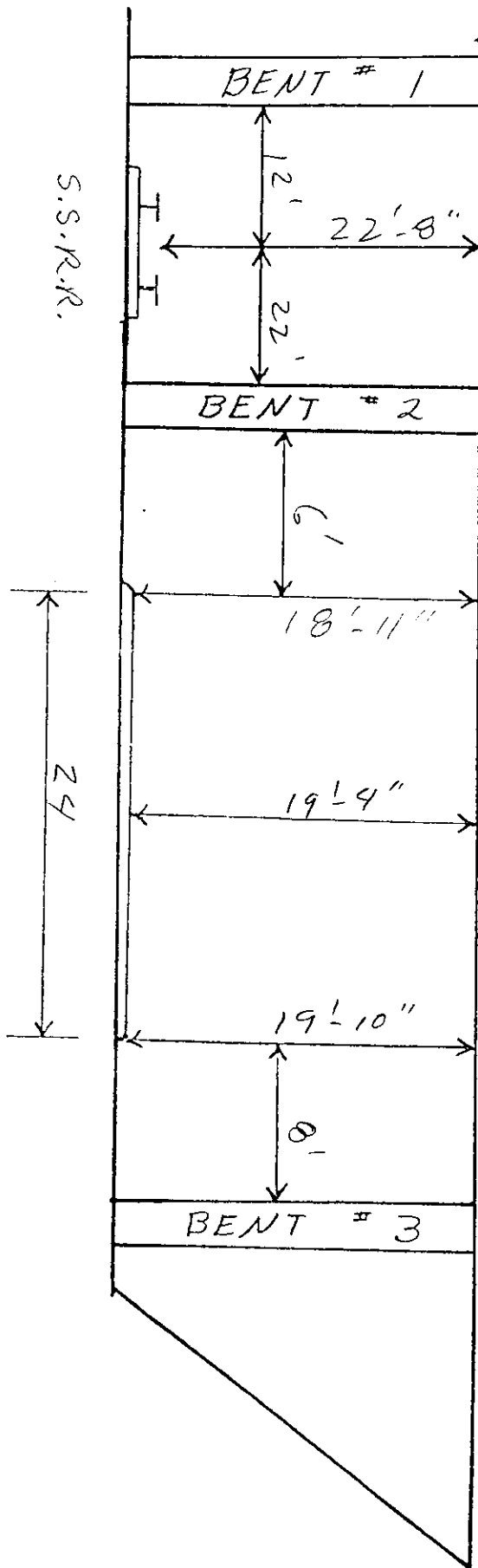
6-10-99 JH

Clearance Sketch

80-140-8.94 LT. →

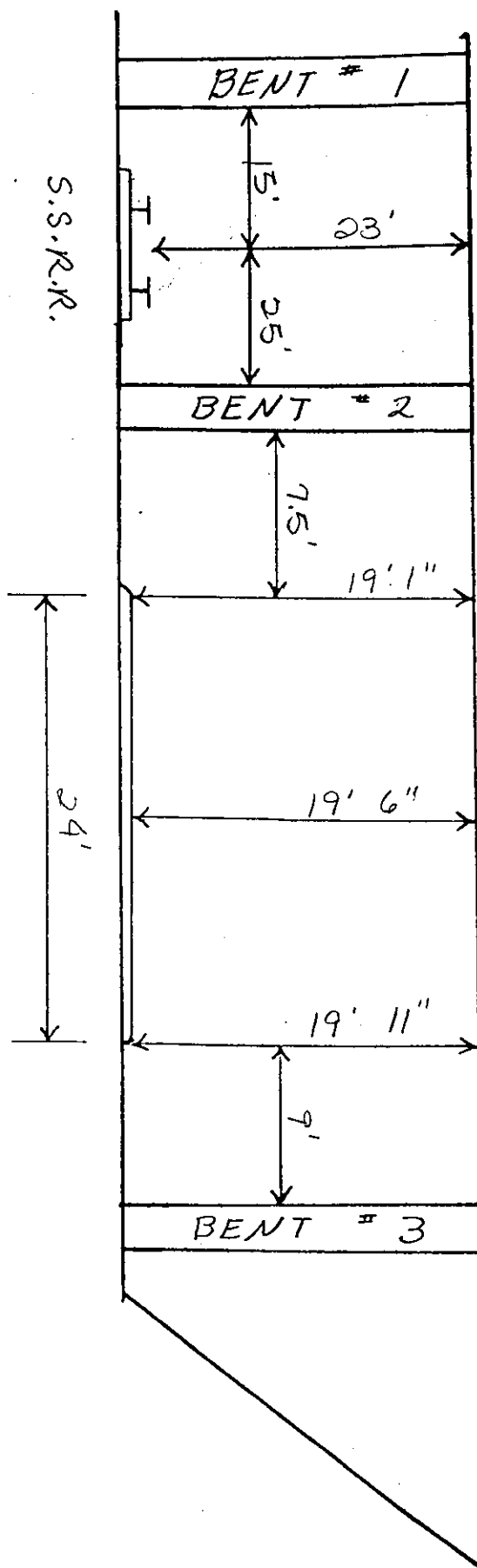
S.S.R.R.

80-A2-0.01



MAR 20 1992

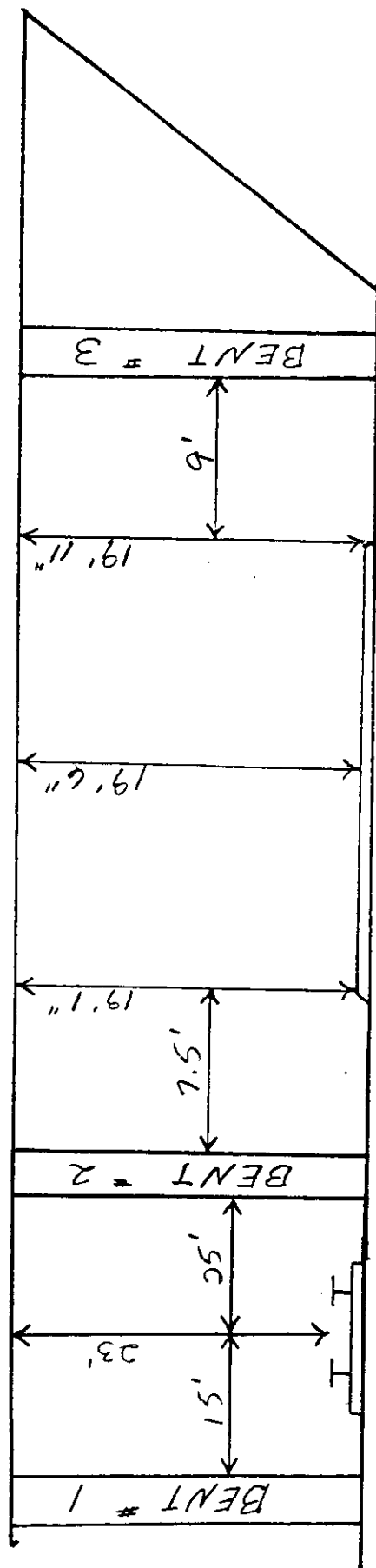
80-A 252 - 0.29



80-I 40 - 8.94 LT. →

FEB 5 1909

80-I40-8.94 LT.



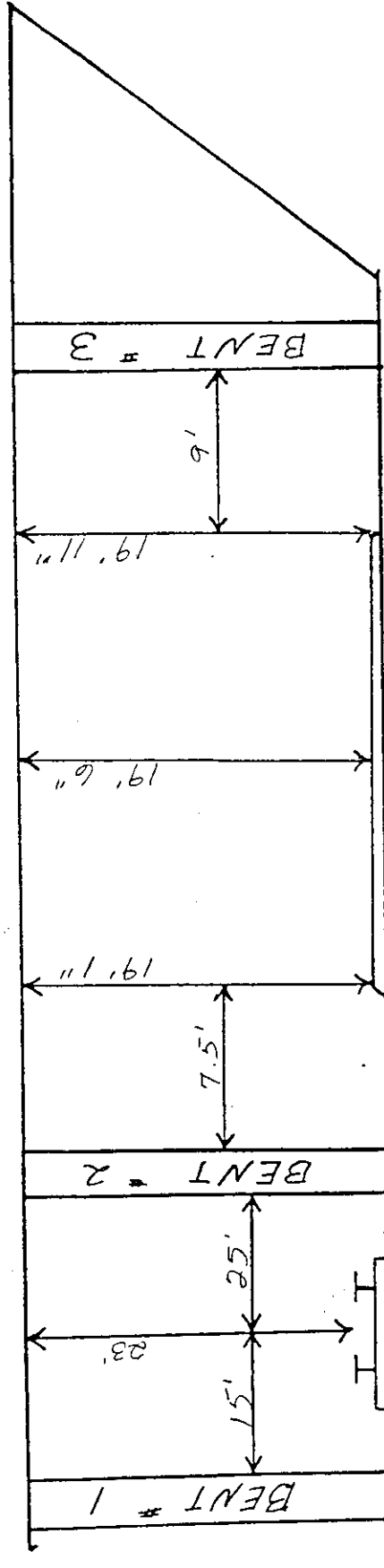
54'

S.S.R.R.

80-A 252 - 0.29

JAN 28 1988

80-I40-8.94 LT.



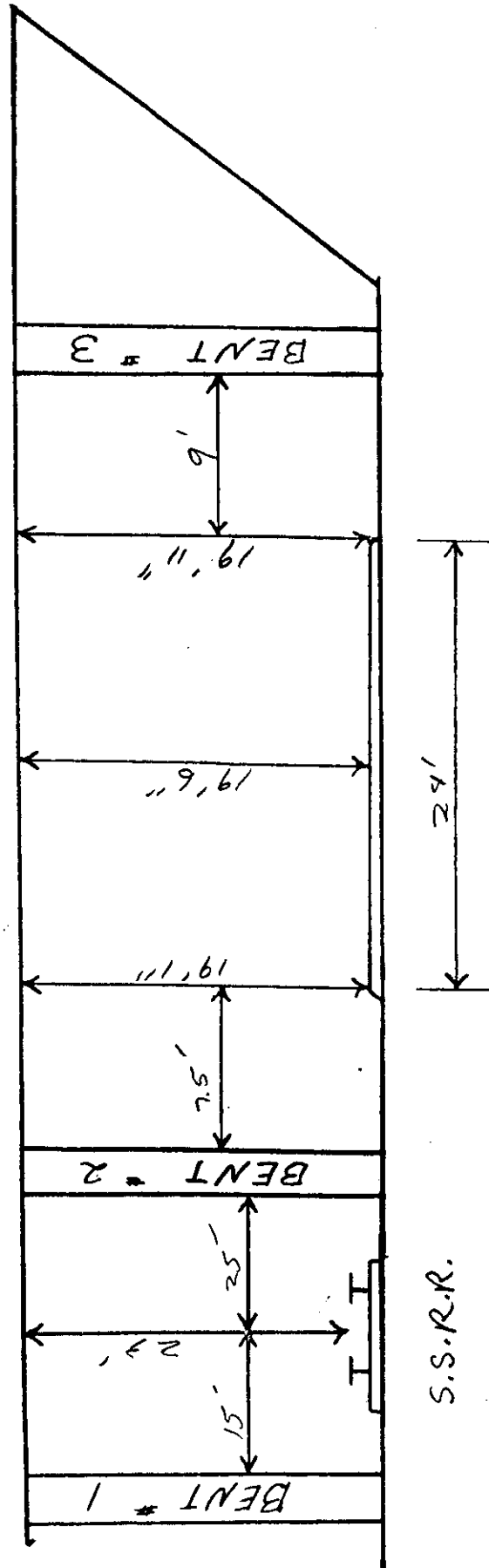
24'

S.S.R.R.

80-A252-0.29

JUL 18 1986

80-I40-8.96 LT.



80-A252-0.29



Br. ^{II} 80-I40-8.94 LT.

Deck	NV	PAVED OVER
Parapet	G	
Drains	NH	
Joints	NV	PAVED OVER

Br. ^{II} 80-140-8.94 LT

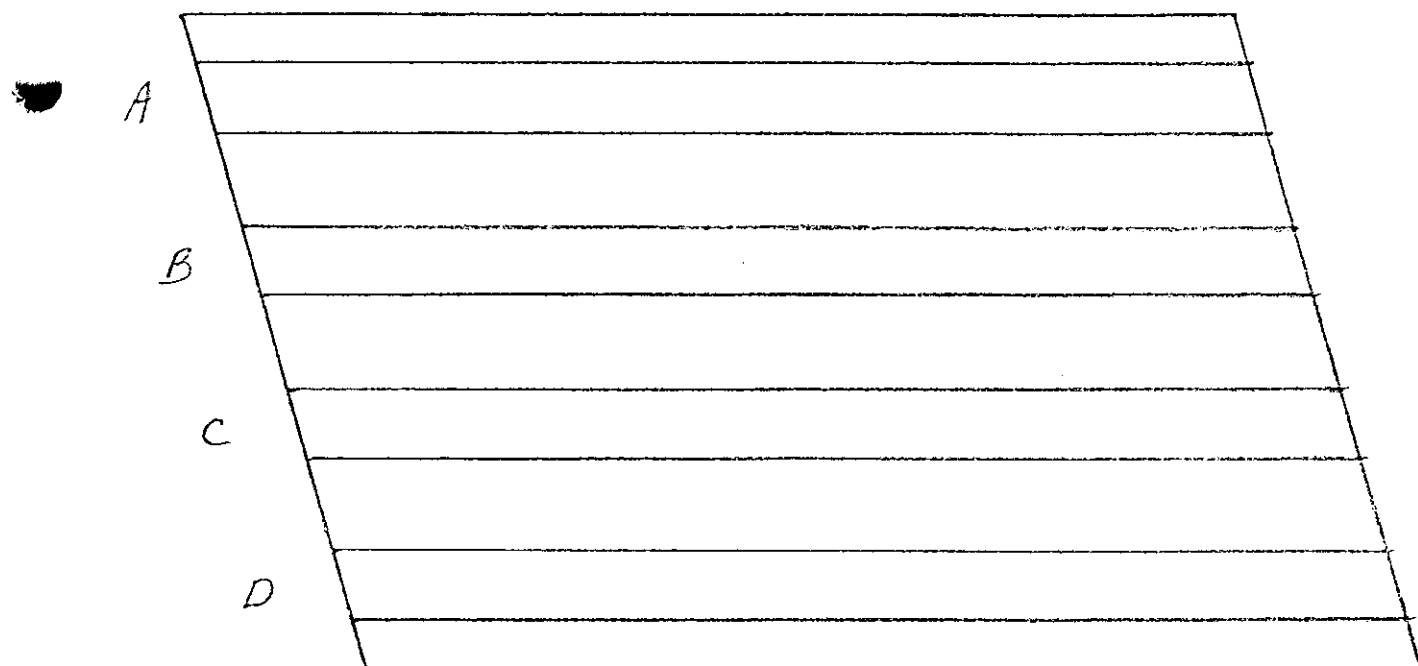
Deck	NU	RC OUTRIG
Parapet	G	
Drains	NU	
Joints	NU	PHOLD OVER

A large parallelogram is shown, tilted to the right. A horizontal line segment extends from the right side of the parallelogram towards the right edge of the page.

Br. ^{III} 80-I40-8.94 LT.

Deck	NV	AC OUTLAY
Parapet	G	
Drains	NA	
Joints	NV	PAVED JLR

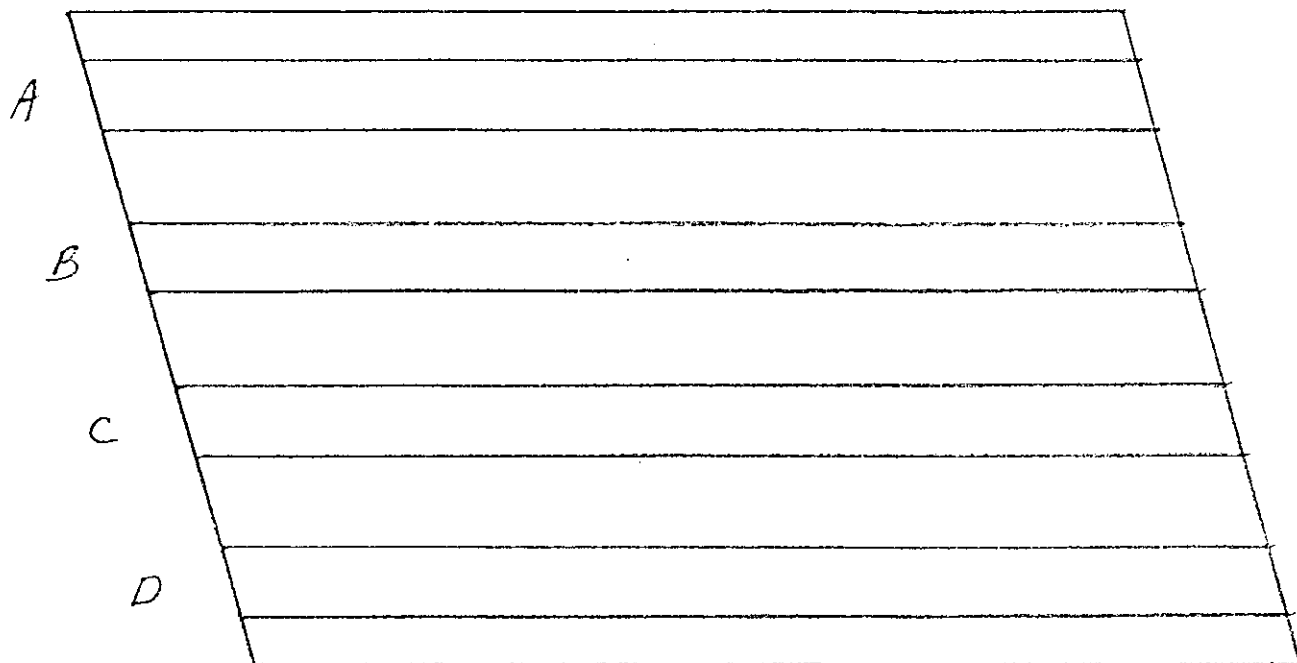
6-10-77 (M)



Bottom slab =

Br. 80-140-8.94 Lt

[illegible]



Bottom slab = Z

Br. 80-I40-8.94 Lt

DECK

G

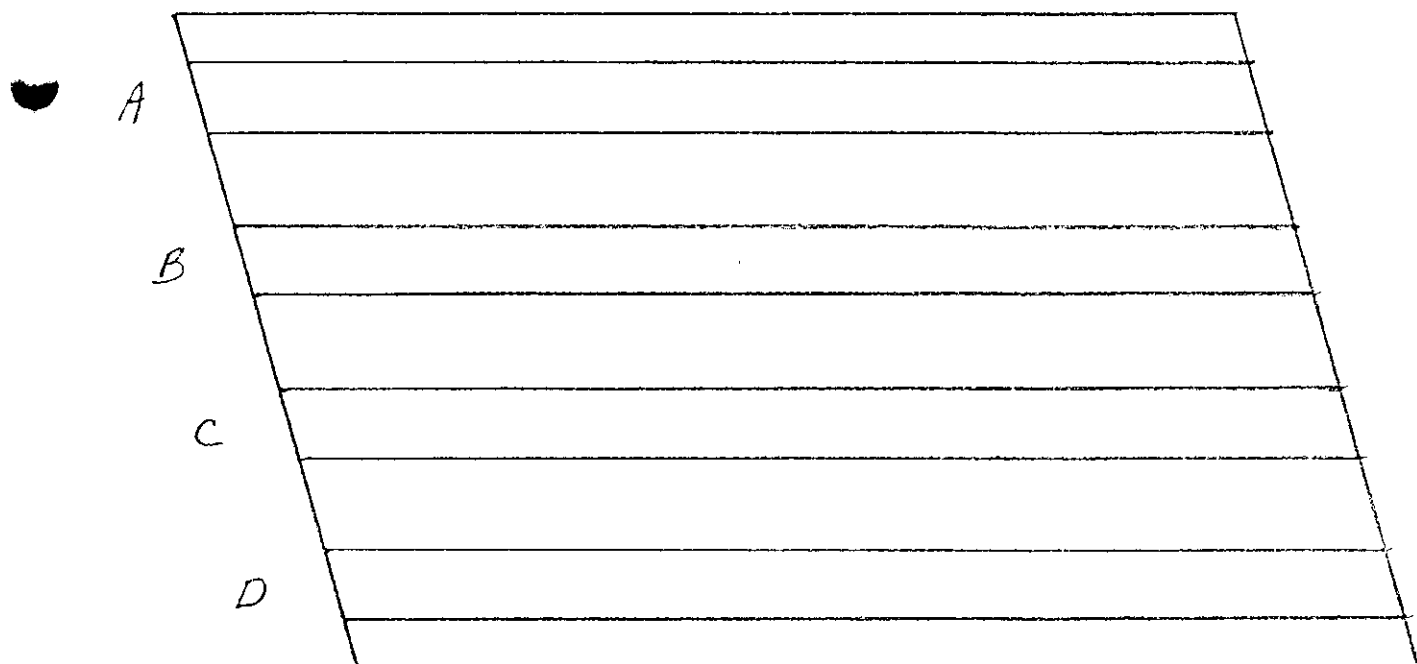
Diaphragms

G

BEAMS

G

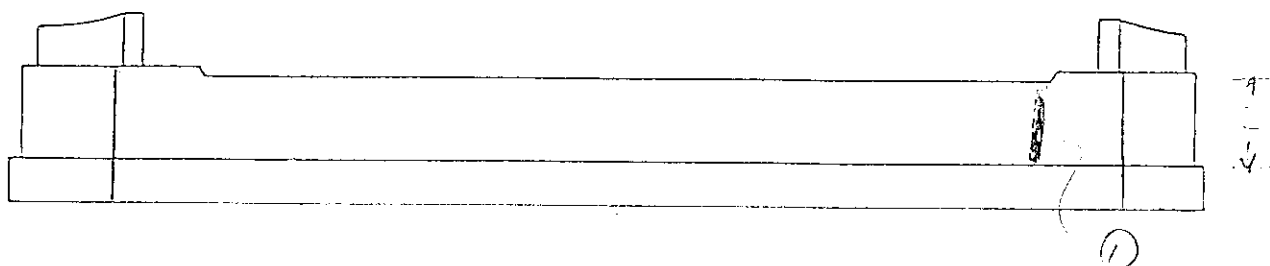
6-12-79



Bottom slab = 4

Br. 80-140-8.94L+

[illegible]



ABUT = |

Br. = 80 - I 40 - 8.94 Lf.

BACK

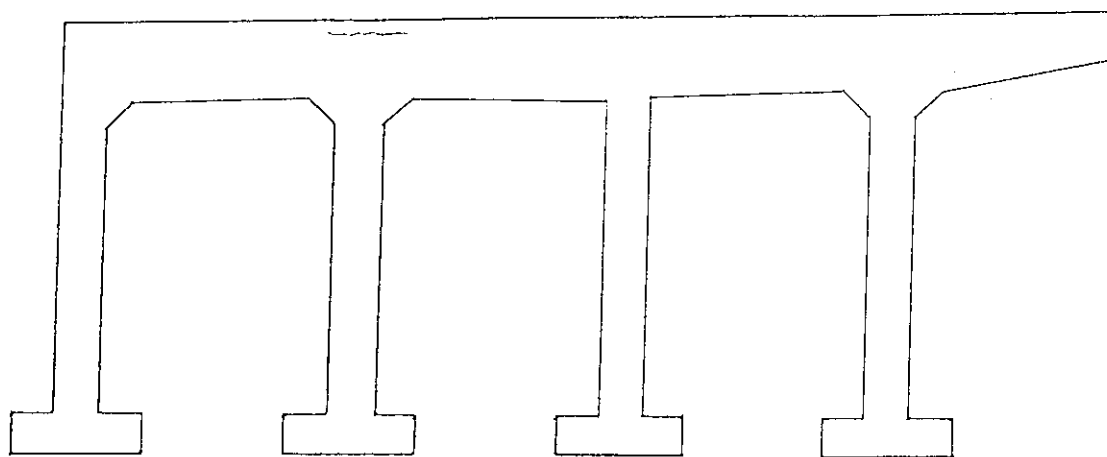
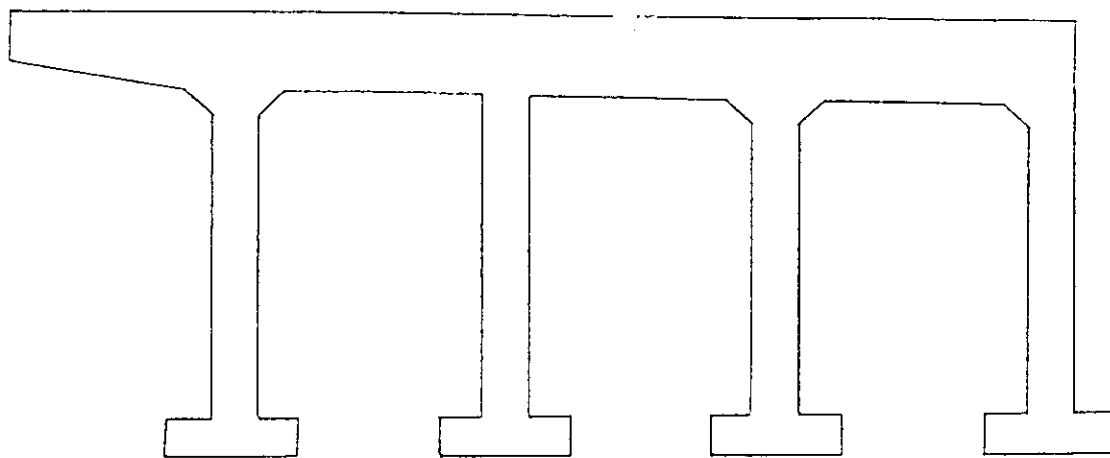
wall NV

CAP Fair

honeycomb & scale up to 3" dp / (1) Break out w/ exp. steel
up to 3.5" dp

WINGS G

Bearings G

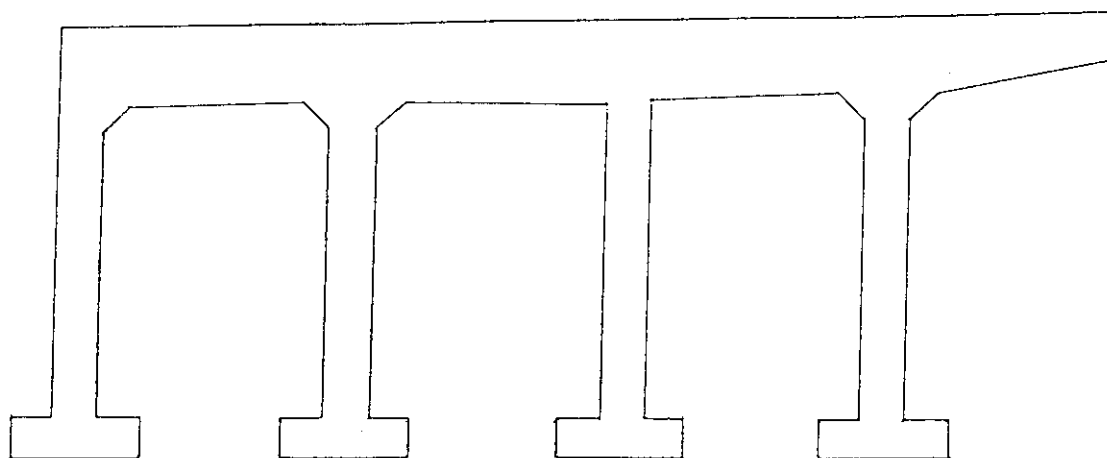
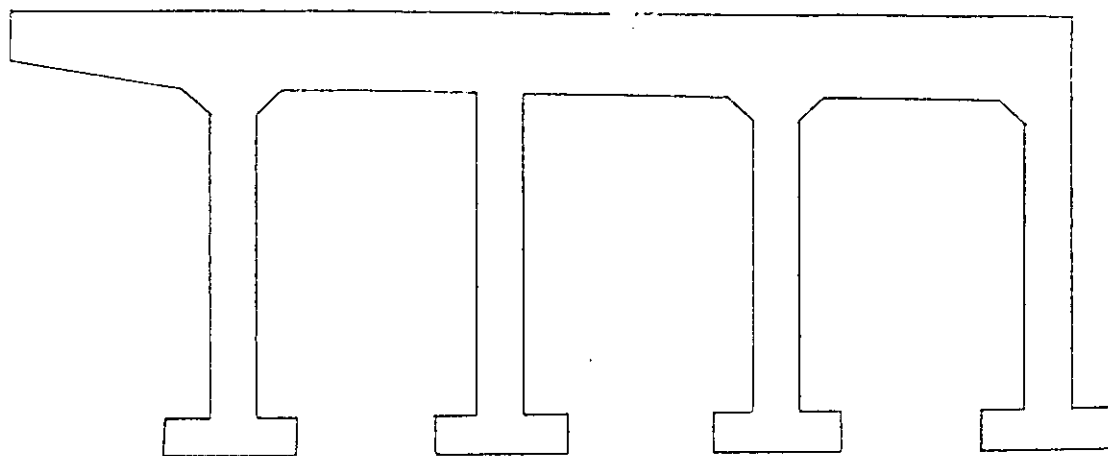


BENT #

BR[#] 80-I40-6.74 Lt.

