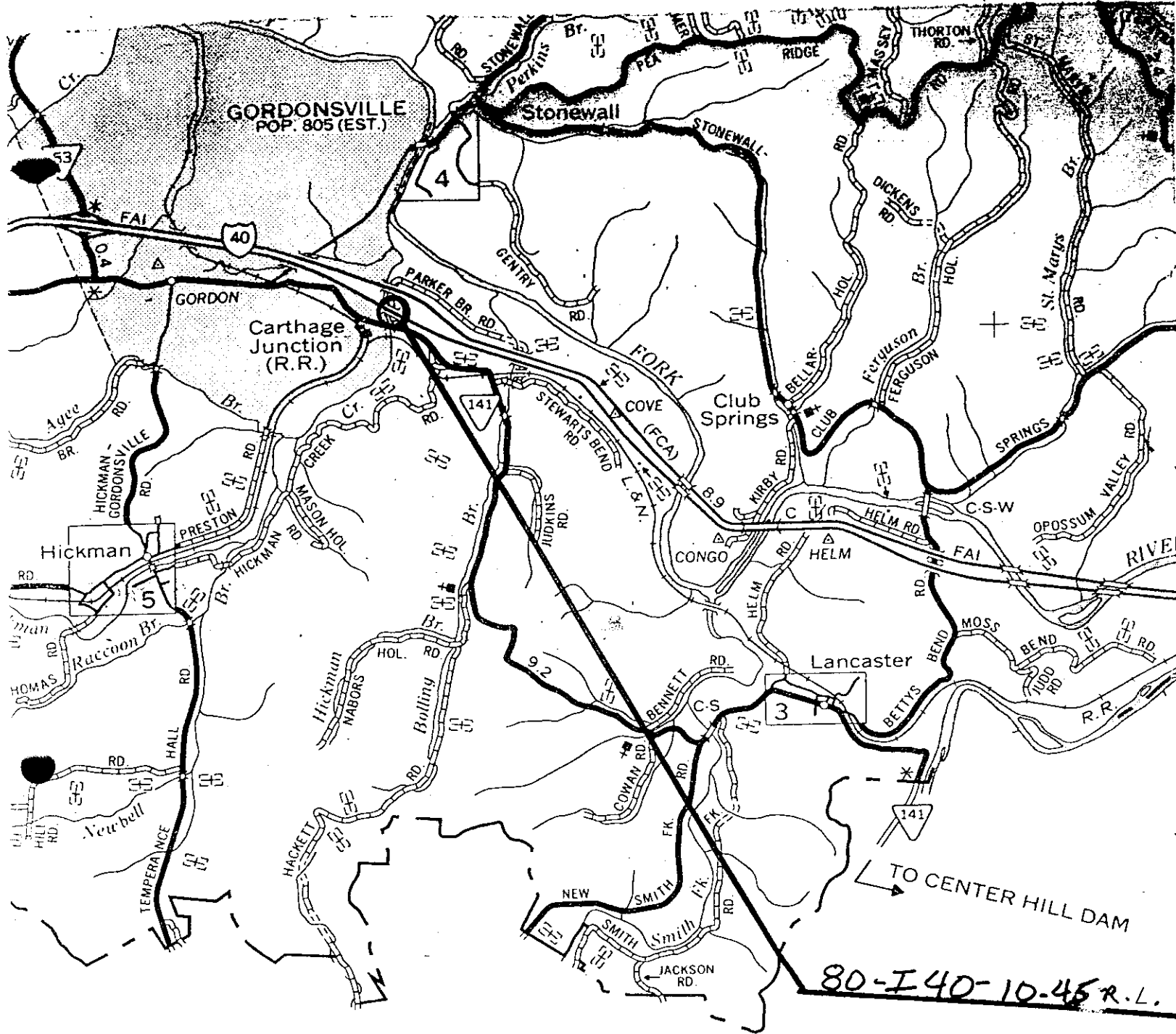




COUNTY

Bridge Maintenance Recommendations

Page No. _____

Page 1 of 1

Bridge Location No.: 80 - I0040 - 10.45

Co. Route Log Mile

Crossing: HICKMAN CREEK & NFA A156*

Bridge Rating: GOOD

Inspection Cycle: 16

Inspection Date: 4/23/2003

Comments:

Bridge Number: 80I00400021

County: Smith

Region: 03

District: 32

Maint.Resp.: 01

Spec.Case: 0

Co.Seq: 01

Maintenance Recommendations:

Maintenance Completed
By / Date

REPAIR BREAKOUTS IN BOTTOM DECK SPANS #1 AND #2.

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 - 10040 - 10.45

Co. Route Log Mile

Bridge Number: 80100400021

County: Smith

Crossing: HICKMAN CREEK & NFA A156*

Region: 03

Bridge Rating: GOOD

District: 32

Inspection Cycle: 15

Maint.Resp.: 01

Inspection Date: 6/11/01

Spec.Case: 0

Co.Seq: 01

Comments: REPAIR BREAKOUTS IN BOTTOM DECK SPANS #1 AND #2.

Maintenance Recommendations:

Maintenance Completed
By / Date

XXXXXXXX

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. : 80I00400021

BRIDGE NO. : 80 - I0040 - 1045 - N
OVER : HICKMAN CREEK & NFA A156*

DATE : 06/11/99 BRIDGE RATING : GOOD COUNTY : Smith
CO. SEQ. : 01 INSPECTION CYCLE : 14 MAINT DIST : 32
SPEC. CASE : 1 INSPECTION DATE : 06/11/99 REGION : 03

007 - FACILITY CARRIED BY STRUCT : I40
021 - MAINTENANCE RESPONSIBILITY : 01
022 - OWNER : 01
042 - TYPE OF STRUCTURE : 16
043 - STRUCTURE TYPE, MAIN : 502
044 - STRUCTURE TYPE, APPROACH : 000
045 - SPANS, MAIN UNIT : 003
046 - SPANS, APPROACH : 0000
049 - STRUCTURE LENGTH : 000279
032 - APPROACH ROADWAY WIDTH : 037
034 - SKEW : 50
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 :

: MAINTENANCE COMPLETED :

1 XXXXXXXX

1 BY _____ DATE _____

: COMMENTS FOR BRIDGE SEQ. NO. : 80I00400021 :

REPAIR BREAKOUTS IN BOTTOM DECK SPANS #1 AND #2.

COMPLETION NOTIFICATION : RETURN WITHIN 6 MONTHS OF INSPECTION DATE

MAINTENANCE ACTIVITIES ARE

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

EXPLANATIONS AND COMMENTS:

MEMORANDUM

DATE: 1-25-99

TO: Mr. Wayne Seger
Civil Engineering Manager I

FROM: Mr. Phillip Shraybman
Structural Specialist Supervisor II

SUBJECT: THE ADDITION OF 3.25" OF ASPHALT TO THE FOLLOWING

STRUCTURES(S): 80-I40-8.94/ CSX RR AND A COUNTY ROAD WBL & EBL
80-I40-9.77/ SR 264 AND A BRANCH WBL & EBL
80-I40-10.37/ HICKMAN CREEK AND NFA A156 WBL
80-I40-10.45/ HICKMAN CREEK AND NFA A156 EBL
80-I40-13.61/ CANEY FORK RIVER WBL & EBL
80-I40-15.43/ CANEY FORK RIVER WBL
80-I40-15.49/ CANEY FORK RIVER EBL
80-I40-16.14/ CANEY FORK RIVER EBL
80-I40-16.18/ CANEY FORK RIVER WBL
80-I40-17.13/ NFA A431 AND CANEY FK. RV.WBL & EBL

We have recently evaluated the above bridge(s) and have determined that the addition of the 3.25" of asphalt will be acceptable.



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
NASHVILLE, TENNESSEE 37219

January 12, 1989

Mr. John H. Burke
Regional Engineering Director
2200 Charlotte Avenue
Nashville, TN 37203

Bridge Inspection Program
Left Lane of I-40 over
Hickman Creek
Bridge No. 80-I40-10.37
Smith County

Dear Mr. Burke:

We are enclosing one (1) copy of our Bridge Evaluation Report for the subject bridge.

Please see that our comments and recommendations are sent to the appropriate officials. Should you need additional information, please advise.

Yours very truly,

A handwritten signature in cursive script, appearing to read "Charles E. Hunter", is written over the typed name of Edward P. Wasserman.

Edward P. Wasserman
Civil Engineering Director, Structures

CEH:gap

Enclosure

cc: Mr. Ben Teague
Mr. Larry Ahlheit
Mr. Donald Greer

BRIDGE EVALUATION REPORT

LOCATION: Smith County
ROUTE: I40 over Hickman Creek
BRIDGE NO.: 80-I40-10.37 (Left Lane)

DATE: 1-12-89

BRIDGE DESCRIPTION:

Length - 242'-0"
Roadway Width - 24'-0"
Span Length - 1 @ 77', 1 @ 93', and 1 @ 72'
Type of Construction - This bridge consists of three (3) prestressed concrete I-beam spans. The substructure consists of two (2) concrete abutments and two (2) concrete bents. The riding surface is asphalt.

COMMENTARY: During the inspection and evaluation of this structure we have determined it to be in fair condition and have noted the following deficiencies:

1. There is an erosion problem at both abutments leaving the steel piles exposed. There is heavy corrosion on these piles due to the lack of paint protection.
2. The caps of pier 2 and abutment 2 are scaled and spalled up to 4" deep.
3. The bearings are heavily corroded due to lack of paint protection.
4. The roadway expansion joints are paved over.

RECOMMENDATIONS:

Maintenance

1. Blast clean and paint all steel piles and then repair the erosion at both abutments and protect against future erosion.
2. Repair the scaled and spalled concrete on pier 2 and abutment 2.
3. Blast clean and paint all bearings.
4. Clean and re-seal the roadway expansion joints.

3-22-89
Widening Project
will take care
of these
repairs
to be let
soon
H. J.

Charles E. Hunter for
Edward P. Wasserman
Civil Engineering Director, Structures



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

Bridge Condition Coding Form

Revised 06/15/2000

Bridge Number: 80I004000211
(Includes Item 5A)

Feature Intersected: HICKMAN CREEK & NFA A156

County: 80

Route: 10040

Special Case: 0

County Sequence: 01

Log Mile: 10.45

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>4 123 1 03</u>	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.
36	TRAFFIC SAFETY FEATURES		5 FAIR CONDITION - ALL PRIMARY STRUCTURAL ELEMENTS ARE SOUND BUT MAY HAVE MINOR SECTION LOSS, CRACKING, SPALLING OR SCOUR.
	Br. Rail Trans. Appr. Rail Appr. Rail Ends		
	<u>1</u> <u>1</u> <u>1</u> <u>1</u>		
41	STRC OPEN/CLOSED/POSTED	A	4 POOR CONDITION - ADVANCED SECTION LOSS, DETERIORATION, SPALLING OR SCOUR.
	A K P		
58	DECK	6	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	8	
60	SUBSTRUCTURE	8	
61	CHANL/CHANL PROTECTION	8	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.
62	CULVERT AND RETAIN WALL	N	
71	WATERWAY ADEQUACY	N	
72	APPROACH RDWY ALIGNMENT (USE VALUES OF 3, 6, OR 8)	8	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.
521	OVERALL CONDITION (Circle One)		0 FAILED CONDITION - OUT OF SERVICE AND BEYOND CORRECTIVE ACTION.
	<u>GOOD</u> FAIR POOR CRITICAL		
	<u>Martin Daniel</u>	<u>4 123 1 03</u>	
	TEAM LEADER SIGNATURE	REVIEW DATE	



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

Underpass Condition Coding Form

Revised 06/15/2000

Bridge Number: 80I004000212
(Includes Item 5A)

Feature Intersected: I40/HICKMAN CREEK & A156

County: 80
Route: 0A156
Special Case: 0
County Sequence: 01
Log Mile: 0.14

CODE ONLY THOSE VALUES WHICH HAVE CHANGED

ITEM #	DESCRIPTION	VALUE	UNDERPASS SAFETY FEATURES
90	INSPECTION DATE	<u>06/11/2001</u> <u>4 / 23 / 03</u>	515 (A) TYPE UNDERPASS BARRIER <u>None Exists but Needed</u>
10	MINIMUM V.C. OVER DECK (ROADWAY + SHOULDERS)	<u>20</u> FT. <u>9</u> IN. ____ FT. ____ IN.	Revised Barrier Type
520	MINIMUM V.C. OVER DECK (EXCLUDES SHOULDERS)	<u>20</u> FT. <u>9</u> IN. ____ FT. ____ IN.	(B) ADEQUACY OF BARRIER OR RAIL <u>0</u>
47	TOTAL HORIZONTAL UNDERCLEARANCE	<u>36</u> FT. <u>8</u> IN. ____ FT. ____ IN.	(C) ADEQUACY OF TRANSITIONS <u>0</u>
54	MINIMUM VERTICAL UNDERCLEARANCE (EXCLUDES SHOULDERS)	Circle One: H R <u>20</u> FT. <u>9</u> IN.	(D) ADEQUACY OF TERMINALS <u>0</u>
55	MINIMUM LATERAL UNDERCLEARANCE ON RIGHT SIDE	Circle One: H R <u>0</u> FT. <u>0</u> IN.	554 VERTICAL CLEARANCE LISTED ON HEIGHT POSTING <u>99</u> FT. <u>99</u> 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 [X] N/A []

555 COMMENTS _____

Martin Daniel
TEAM LEADER SIGNATURE

4 / 23 / 03
REVIEW DATE



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

Bridge Condition Coding Form

Revised 06/15/2000

Bridge Number: 80I004000211
(Includes Item 5A)