Cap	G	random horizontal cracks up to 1/8" open
Bearings	G	
Footing	N/V	
Cols.	G	

6-10-79

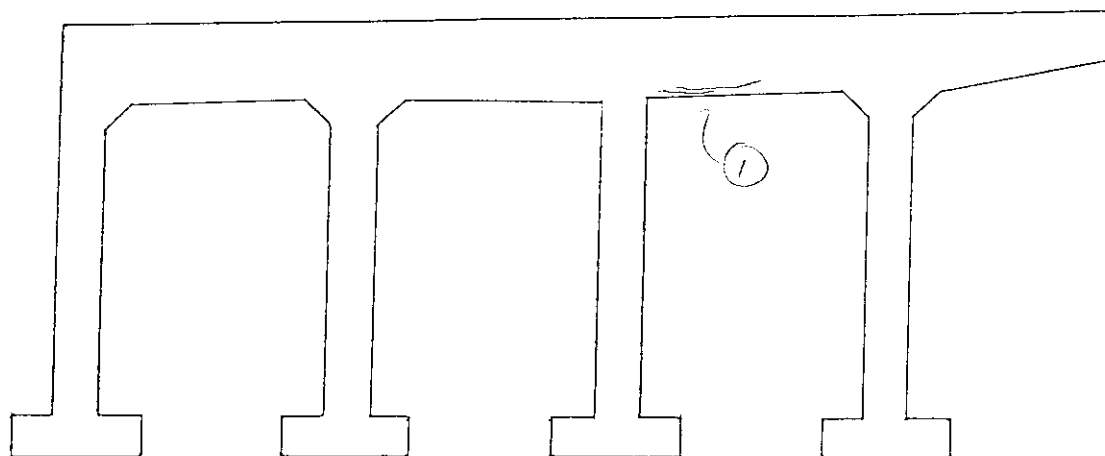


BENT # 2

BR-D 80-140-6.74 Lt.

Cap	G	
Bearings	G	
Footing	N/V	
Cols.	G	

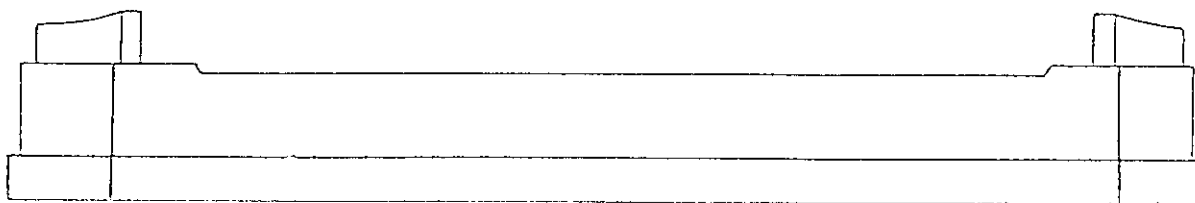
A line drawing of a comb with four teeth. The teeth are rectangular and of equal height, spaced evenly apart. The comb has a single horizontal headpiece at the top. The drawing is labeled 'Figure 1' in the bottom right corner.



BR.^D 80-I40-6.94 Lt.

[illegible]

6-10-79



ABUT = 2

$$B_c = 80 - 140 - 8.94 \text{ Lt.}$$

BACK	
WALL	NV
CAP	G
WINGS	G
BEARINGS	G

CONJT. NO. 80001-3148-44		
PROJECT NO.	YEAR	SHEET NO.
IR-40-5(7B) 259	1984	
REVISIONS		
NO.	DATE	BY
1	2-13-84	JAW
2	3-30-84	JHW
		BRIEF DESCRIPTION
		REV. DATE FOR REV. 907A
		ROADWAY DRAINS ADDED

LIST OF DRAWINGS	DWG. NO.	LAST REV. DATE
LAYOUT	M-142-53	
GENERAL NOTES AND ESTIMATED QUANTITIES	M-142-54	
SUBSTRUCTURE	M-142-55	
SUBSTRUCTURE DETAILS	M-142-56	
SUBSTRUCTURE DETAILS	M-142-57	
PRESTRESSED BOX BEAM	M-142-58	
ABUT. NO. 1 RT. LN. & NO. 2 LT. LN.	M-142-59	
ABUT. NO. 1 LT. LN. & NO. 2 RT. LN.	M-142-60	
BENT NO. 1, 2, 3 LT. LN.	M-142-61	
BENT NO. 1, 2, 3 RT. LN.	M-142-62	
CULL OF STEEL	M-142-63	

LIST OF STD. DWGS.	DWG. NO.	LAST REV. DATE
STANDARD PILE DETAILS	H-5-111	11-12-82
REINFORCING BAR SUPPORT	H-80-14	8-27-79
MISC. ADJUTMENT AND DRAINAGE DETAILS	H-85-150	1-9-79
REINFORCED CONCRETE PAVEMENT @ DRYIDGE ENDS	H-86-144	7-17-81
DRYIDGE PAIRING - CONCRETE PARAPET	M-28-1	7-17-81
PRECAST, PRESTRESSED BRIDGE DECK PANELS	M-103-149 & 150	4-21-83
SLOPE PROTECTION	RD-5A-1	1-11-82

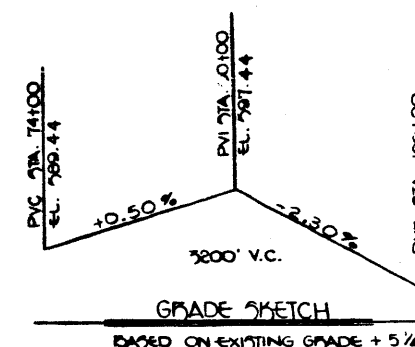
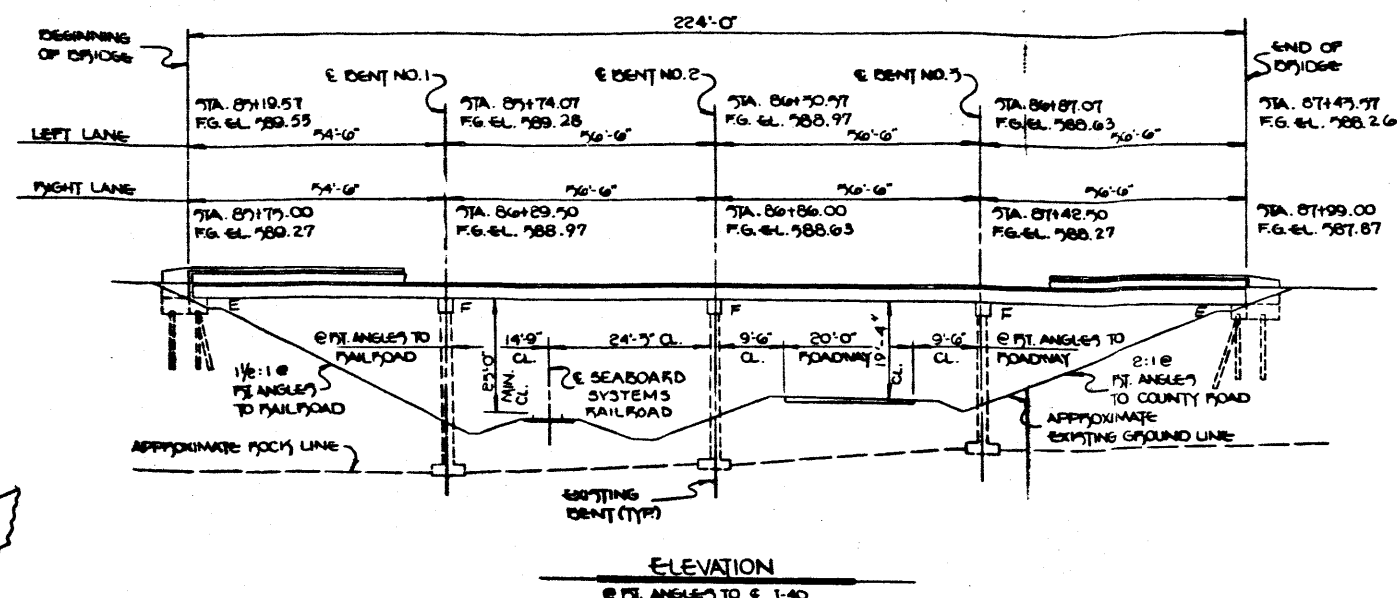
LIST OF SPECIAL PROVISIONS	PROV. NO.	LAST REV. DATE
REGARDING APPROVAL OF SHOP DRAWINGS	107A	9-8-84
REGARDING CLASS 'A' CONCRETE (DRYIDGE DECK)	600A	12-20-82
REGARDING EPOXY COATED REINFORCING STEEL	907A	4-18-83

80-I40-8.94
RT. & LT. LANES

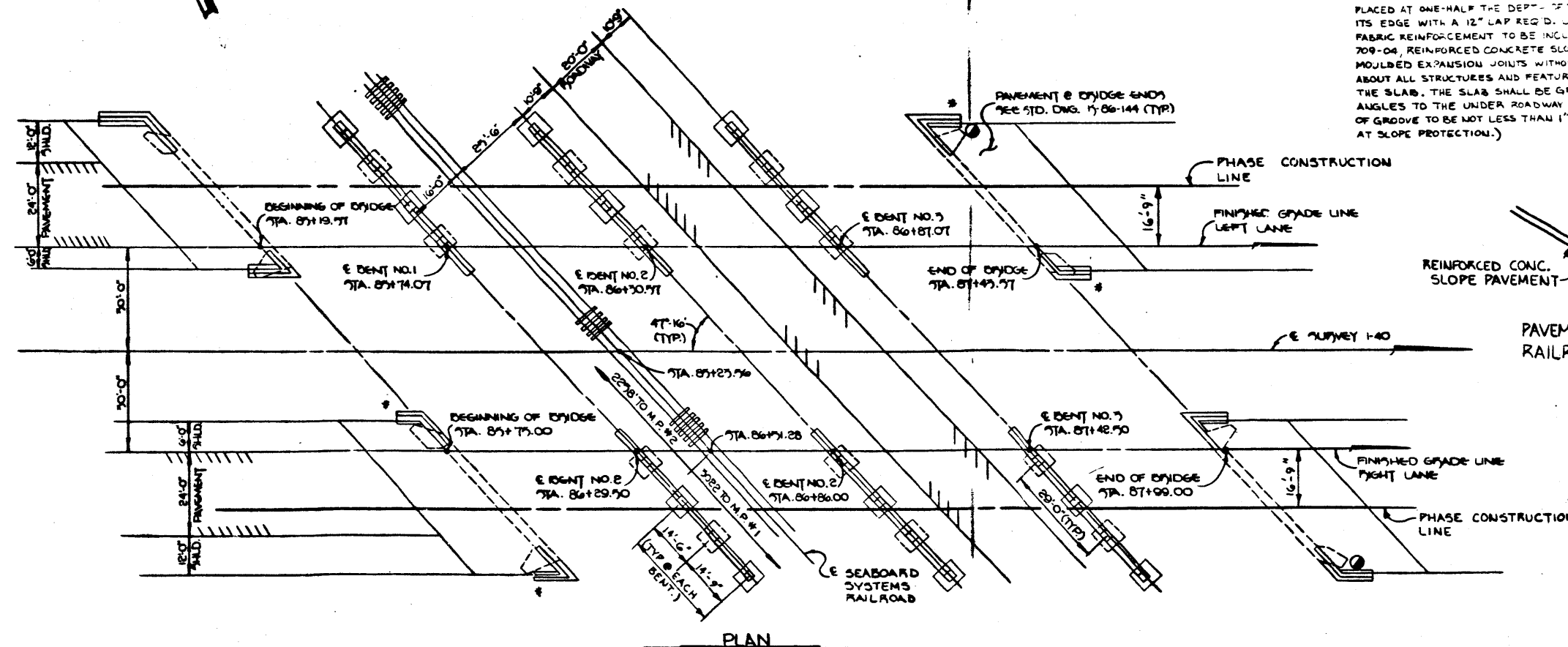
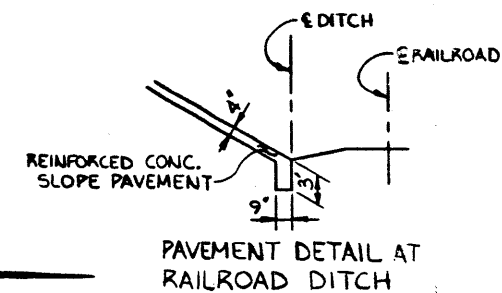
42'-0" ROADWAY WITH M-28-1 DRYIDGE/PAV
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS
LAYOUT
WIDENING OF INTERSTATE 40 OVER
SEABOARD SYSTEMS RAILROAD AND COUNTY ROAD
STATION 85+19.57 (LEFT LANE)
STATION 85+75.00 (RIGHT LANE)
SMITH COUNTY
1984

CORRECT *Chellon L. Lussell*
ENGINEER OF STRUCTURES
APPROVED *Louis Guad*
DIRECTOR OF HIGHWAYS
M-142-53

CLASS 'A' GRADING 'D' 4.5 c.f.



NOTE: PAVE SLOPES AND EXPOSED EARTH UNDER BRIDGES WITH 4" THICK CEMENT CONCRETE SLAB REINFORCED WITH NO. 4 GAUGE X RE FABRIC @ 6" CENTERS AND 50 LBS PER 100 SQ. FT. THE WIRE FABRIC REINFORCEMENT SHALL BE PLACED AT ONE-HALF THE DEPTH OF THE SLAB AND EXTEND TO 1' MIN. FROM ITS EDGE WITH A 12" LAP REQ'D. ON ALL SHEETS THE COST OF THE WIRE FABRIC REINFORCEMENT TO BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 709-04, REINFORCED CONCRETE SLOPE PAVEMENT ONE-HALF (1/2) PRE-MOULDED EXPANSION JOINTS WITHOUT LOAD TRANSFERS SHALL BE FORMED ABOUT ALL STRUCTURES AND FEATURES PROJECTING THROUGH, UP OR AGAINST THE SLAB. THE SLAB SHALL BE GROOVED PARALLEL WITH AND AT RIGHT ANGLES TO THE UNDER ROADWAY CENTER LINE AT 6" CENTERS. DEPTH OF GROOVE TO BE NOT LESS THAN 1" (SEE STD. DWG. RD-5A-1 FOR LIMITS AT SLOPE PROTECTION.)



* DENOTES GUARDRAIL ATTACHMENT REQUIRED.
@ DENOTES ROTOWAY DRAINS REQUIRED.

DESIGNED BY HOUSTON VALNER
DRAWN BY J. FRANKENFELD
SUPERVISED BY D. N. WILSON & BROOKS
CHECKED BY H. G. ALKHA
DATE 9-85
DATE 11-85
DATE 11-85
DATE 11-85

GENERAL NOTES

SPECIFICATIONS: STANDARD ROAD AND BRIDGE SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION (MARCH 1981 EDITION)
LOADING: HS 20-44, WITH ALTERNATE MILITARY
DESIGN SPECIFICATIONS: AASHTO 1977 EDITION WITH ADDENDA
CONCRETE: TO BE CLASS "A" (CAST IN PLACE), F'C 3000 PSI.
CLASS "A" CONCRETE FOR BRIDGE DECK: SHALL BE IN ACCORDANCE WITH SECTION 604 OF THE STANDARD SPECIFICATIONS EXCEPT AS MODIFIED BY SPECIAL PROVISION 604 (A) PAYMENT WILL BE MADE UNDER ITEM 604-04.12

BRIDGE DECK FORMS: BRIDGE DECK FORMS FOR CONCRETE DECKS SHALL BE CONSTRUCTED USING EITHER REMOVABLE FORMS OR PERMANENT FORMS. PERMANENT FORMS MAY BE EITHER REMAIN-IN-PLACE STEEL OR PRECAST, PRESTRESSED CONCRETE PANELS. IN EITHER CASE, FORMS SHALL BE ATTACHED BY MEANS OTHER THAN WELDING TO SUPPORT MEMBERS. THE CONTRACTOR SHALL TAKE STEPS TO ASSURE THE STABILITY OF THE EXTERIOR GIRDER AGAINST TWISTING OR OVERTURNING DURING SLAB POURING OPERATIONS.

REINFORCING STEEL: TO BE ASTM A615 GRADE 60. STANDARD CRASH HOOK DETAILS APPLY UNLESS OTHERWISE NOTED ON PLAN OR STEEL. BENDING DIMENSIONS SHOWN ARE BASED ON GRADE 60. SPACING DIMENSIONS ARE CENTER TO CENTER UNLESS OTHERWISE NOTED ON DETAIL DRAWINGS. THE SUFFIX "E" FOR BARS SO MARKED, DENOTES EPOXY COATED REINFORCEMENT. SEE SPECIAL PROVISION 604A.

SPECIAL NOTE FOR RAILROAD CROSSINGS: THE CONTRACTOR SHALL CONDUCT HIS WORK SO AS TO PROTECT THE RAILROAD TRACKS AND PROPERTIES FROM ANY DAMAGE. THE WORK SHALL BE DONE IN ACCORDANCE WITH REGULATIONS STIPULATED BY THE SEABOARD SYSTEMS RAILROAD SO AS TO MAINTAIN CLEARANCE AND NOT INTERRUPT TRAFFIC.

PILES: TO BE HP 10X42 STEEL PILES DRIVEN TO REFUSAL ON ROCK OR A MINIMUM BEARING OF 40 TONS FOR THE ABUTMENTS.

BRIDGE RAIL SYSTEM: BUILD PARAPETS ACCORDING TO STANDARD DRAWING M-28-1.

SHOP DRAWINGS: SEE SPECIAL PROVISION NO. 105 A.

SPECIAL NOTE - FOOTING FOR BENTS: AFTER EXCAVATION TO ROCK FOR FOOTING HAS BEEN COMPLETED, HOLES 6" DEEP SHALL BE DRILLED AT POINTS DESIGNATED BY THE ENGINEER. FROM THE RESULTS OBTAINED, THE ENGINEER SHALL DETERMINE THE FINAL FOOTING ELEVATIONS. NO REINFORCING STEEL FOR BENT COLUMNS SHALL BE ORDERED UNTIL FINAL FOOTING ELEVATIONS HAVE BEEN DETERMINED.

GROUTED BARS IN DRILLED HOLES: HOLES FOR GROUTED BARS ARE TO BE DRILLED 1/4" IN DIAMETER LARGER THAN THE BAR. AFTER CLEANING HOLE, PACK WITH GROUT AND DRIVE BAR TO ITS SEAT. APPROVED GROUTS ARE: EPI TOP 100 (CELANESE COATING CO.); COLMA-DUR OR SIKATIX 370 (SIKA CHEMICAL CORP.); FK-75 HYDRO-ESTER BONDING AGENT (FOX INDUSTRIES) AND FEL-POXY 102 (FEL-PRO BUILDING PRODUCTS, INC.).

ESTIMATED QUANTITIES

ITEM NO.	202-04.01	202-04.02	204-02.01	604-01.12	604-02.03	604-03.01	604-03.02	604-03.03	604-04.01	604-04.02	606-02.03	615-02.28	620-03	710-10	710-11	709-04	604-10.05
ITEM	REMOVAL OF STRUCTURES (SUPERSTRUCTURE, BOX BEAMS, AND BENT CAPS) (STA 85+19.57)	REMOVAL OF STRUCTURES (SUPERSTRUCTURE, BOX BEAMS, AND BENT CAPS) (STA 85+75.00)	DRY EXCAVATION (BRIDGES)	CLASS "A" CONCRETE (BRIDGE DECK)	EPOXY COATED REINFORCING STEEL	CLASS "A" CONCRETE (BRIDGES)	STEEL BAR REINFORCEMENT (BRIDGES)	LINESEED OIL TREATMENT	APPLIED TEXTURE FINISH (NEW STRUCTURES)	APPLIED TEXTURE FINISH (EXISTING STRUCTURES)	STEEL PILES (10 INCH)	PRESTRESSED CONCRETE BOX BEAM (24" X 48")	CONCRETE PARAPET	6" REEF. C.M. PIPE (18 GA) W/ POROUS BACKFILL	6" C.M. PIPE UNDERDRAINS (18 GA)	REINFORCED CONCRETE SLOPE PAVEMENT	PNEUMATIC CONCRETE REPAIR
	L.S.	L.S.	C.Y.	(CY)	LB	CY	LB	SY.	SY.	SY.	SY.	LB	L.F.	L.F.	L.F.	C.Y.	S.F.
SUPERSTRUCTURE				246.2	74,023	25.8	1,370										
ABUTMENT NO. 1			14			3.0	823				56			66	19		10
BENT NO. 1			61			25.4	3,651										50
BENT NO. 2			52			25.8	3,598										50
BENT NO. 3			25			24.4	3,341										50
ABUTMENT NO. 2			18			3.0	857				56			66	19		10
PVMT @ BR. ENDS					5,701	88.8	17,951				100						
TOTALS	1		170	246.2	79,724	196.2	32,291	1,229	1,250	335	212	871	480	132	38	16.0	170
SUPERSTRUCTURE				246.2	74,023	25.8	1,370										
ABUTMENT NO. 1			18			3.0	857				56			66	19		10
BENT NO. 1			74			26.6	3,726										50
BENT NO. 2			30			25.8	3,600										50
BENT NO. 3			45			24.4	3,371										50
ABUTMENT NO. 2			14			3.0	823				56			66	19		10
PVMT @ BR. ENDS					5,701	88.8	17,951				100						
TOTALS		1	181	246.2	79,724	197.4	32,198	1,229	1,250	335	212	871	480	132	38	16.0	170

① NOTE: WHP SUM: ASPHALT, BRIDGE RAIL, BOX BEAMS, PORTIONS OF BENT CAPS, AND PORTIONS OF THE ABUTMENTS ARE TO BE REMOVED.

② NOTE: EXCAVATION BASED ON EXISTING GROUND.

③ NOTE: THE COST OF BITUMINOUS FIBERBOARD, TARPAPER, AND ALL MISCELLANEOUS JOINT MATERIAL TO BE INCLUDED IN BRIDGE ITEMS BID ON.

④ NOTE: COST OF ELASTOMERIC PADS, RUBBER BONDING CEMENT, AND DOWEL BARS TO BE INCLUDED IN THE COST OF PRESTRESSED BEAM.

⑤ NOTE: COST OF POLYETHYLENE SHEETING AND ALL MISCELLANEOUS ITEMS NECESSARY FOR INSTALLATION TO BE INCLUDED IN COST OF PERFORATED C.M. PIPE.

⑥ NOTE: ALL REINFORCING STEEL IN THE TRAFFIC FACE OF PARAPETS SHALL BE EPOXY COATED. COST TO BE INCLUDED IN THE PRICE FOR ITEM 620-03.

⑦ NOTE: THE COST 1/8 THREADED STEEL INSERTS AND 1/8" X 4" HEX HEAD BOLTS, (A307), TO BE INCLUDED IN BRIDGE ITEMS BID ON.

⑧ NOTE: PAVEMENT AT BRIDGE ENDS MUST BE CONSTRUCTED IN PHASES WITH TRANSVERSE STEEL SPICED AT CONST. JOINT.

⑨ NOTE: EXISTING PAVED AREAS REQUIRED TO BE REMOVED FOR CONSTRUCTION OF SUBSTRUCTURES SHALL BE REPAIRED IN KIND BY THE CONTRACTOR.

⑩ NOTE: ALL COSTS TO BE INCLUDED IN ITEMS BID ON.

⑪ NOTE: ITEM NO. 604-10.05 INCLUDES REMOVAL OF ALL SPALLED, CRACKED, AND/OR DETERIORATED CONCRETE ON THE EXPOSED SURFACES OF THE EXISTING SUBSTRUCTURES AND THEN REPAIRING WITH PNEUMATIC CONCRETE. SEE TENNESSEE STANDARD SPECIFICATIONS SECTION 622. ALL REPAIRED AREAS, UNLESS OTHERWISE SHOWN ON THE PLANS, ARE TO BE RESTORED TO THE LINES SHOWN ON THE ORIGINAL CONTRACT DRAWINGS.

ENGINEER MAY DESIGNATE OTHER LOCATIONS THROUGHOUT THE STRUCTURE TO BE REPAIRED AT THE SAME UNIT COST AS THE BID PRICE. THE CONTRACTOR MAY SUBSTITUTE CLASS "A" CONCRETE FOR PNEUMATIC CONCRETE PROVIDED THE MINIMUM DEPTH OF REPAIR AREAS SHALL BE FOUR (4) INCHES AND AN APPROVED EPOXY BONDING MATERIAL IS PLACED BETWEEN OLD AND NEW CONCRETE. IF CLASS "A" CONCRETE IS USED, THE SURFACE PREPARATION SHALL BE AS SPECIFIED IN SECTION 622.06 EXCEPT AS MODIFIED ABOVE.

DESIGNED BY: H. GUSTAFSON

DRAWN BY: J. L. JONES

CHECKED BY: J. L. JONES

DATE: 12-83

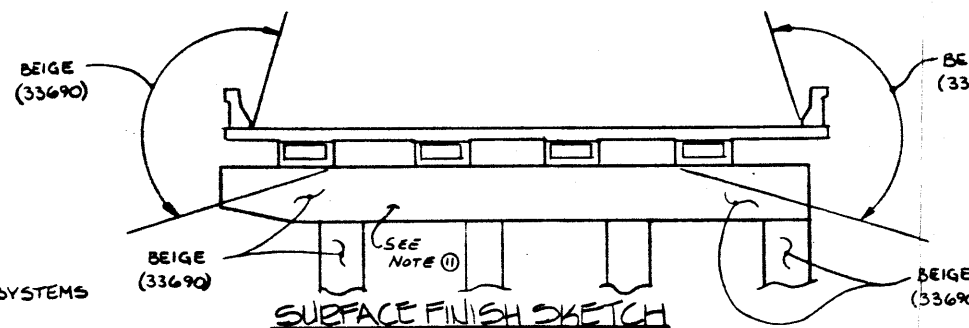
DATE: 11-83

DATE: 11-83

LINESEED OIL PROTECTIVE TREATMENT: SURFACES RECEIVING AN APPLIED TEXTURE FINISH SHALL NOT RECEIVE A LINESEED OIL TREATMENT. SEE SURFACE FINISH SKETCH ON THIS SHEET.