Feature Intersected: HICKMAN CREEK & NFA A156

County: 80

Route: 10040

Special Case: 0

County Sequence: 01

Log Mile: 10.45

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>06/11/1999</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	6	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	8	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	8	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	8	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: 80I004000212
(Includes Item 5A)

Feature Intersected: I40/HICKMAN CREEK & A156

County: 80

Route: 0A156

Special Case: 0

County Sequence: 01

Log Mile: 0.14

CODE ONLY THOSE VALUES WHICH HAVE CHANGED

ITEM #	DESCRIPTION	VALUE	UNDERPASS SAFETY FEATURES
90	INSPECTION DATE	<u>06/11/1999</u> <u>6 / 11 / 01</u>	515 (A) TYPE UNDERPASS BARRIER None Exists but Needed
10	MINIMUM V.C. OVER DECK (ROADWAY + SHOULDERS)	20 FT. 9 IN. <u>20</u> FT. <u>6</u> IN.	Revised Barrier Type
520	MINIMUM V.C. OVER DECK (EXCLUDES SHOULDERS)	20 FT. 9 IN. <u>20</u> FT. <u>6</u> IN.	(B) ADEQUACY OF BARRIER OR RAIL 0
47	TOTAL HORIZONTAL UNDERCLEARANCE	36 FT. 8 IN. ____ FT. ____ IN.	(C) ADEQUACY OF TRANSITIONS 0
54	MINIMUM VERTICAL UNDERCLEARANCE (EXCLUDES SHOULDERS)	Circle One: (H) R <u>20</u> FT. <u>6</u> IN.	(D) ADEQUACY OF TERMINALS 0
55	MINIMUM LATERAL UNDERCLEARANCE ON RIGHT SIDE	Circle One: (H) R <u>0</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: 10.45

Bridge Number: 80I004000211
(Includes Item 5A)

Feature Intersected: HICKMAN CREEK & NFA A156

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
		6/1/1999	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 ☒ H 20 FT. 9 IN. (EXCLUDES SHOULDERS)		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	6	
59	SUPERSTRUCTURE	8	
60	SUBSTRUCTURE	8	
61	CHANL/CHANL PROTECTION	8	
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		

Albert Wayne Hunter
SIGNATURE

6/1/1999
DATE



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

Underpass Condition Coding Form

County: 80
Route: 0A156
Special Case: 0
County Sequence: 1
Log Mile: 0.14

Bridge Number: 801004000212
(Includes Item 5A)
Feature Intersected: I40/HICKMAN CREEK & A156

CODE ONLY THOSE NUMBERS WHICH HAVE CHANGED

ITEM #	DESCRIPTION	VALUE	UNDERPASS SAFETY FEATURES
90	INSPECTION DATE	5/1/97 <u>06/11/99</u>	(A) TYPE UNDERPASS BARRIER None Exists but Needed
10	MINIMUM V.C. OVER DECK (ROADWAY + SHOULDERS)	20 FT. 9 IN.	Revised Barrier Type (B) ADEQUACY OF BARRIER OR RAIL 0 (C) ADEQUACY OF TRANSITIONS 0 (D) ADEQUACY OF TERMINALS 0 VERTICAL CLEARANCE LISTED ON HEIGHT POSTING SIGNS 99 FT. 99 IN. ____ FT. ____ IN.
520	MINIMUM V.C. OVER DECK (EXCLUDES SHOULDERS)	20 FT. 9 IN.	
47	TOTAL HORIZONTAL UNDERCLEARANCE	36 FT. 8 IN.	
55	MINIMUM LATERAL UNDERCLEARANCE ON RIGHT SIDE ☒ H	2 FT. 11 IN.	
56	MINIMUM LATERAL UNDERCLEARANCE ON LEFT SIDE	0 FT. 0 IN.	
Circle One: H R N		<u>0</u> FT. <u>0</u> IN.	

OVERALL CONDITION (Circle One)

☒ GOOD ☐ FAIR ☐ POOR ☐ CRITICAL

HEIGHT POSTED AT BOTH APPROACHES? YES [] NO [] N/A ☒

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

J. H. Hall
SIGNATURE

06/11/99
DATE

TENNESSEE BRIDGE INSPECTION PROGRAM

SUMMARY OF EVALUATION

REV. 03-05-2003

BRIDGE ID NO: 80I00400021

LOCATION NO: 80 - I0040 - 10.46 R

(6A) CROSSING: HICKMAN CREEK & NFA A156

(505) METHOD OF ANALYSIS: LOAD FACTOR
METHOD

(548) RATING BASED ON: AASHTOWARE BRIDGE
RATING (4" OF ASPHALT)

LOAD RATINGS IN TONS

INVENTORY (503) H 20	(518B) HS 36
OPERATING (504) H 34	(519) HS 61

(549) EVALUATOR: DCD

(522) EVAL. DATE: 6/1/2017

LAST UPDATED BY: DOMM

(29) ADT: 39,420 **(30) ADT YR:** 2017

(100) STRAHNET ROUTE: YES

(19) DETOUR LENGTH: 2 **KM**

(520) VC OVER RDWY: 99.99 **METERS**

CONDITION RATINGS

(58) DECK RATING: 5

(59) SUPERSTRUCTURE RATING: 7

(60) SUBSTRUCTURE RATING: 5

(61) CHANNEL PROTECTION: 7

(62) CULVERT RATING: N

(113A) NBIS SCOUR CODE: 8

(113B) TDOT SCOUR CODE: R

OTHER RATING ITEMS

(521) OVERALL CONDITION: F

(513) TEXTURE COAT RATING: G 10

(514) PAINT CONDITION RATING: N

(41) WEIGHT POSTING CODE: A

APPRAISAL RATINGS

(67) STRUCTURAL EVALUATION: 5

(68) DECK GEOMETRY: 8

(69) UNDER CLEARANCE: 3

(70) BRIDGE POSTING: 5

(71) WATERWAY ADEQUACY: 7

(72) APPROACH RDWY ALIGNMENT: 8

(36) TRAFFIC SAFETY

FEATURES: 1 0 0 N

(525) REPAIR LIST NO: N

CODE VALUES

N - NOT APPLICABLE

9 - EXCELLENT CONDITION

8 - VERY GOOD CONDITION

7 - GOOD CONDITION

6 - SATISFACTORY

5 - FAIR CONDITION

4 - POOR CONDITION

3 - SERIOUS CONDITION

2 - CRITICAL CONDITION

1 - FAILURE IS IMMINENT

0 - FAILED CONDITION

COMMENTS

(502) SUFF. RATING:	76.4
(528) STR. DEFICIENT:	NO
(529) FUNC. OBSOLETE:	YES

Bridge Name: I-40 OVER A156 and Hicman Creek

NBI Structure ID: 80I00400021

Bridge ID: 80I00400021

Analyzed By: bridgeware

Analyze Date: Thursday, October 18, 2018 13:12:54

Analysis Engine: AASHTO LFR Engine Version 6.8.1.3001

Analysis Preference Setting: None

Report By: bridgeware

Report Date: Thursday, October 18, 2018 13:23:38

Structure Definition Name: GSS

Member Name: G7

Member Alternative Name: NEW EXT

Load Factor Rating Summary

			Girder Summary					
Live Load		Rating Factor	Controls	Capacity (Ton)	Span	Location (ft)	Percent	Impact Lane
H 15-44	Inventory	1.346	Design Flexure - Concrete	20.20	2	93.83	100.0	As Requested As Requested
H 15-44	Operating	2.248	Design Flexure - Concrete	33.73	2	93.83	100.0	As Requested As Requested
HS 20-44	Inventory	1.010	Design Flexure - Concrete	36.35	2	93.83	100.0	As Requested As Requested
HS 20-44	Operating	1.686	Design Flexure - Concrete	60.71	2	93.83	100.0	As Requested As Requested
Type 3S2	Inventory	1.264	Design Shear - Concrete	45.51	1	90.25	99.2	As Requested As Requested
Type 3S2	Operating	2.111	Design Shear - Concrete	76.00	1	90.25	99.2	As Requested As Requested
Annual Permit 1	Inventory	0.687	Design Shear - Concrete	56.69	1	90.25	99.2	As Requested As Requested

Annual Permit 1	Operating	1.147	Design Shear - Concrete	94.66	1	90.25	99.2	As Requested	As Requested
Annual Permit 2	Inventory	0.611	Design Shear - Concrete	50.41	1	90.25	99.2	As Requested	As Requested
Annual Permit 2	Operating	1.020	Design Shear - Concrete	84.18	1	90.25	99.2	As Requested	As Requested
Gravel Truck	Inventory	1.101	Design Shear - Concrete	40.74	1	90.25	99.2	As Requested	As Requested
Gravel Truck	Operating	1.839	Design Shear - Concrete	68.04	1	90.25	99.2	As Requested	As Requested
Overweight Permit	Inventory	0.479	Design Flexure - Concrete	61.10	2	93.83	100.0	As Requested	As Requested
Overweight Permit	Operating	0.800	Design Flexure - Concrete	102.04	2	93.83	100.0	As Requested	As Requested
EV2	Operating	2.334	Design Shear - Concrete	67.12	1	90.25	99.2	As Requested	As Requested
EV3	Operating	1.560	Design Shear - Concrete	67.06	1	90.25	99.2	As Requested	As Requested
SU6 LFR	Operating	1.999	Design Shear - Concrete	69.46	1	90.25	99.2	As Requested	As Requested
SU7 LFR	Operating	1.834	Design Shear - Concrete	71.06	1	90.25	99.2	As Requested	As Requested

Note:

"N/A" indicates not applicable

***" indicates not available

BARS UPDATE RATING FOR ADDITIONAL DEAD LOAD

BRIDGE NUMBER: 80-10.45 EBL

NAME: ANDY McNABB

DATE: 01-25-1999

INPUT DATA

CHECK POINT BEING RATED : 1.5

RATING BASED ON : IF 3.25" A/C IS ADDED.

THIS IS A LOAD FACTOR ANALYSIS.....

EFFECTIVE BEAM SPACING.....	(FEET)...	6.5
SPAN LENGTH.....	(FEET)...	92.83
THICKNESS OF ADDITIONAL ASPHALT.....	(INCHES)...	3.25
MOMENT CAPACITY AVAILABLE AT INVENTORY LEVEL.....	(K-FT)...	1540.3
MOMENT CAPACITY AVAILABLE AT OPERATING LEVEL.....	(K-FT)...	2188.5
H LIVELOAD MOMENT.....	(K-FT)...	593.2
HS LIVELOAD MOMENT.....	(K-FT)...	993.7

OUTPUT DATA - DUE TO MOMENT

DLW/FT	MCAP-INV	MCAP-OPER	DEAD LOAD MOMENT
.253	1540.3	2188.5	354.98

MOMENT AVAIL - INV	MOMENT AVAIL - OPER
1185.32	1833.52

H-LLM+I	HS-LLM+I
593.2	993.7

H AND HS RATINGS - DUE TO MOMENT

H@ INV	H @ OPER	HS @ INV	HS @ OPER
29.97	46.36	42.94	66.43

BARS INPUT FILE DATA REPORT
=====

- General Data -

FILE NAME: 80- 80.DAT REGION: 3
ROUTE: I0040
LOGMILE: 1045 SYSTEM BRIDGE?: YES
LANE (R/L): R
CROSSING: HICKMAN CREEK

RIGHT LANE

- Specific Data -

STD. OVERLOAD BRIDGE?: YES TIMBER SUBSTRUCTURE?: NO
STRUCTURE TYPE - I43: 502 ASPHALT DEPTH ON DECK: 0.
LAST REVISION DATE: 07/10/96 TYPE OF RATING ANALYSIS: LF
OVERALL CONDITION: G TOTAL NUMBER OF SPANS: 3
IS BRIDGE POSTED?: NO MAXIMUM SPAN LENGTH - I48: 93
YEAR BRIDGE WAS BUILT: 1959

RECORD		H15 HS2C		PCIB 59		279 0 0		42 0 0 3		REC.NO.	
01	071096 A. McNABB										130
02	ARM080 A. McNABB										100
03	ARM080LM 10.453 80 I-40										200
04	ARM080 I-40/HICKMAN CREEK EBL--G01 SPANS A & C --G02 SPAN "B"										300
05	ARM080 60000 4500										400
06	ARM080G01 1 90 9 0										500
07	ARM080G02 1 9210 0										600
08	ARM080G01 01										700
09	ARM080G01 01										800
10	ARM080G01 01										900
11	ARM080G01 01										1000
12	ARM080G01 01										1100
13	ARM080G01 01										1200
14	ARM080G01 01										1300
15	ARM080G01 01										1400
16	ARM080G01 01										1500
17	ARM080G01 01										1600
18	ARM080G01 01										1700
19	ARM080G01 01										1800
20	ARM080G01 01										1900
21	ARM080G01 01										2000
22	ARM080G01 01										2100
23	ARM080G01 01										2200

THE FOLLOWING STRUCTURES WERE SELECTED

ARM080

STRUCTURE I.D. = ARM-080

*
* STRUCTURE HEADER AND DESCRIPTION
*

100-- 2 A. MCNABB EA/I/O/P = FILE REQUESTS AND OUTPUT DATA EXCEPTIONS
TYPE = PCIB YEAR = 59 LEN = 279.00 FT. WIDTH = 42.00 FT. 3 SPANS SP.LOAD =
INV.LL.TRK.= OP.LL.TRK.=