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 BID FOR PAY ITEMS.

NOTE: THE CONTRACTOR SHALL CHECK THE LOCATION OF ALL EXISTING SUBSTRUCTURES AND VERIFY SPAN LENGTHS BEFORE FABRICATING GIRDERS.



SURFACE FINISH SKETCH

FINISHING CONCRETE SURFACES: CONCRETE FINISHING SHALL BE IN ACCORDANCE WITH SECTION 604-22

OF THE TENNESSEE STANDARD SPECIFICATION. AN APPLIED TEXTURE FINISH SHALL BE USED IN LIEU OF A CLASS 2 FINISH. THE COLOR OF THE FINISH SHALL BE SIMILAR TO BEIGE, FEDERAL SPECIFICATION NO. 33690.

FEDERAL COLOR STANDARD NO. 595A, AND A COLOR SAMPLE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. NO TEXTURE FINISH SHALL BE APPLIED PRIOR TO COMPLETION OF PAVING AND HAULING OPERATIONS AT THE BRIDGE SITE. PAYMENT FOR THE APPLIED TEXTURE FINISH SHALL BE UNDER ITEM 604-04.01 + 604-04.02. ALL EXPOSED SURFACES OF BENTS AND ABUTMENTS SHALL RECEIVE AN APPLIED TEXTURE FINISH.

⑪ NOTE: BITUMINOUS COATING ON EXISTING BENT CAPS SHALL BE REMOVED BEFORE APPLYING TEXTURE FINISH. COST OF REMOVAL TO BE INCLUDED IN PRICE BID FOR ITEM NO. 604-04.02.

PROJECT NO.	YEAR	SHEET NO.
12-40-5(78) 293	1984	

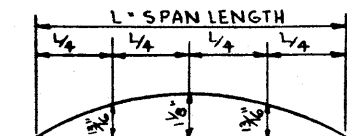
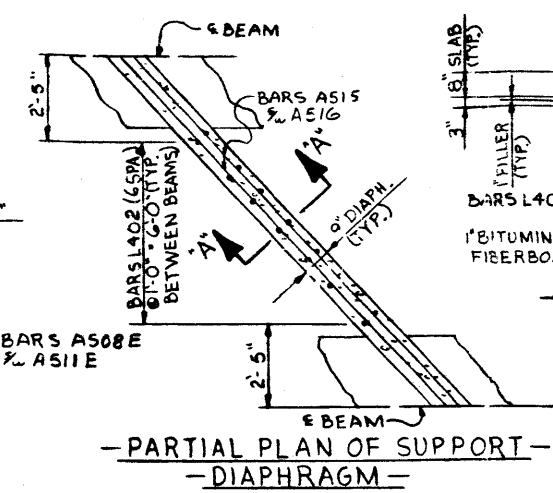
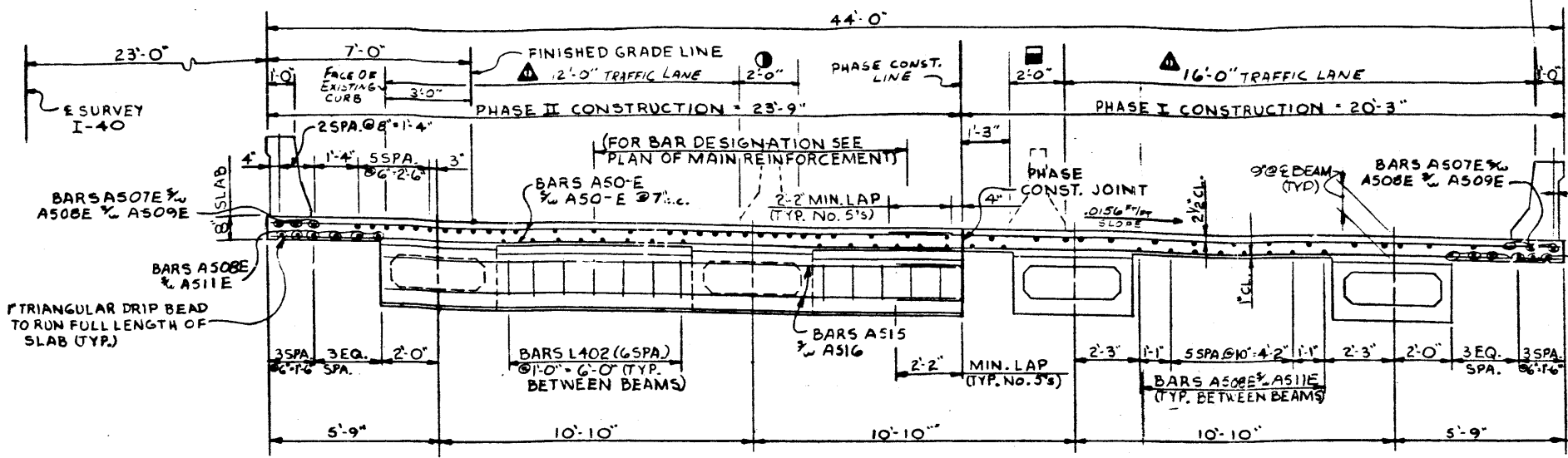
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION
1	2-13-84	J.M.W.	QUANTITIES NOTED
2	3-2-84	J.M.W.	QUANTITIES
3	3-2-84	J.M.W.	EPOXY STEEL QUANT.

WIDENING OF INTERSTATE 40 OVER SEABOARD SYSTEMS RAILROAD AND COUNTY ROAD STATION 85+19.57 (LEFT LAINE INTERSTATE-40) STATION 85+75.00 (RIGHT LAINE INTERSTATE-40)

SMITH COUNTY, TENNESSEE
 CORRECT: *Colleen L. Forewell*
 APPROVED: *Louis Evans*
 1984

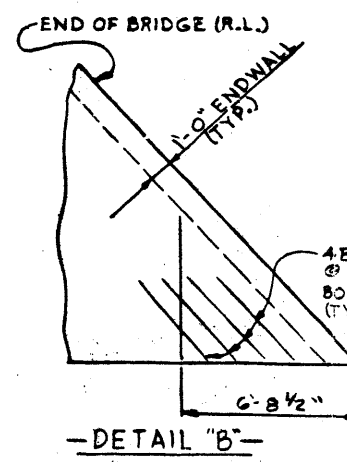
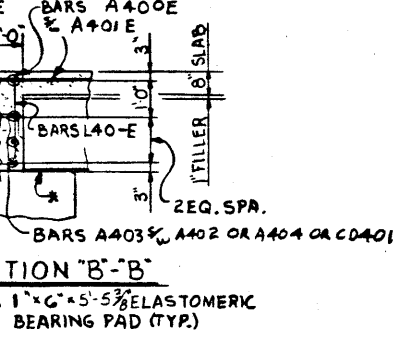
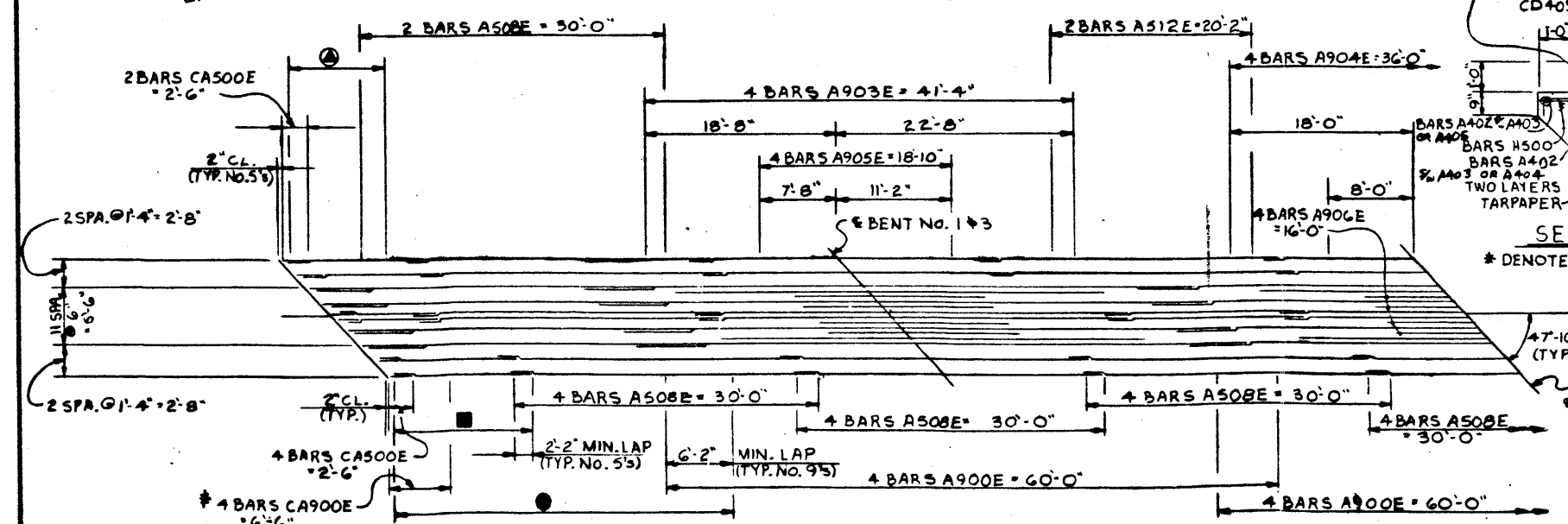
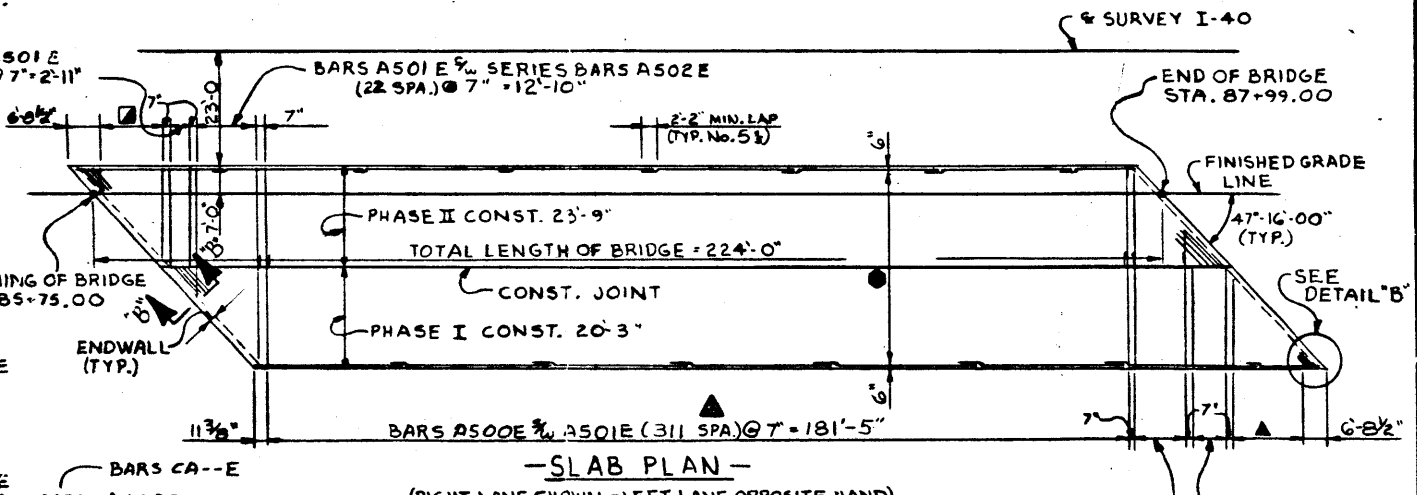
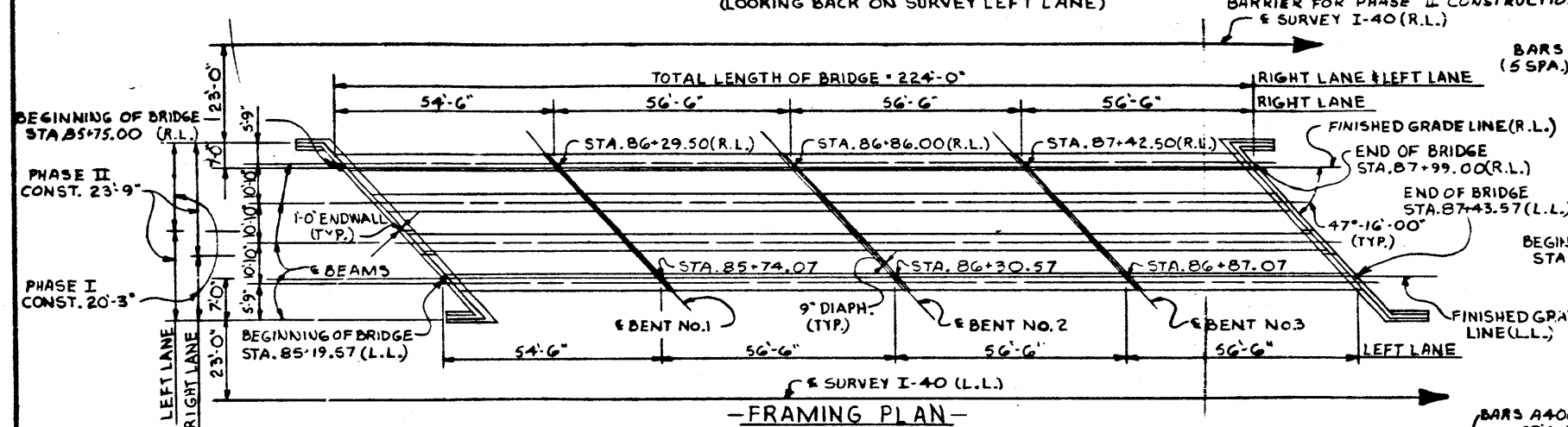
M-142-54

PROJECT NO.		YEAR	SHEET NO.
IR-40-5(7B)259		1984	
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION
1	2-13-84	JHW	QUANTITIES LOC. OF MED. BAR.
2	3-30-84	JHW	NOTE: QUANTITIES
3	8-22-84	JHW	NUMBER OF BARS, DIM. QUANT.



SPECIAL NOTE FOR DOWEL BARS AT BENTS: TOP OF DOWELS TO BE COVERED WITH 1/2" OF COMPRESSIBLE MATERIAL AND THE 9" PROJECTION WRAPPED WITH TWO LAYERS OF WATERPROOF PAPER.

NOTE: THIS CURVE IS FOR DEAD LOAD SLAB AND ALL DEAD LOADS THAT ARE APPLIED AFTER THE SLAB IS IN PLACE AND SHOULD BE CORRECTED TO COMPENSATE FOR THE EFFECTS DUE TO VERTICAL CURVE.



ESTIMATED QUANTITIES (PER LANE)

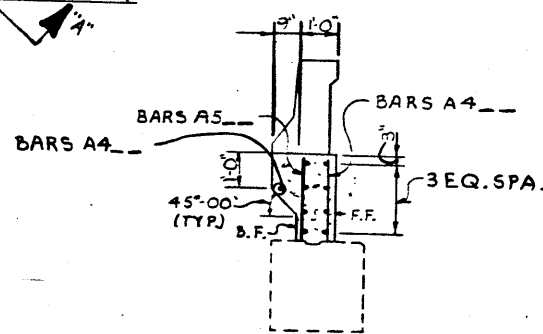
CLASS "A" CONCRETE (BRIDGES) (C.Y.)	EPOXY-COATED REINFORCING STEEL LBS.	CLASS "A" CONCRETE (BRIDGE DECK) (C.Y.)	STEEL BAR REINFORCEMENT (BRIDGES) LBS.
25.8	74,023	246.2	1,870

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS
SUPERSTRUCTURE
WIDENING OF INTERSTATE 40 OVER
SEABOARD SYSTEM RAILROAD AND COUNTRY ROAD
STATION 85+19.57 (LEFT LANE)
STATION 85+75.00 (RIGHT LANE)
SMITH COUNTY
1984

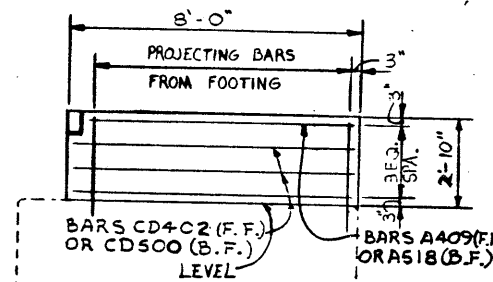
DESIGNED BY: HOUSTON WALKER
DRAWN BY: FRANK F. FULTON
CHECKED BY: H. WALKER
DATE: 10-83
DATE: 1-84
DATE: 1-84

- DENOTES 4 BARS A507E @ 14'-4" SPAN 1
4 BARS A509E @ 16'-4" SPAN 4
- DENOTES 4 BARS A901E @ 33'-0" SPAN 1
4 BARS A902E @ 35'-0" SPAN 4
- ▲ DENOTES 2 BARS A510E @ 10'-0" SPAN 1
2 BARS A513E @ 12'-0" SPAN 4

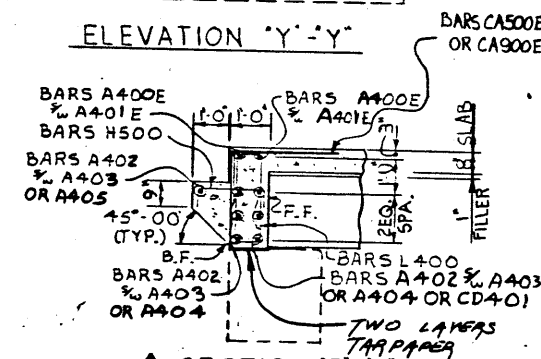
CORRECT: *Chilton L. Fowell*
ENGINEER OF STRUCTURES
APPROVED: *Lewis Evans*
DIRECTOR OF HIGHWAYS

[illegible]

SECTION "A"-"A"



ELEVATION "Y" - "Y"



SECTION "B" - "B"

NOTE: F.F. - FRONT FACE
B.F. - BACK FACE

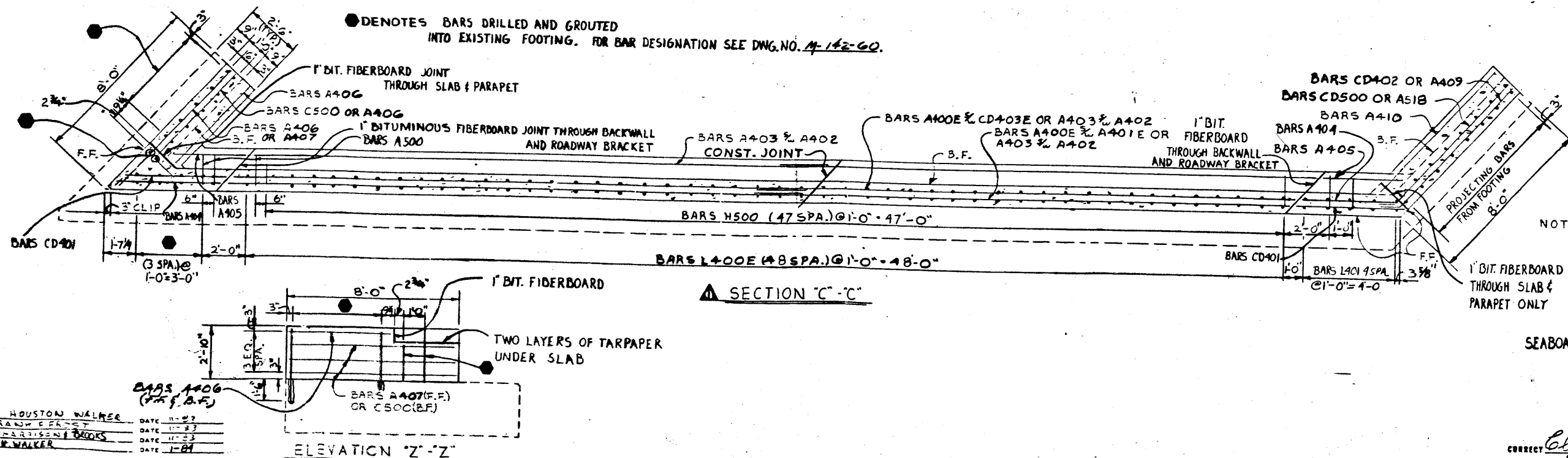
SEABOARD
SLAB &
ONLY

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

SUPERSTRUCTURE DETAILS
WIDENING OF INTERSTATE 40 OVER
SEABOARD SYSTEM RAILROAD AND COUNTRY ROAD
STATION 85+19.57 (LEFT LANE I-40)
STATION 85+75.00 (RIGHT LANE I-40)
SMITH COUNTY
1984

CORRECT Chellon L. Loucail
ENGINEER OF STRUCTURES
APPROVED Levis Evans
DIRECTOR OF HIGHWAY

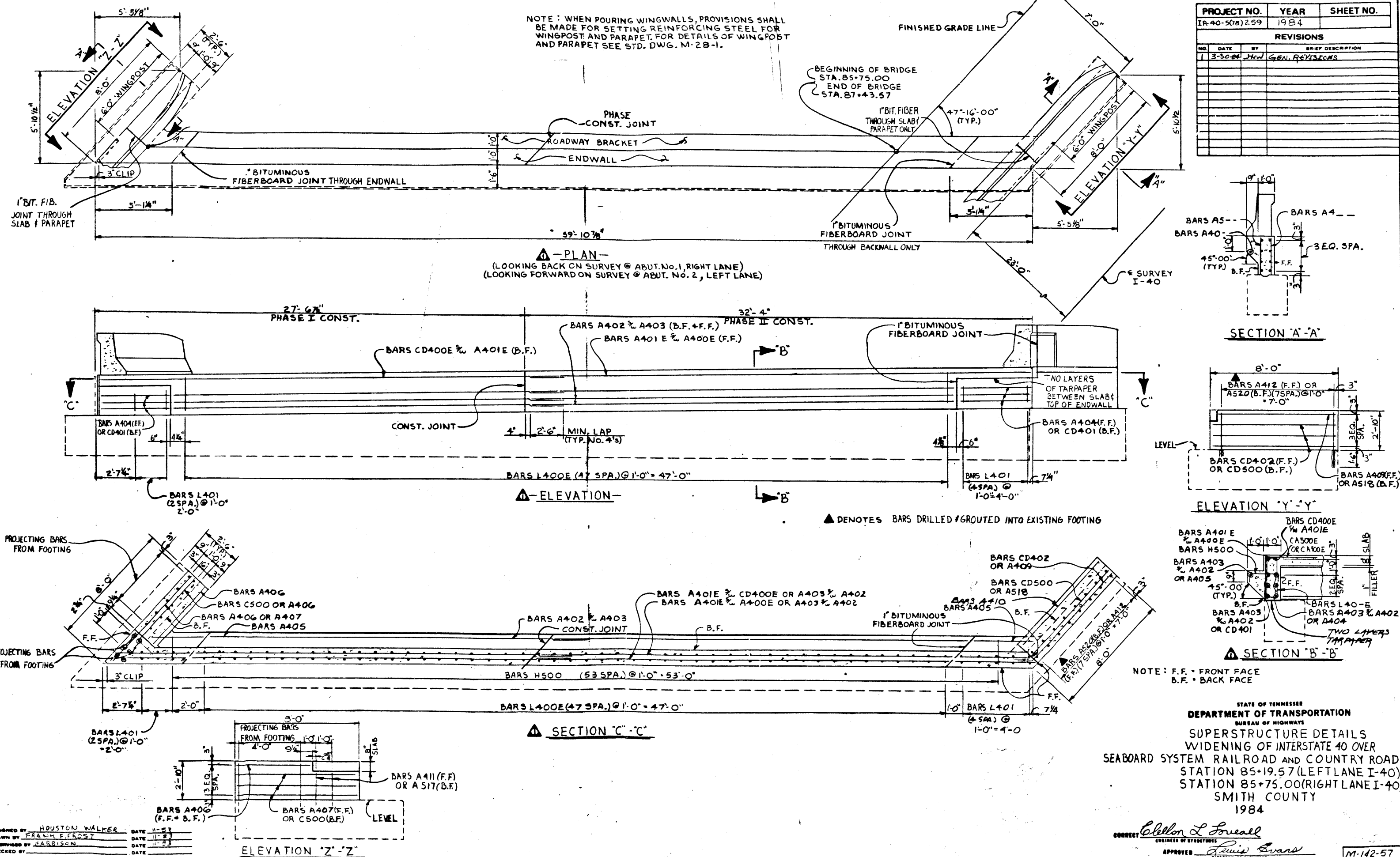
M-142-56



ELEVATION "Z" - "Z"

DESIGNED BY HOUSTON WALKER DATE 11-27
 DRAWN BY FRANK FRIST DATE 11-23
 SUPERVISED BY MARTIN BROOKS DATE 11-23
 CHECKED BY H. WALKER DATE 1-24

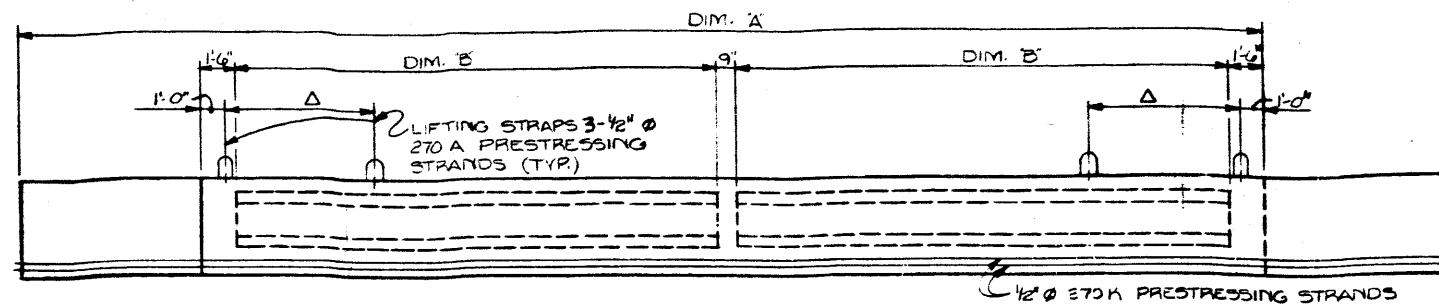
PROJECT NO.	YEAR	SHEET NO.
IR-40-5(78)259	1984	

[illegible]

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS
SUPERSTRUCTURE DETAILS
WIDENING OF INTERSTATE 40 OVER
SEABOARD SYSTEM RAILROAD AND COUNTRY ROAD
STATION 85+19.57 (LEFT LANE I-40)
STATION 85+75.00 (RIGHT LANE I-40)
SMITH COUNTY
1984

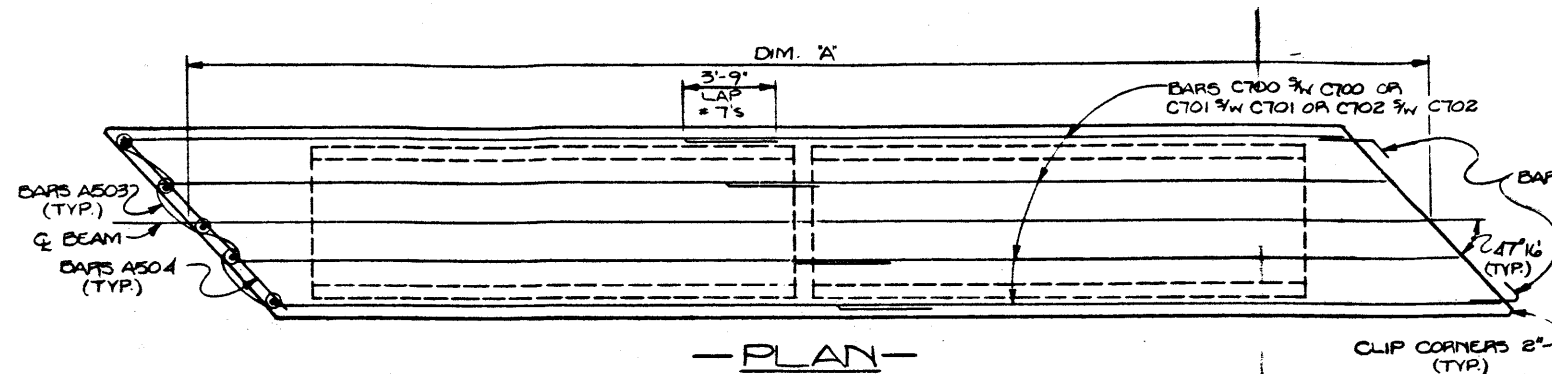
CHECKED Clifton L. Lurell
ENGINEER OF STRUCTURES
APPROVED Lewis Evans

M-142-57



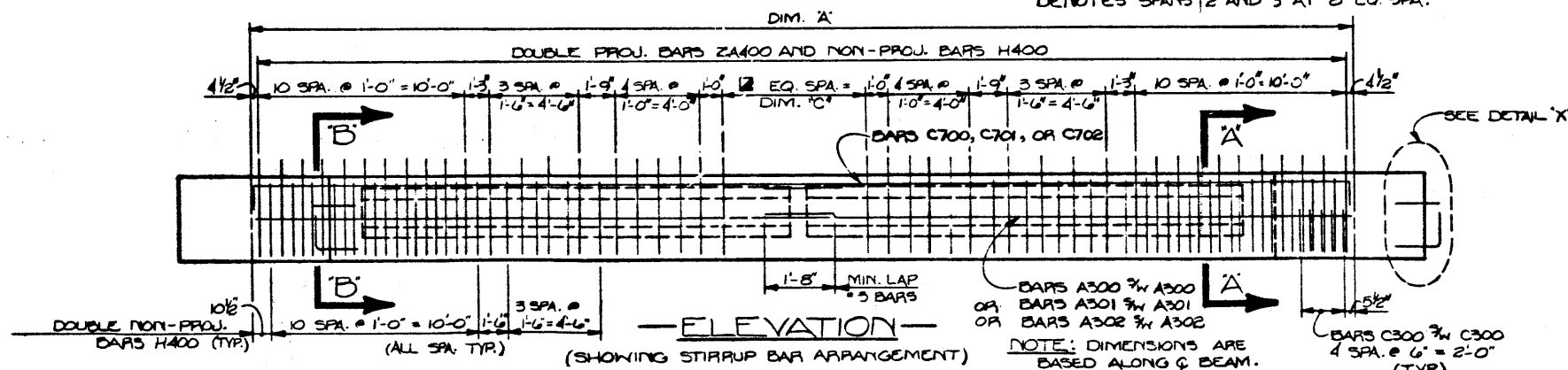
Δ: DISTANCE TO BE DETERMINED BY FABRICATOR.