*
* STRUCTURE LOCATION AND PERMANENT IDENTIFICATION FACTORS
*

200-- 5 BRIDGE=LM 13.45 DIST./CO.= 3 80 CONST. ROUTE = I-40 CONST. SECT.= 0+
MICROFILM REEL NO. DESIGN PLANS= COMPUTATIONS= CORRESPONDENCE=
ROUTE I.D.= MARKED ROUTE =

*
* COMMENTS
*

300-- 6 0 I-40/HICKMAN CREEK EBL--G01 SPANS A & C --G02 SPAN "B"

*
* SPECIFICATIONS GENERALLY APPLICABLE TO STRUCTURE MEMBERS
*

STRUCT ID	REINF. CONCRETE	COMPOSITE STEEL/CONC	PRESTRESSED CONCRETE	ALLOWABLE STRESS	LL DIST.	END THRU	MAX	IMPACT	FACTOR
	FY = 60000. F _u C = 4500.	FY = 60. F _u C = 0.	LOSS = 0. ES/ES = .000	F _u S = 0. F _u S = .000	MAX = .00 MIN = .00	OP	POST SPEC	INV	OP
400-- 7									

*
* MEMBER SPECIFICATIONS AND REQUIRED ANALYSIS-GIRDER, STRINGER AND FLOOR BEAM
*

MEMBER ID	SPANS	STIFF. CODE	SPAN 1 (SPAN 4)	SPAN 2 (SPAN 5)	SPAN 3 (SPAN 6)	MATL CODE	ALLOWABLE STRESS	LL DIST.	END THRU	MAX	IMPACT	FACTOR
500-- 8	5 1	1	90.750	.000	.000	CPS	270.00	.00	1.162	.00	.00	.00
600-- 8	5 2	1	92.833	.000	.000	CPS	270.00	.00	1.162	.00	.00	.00

*

***** SUPERIMPOSED DEAD LOADS-GIRDERS, STRINGERS AND FLOOR BEAMS *****

MEMBER ID	SYMM.	SPAN NO.	DISTANCE FR. LEFT SUPP.	LOAD		W(R)	LENGTH
				TYPE	P OR W(L)		
700--10	G 1	1	.000FT.	W	500.0	.0	90.750FT.
800--10	G 1	1	45.375FT.	P	1.6	.0	.000FT.
900--10	G 2	1	.000FT.	W	500.0	.0	92.833FT.
1000--10	G 2	1	46.417FT.	P	1.6	.0	.000FT.

***** SECTION RANGE SPECIFICATIONS *****

MEMBER ID	SYMM.	SPAN NO.	RANGE NO.	RANGE LENGTH	SECTION NO. SEC.		HINGE 1 CODE	HINGE 1 DIST.	HINGE 2 CODE	HINGE 2 DIST.	HYBRID GIRDER	
					LEFT	RIGHT					FY	FY
1100--11	G 1	1	1	90.750FT.	1	0	.000FT.	.000FT.	.000FT.	.000FT.	0.	0.
1200--11	G 2	1	1	92.833FT.	1	0	.000FT.	.000FT.	.000FT.	.000FT.	0.	0.

***** SECTION PROPERTIES (COMPOSITE) - GIRDERS, STRINGERS, FLOOR BEAMS *****

MEMBER ID	SYMM	SPAN RANGE	RANGE LENGTH	COMP N CODE	SECT CODE	A	WIDTH	THICK -NESS	FILLET		EFFECT.		DIST TO TOP SECT.	
									WIDTH	THICK.	WIDTH	THICK.		
1300--14	G 1	1	1	90.750FT.	C	0	1	0	88.50	8.50	1.00	88.50	8.50	5.25
1400--14	G 2	1	1	92.833FT.	C	0	1	0	88.50	8.50	1.00	88.50	8.50	5.25

***** SECTION PROPERTIES (PRESTRESSED CONCRETE) - GIRDERS, STRINGERS, FLOOR BEAMS *****

MEMBER ID	SECT	SAME	ADR	VOIDS DESCRIPTION		DIST.	BEAM DESCRIPTION		STRANDS							
				DEPTH	WIDTH		CODE	DEPTH	WIDTH	I	ASI	DI				
1500--15	G 1	1	0	.0	.00	.0	TNG	4.00	.0	.00	.00	.0	1	L	1208.00	2.00
1600--15	G 1	1	0	.0	.00	.0		.00	.0	.00	.00	.0	2	L	1208.00	4.00
1700--15	G 1	1	0	.0	.00	.0		.00	.0	.00	.00	.0	3	L	908.00	6.00
1800--15	G 1	1	0	.0	.00	.0		.00	.0	.00	.00	.0	4	B	1005.00	60.69
1900--15	G 2	1	0	.0	.00	.0	TNG	4.00	.0	.00	.00	.0	1	L	1208.00	2.00
2000--15	G 2	1	0	.0	.00	.0		.00	.0	.00	.00	.0	2	L	1208.00	4.00
2100--15	G 2	1	0	.0	.00	.0		.00	.0	.00	.00	.0	3	L	938.00	6.00
2200--15	G 2	1	0	.0	.00	.0		.00	.0	.00	.00	.0	4	B	1005.00	60.69

D/P STR. I.D.-- ARM-080

INPUT CODING --

DATE 7/10/96
BY A. McNABB

STRUCTURE LM 10.45

INVENTORY		OPERATING	
LIVE LOAD	RATING	LIVE LOAD	RATING
H15	H 41.94	HS20	HS 47.69

MICROFILM REEL NUMBERS --

STRUCTURE DESCRIPTION --

LOCATION --

IDENTIFICATION		DISTRICT		DESIGN PLANS	
LM 10.45	PCIB	3	80	COMPUTATIONS	
TYPE OF CONSTR.	1959	CONSTR. RTE.	I-40	CORRESPONDENCE	
LENGTH	279.00 FEET	CONSTR. SEC.			
ROADWAY WIDTH	42.00 FEET	CONSTR. STA.	0+		
NUMBER OF SPANS	3	KEY RTE.			
		MARKED RTE.			

ANALYST REMARKS --

I-40/HICKMAN CREEK EBL--G01 SPANS A & C --G02 SPAN "B"

INVENTORY RATING SUMMARY --

OPERATING RATING SUMMARY --

MEMBER ID. G 1
SPAN 1
CRITICAL C.P. DIST. 45.4 FEET
LIVE LOAD DESIGNATION H15

MEMBER ID. G 1
SPAN 1
CRITICAL C.P. DIST. 45.4 FEET
LIVE LOAD DESIGNATION HS20

MOMENT
(FT. KIPS)
MEMBER CAPACITY 3826.5
DL EFFECT 2224.8

MOMENT
(FT. KIPS)
MEMBER CAPACITY 4534.3
DL EFFECT 2224.8

CAPACITY FOR (LL+I) 1601.8
ACTUAL (LL+I) 572.8

CAPACITY FOR (LL+I) 2309.6
ACTUAL (LL+I) 968.6

INVENTORY RATING H 41.94

OPERATING RATING HS 47.69

SUMMARY OF RATING CALCULATIONS-----STRUCTURE MEMBER G 2 BARS-PC RELEASE 5.5
INVENTORY AND/OR OPERATING ANALYSIS

D/P STR. I.D.-- ARM-080

INPUT CODING --
DATE 7/10/96
BY A. McNabb
STRUCTURE LM 10.45
INVENTORY
LIVE LOAD RATING OPERATING
H15 H 38.95 HS20 HS 44.05

MICROFILM REEL NUMBERS --

STRUCTURE DESCRIPTION -- LOCATION --
IDENTIFICATION LM 10.45 DISTRICT 3
TYPE PC1B COUNTY 80
YEAR OF CONSTR. 1959 CONSTR. RTE. I-40
LENGTH 279.00 FEET CONSTR. SEC. 0+
ROADWAY WIDTH 42.00 FEET CONSTR. STA.
NUMBER OF SPANS 3 KEY RTE.
MARKED RTE.

ANALYST REMARKS --

I-40/HICKMAN CREEK EBL--G01 SPANS A & C --G02 SPAN "B"

INVENTORY RATING SUMMARY --

MEMBER ID. G 2
SPAN 1
CRITICAL C.P. DIST. 46.4 FEET
LIVE LOAD DESIGNATION H15
MOMENT
(FT. KIPS)
MEMBER CAPACITY 3867.5
DL EFFECT 2327.2
CAPACITY FOR (LL+I) 1540.3
ACTUAL (LL+I) 593.2
INVENTORY RATING H 38.95

OPERATING RATING SUMMARY --

MEMBER ID. G 2
SPAN 1
CRITICAL C.P. DIST. 46.4 FEET
LIVE LOAD DESIGNATION HS20
MOMENT
(FT. KIPS)
MEMBER CAPACITY 4515.8
DL EFFECT 2327.2
CAPACITY FOR (LL+I) 2188.5
ACTUAL (LL+I) 993.7
OPERATING RATING HS 44.05

*** FINAL SUMMARY OF RATING RESULTS FOR --- STRUCTURE ID. ARM-080 BARS-PC RELEASE 5.5
INVENTORY AND/OR OPERATING ANALYSIS

D/P STR. ID-- ARM-080

STRUCTURE LM 10.45

INPUT CODING--

DATE 7/10/96
BY A. MCNABB

INVENTORY
LIVE LOAD H 38.9
H15
OPERATING
LIVE LOAD HS 44.0
HS20

MICROFILM REEL NUMBERS--

LOCATION--

IDENTIFICATION LM 10.45
TYPE PCIB
YEAR OF CONSTR. 1959
LENGTH 279.00 FEET
ROADWAY WIDTH 42.00 FEET
NUMBER OF SPANS 3

DISTRICT 3
COUNTY 80
CONSTR. RTE. I-40
CONSTR. SEC.
CONSTR. STA. 0+
KEY RTE.
MARKED RTE.

DESIGN PLANS
COMPUTATIONS
CORRESPONDENCE

ANALYST REMARKS--

I-40/HICKMAN CREEK EBL--G01 SPANS A & C --G02 SPAN "B"

INVENTORY RATING SUMMARY

MEMBER I.D. G 2
SPAN 1
CRITICAL C.P. DIST. 46.4 FEET
LIVE LOAD DESIGNATION H15

MOMENT
(FOOT-KIPS)
MEMBER CAPACITY 3867.5
DL EFFECT 2327.2

CAPACITY FOR (LL+I) 1540.3
ACTUAL (LL+I) 593.2

INVENTORY RATING H 38.95

OPERATING RATING SUMMARY

MEMBER I.D. G 2
SPAN 1
CRITICAL C.P. DIST. 46.4 FEET
LIVE LOAD DESIGNATION HS20

MOMENT
(FOOT-KIPS)
MEMBER CAPACITY 4515.8
DL EFFECT 2327.2

CAPACITY FOR (LL+I) 2188.5
ACTUAL (LL+I) 993.7

OPERATING RATING HS 44.05

DETAIL DATA FOR FLEXURAL MEMBER

DATE 07/10/96
 NO. SPANS = 1
 NOT SYMMETRICAL

D/P STRUCTURE I.D. ARM-080
 MEMBER I.D.--G01
 MATERIAL--CPS
 LL DIST. FACT. = 1.162
 SUPERIMPOSED CONCENTRATED DL(S)
 DIST. FROM LT SUPPORT***

SPAN LENGTH	RNG.	LENGTH	SEC.NO.	T	T	VAR	DL DUE TO	MEM. WEIGHT	W(LT)	W(RT)	SPAN	W(LT)	W(RT)	DIST. FROM LT SUPPORT***	LENGTH DISTRIBUTED DL(S)	DIST. FROM LT SUPPORT***	STIFF	SPAN	P	FT.	TRANS.	LONG.	NO.	KIPS	FT.
1	90.750	1	90.750	01	01	S	821.9	921.9	1	500.0	500.0	1	500.0	500.0	.000	90.750	90.750	1	1.6	45.375					

CHECK POINTS RATED--

SPAN DIS	ERM	FUNC	SPAN DIS	ERM	FUNC
1	.000	X	1	45.375	X
1	90.750	X	1	90.750	X

DETAIL DATA FOR FLEXURAL MEMBER

DATE 07/10/96
 NO. SPANS = 1
 NOT SYMMETRICAL
 D/P STRUCTURE I.D. ARM-090
 MEMBER I.D.--G02
 MATERIAL--CPS
 L. DIST. FACT. = 1.162
 SUPERIMPOSED CONCENTRATED DL(S)
 DIST. FROM LT SUPPORT***
 SUPERIMPOSED DISTRIBUTED DL(S)
 LENGTH DISTRIBUTED*****
 DIST. FROM LT SUPPORT***
 STIFF SPAN P
 FT. TRANS. LONG. NO. KIPS FT.
 1 500.0 500.0 .000 92.833 1 1.6 46.417
 DL DUE TO
 MEM. WEIGHT
 W(LT) W(RT)
 LBS/FT LBS/FT
 821.9 921.9
 VAR CODE
 S T
 LT RT P B
 SEC.NO. 1
 LT RT 01 01
 SPAN LENGTH RING. LENGTH
 NO. FT. NO. FT.
 1 92.833 1 92.833