-ELEVATION-



-PLAN-
(SHOWING TOP REINFORCING STEEL AND REINFORCING IN END GRID.)

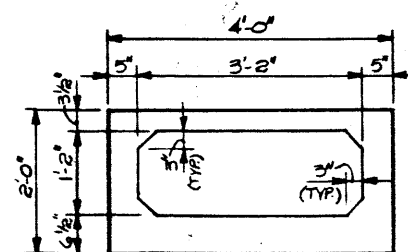
□: DENOTES SPANS 1 AND 4 AT 6 EQ. SPA.
○: DENOTES SPANS 2 AND 3 AT 8 EQ. SPA.



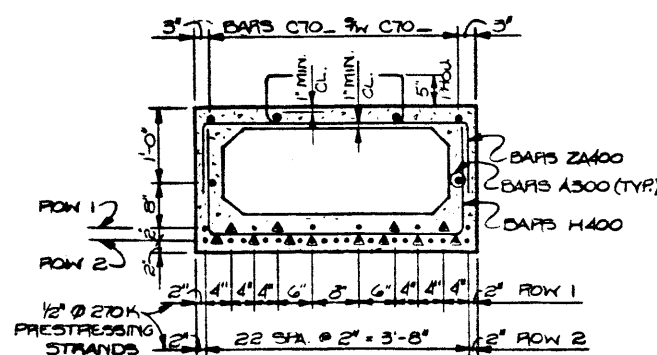
-ELEVATION-

(SHOWING STIRRUP BAR ARRANGEMENT)

NOTE: DIMENSIONS ARE BASED ALONG C.L. BEAM.



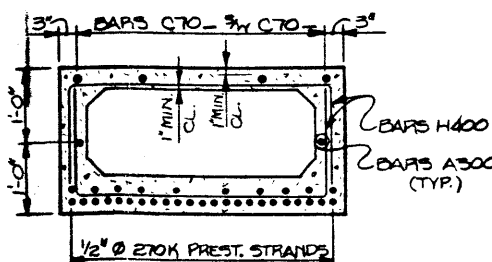
-SECTION-
(SHOWING PROPERTIES)



-SECTION A-A-

(SHOWING PROJECTING BARS AND PRESTRESSING STRANDS)

Δ: DENOTES 12 STRANDS WRAPPED 9'-0" FROM END OF BEAM.



-SECTION A-A-

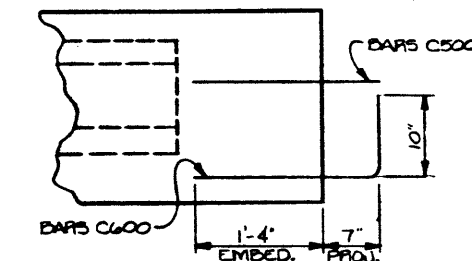
(SHOWING NON-PROJECTING BARS)

BILL OF STEEL - PER BEAM

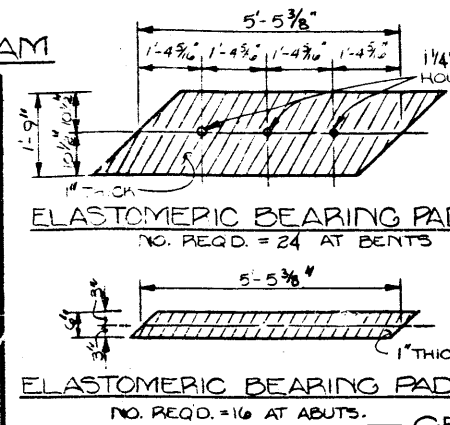
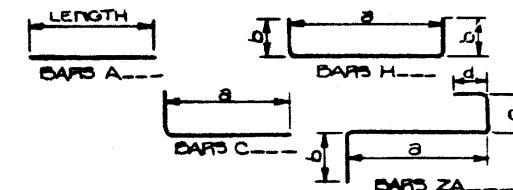
BAR	SPAN	SIZE	NO. REQD.	BENDING DIMENSIONS				LENGTH
				a	b	c	d	
A300	1	3	4					27'-0"
A301	2, 3	3	4					28'-5"
A302	4	3	4					28'-0"
C700	1	7	8	28'-1"				29'-2"
C701	2, 3	7	8	29'-4"				30'-7"
C702	4	7	8	28'-11"				30'-0"
A503	1, 2, 3, 4	5	10					1'-8"
A504	1, 2, 3, 4	5	6					5'-1"
C300	1, 2, 3, 4	3	20	2'-5"				3'-5"
C500	1, 2, 3, 4	5	4	1'-11"				2'-8"
C600	1, 2, 3, 4	6	16	1'-11"				2'-8"
H400	1, 4	4	158	3'-7 1/2"	1'-8"			6'-11"
H400	2, 3	4	158	3'-7 1/2"	1'-8"			6'-11"
ZA400	1, 4	4	94	2'-10"	1'-0"	7 1/2"	4"	4'-8"
ZA400	2, 3	4	98	2'-10"	1'-0"	7 1/2"	4"	4'-8"

TABLE OF DIMENSIONS

LOCATION	DIM. A'	DIM. B'	DIM. C'
SPAN 1	52'-7 1/2"	22'-7 1/2"	6'-10 1/2"
SPAN 2, 3	55'-5 3/4"	24'-0 1/4"	9'-8 3/4"
SPAN 4	54'-7 1/2"	23'-7 1/2"	8'-10 1/2"



-DETAIL X-



CONST. NO. 80001-3148-44.

PROJECT NO.	YEAR	SHEET NO.
IR-40-5(78)259	1984	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

-GENERAL NOTES-

- THE TOP OF ALL BEAMS ARE TO BE ROUGH FLOATED, AT APPROXIMATELY THE TIME OF INITIAL SET, THE TOP OF THE BEAMS WILL ALSO BE SCRUBBED TRANSVERSELY WITH A COARSE WIRE BRUSH TO REMOVE ALL LAITANCE AND PRODUCE A ROUGH SURFACE. WHERE PRECAST SLAB PANELS ARE TO BE USED AND SET ON FELT PADS, THE OUTER TWO INCHES OF THE TOP FLANGE MAY BE TROWELED.
- MILD STEEL REINFORCING SHALL BE ASTM A615 GRADE 60.
- ALL PRESTRESSING STRANDS TO BE 1/2" Ø ASTM GRADE 270K, 7 WIRE UNCOATED STRESS-RELIEVED PRESTRESSING STRANDS.
- AN INITIAL FORCE OF 28,936 LBS. SHALL BE APPLIED TO EACH STRAND IN ALL BEAMS.
- AFTER THE BEAM IS REMOVED FROM THE PRESTRESSING BED, BARS C600 AND C400 SHALL BE BENT A SUFFICIENT AMOUNT SO AS TO PERMIT THE "C" BARS OF ADJOINING BEAM TO MESH WHEN IN THE ERECTED POSITION.
- THE PRESTRESSING STRANDS SHALL BE LEFT PROJECTING 3" ± FROM THE ENDS OF THE BEAMS. THERE SHALL NOT BE ANY PROTECTIVE COATING PLACED ON THE ENDS OF THE BEAMS OR ON THE PROJECTING STRANDS.
- ELASTOMERIC PADS TO BE 5'-5 3/8" X 6" X 1" AT ABUTMENT ENDS AND 5'-5 3/8" X 1'-9" X 1" WITH 1 1/4" Ø HOLES AT BENTS.
- THE CONCRETE FOR THIS CONSTRUCTION SHALL BE OF SUCH PROPERTIES AS TO ATTAIN A COMPRESSIVE STRENGTH OF NOT LESS THAN 5,000 + PSI AT THE AGE OF 28 DAYS AND STRESS TRANSFER SHALL NOT BE MADE TO THE BRIDGE MEMBER UNTIL THE TEST SPECIMENS INDICATE THAT THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF AT LEAST 4,300 + PSI. SEE GENERAL NOTES SHEET FOR CONCRETE FINISHING NOTE.
- 1" Ø WEEP HOLES REQUIRED AT LOW POINT OF EACH CELL.
- EACH CELL SHALL BE VENTED, (DURING THE FABRICATION PHASE), IN SUCH A MANNER SO AS NOT TO ALLOW EXTERNAL WATER TO ENTER THE CELL.

ESTIMATED QUANTITIES - PER BEAM

BEAM	NO. REQD.	CLASS 1/2" CONCRETE C.Y.	STEEL BAR REINFORCEMENT LBS.	PREST. STEEL LBS.
SPAN 1	8	8.9	4,771	920
SPAN 2	8	9.4	4,828	970
SPAN 3	8	9.4	4,828	970
SPAN 4	8	9.3	4,789	955

NOTE: COST OF ELASTOMERIC PADS AND 3% DOWEL BARS AND RUBBER BONDING CEMENT TO BE INCLUDED IN THE COST OF PRESTRESSED BEAM.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

PRESTRESSED BOX BEAM
WIDENING OF INTERSTATE 40 OVER
SEABOARD SYSTEMS RAILROAD AND COUNTY ROAD
STATION 85+19.57 (LEFT LANE I-40)
STATION 85+75.00 (RIGHT LANE I-40)
SMITH COUNTY
1984.

DESIGNED BY: HOUSTON WALKER
DRAWN BY: Y. KAY FORREST
SUPERVISED BY: J. H. HARRIS
CHECKED BY: HOUSTON WALKER
DATE: 9-85
DATE: 11-85
DATE: 11-85
DATE: 1-86

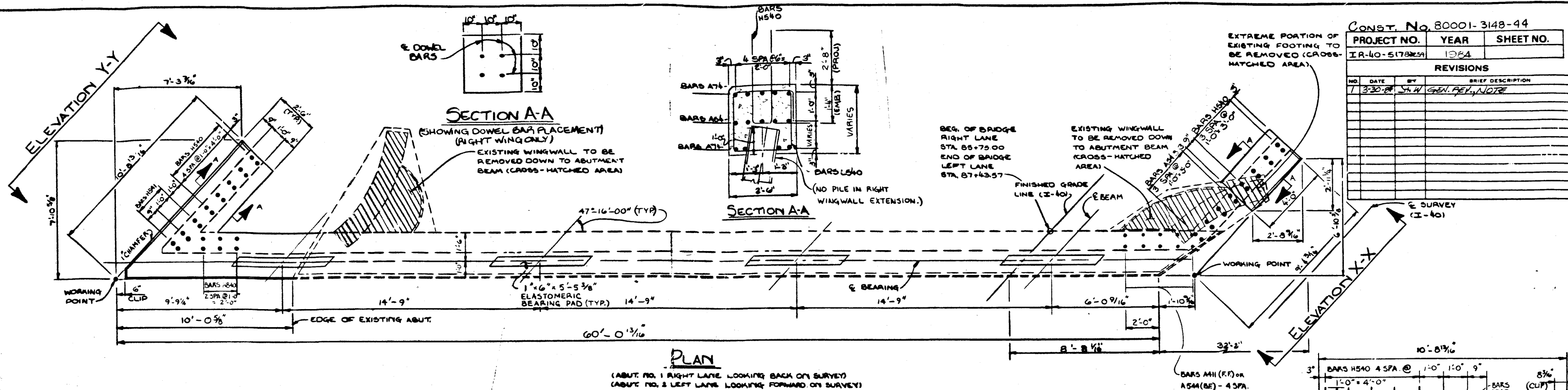
M-142-58

CONST. NO. 80001-3148-44

PROJECT NO.	YEAR	SHEET NO.
IR-40-5178251	1984	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	3-30-84	SAW	GEN. REL. NOTE



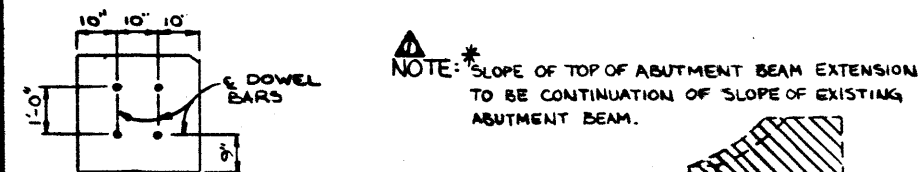
PLAN
(ABUT. NO. 1 RIGHT LANE LOOKING BACK ON SURVEY)
(ABUT. NO. 2 LEFT LANE LOOKING FORWARD ON SURVEY)

NOTE: EXISTING DOWEL BARS IN ABUTMENT BEAM TO BE REMOVED DOWN FLUSH WITH TOP OF ABUTMENT BEAM.

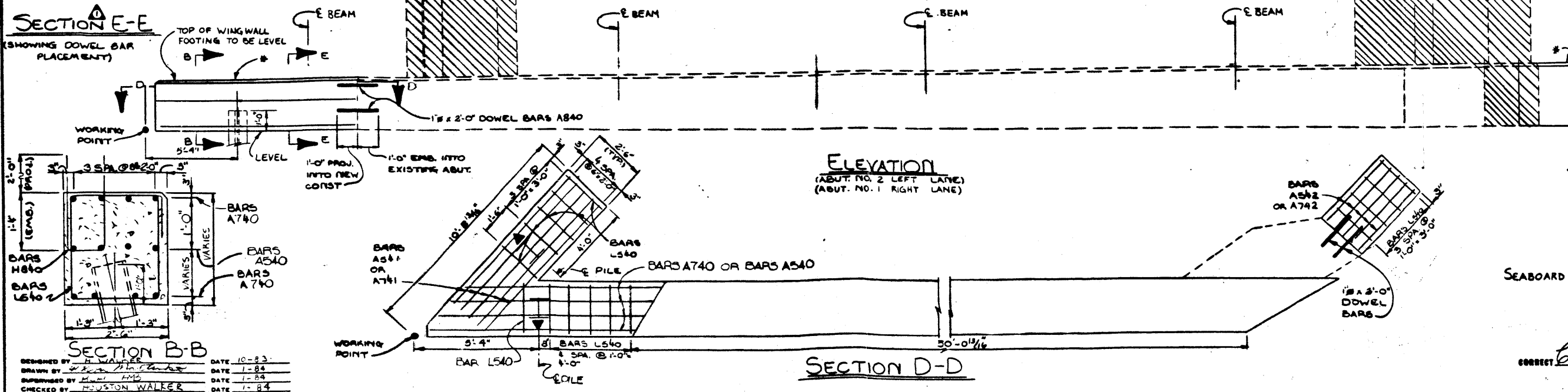
NOTE: THE COST OF BRIDGE RAIL AND POST IS TO BE INCLUDED IN THE COST OF BRIDGE RAIL SYSTEM

NOTE: PILE CUT-OFF ELEVATION IS 1'-0\"/>

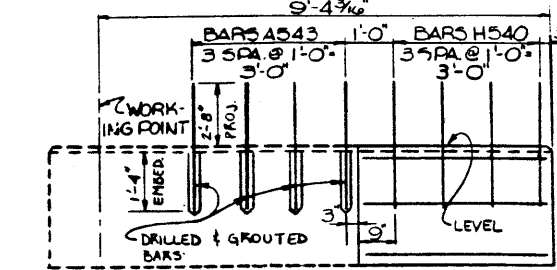
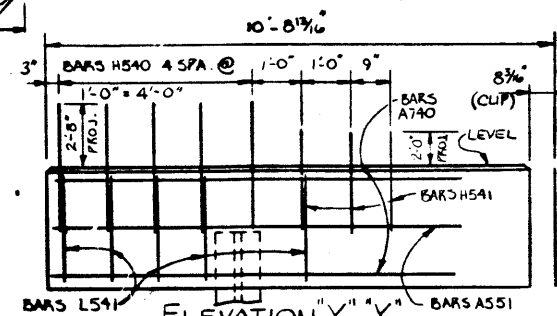
NOTE: ABUTMENT BEAM BEARING PAD SURFACES TO CONFORM TO EXISTING ABUTMENT AND BOTTOM OF BEAM GRADE.



NOTE: SLOPE OF TOP OF ABUTMENT BEAM EXTENSION TO BE CONTINUATION OF SLOPE OF EXISTING ABUTMENT BEAM.



SECTION D-D



ESTIMATED QUANTITIES

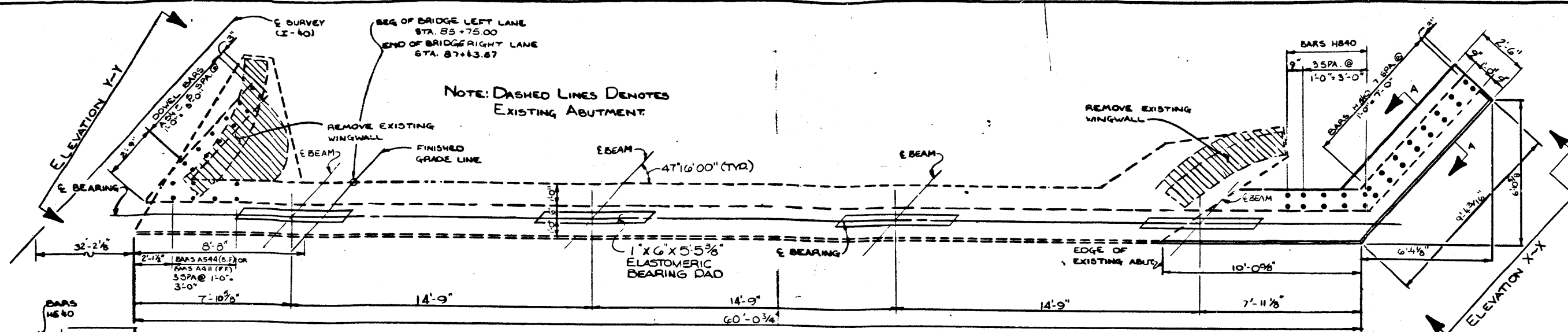
ITEM	CLASS "A" CONCRETE C.Y.	REINFORCING STEEL L.B.
ABUTMENT	3.0	857

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS
ABUTMENT NUMBER 1 (RIGHT LANE)
ABUTMENT NUMBER 2 (LEFT LANE)
WIDENING OF INTERSTATE 40 OVER
SEABOARD SYSTEMS RAILROAD AND COUNTY ROAD
STATION 85+19.57 (LEFT LANE I-40)
STATION 85+75.00 (RIGHT LANE I-40)
SMITH COUNTY
1984

CORRECT *Chellon L. Louder*
ENGINEER OF STRUCTURES
APPROVED *R. L. Brant*
DIRECTOR OF HIGHWAYS

CONST. NO. 80001-3148-44
 PROJECT NO. YEAR SHEET NO.
 1A-40-517 9 1984

REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION
1	3-30-84	JWH	GEN. REV. NOTE ADDED (QUANTITIES)



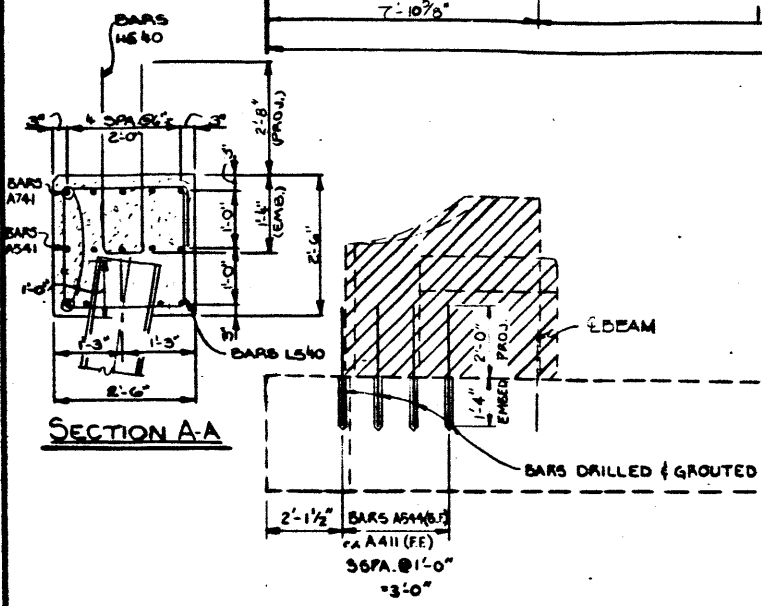
PLAN

(ABUT. NO. 1 LEFT LANE LOOKING BACK ON SURVEY)
 (ABUT. NO. 2 RIGHT LANE LOOKING FORWARD ON SURVEY)

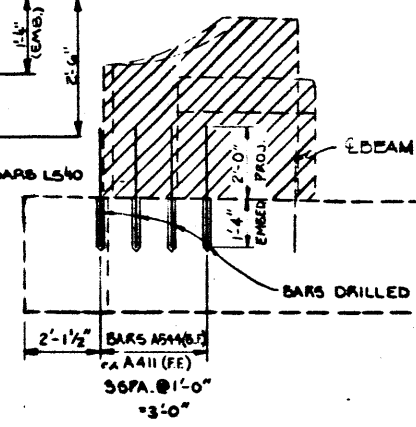
NOTE: CROSS HATCHED AREA TO BE REMOVED.

NOTE: EXISTING WINGWALLS TO BE REMOVED DOWN TO ABUTMENT BEAM.

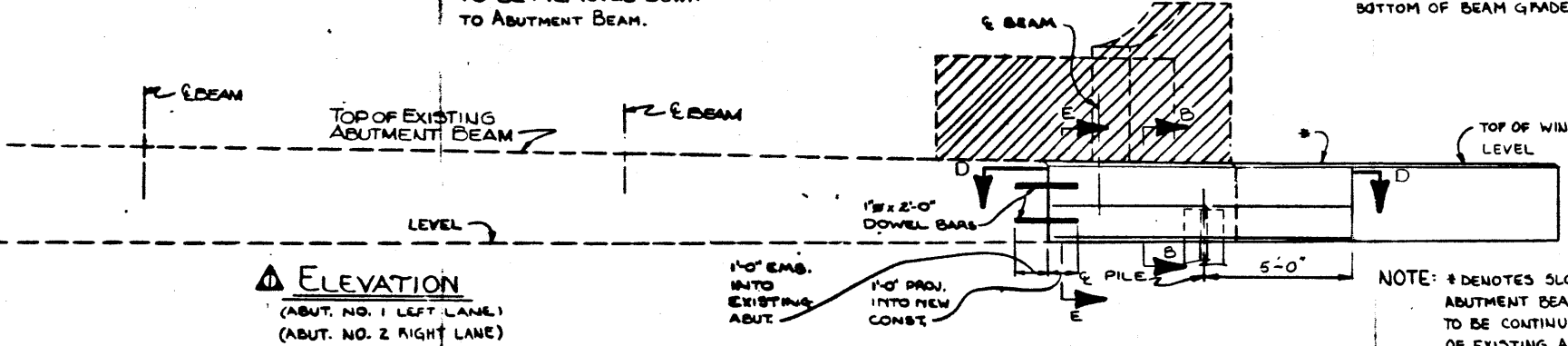
NOTE: ABUTMENT BEAM BEARING PAD SURFACES TO CONFORM TO EXISTING ABUTMENT AND BOTTOM OF BEAM GRADE.



SECTION A-A



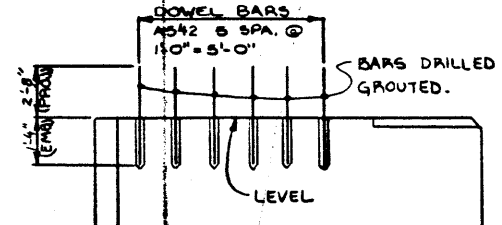
SECTION E-E
 (SHOWING DOWEL BAR PLACEMENT)



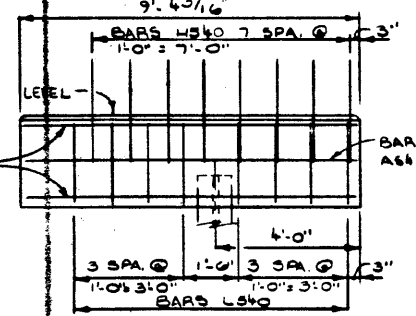
ELEVATION
 (ABUT. NO. 1 LEFT LANE)
 (ABUT. NO. 2 RIGHT LANE)

NOTE: EXISTING DOWEL BARS IN ABUTMENT BEAM TO BE REMOVED DOWN FLUSH WITH TOP OF ABUTMENT BEAM.

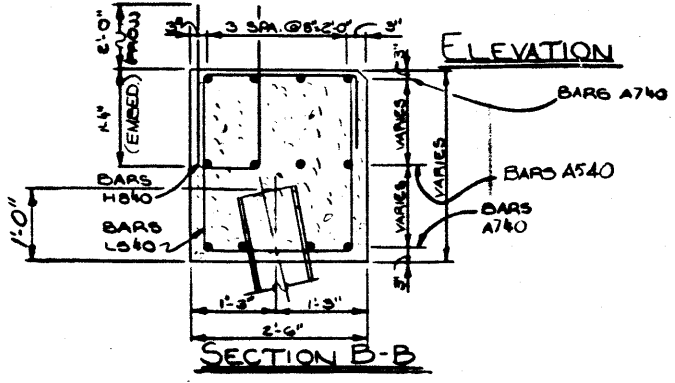
NOTE: * DENOTES SLOPE OF TOP OF ABUTMENT BEAM EXTENSION TO BE CONTINUATION OF SLOPE OF EXISTING ABUTMENT BEAM.
 NOTE: PILE CUT-OFF ELEVATION TO BE 1'-0" ABOVE BOTTOM OF EXISTING FOOTING.



ELEVATION Y-Y

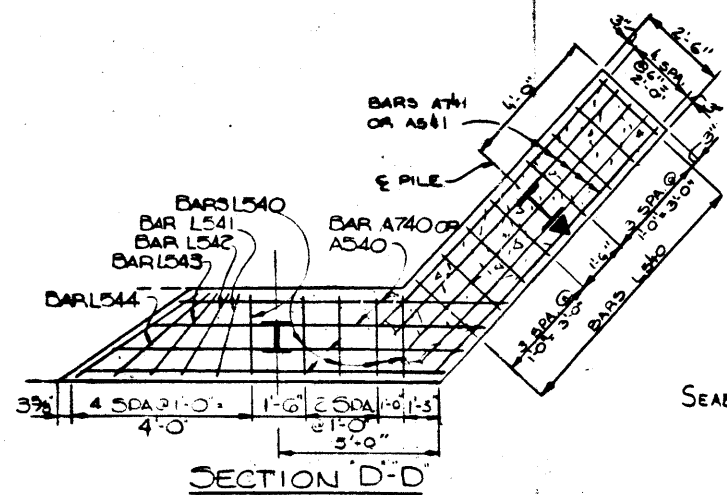


ELEVATION X-X



SECTION B-B

NOTE: THE COST OF BRIDGE RAIL AND POST IS TO BE INCLUDED IN THE COST OF BRIDGE RAIL SYSTEM



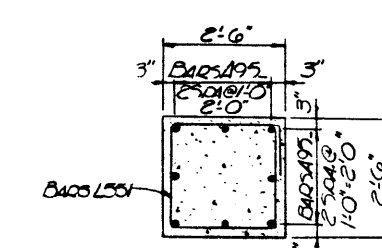
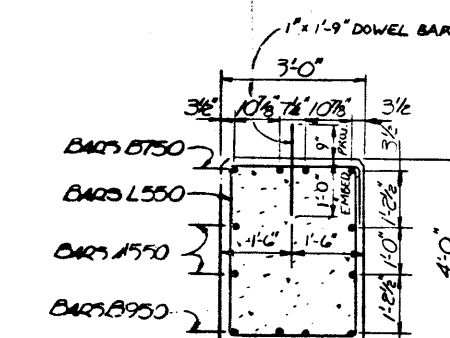
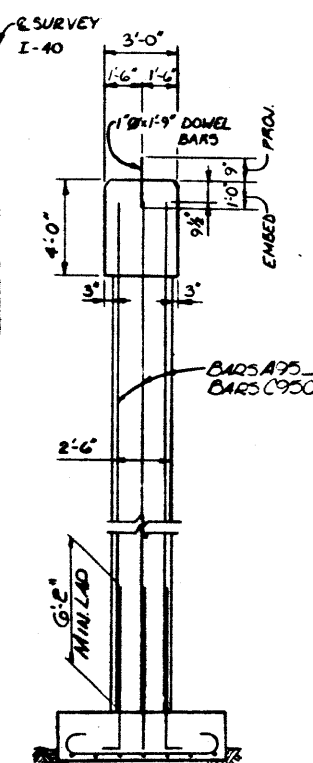
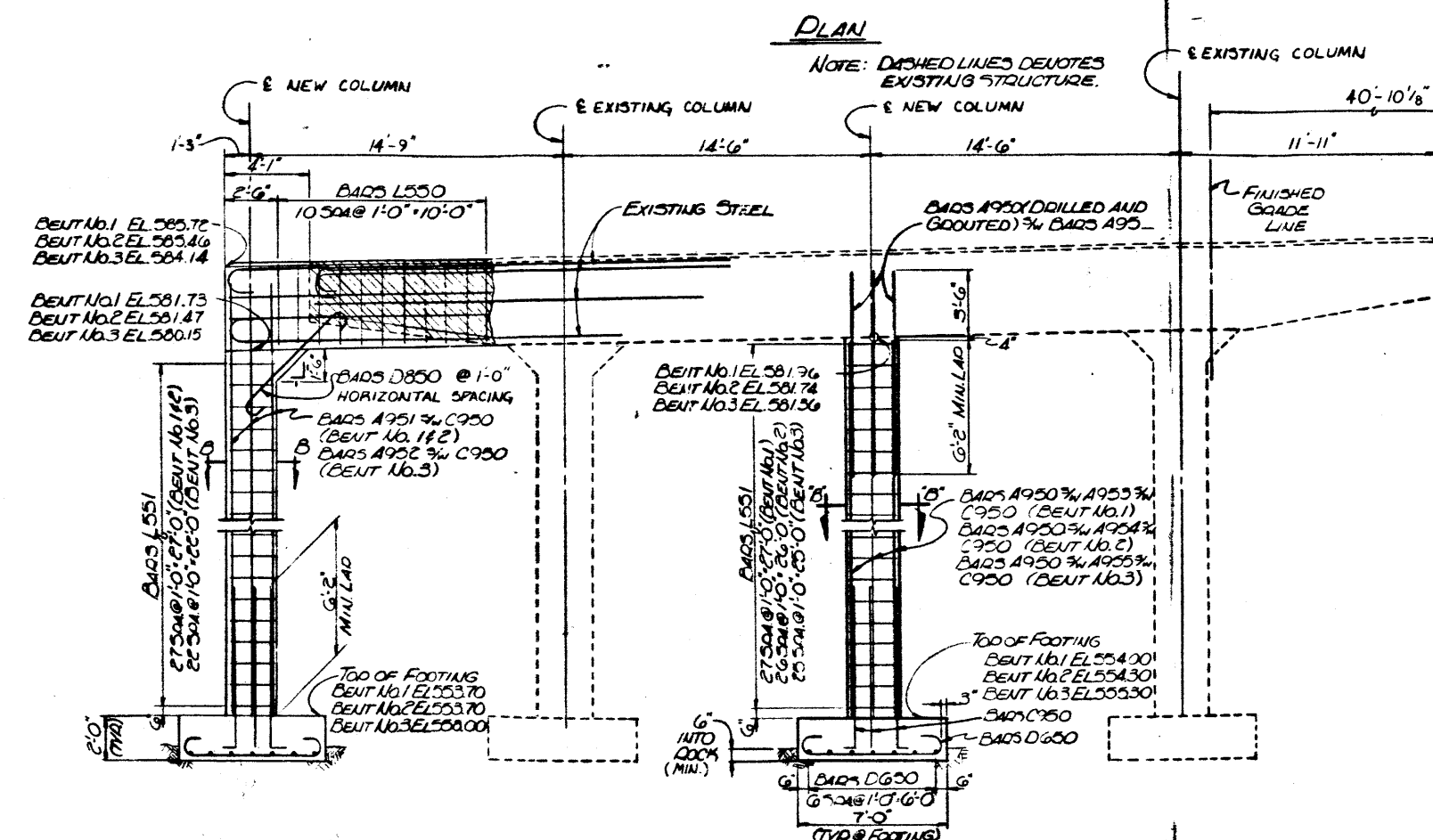
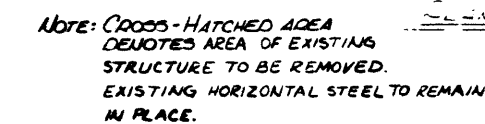
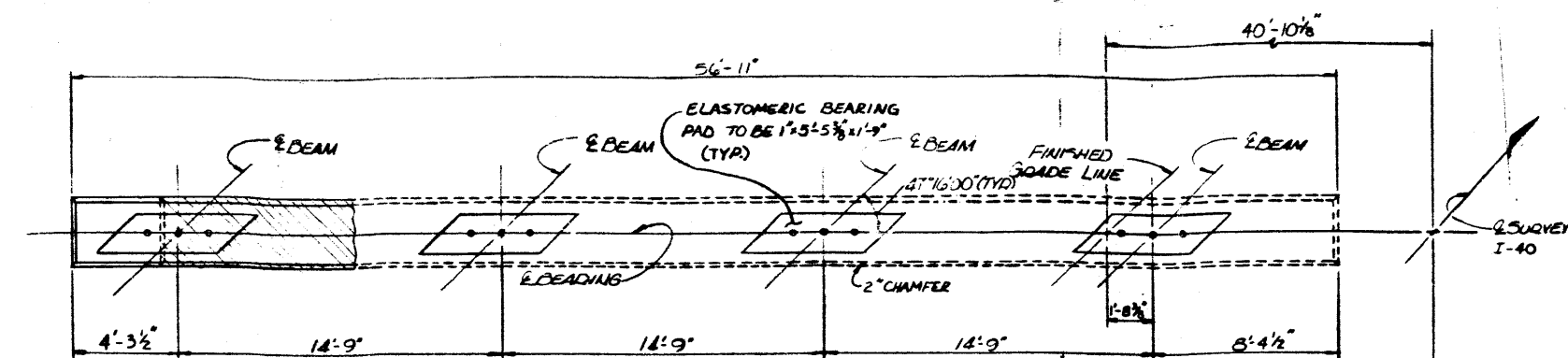
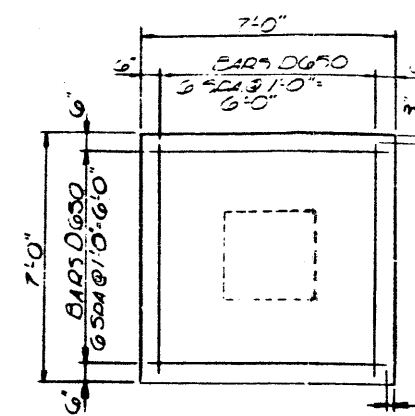
SECTION D-D

ESTIMATED QUANTITIES

ITEM	CLASS "A" CONCRETE C.Y.	REINFORCING STEEL LB.
ABUTMENT	3.0	823

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAYS
 ABUTMENT NUMBER 1 (LEFT LANE)
 ABUTMENT NUMBER 2 (RIGHT LANE)
 WIDENING OF INTERSTATE 40 OVER
 SEABOARD SYSTEMS RAILROAD AND COUNTY ROAD
 STATION 85+19.57 (LEFT LANE I-40)
 STATION 85+75.00 (RIGHT LANE I-40)
 SMYTH COUNTY
 1984
 CORRECTED *Sharon L. Lousell*
 ENGINEER OF STRUCTURES
 APPROVED *Louis Evans*
 DIRECTOR OF HIGHWAYS

DESIGNED BY HOUSTON WALKER DATE 11-83
 DRAWN BY *Sharon L. Lousell* DATE 11-83
 SUPERVISED BY *L.H. N.D.* DATE 11-83
 CHECKED BY *Sharon L. Lousell* DATE 11-83

[illegible]

ESTIMATED QUANTITIES		
ITEM	# REINFORCING STEEL	CLASS "A" CONCRETE
	Δ 165	CY
BENT NO. 1	3,651	25.4
BENT NO. 2	3,598	25.8
BENT NO. 3	3,541	24.4

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

BEUT No. 1, 2, AND 3
LEFT LANE

WIDENING OF INTERSTATE 40 OVER
SEABOARD SYSTEM'S RAILROAD AND COUNTY ROAD
STATION 85+19.57 (LEFT LANE)
STATION 85+75.00 (RIGHT LANE)
SMITH COUNTY

CORRECT Colston L. Loveall 1984
ENGINEER OF STRUCTURES

APPROVED Louis Evans
DIRECTOR OF HIGHWAYS

M-142-60

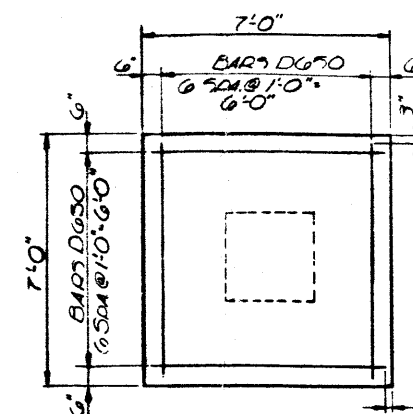
DESIGNED BY H. WALKER DATE 12-23
 DRAWN BY FRANK J. ARSON DATE 1-54
 SUPERVISED BY H. WALKER DATE 1-54
 CHECKED BY H. WALKER DATE 1-54

NOTE: THE SLOPE OF THE NEW PORTION OF THE CAP BEAM SHALL CONFORM TO THE SLOPE OF THE EXISTING CAP BEAM AND TO THE BOTTOM OF BEAM GRADE.

NOTE: COLUMN STEEL TO EXTEND 3'-6" INTO CAP BEAM.

NOTE: WHEN POURING CAP BEAM EXTENSION, PROVISIONS SHALL BE MADE FOR SETTING DOWEL BARS. IF THE CONTRACTOR ELECTS TO DRILL THE HOLES FOR THE DOWEL BARS, THE REINFORCING STEEL SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE DRILLING. DOWEL BAR PROJECTION 9" DOWEL BARS SHALL BE DRILLED INTO THE EXISTING CAP BEAM.

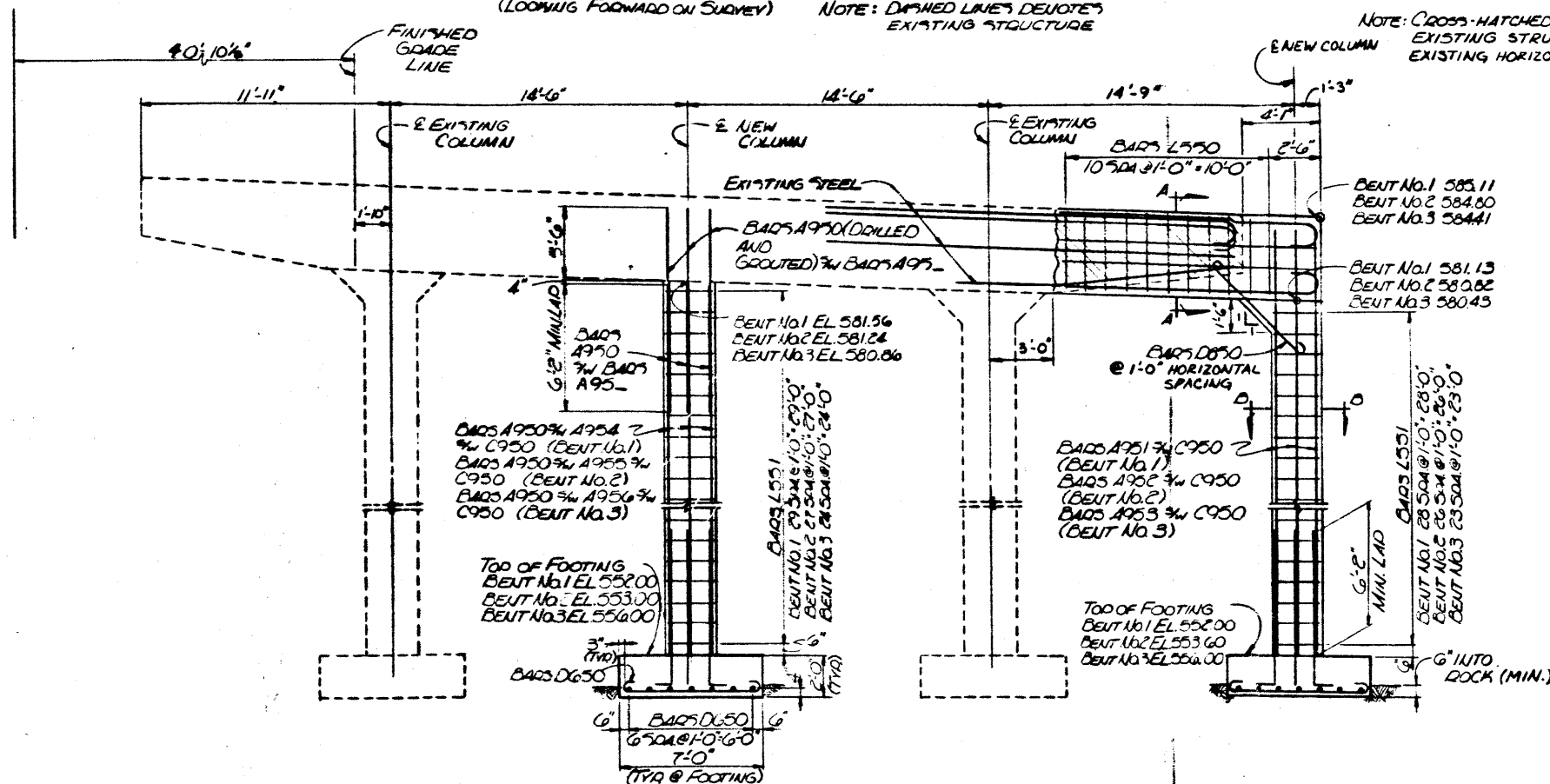
PROJECT NO.	YEAR	SHEET NO.
18-40-5(78) 259	1981	



PLAN
(LOOKING FORWARD ON SURVEY)

NOTE: DASHED LINES DEVOTES
EXISTING STRUCTURE

NOTE: CROSS-HATCHED AREA DENOTES AREAS OF
EXISTING STRUCTURE TO BE REMOVED.
EXISTING HORIZONTAL STEEL TO REMAIN IN PLACE

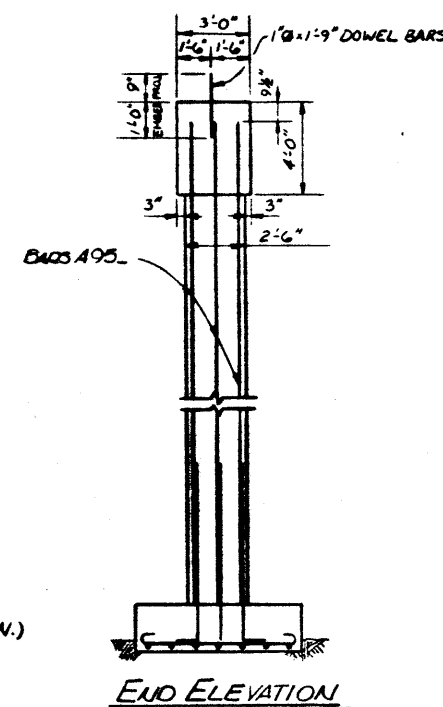


ELEVATION
(LOOKING FORWARD ON SURVEY)

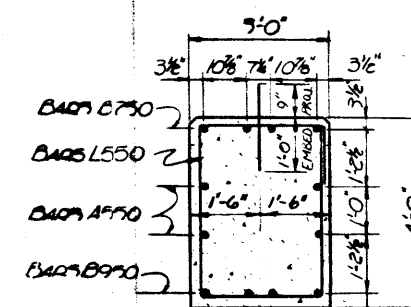
NOTE: THE SLOPE OF THE NEW PORTION OF THE CAP BEAM SHALL CONFORM TO THE SLOPE OF THE EXISTING CAP BEAM AND TO THE BOTTOM OF BEAM GRADE.

NOTE: COLUMN STEEL TO EXTEND 3'-6" INTO CAP BEAM.

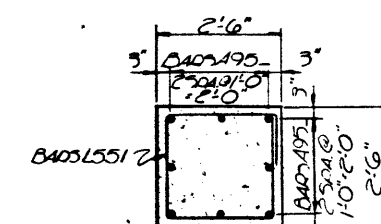
NOTE: WHEN POURING CAP BEAM EXTENSION, PROVISIONS SHALL BE MADE FOR SETTING DOWEL BARS. IF THE CONTRACTOR ELECTS TO DRILL THE HOLES FOR THE DOWEL BARS, THE REINFORCING STEEL SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE DRILLING. DOWEL BAR PROJECTION 9". DOWEL BARS SHALL BE DRILLED INTO THE EXISTING CAP BEAM.



END ELEVATION



SECTION A-A



SECTION "B-B"

ESTIMATED QUANTITIES

ITEM	REINFORCING STEEL	CLASS "A" CONCRETE
	Δ 165.	CY.
BENT No.1	3,726	26.6
BENT No.2	3,600	25.8
BENT No.3	3,371	24.4

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

BENT No 1, 2, AND 3
RIGHT LANE

WIDENING OF INTERSTATE 40 OVER
SEABOARD SYSTEMS RAILROAD AND COUNTY ROAD
STATION 85+19.57 (LEFT LANE)
STATION 85+75.00 (RIGHT LANE)
SMITH COUNTY

SMITH COUNTY

CORRECT Carlton L. Lovelace 1984
ENGINEER OF STRUCTURES
APPROVED Louis Evans

M-142-62

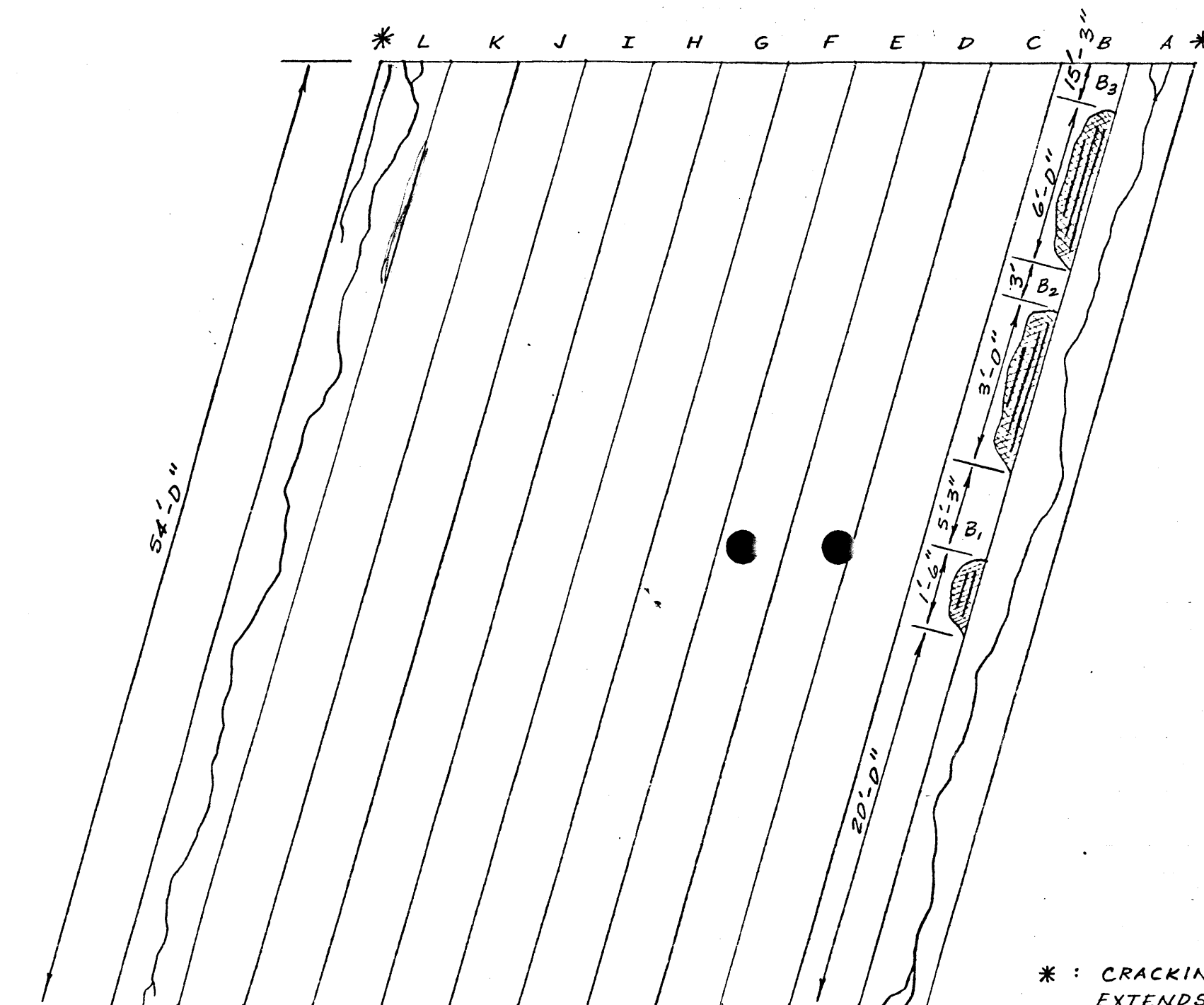
DESIGNED BY H. WALKER DATE 1-28-3
 DRAWN BY DEBBY WILSON DATE 1-28-3
 SUPERVISED BY H. WALKER DATE 1-28-3
 CHECKED BY H. WALKER DATE 1-28-3

SPAN IV

PAGE NO. _____

SHEET _____ OF _____

MAY 23 1983



- B₁: SPALLING AREA IS 1'-6" LONG BY 6" WIDE WITH 2 CABLES EXPOSED
- B₂: SPALLING AREA IS 3'-0" LONG BY 6" WIDE WITH 3 CABLES EXPOSED
- B₃: SPALLING AREA IS 6'-0" LONG BY 6" WIDE WITH 3 CABLES EXPOSED

* : CRACKING ON BEAMS A & L EXTENDS THE FULL LENGTH OF THE BEAMS AND IS $\approx 1/4$ " WIDE

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
DIVISION OF STRUCTURES

896

80-I40-901-LT. LANE
- SPAN IV - BENT 3 TO ABUT. 2

BRIDGE NO.
CROSSING:

COUNTY: SMITH

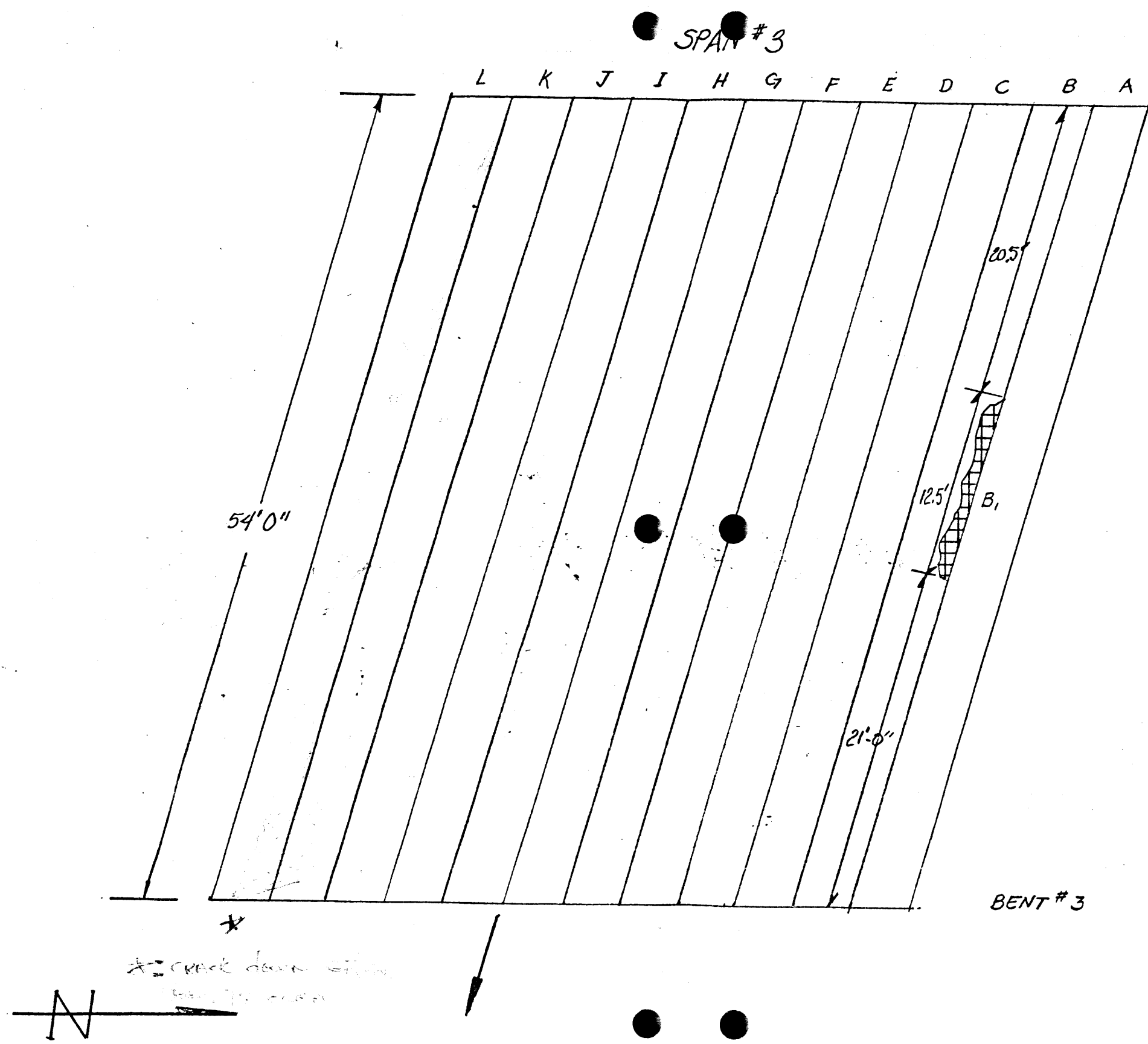
DRAWN LKB
DATE 12/29/82

REVISION
DATE

PAGE NO. _____

SHEET ____ OF ____

MAY 23 1983



BENT #2

B₁: 12.5' x 6" area of spalling &
exposed cables
3 exposed cables
1 broken cables

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
DIVISION OF STRUCTURES

8.96

80-I40-901 LT. Lane
SPAN #3 BENT #2 TO BENT #3

BRIDGE NO.
CROSSING:

COUNTY: SMITH COUNTY

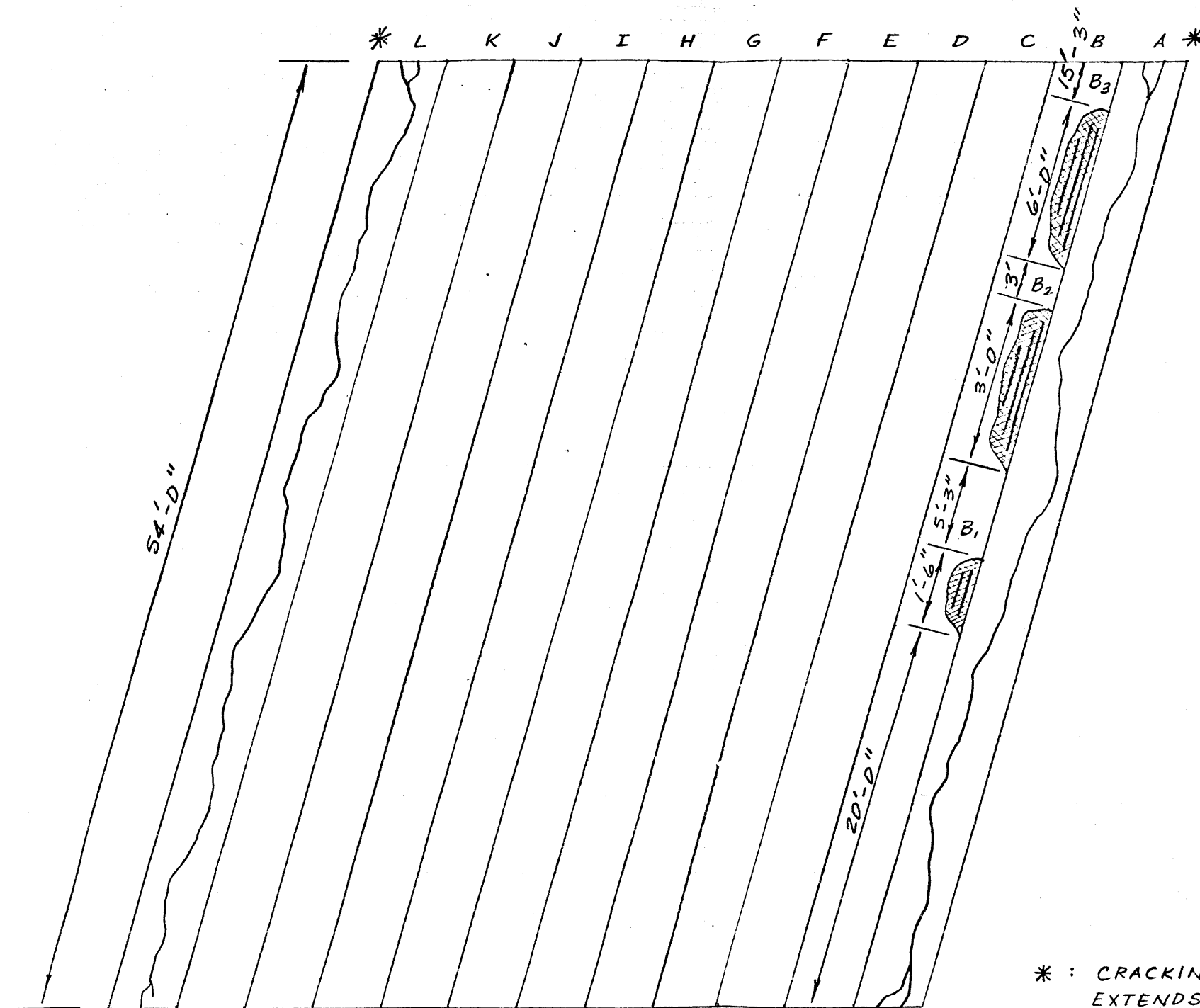
DRAWN VCT
DATE 12-29-82

REVISION
DATE

SPAN IV

PAGE NO. _____

SHEET _____ OF _____



- B₁: SPALLING AREA IS 1'-6" LONG BY 6" WIDE WITH 2 CABLES EXPOSED
- B₂: SPALLING AREA IS 3'-0" LONG BY 6" WIDE WITH 3 CABLES EXPOSED
- B₃: SPALLING AREA IS 6'-0" LONG BY 6" WIDE WITH 3 CABLES EXPOSED

DATE RECEIVED
↓
2/3/83

* : CRACKING ON BEAMS A & L EXTENDS THE FULL LENGTH OF THE BEAMS AND IS ≈ 1/4" WIDE

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
DIVISION OF STRUCTURES

80-I40-901-LT. LANE
- SPAN IV - BENT 3 TO ABUT. 2

BRIDGE NO.
CROSSING:

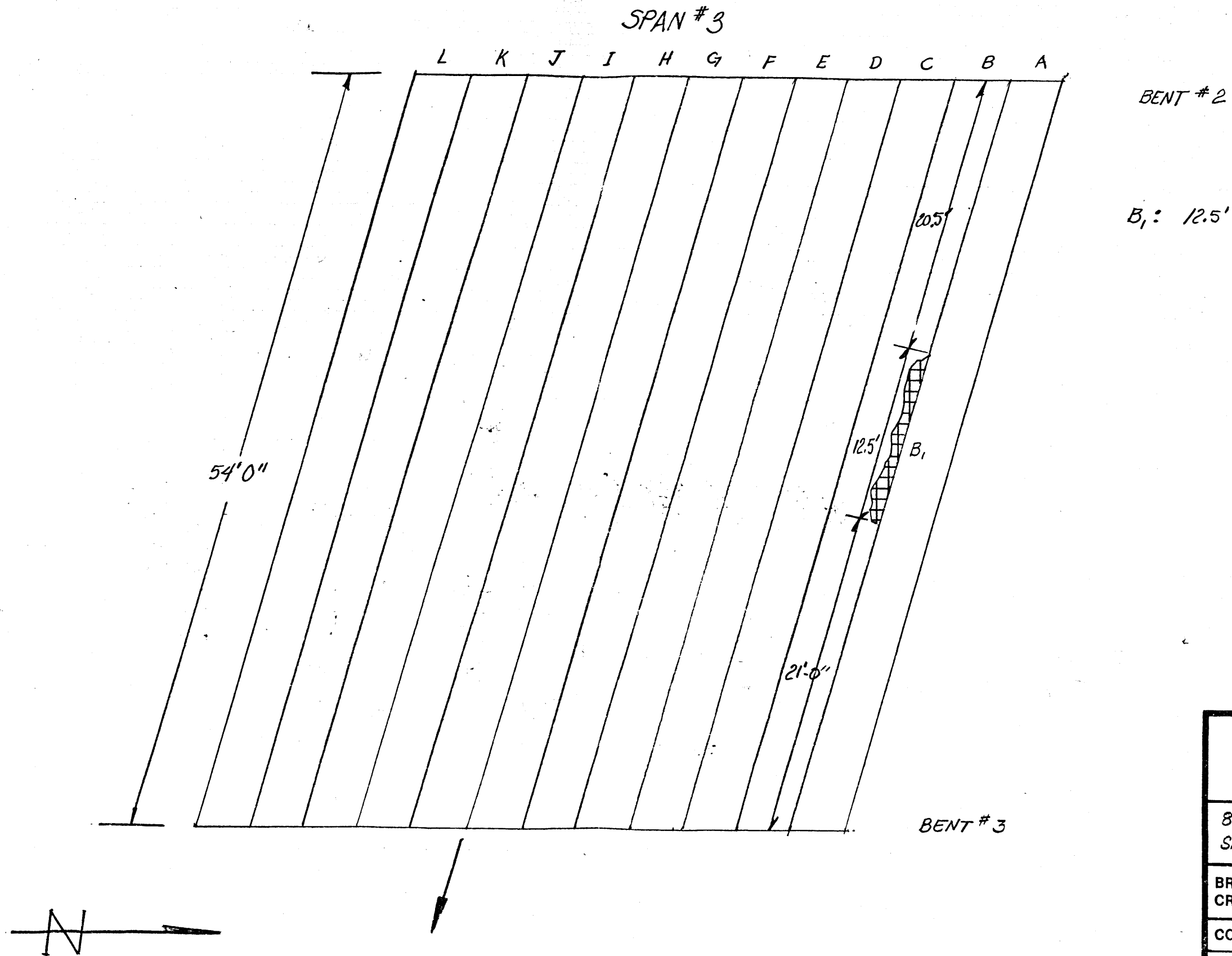
COUNTY: SMITH

DRAWN LKB
DATE 12/29/32

REVISION
DATE

PAGE NO. _____

SHEET _____ OF _____



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
DIVISION OF STRUCTURES

80-140-901 Lt. LERIC
SPAN #3 BENT #2 TO BENT #3

BRIDGE NO.
CROSSING:

COUNTY: SMITH COUNTY

DRAWN VCT
DATE 12-29-82

REVISION
DATE

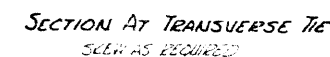
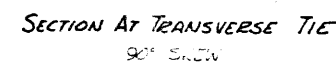
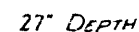
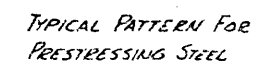


Diagram illustrating the reinforcement layout for a slab. The layout shows a central vertical section with a width of $2 \times 12"$ and a total width of $24"$. The length of the slab is indicated as $24' - 0"$. The reinforcement is shown as a grid of bars, with dimensions $12' - 0"$ and $12' - 0"$ marked along the length. The diagram also shows the spacing of the bars, with dimensions $12' - 0"$ and $12' - 0"$ marked along the length. The diagram is labeled "Length As Required See Table For Depth" and "K = 3.5".

PART PLAN - SKEW AS REQUIRED

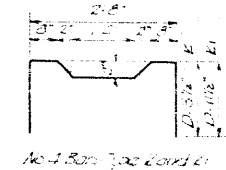
[illegible]

PAET PLAN - 90° SKEW
(Clear Span Over 44')



DATE	TIME	DEPTH	WIND DIRECTION	WIND SPEED	SEA STATE	WAVE PERIOD	WAVE DIRECTION	WAVE HEIGHT	WAVE PERIOD	WAVE DIRECTION	WAVE HEIGHT
10-10-68	0800	42"	SE	15	3	10	SE	10	10	SE	10
10-10-68	0900	42"	SE	15	3	10	SE	10	10	SE	10
10-10-68	1000	42"	SE	15	3	10	SE	10	10	SE	10
10-10-68	1100	42"	SE	15	3	10	SE	10	10	SE	10
10-10-68	1200	42"	SE	15	3	10	SE	10	10	SE	10
10-10-68	1300	42"	SE	15	3	10	SE	10	10	SE	10
10-10-68	1400	42"	SE	15	3	10	SE	10	10	SE	10
10-10-68	1500	42"	SE	15	3	10	SE	10	10	SE	10
10-10-68	1600	42"	SE	15	3	10	SE	10	10	SE	10
10-10-68	1700	42"	SE	15	3	10	SE	10	10	SE	10
10-10-68	1800	42"	SE	15	3	10	SE	10	10	SE	10
10-10-68	1900	42"	SE	15	3	10	SE	10	10	SE	10
10-10-68	2000	42"	SE	15	3	10	SE	10	10	SE	10
10-10-68	2100	42"	SE	15	3	10	SE	10	10	SE	10
10-10-68	2200	42"	SE	15	3	10	SE	10	10	SE	10
10-10-68	2300	42"	SE	15	3	10	SE	10	10	SE	10
10-10-68	2400	42"	SE	15	3	10	SE	10	10	SE	10

GENERAL NOTES:

[illegible]

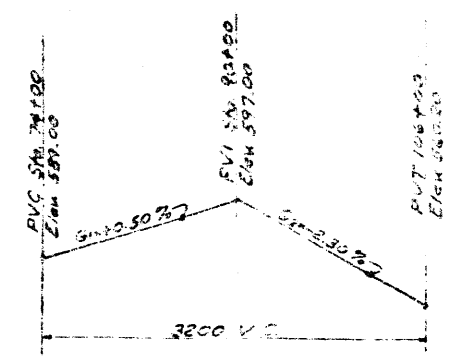
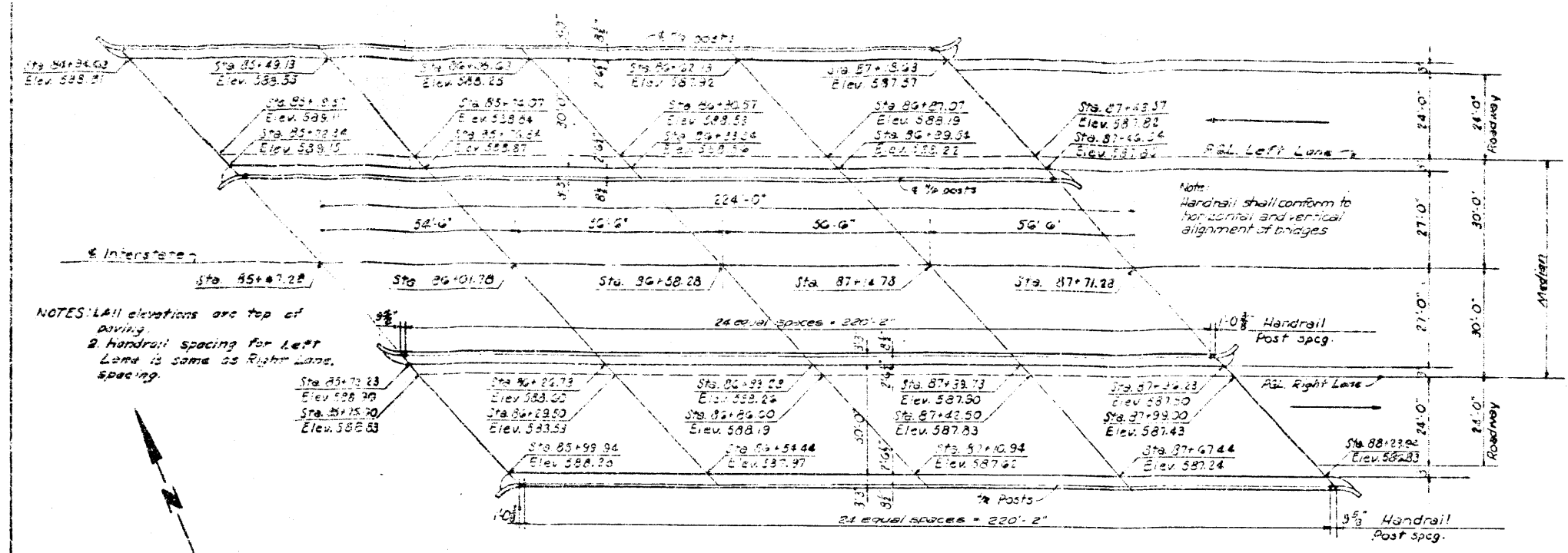
No 4 Bar - 722 6000 20

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
AND PUBLIC WORKS
NASHVILLE

STANDARD
PRESTRESSED CONCRETE BRIDGE
PREDESIGNED
CLEAR SPANS 15'0" TO 20'0"
28'0" ROADWAY WITH SAFETY CURBS

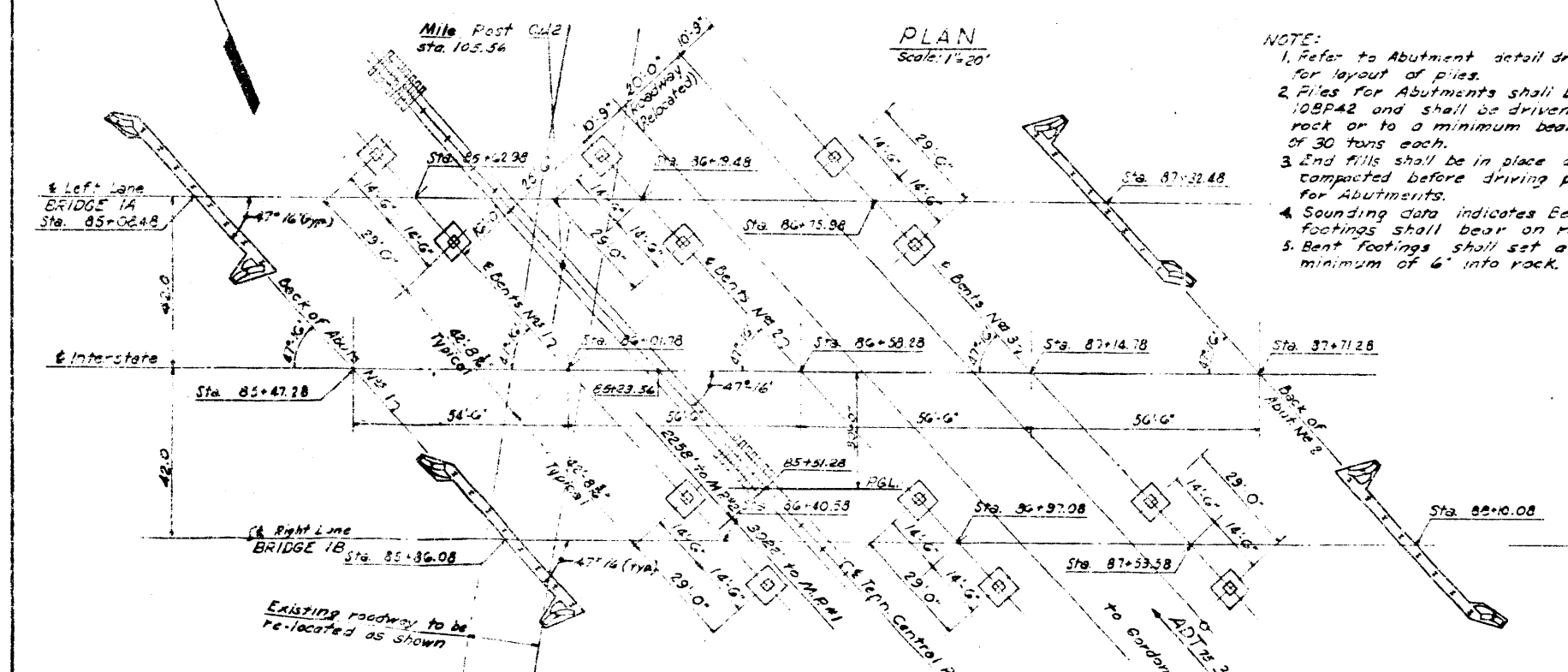
957

#3 Type "F" STIRBUP



GENERAL NOTES:
 GENERAL SPECIFICATIONS: Standard Road and Bridge Specifications of the Tennessee Department of Highways and Public Works.
 DESIGN SPECIFICATIONS: Tennessee Specifications for Highway Bridges 1954-1957 and Tentative AASHTO Specifications covering prestressed concrete design and construction.
 DESIGN LOADS: HS-20-S16-44 and for alternate loading as per Section 40 of RPM 20-2.
 CONCRETE: All concrete shall be Class "A" and shall be air entrained.
 REINFORCING STEEL: See Specifications, FORMS and FINISH: See Specifications.
 HAND RAILS: Standard 2-rail steel railing, Tennessee Highway Department Standard.
 PILES: Piles shall be 100#42 as required and shown.
 PRECAST PRESTRESSED CONCRETE BOX GIRDERS: See special provisions.
 BEARING PADS: See special provisions.

259.38
 80-40-259.99



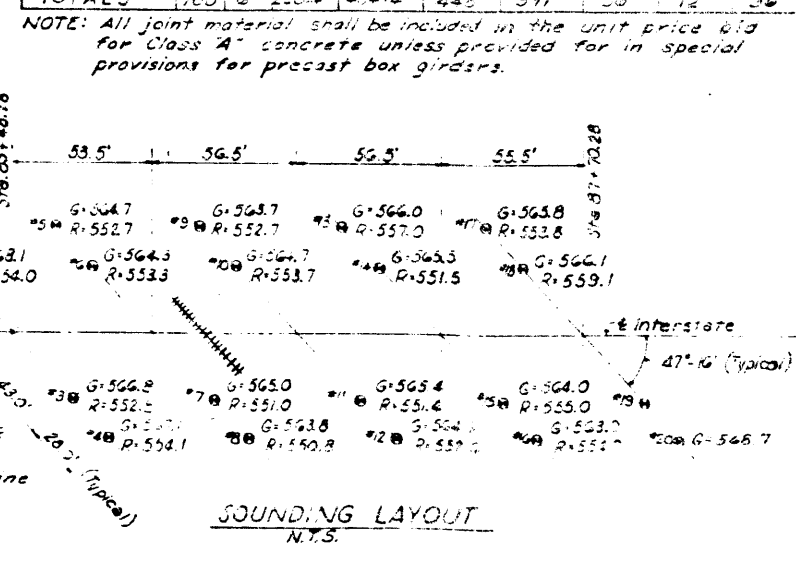
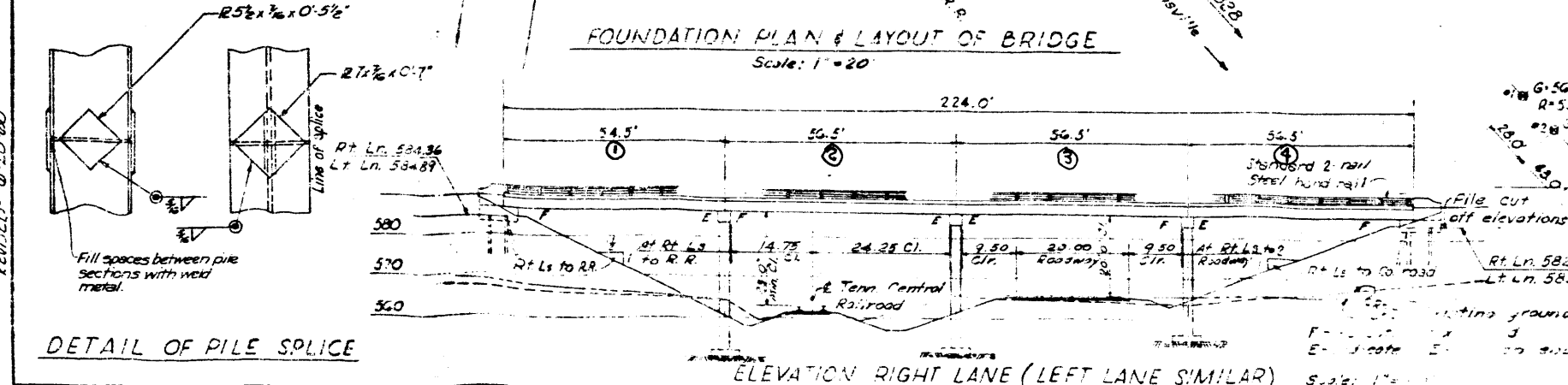
ESTIMATED QUANTITIES

ITEM NO.	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190
ITEMS	LOCATION CONC	REINF	STEEL	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42
BRIDGE (1A)	CU YDS	CLASS "A" STEEL	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42
RIGHT LANE	DRY ROCK	CU YDS	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42	100#42
SAFETY CURB																			
GIRDERS																			
ABUTMENT #1																			
ABUTMENT #2																			
BENT #1																			
BENT #2																			
BENT #3																			
TOTALS	106	6	2230	41,685	448	586	36	12	36										

NOTE: After Bent foundations are constructed, the subgrade shall be driven into rock at points designated by the engineer.

LIST OF DRAWINGS

DRWG. NO.	DESCRIPTION
G-15-1	Layout of Bridges
G-15-2	Abutment Nos. 1 & 2 Right Lane
G-15-3	Abutment Nos. 1 & 2 Left Lane
G-15-4	Bents No. 1, No. 2, & No. 3 Right Lane
G-15-5	Bents No. 1, No. 2, & No. 3 Left Lane
G-15-6	Layout of Safety Curbs
G-15-7	Layout of Box Girders
G-15-8	Reinforcing Steel Schedule
G-15-9	Steel/Handrails
F-10-84.1	Precast Prestressed Box Girders
F-10-85	



SMITH COUNTY

2-30'-0" Roadways with Safety Curbs.