CHECK POINTS RATED--

SPAN DIS FRM FUNC SPAN DIS FRM FUNC
 NO. LT SEPT M VL VR NO. LT SEPT M VL VR
 FT.
 1 .000 X
 1 46.417 X
 1 92.833 X

DETAIL DATA AT MOMENT CHECK POINT FOR
COMPOSITE PRESTRESSED CONCRETE FLEXURAL MEMBER

DATE 07/10/96

D/F STRUCTURE I.D. ARM-080
MEMBER I.D.--601
C.P. LOCATION 1.50

***** SECTION PROPERTIES IN COMPOSITE RANGE 1 OF SPAN 1

***** SECTION MODULUS *****

	TOP	BEND	IN+3	IN+4	IN+5	IN+6	IN+7	IN+8	IN+9	IN+10	IN+11	IN+12	IN+13	IN+14	IN+15	IN+16	IN+17	IN+18	IN+19	IN+20	IN+21	IN+22	IN+23	IN+24	IN+25	IN+26	IN+27	IN+28	IN+29	IN+30	IN+31	IN+32	IN+33	IN+34	IN+35	IN+36	IN+37	IN+38	IN+39	IN+40	IN+41	IN+42	IN+43	IN+44	IN+45	IN+46	IN+47	IN+48	IN+49	IN+50	IN+51	IN+52	IN+53	IN+54	IN+55	IN+56	IN+57	IN+58	IN+59	IN+60	IN+61	IN+62	IN+63	IN+64	IN+65	IN+66	IN+67	IN+68	IN+69	IN+70	IN+71	IN+72	IN+73	IN+74	IN+75	IN+76	IN+77	IN+78	IN+79	IN+80	IN+81	IN+82	IN+83	IN+84	IN+85	IN+86	IN+87	IN+88	IN+89	IN+90	IN+91	IN+92	IN+93	IN+94	IN+95	IN+96	IN+97	IN+98	IN+99	IN+100	IN+101	IN+102	IN+103	IN+104	IN+105	IN+106	IN+107	IN+108	IN+109	IN+110	IN+111	IN+112	IN+113	IN+114	IN+115	IN+116	IN+117	IN+118	IN+119	IN+120	IN+121	IN+122	IN+123	IN+124	IN+125	IN+126	IN+127	IN+128	IN+129	IN+130	IN+131	IN+132	IN+133	IN+134	IN+135	IN+136	IN+137	IN+138	IN+139	IN+140	IN+141	IN+142	IN+143	IN+144	IN+145	IN+146	IN+147	IN+148	IN+149	IN+150	IN+151	IN+152	IN+153	IN+154	IN+155	IN+156	IN+157	IN+158	IN+159	IN+160	IN+161	IN+162	IN+163	IN+164	IN+165	IN+166	IN+167	IN+168	IN+169	IN+170	IN+171	IN+172	IN+173	IN+174	IN+175	IN+176	IN+177	IN+178	IN+179	IN+180	IN+181	IN+182	IN+183	IN+184	IN+185	IN+186	IN+187	IN+188	IN+189	IN+190	IN+191	IN+192	IN+193	IN+194	IN+195	IN+196	IN+197	IN+198	IN+199	IN+200	IN+201	IN+202	IN+203	IN+204	IN+205	IN+206	IN+207	IN+208	IN+209	IN+210	IN+211	IN+212	IN+213	IN+214	IN+215	IN+216	IN+217	IN+218	IN+219	IN+220	IN+221	IN+222	IN+223	IN+224	IN+225	IN+226	IN+227	IN+228	IN+229	IN+230	IN+231	IN+232	IN+233	IN+234	IN+235	IN+236	IN+237	IN+238	IN+239	IN+240	IN+241	IN+242	IN+243	IN+244	IN+245	IN+246	IN+247	IN+248	IN+249	IN+250	IN+251	IN+252	IN+253	IN+254	IN+255	IN+256	IN+257	IN+258	IN+259	IN+260	IN+261	IN+262	IN+263	IN+264	IN+265	IN+266	IN+267	IN+268	IN+269	IN+270	IN+271	IN+272	IN+273	IN+274	IN+275	IN+276	IN+277	IN+278	IN+279	IN+280	IN+281	IN+282	IN+283	IN+284	IN+285	IN+286	IN+287	IN+288	IN+289	IN+290	IN+291	IN+292	IN+293	IN+294	IN+295	IN+296	IN+297	IN+298	IN+299	IN+300	IN+301	IN+302	IN+303	IN+304	IN+305	IN+306	IN+307	IN+308	IN+309	IN+310	IN+311	IN+312	IN+313	IN+314	IN+315	IN+316	IN+317	IN+318	IN+319	IN+320	IN+321	IN+322	IN+323	IN+324	IN+325	IN+326	IN+327	IN+328	IN+329	IN+330	IN+331	IN+332	IN+333	IN+334	IN+335	IN+336	IN+337	IN+338	IN+339	IN+340	IN+341	IN+342	IN+343	IN+344	IN+345	IN+346	IN+347	IN+348	IN+349	IN+350	IN+351	IN+352	IN+353	IN+354	IN+355	IN+356	IN+357	IN+358	IN+359	IN+360	IN+361	IN+362	IN+363	IN+364	IN+365	IN+366	IN+367	IN+368	IN+369	IN+370	IN+371	IN+372	IN+373	IN+374	IN+375	IN+376	IN+377	IN+378	IN+379	IN+380	IN+381	IN+382	IN+383	IN+384	IN+385	IN+386	IN+387	IN+388	IN+389	IN+390	IN+391	IN+392	IN+393	IN+394	IN+395	IN+396	IN+397	IN+398	IN+399	IN+400	IN+401	IN+402	IN+403	IN+404	IN+405	IN+406	IN+407	IN+408	IN+409	IN+410	IN+411	IN+412	IN+413	IN+414	IN+415	IN+416	IN+417	IN+418	IN+419	IN+420	IN+421	IN+422	IN+423	IN+424	IN+425	IN+426	IN+427	IN+428	IN+429	IN+430	IN+431	IN+432	IN+433	IN+434	IN+435	IN+436	IN+437	IN+438	IN+439	IN+440	IN+441	IN+442	IN+443	IN+444	IN+445	IN+446	IN+447	IN+448	IN+449	IN+450	IN+451	IN+452	IN+453	IN+454	IN+455	IN+456	IN+457	IN+458	IN+459	IN+460	IN+461	IN+462	IN+463	IN+464	IN+465	IN+466	IN+467	IN+468	IN+469	IN+470	IN+471	IN+472	IN+473	IN+474	IN+475	IN+476	IN+477	IN+478	IN+479	IN+480	IN+481	IN+482	IN+483	IN+484	IN+485	IN+486	IN+487	IN+488	IN+489	IN+490	IN+491	IN+492	IN+493	IN+494	IN+495	IN+496	IN+497	IN+498	IN+499	IN+500	IN+501	IN+502	IN+503	IN+504	IN+505	IN+506	IN+507	IN+508	IN+509	IN+510	IN+511	IN+512	IN+513	IN+514	IN+515	IN+516	IN+517	IN+518	IN+519	IN+520	IN+521	IN+522	IN+523	IN+524	IN+525	IN+526	IN+527	IN+528	IN+529	IN+530	IN+531	IN+532	IN+533	IN+534	IN+535	IN+536	IN+537	IN+538	IN+539	IN+540	IN+541	IN+542	IN+543	IN+544	IN+545	IN+546	IN+547	IN+548	IN+549	IN+550	IN+551	IN+552	IN+553	IN+554	IN+555	IN+556	IN+557	IN+558	IN+559	IN+560	IN+561	IN+562	IN+563	IN+564	IN+565	IN+566	IN+567	IN+568	IN+569	IN+570	IN+571	IN+572	IN+573	IN+574	IN+575	IN+576	IN+577	IN+578	IN+579	IN+580	IN+581	IN+582	IN+583	IN+584	IN+585	IN+586	IN+587	IN+588	IN+589	IN+590	IN+591	IN+592	IN+593	IN+594	IN+595	IN+596	IN+597	IN+598	IN+599	IN+600	IN+601	IN+602	IN+603	IN+604	IN+605	IN+606	IN+607	IN+608	IN+609	IN+610	IN+611	IN+612	IN+613	IN+614	IN+615	IN+616	IN+617	IN+618	IN+619	IN+620	IN+621	IN+622	IN+623	IN+624	IN+625	IN+626	IN+627	IN+628	IN+629	IN+630	IN+631	IN+632	IN+633	IN+634	IN+635	IN+636	IN+637	IN+638	IN+639	IN+640	IN+641	IN+642	IN+643	IN+644	IN+645	IN+646	IN+647	IN+648	IN+649	IN+650	IN+651	IN+652	IN+653	IN+654	IN+655	IN+656	IN+657	IN+658	IN+659	IN+660	IN+661	IN+662	IN+663	IN+664	IN+665	IN+666	IN+667	IN+668	IN+669	IN+670	IN+671	IN+672	IN+673	IN+674	IN+675	IN+676	IN+677	IN+678	IN+679	IN+680	IN+681	IN+682	IN+683	IN+684	IN+685	IN+686	IN+687	IN+688	IN+689	IN+690	IN+691	IN+692	IN+693	IN+694	IN+695	IN+696	IN+697	IN+698	IN+699	IN+700	IN+701	IN+702	IN+703	IN+704	IN+705	IN+706	IN+707	IN+708	IN+709	IN+710	IN+711	IN+712	IN+713	IN+714	IN+715	IN+716	IN+717	IN+718	IN+719	IN+720	IN+721	IN+722	IN+723	IN+724	IN+725	IN+726	IN+727	IN+728	IN+729	IN+73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***** ULTIMATE STRENGTH *****