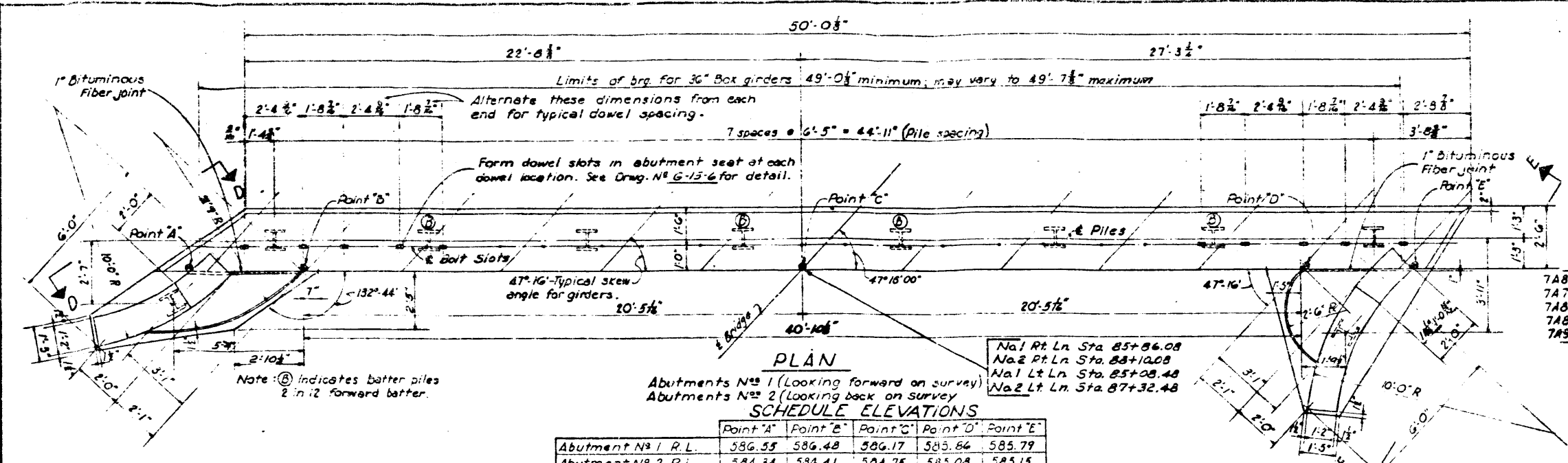
MID-SOUTH ENGINEERING CO., INC.
120 BROADWAY, N.E. ANDOVER, TENNESSEE

BRIDGES OVER TENN. CENTRAL R.R. CO. ROAD
LEFT LANE BRIDGE 1A STA 85+19.57
RIGHT LANE BRIDGE 1B STA 85+75.00

LAYOUT OF BRIDGES
1A & 1B

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
AND PUBLIC WORKS
NASHVILLE

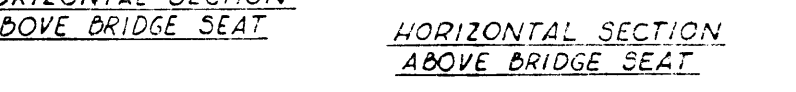
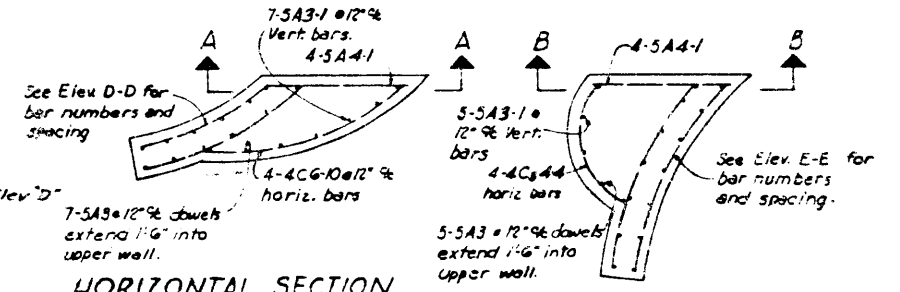
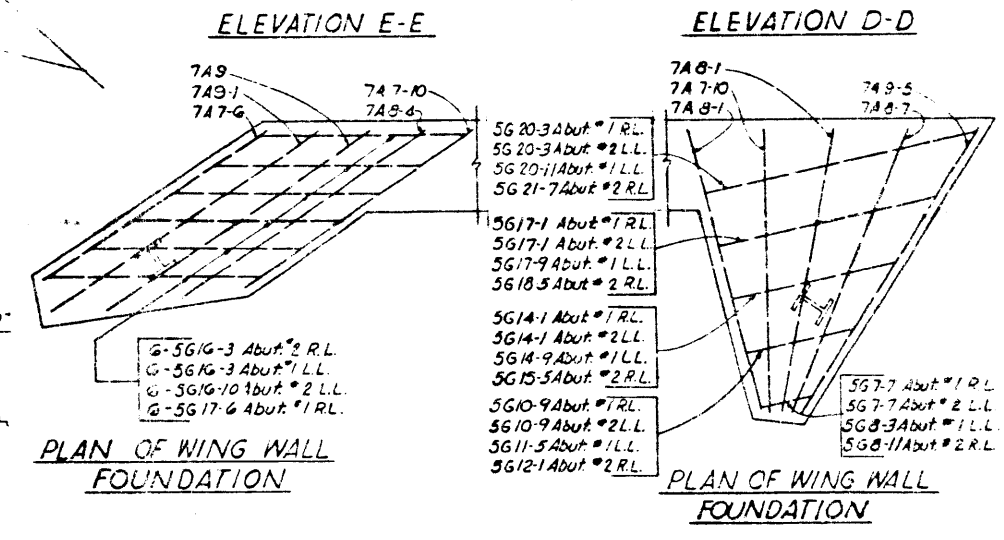
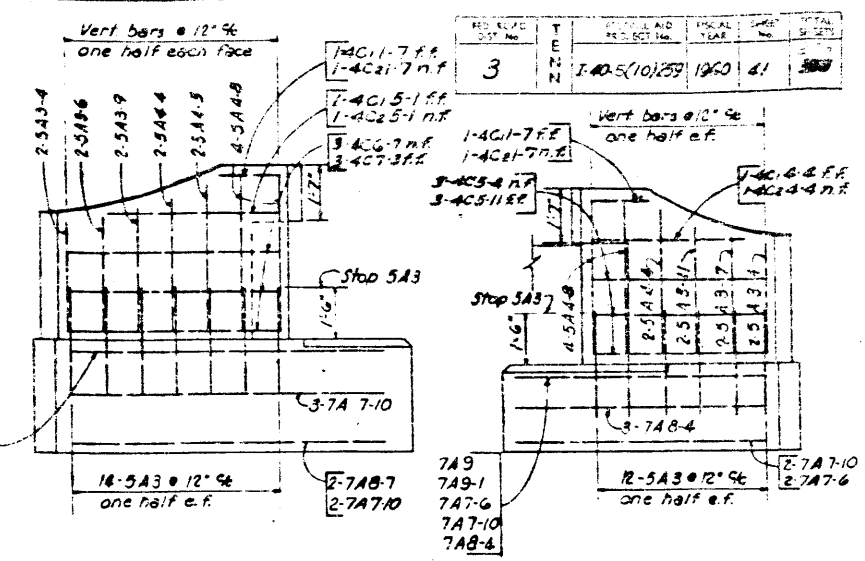
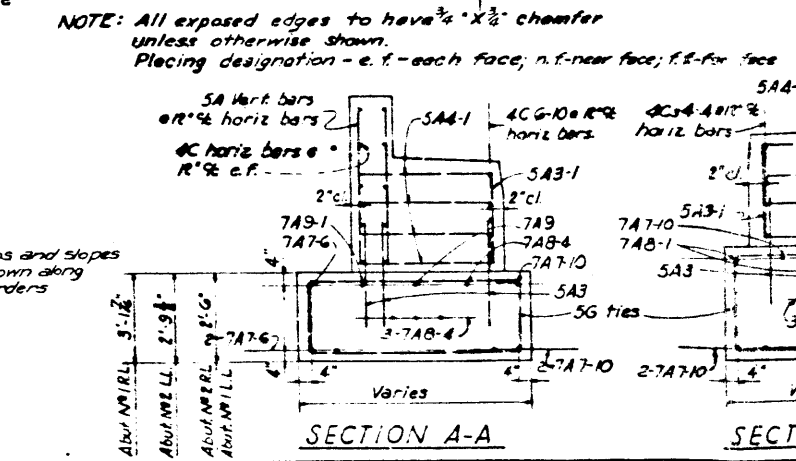
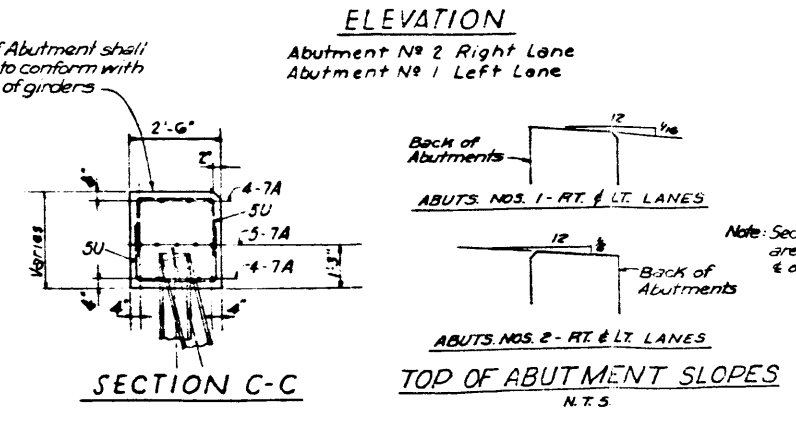
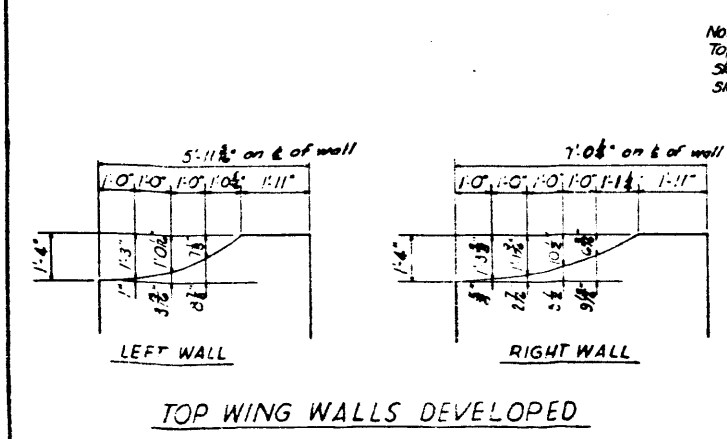
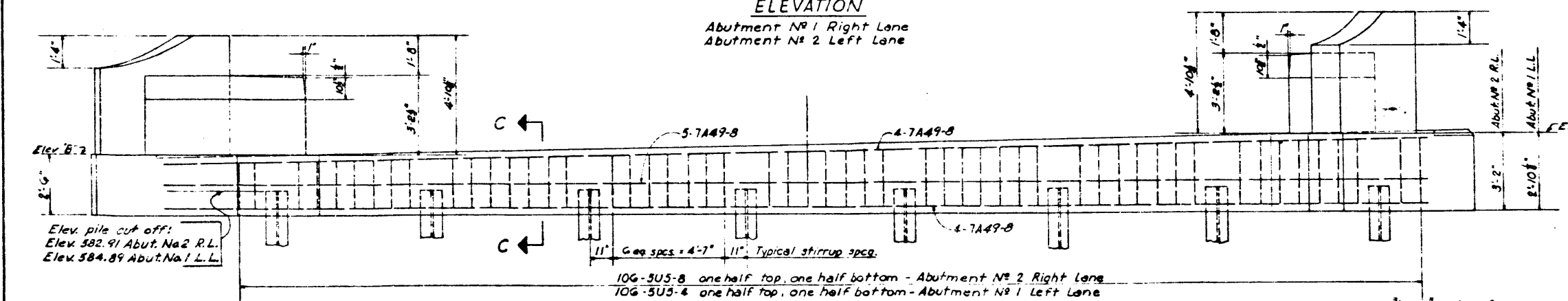
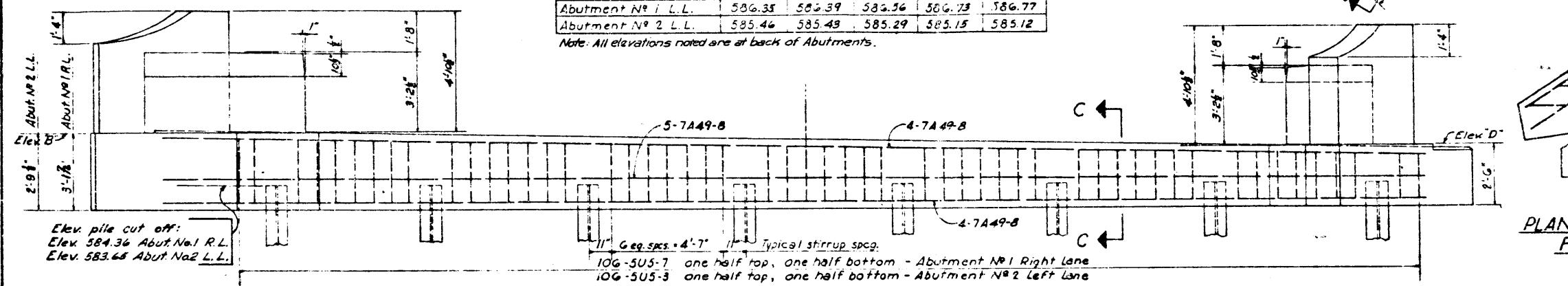
DATE: 8-1-59
G-15-1



SCHEDULE ELEVATIONS

	Point A	Point B	Point C	Point D	Point E
Abutment No 1 R.L.	586.55	586.48	586.17	585.84	585.79
Abutment No 2 R.L.	584.34	584.41	584.75	585.08	585.15
Abutment No 1 L.L.	586.35	586.39	584.56	586.73	586.77
Abutment No 2 L.L.	585.46	585.48	585.29	585.15	585.12

Note: All elevations noted are at back of Abutments.



ESTIMATED QUANTITIES

	Abut. No 1 R.L.	Abut. No 2 R.L.	Abut. No 1 L.L.	Abut. No 2 L.L.
Class A Concrete - Cu. Yds.	21.8	22.1	21.1	20.8
Reinforcing Steel - Lbs.	2916	2927	2886	2876

Scale: 1" = 1'-0"

MID-SOUTH ENGINEERING CO., INC.
820 BROADWAY, N.E. KNOXVILLE, TENNESSEE

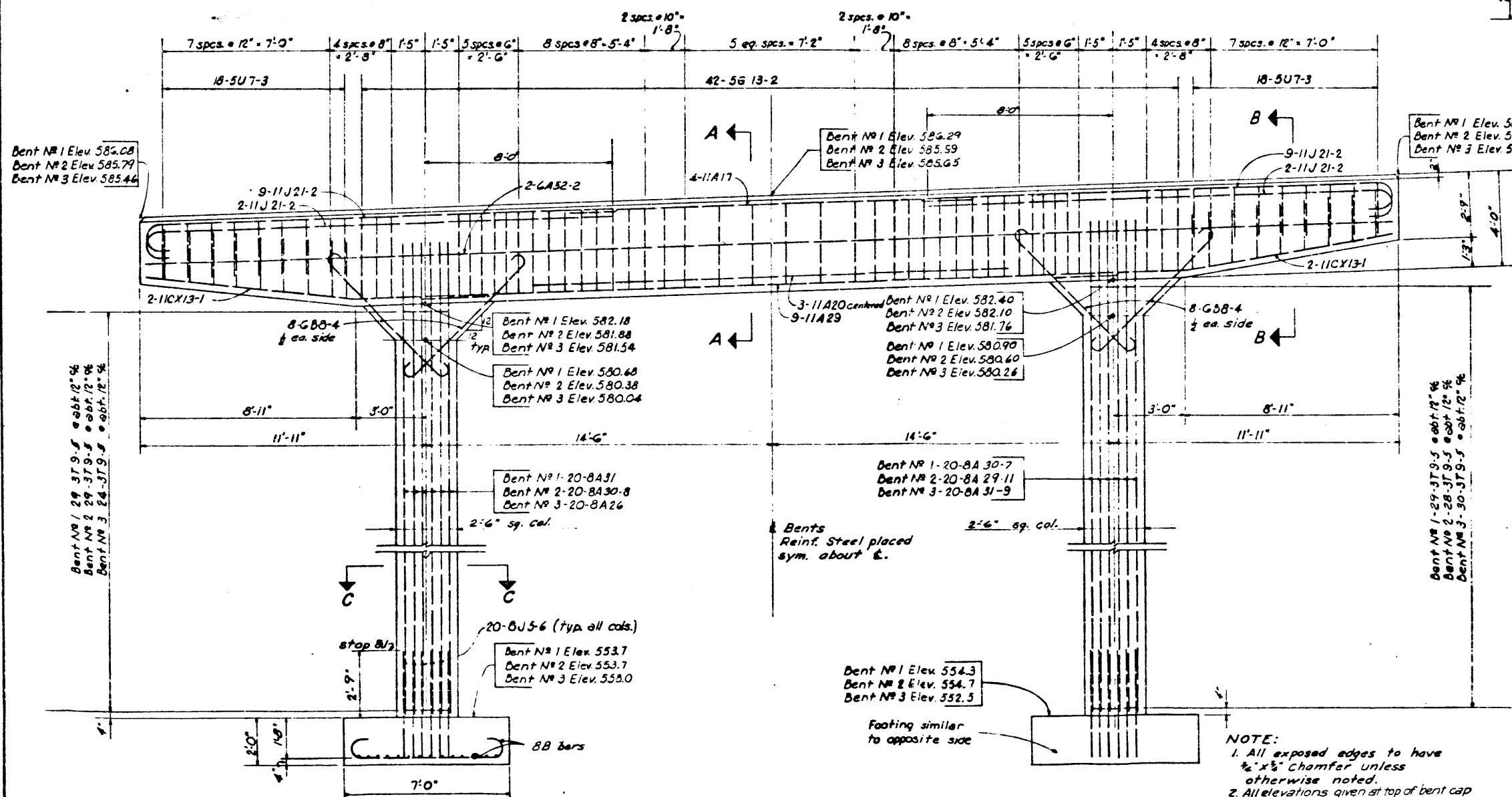
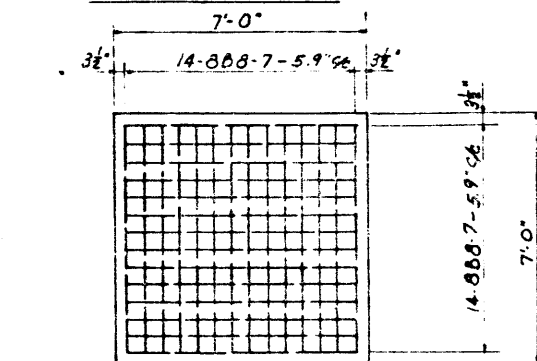
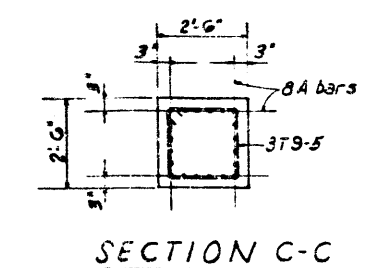
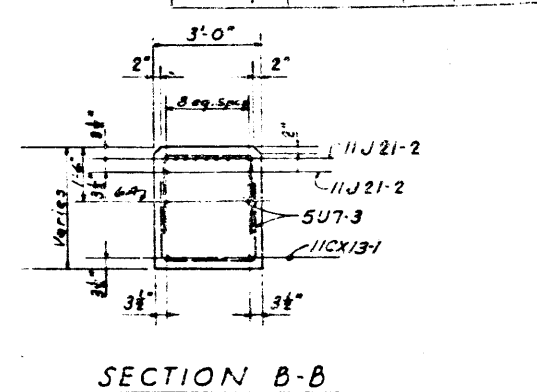
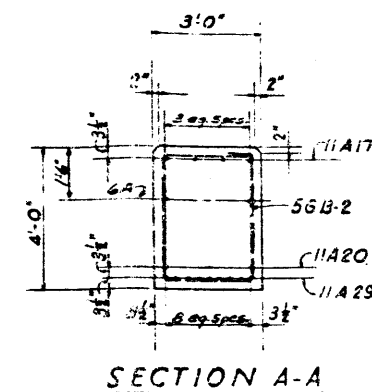
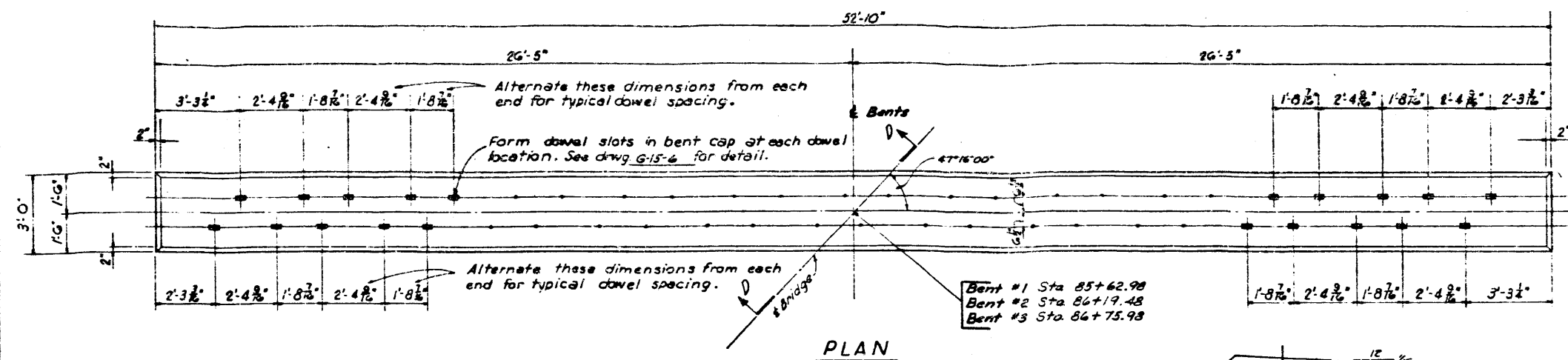
BRIDGES OVER TENN. CENTRAL R.R. & CO. ROAD
ABUTMENTS NOS. 1 & 2 RT. LANE & NOS 1 & 2 LT. LANE

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
AND PUBLIC WORKS
NASHVILLE

DR. W.R.S.
CHKD. R.A.H.
APPD. H.R.

DATE: 5-11-59

G-15-2



NOTE:

1. All exposed edges to have $\frac{1}{2} \times \frac{1}{2}$ " Chamfer unless otherwise noted.
2. All elevations given at top of bent cap are elevations at E of bent cap.
3. Top of bent cap shall slope to conform with slope of girders.

END ELEVATION

ESTIMATED QUANTITIES

	Bent #1	Bent #2	Bent #3
Class A Concrete - Cu. yds.	43.8	43.6	43.0
Reinforcing Steel - Lbs.	11,389	11,334	11,170

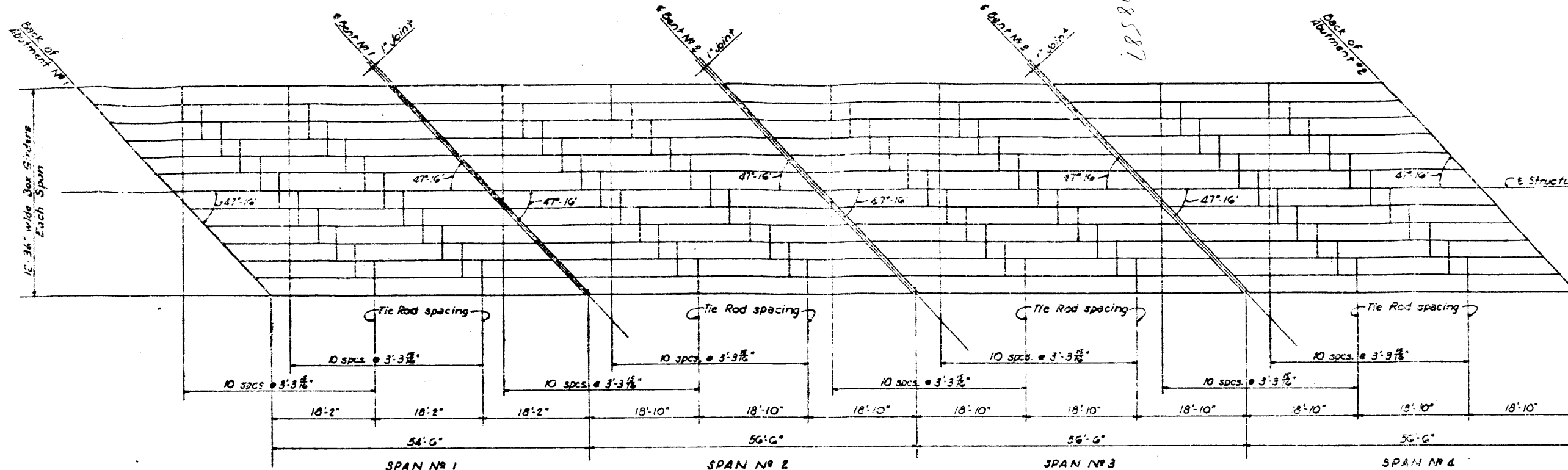
Scale: $\frac{3}{8}'' = 1'-0''$

MID-SOUTH ENGINEERING CO., INC.
820 BROADWAY, N. E. KNOXVILLE, TENNESSEE

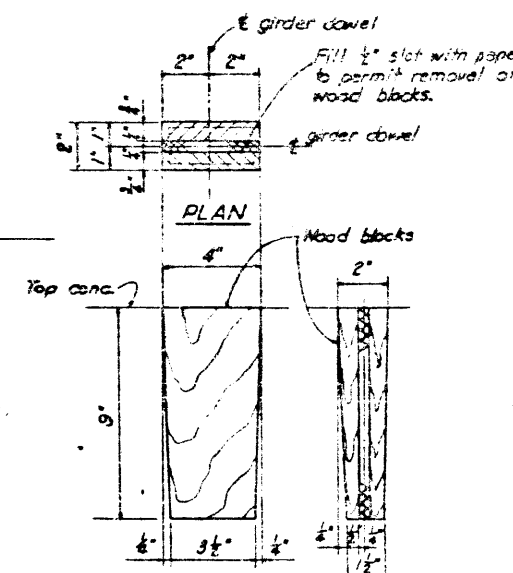
BRIDGES OVER TENN. CENTRAL RR. & CO. ROAD
BENTS NO. 1, NO. 2, & NO. 3
LEFT LANE

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
AND PUBLIC WORKS
NASHVILLE

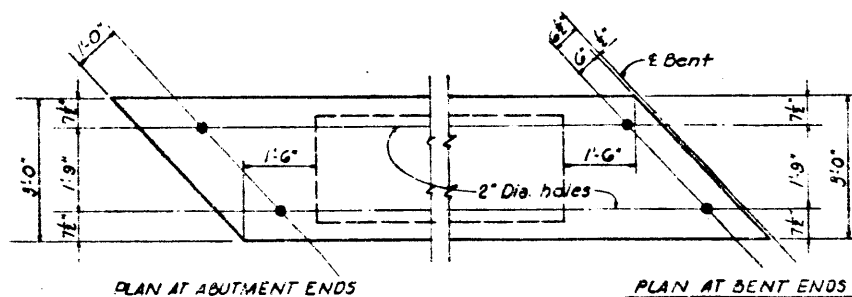
DR. <u>W.B.S.</u>	DATE	G-15-4
CHRG. <u>R.A.H.</u>		
APPT. <u>W.R.</u>	8-11-59	



PLAN-PRESTRESSED BOX GIRDERS - RIGHT & LEFT LANE
Scale: 1" = 10'



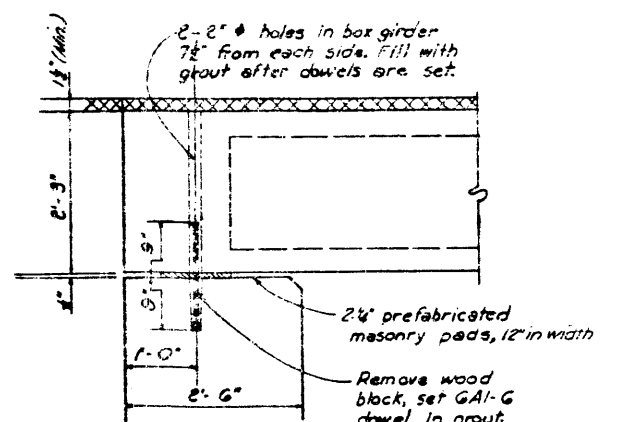
TYPICAL DOWEL SLOT
IN BENT CAPS & ABUTMENTS
Scale: 3" = 1'-0"



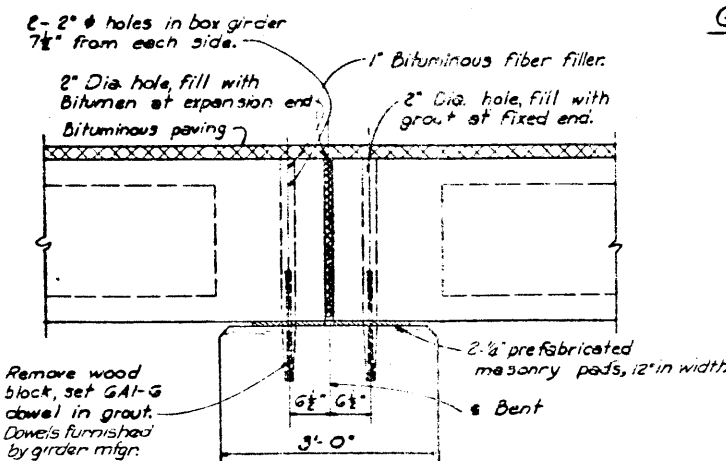
END DETAILS - BOX GIRDERS
Scale: 1/2" = 1'-0"

SCHEDULE FOR PRESTRESSING STEEL

	Number of 1/2" strands per girder	Distance - bottom of girder to C.G. of steel	(e) Eccentricity at % of span
SPAN NO. 1 (54'-6")	32	(2.32) 293	(16) 10.79
SPANS NOS. 2, 3 & 4 (56'-6")	35	(2.80) 323	(10.92) 10.49



SECTION AT ABUTMENT
Scale: 1/2" = 1'-0"



SECTION AT BENT
Scale: 1/2" = 1'-0"

GENERAL NOTES:

- All prestressed concrete box girders shall be the Standard Section adopted by the Tennessee Department of Highways and Public Works shown Drawg. F-10-54.
- The size girder for this structure shall be 36" wide x 27" deep.
- The pattern for placing prestressing steel shall be as shown on standard drawg. F-10-54. Spaced from the bottom, the number of strands required for the varying span lengths shall be as shown in schedule this drawing.
- The supplier of the precast box girders shall furnish an erection plan with each girder piece marked for the proper position in each span.

ESTIMATED QUANTITIES BOX GIRDERS

5000 psi Concrete - Cu. Yds.	826
Hi-tensile Reinf. Strands - Lbs.	51,592
Reinforcing Steel - Lbs.	68,496

Scale: As noted

M.D. SOUTH ENGINEERING CO., INC.
825 BROADWAY N.E. KNOXVILLE TENNESSEE

BRIDGES OVER TENN. CENTRAL R.R. & CO. ROAD

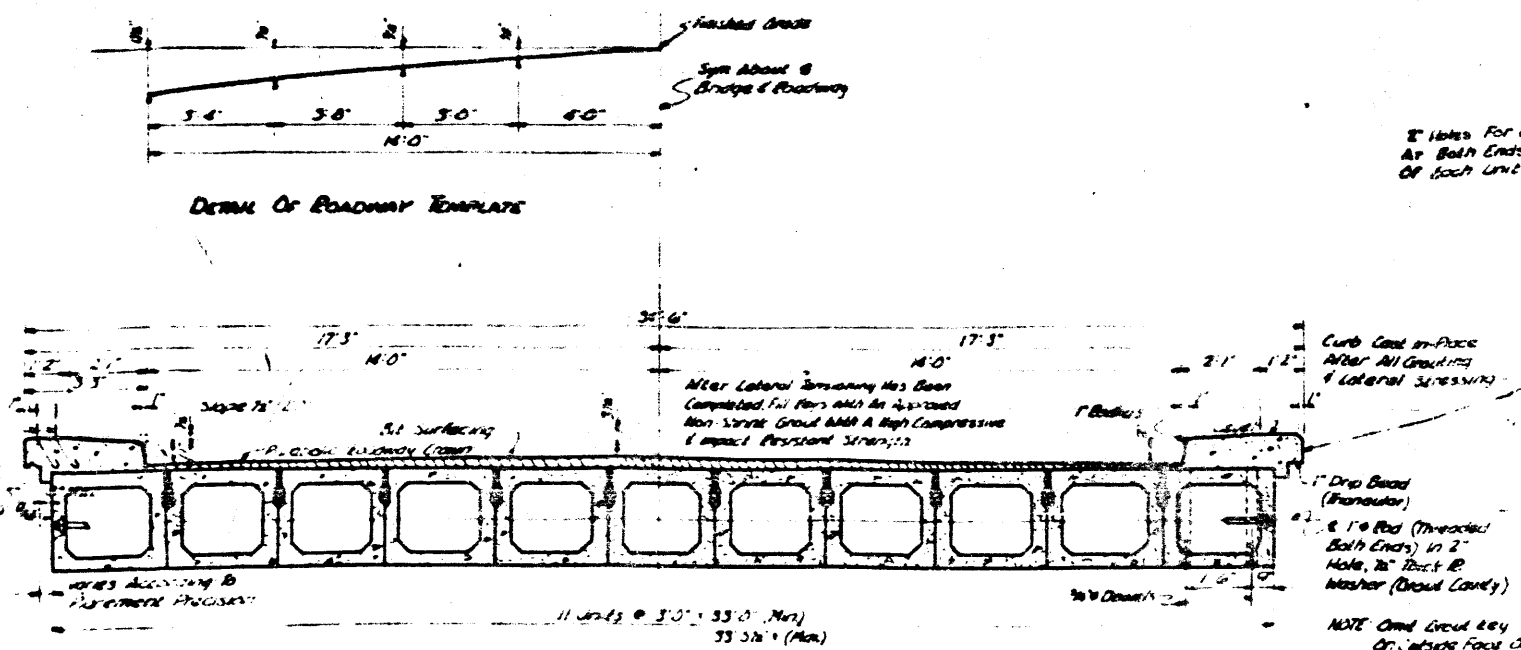
LAYOUT OF BOX GIRDERS

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
AND PUBLIC WORKS
NASHVILLE

DR. V.R.S.
CHD. R.A.H.
APD. W.R.
DATE
8-11-59
G-15-6

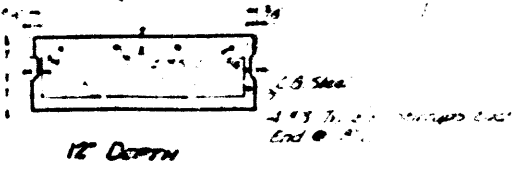


See Detail of Roadway Template

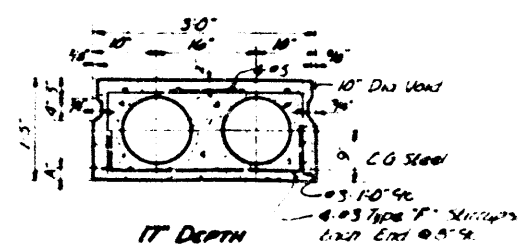


SECTION NEAR MIDSPAN

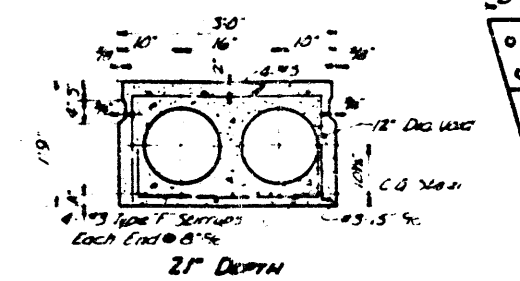
SECTION NEAR BEARINGS



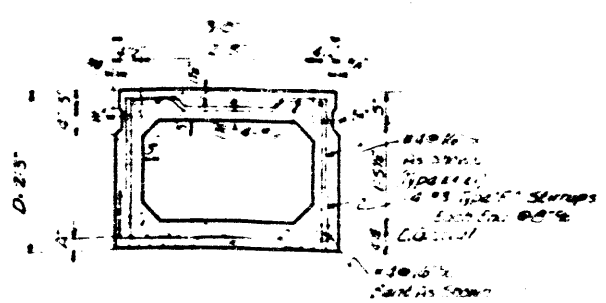
Clear Span Feet	A	B	Reinforcing Steel Area	No. Bars	Basic Stress	Summed Bars
12	2.22	2.22	2.22	23	23,000	529
14	2.25	2.25	2.25	25	25,000	625
16	2.28	2.28	2.28	27	27,000	737
18	2.31	2.31	2.31	29	29,000	861
20	2.34	2.34	2.34	31	31,000	991
22	2.37	2.37	2.37	33	33,000	1127
24	2.40	2.40	2.40	35	35,000	1269
26	2.43	2.43	2.43	37	37,000	1417
28	2.46	2.46	2.46	39	39,000	1571
30	2.49	2.49	2.49	41	41,000	1731



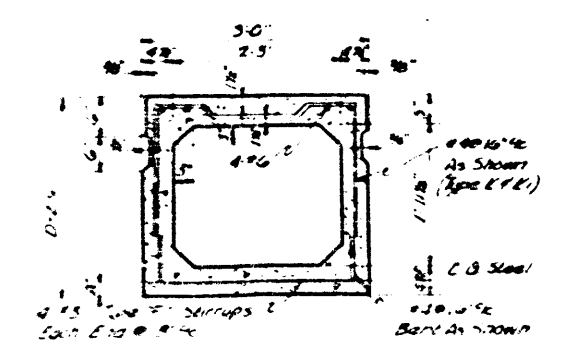
Clear Span Feet	A	B	Reinforcing Steel Area	No. Bars	Basic Stress	Summed Bars
17	2.22	2.22	2.22	23	23,000	529
19	2.25	2.25	2.25	25	25,000	625
21	2.28	2.28	2.28	27	27,000	737
23	2.31	2.31	2.31	29	29,000	861
25	2.34	2.34	2.34	31	31,000	991
27	2.37	2.37	2.37	33	33,000	1127
29	2.40	2.40	2.40	35	35,000	1269
31	2.43	2.43	2.43	37	37,000	1417
33	2.46	2.46	2.46	39	39,000	1571
35	2.49	2.49	2.49	41	41,000	1731



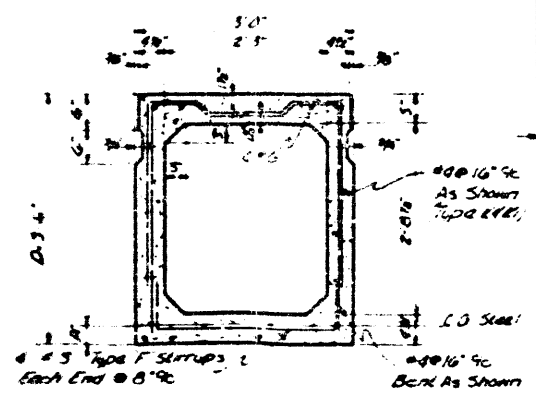
Clear Span Feet	A	B	Reinforcing Steel Area	No. Bars	Basic Stress	Summed Bars
21	2.22	2.22	2.22	23	23,000	529
23	2.25	2.25	2.25	25	25,000	625
25	2.28	2.28	2.28	27	27,000	737
27	2.31	2.31	2.31	29	29,000	861
29	2.34	2.34	2.34	31	31,000	991
31	2.37	2.37	2.37	33	33,000	1127
33	2.40	2.40	2.40	35	35,000	1269
35	2.43	2.43	2.43	37	37,000	1417
37	2.46	2.46	2.46	39	39,000	1571
39	2.49	2.49	2.49	41	41,000	1731



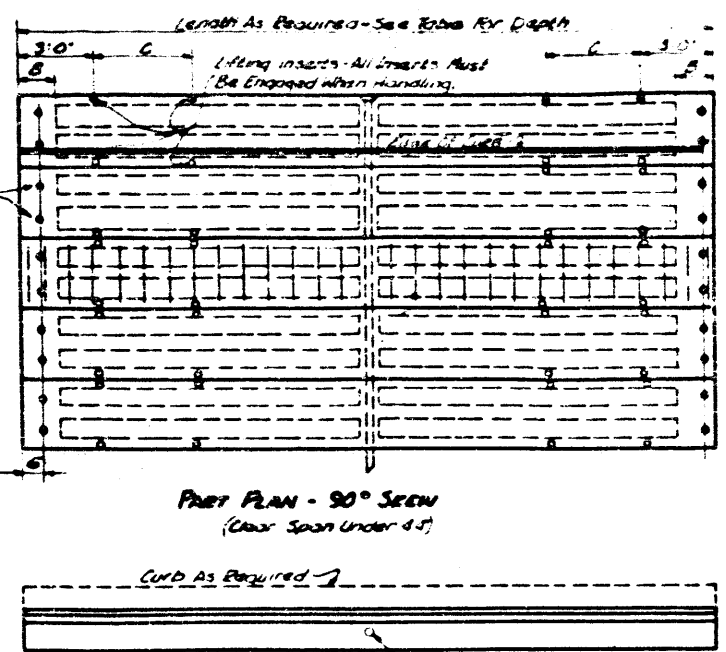
Clear Span Feet	A	B	Reinforcing Steel Area	No. Bars	Basic Stress	Summed Bars
27	2.22	2.22	2.22	23	23,000	529
29	2.25	2.25	2.25	25	25,000	625
31	2.28	2.28	2.28	27	27,000	737
33	2.31	2.31	2.31	29	29,000	861
35	2.34	2.34	2.34	31	31,000	991
37	2.37	2.37	2.37	33	33,000	1127
39	2.40	2.40	2.40	35	35,000	1269
41	2.43	2.43	2.43	37	37,000	1417
43	2.46	2.46	2.46	39	39,000	1571
45	2.49	2.49	2.49	41	41,000	1731



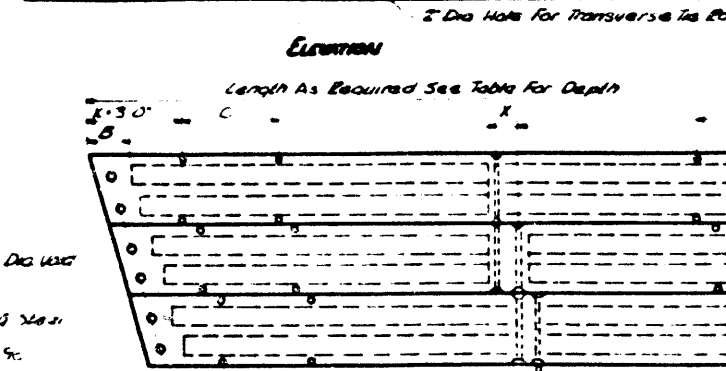
Clear Span Feet	A	B	Reinforcing Steel Area	No. Bars	Basic Stress	Summed Bars
33	2.22	2.22	2.22	23	23,000	529
35	2.25	2.25	2.25	25	25,000	625
37	2.28	2.28	2.28	27	27,000	737
39	2.31	2.31	2.31	29	29,000	861
41	2.34	2.34	2.34	31	31,000	991
43	2.37	2.37	2.37	33	33,000	1127
45	2.40	2.40	2.40	35	35,000	1269
47	2.43	2.43	2.43	37	37,000	1417
49	2.46	2.46	2.46	39	39,000	1571
51	2.49	2.49	2.49	41	41,000	1731



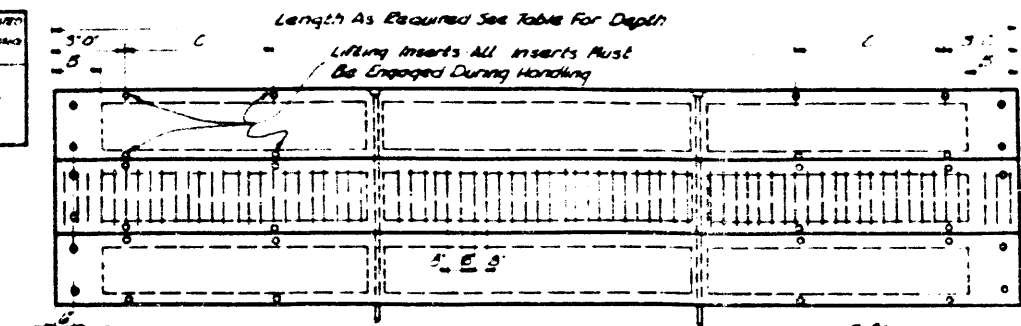
Clear Span Feet	A	B	Reinforcing Steel Area	No. Bars	Basic Stress	Summed Bars
42	2.22	2.22	2.22	23	23,000	529
44	2.25	2.25	2.25	25	25,000	625
46	2.28	2.28	2.28	27	27,000	737
48	2.31	2.31	2.31	29	29,000	861
50	2.34	2.34	2.34	31	31,000	991
52	2.37	2.37	2.37	33	33,000	1127
54	2.40	2.40	2.40	35	35,000	1269
56	2.43	2.43	2.43	37	37,000	1417
58	2.46	2.46	2.46	39	39,000	1571
60	2.49	2.49	2.49	41	41,000	1731



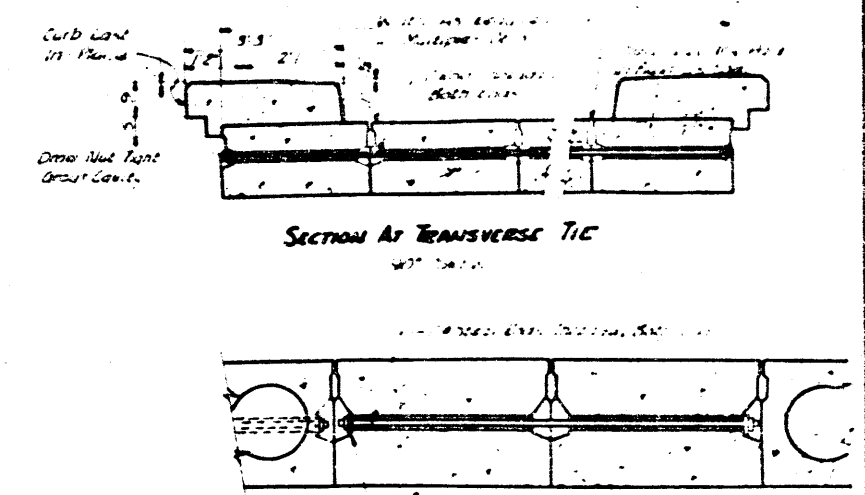
PART PLAN - 90° SECTION
(Clear Span Under 45')



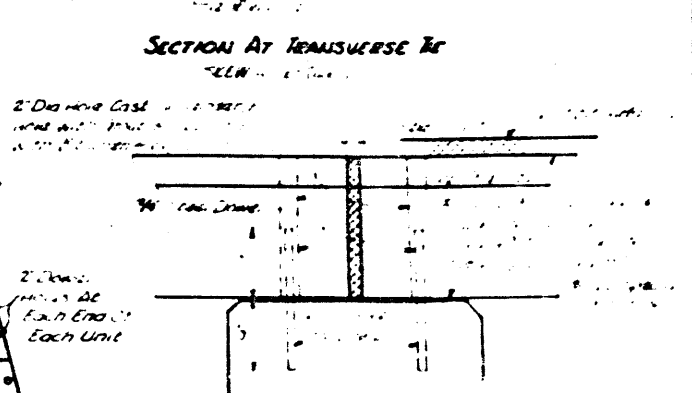
PART PLAN - 90° SECTION
(Clear Span Over 45')



PART PLAN - 90° SECTION
(Clear Span Over 45')



SECTION AT TRANSVERSE TIE



SECTION AT TRANSVERSE TIE

ELEVATION AT ABUTMENT - FACE OF BENT



TYPICAL PATTERN FOR PRESTRESSING STEEL

GENERAL NOTES:
 SPECIFICATIONS: Standard Road & Bridge Specifications of the Tennessee Department of Highways.
 LOADING: HS-20-44.
 CONCRETE: (Cast in Place) To Be Class A.
 PRECAST/PRESTRESSED CONCRETE: See Specifications.
 REINFORCING STEEL: See Specifications.
 FORMS & FINISH: See Specifications.
 HANDLING PRE-TENSIONED DECK UNIT: See Specifications.
 LATERAL TENSIONING: Prior to Grouting Longitudinal Keys of In-Place Deck Units, The Nuts of The Transverse Rods Shall Be Given Two Full Turns From Hand Tight Position, To Develop A Stress Of 30,000 P.S.I. in Rods.
 PRESTRESSING STEEL: An Initial Force Of 14,000 Lbs Shall Be Applied To Each Strand In All Beams.
 The Design Is Based On Federal Bureau Criteria & Special Provision.

STANDARD PRESTRESSED CONCRETE BRIDGE

PRETENSIONED
 CLEAR SPANS: 14'-0" TO 60'-0"
 25'-0" ROADWAY WITH SAFETY CURBS
 1967

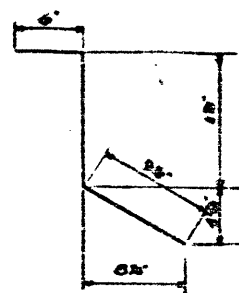
DESIGNED BY: A. B. B. DATE: 6-26-57
 CHECKED BY: A. B. B. DATE: 8-30-60
 APPROVED BY: A. B. B. DATE: 8-30-60

CORRECT: Fred G. G. DATE: 8-30-60
 APPROVED: A. B. B. DATE: 8-30-60

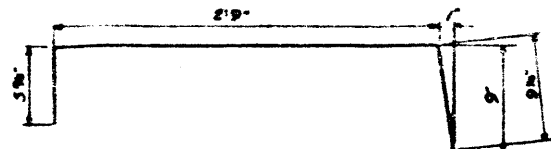
Quantities For Cast Concrete Bent Spans

Clear Span	Concrete Cu Yds	Rein Steel Lbs	Mo Of Bars C1	Mo Of Bars C2	Mo Of Bars C3
14	1.2	132	24	27	6
16	1.3	141	25	28	6
18	1.5	158	26	29	6
20	1.7	173	28	32	6
22	1.9	186	29	34	6
24	2.1	205	30	36	6
26	2.3	220	32	39	6
28	2.5	237	33	41	6
30	2.7	253	34	43	6
32	2.9	269	35	45	6
34	3.1	283	36	47	6
36	3.3	301	37	49	6
38	3.5	315	38	51	6
40	3.7	328	39	53	6
42	3.9	347	40	55	6
44	4.1	363	41	57	6
46	4.3	379	42	59	6
48	4.5	392	43	61	6
50	4.7	411	44	63	6
52	4.9	425	45	65	6
54	5.1	443	46	67	6
56	5.3	457	47	69	6
58	5.5	479	48	71	6
60	5.7	492	49	73	6
62	5.9	511	50	75	6
64	6.1	524	51	77	6
66	6.3	543	52	79	6
68	6.5	562	53	81	6
70	6.7	585	54	83	6
72	6.9	598	55	85	6
74	7.1	617	56	87	6
76	7.3	630	57	89	6
78	7.5	649	58	91	6
80	7.7	662	59	93	6

NOTE: Above Quantities Apply To All Spans
For Saturated Bridge Less Than 90° Curb
Bars To Be Placed At Each End Of Span
NOTE: Bars D To Be Included In Unit
Price Bid For Drains

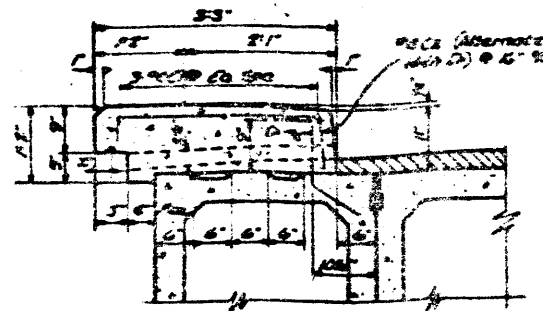


Bars D (To Be 10")
Total Length 2'-0"



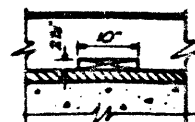
Bars C
Total Length 2'-0"

NOTE: Length Of Longitudinal Bars C To Be
Total Span Length Minus 6" Also Lap Bars
C 10" When Splice Is Required

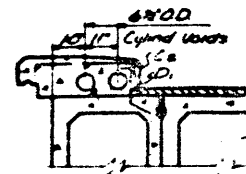


Typical Sectional Reinforcement
And Exterior Box

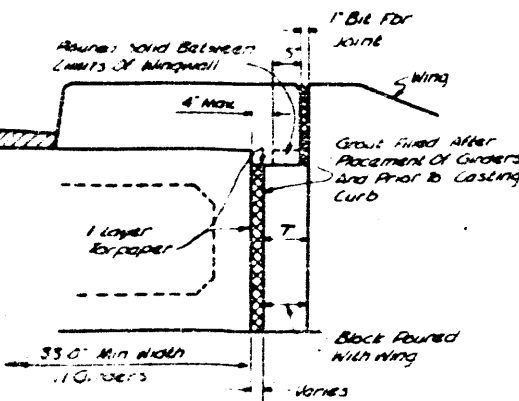
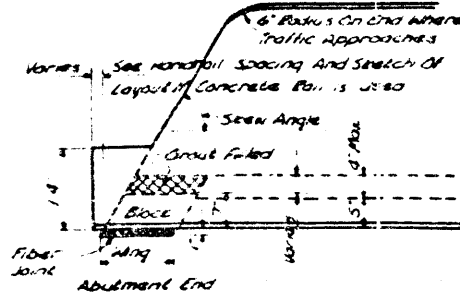
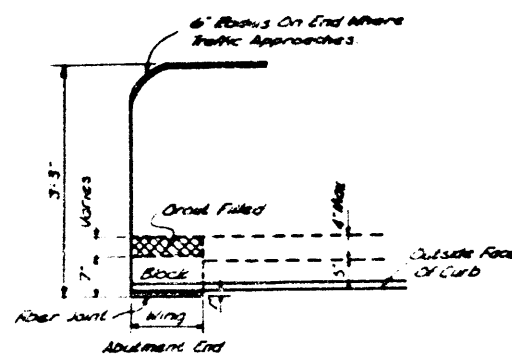
NOTE: Curb To Be Cast In Place. Provisions May Be Made
In The Face Of Box Units For Approved Inserts To
Facilitate Forming Of Curbs



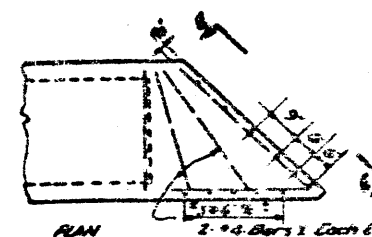
Drainage
Slot Detail



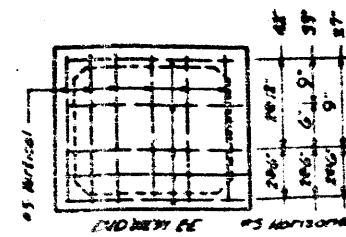
Abutment Case



Section Showing Case
Detail At Abutment End



Section Showing Additional Reinforcement To Be Placed In Rectangular Or Prestressed Box Beam



Section Showing Additional Reinforcement To Be Placed In Rectangular Or Prestressed Box Beam

DATE	BY	REVISION	DATE	BY	REVISION
10/10/55	J. H. G.	1	10/10/55	J. H. G.	1

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
AND PUBLIC WORKS
NASHVILLE

STANDARD PRESTRESSED CONCRETE BRIDGE

PREFABRICATED
CLEAR SPANS 14'-0" TO 80'-0"
20'-0" ROADWAY WITH SAFETY CURBS
1957

CORRECT
J. H. G.
APPROVED

F-10-85

WITH STD DWG FROM F-10-85A
700000

DESIGNED BY
DRAWN BY
CHECKED BY
DATE
DATE
DATE

DATE
DATE
DATE