PRESTRESS STEEL / CONC
SLAB *FY 60000.0
INVENTORY 270000.0
OPERATING 270000.0
POST VEHL
POST VEHL
POST VEHL
POST SPEC

***** DL MOMENT *****

DL EFFECT
FT-KIPS 1674.2
INVENTORY 1601.8
OPERATING 2669.6
VEH. 1
VEH. 2
VEH. 3
SPECIAL

***** LIVE LOAD AND RATING CALCULATIONS (IMPACT FACTOR = .232 FOR -BEND) *****

TRUCK LOAD
LIVE LOAD
INVENTORY
OPERATING
POST
POST
POST
POST SPEC

DATE 07/10/96

SUMMARY OF SHEAR ANALYSIS

D/P STRUCTURE I.D. ARM-080

[illegible]

Bridge No.: 80 — 10040 — 1045
Crossing:: HICKMAN CREEK & NFA A156*
Federal No.: 80I00400021

Date:

April 23, 2003

PIC1



BRIDGE NO. AT ABUTMENT # 1

Bridge No.: 80 — 10040 — 1045
Crossing:: HICKMAN CREEK & NFA A156*
Federal Nc 80100400021

Date:

April 23, 2003

PIC2



INLET-ELEV

PIC3



VIEW ACROSS DECK FROM A-APPR

Bridge No.: 80 — 10040 — 1045
Crossing:: HICKMAN CREEK & NFA A156*
Federal No.: 80100400021

Date:

June 11, 2001

PIC1



BRIDGE NO. AT ABUTMENT # 1

Bridge No.: 80 — I0040 — 1045
Crossing:: HICKMAN CREEK & NFA A156*
Federal No 80I00400021

Date:

June 11, 2001

PIC2



RIGHT SIDE VIEW

PIC3



VIEW ACROSS DECK

Bridge No.: 80 — 10040 — 1045
Crossing:: HICKMAN CREEK & NFA A156*
Federal No.: 80I00400021

Date:

June 11, 1999

PIC4



BRIDGE NO. AT ABUTMENT # 1

PIC5



ABUTMENT TYPICAL

Bridge No.: 80 — 10040 — 1045

Crossing:: HICKMAN CREEK & NFA A156*

Federal No.: 80100400021

Date:

June 11, 1999

PIC1



ACROSS TOP OF DECK

Bridge No.: 80 — I0040 — 1045
Crossing: HICKMAN CREEK & NFA A156*
Federal No 80I00400021

Date:

June 11, 1999

PIC2



APPROACH #1

PIC3



APPROACH #2

Bridge No.: 80 — I0040 — 1045
Crossing:: HICKMAN CREEK & NFA A156*
Federal No.: 80I00400021

Date:

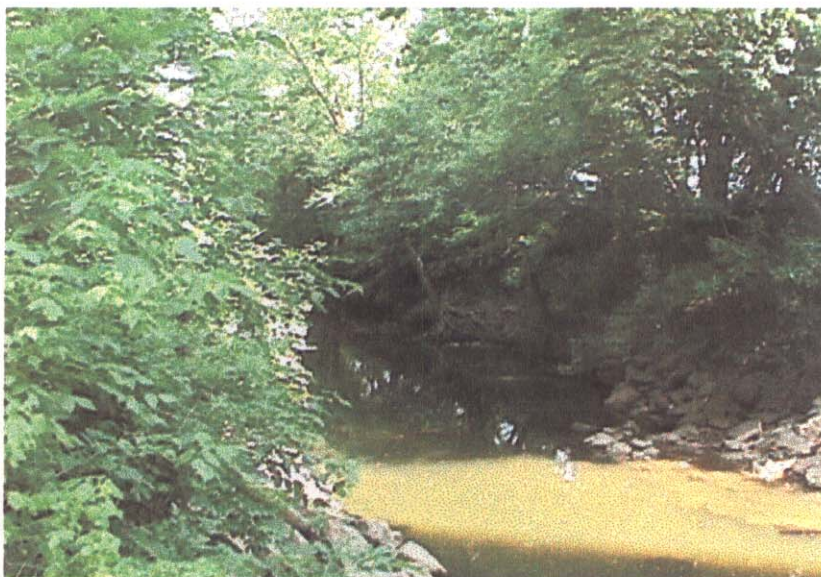
June 11, 1999

PIC6



PIER TYPICAL

PIC7



DOWNSTREAM

Bridge No.: 80 — 10040 — 1045
Crossing:: HICKMAN CREEK & NFA A156*
Federal No.: 80I00400021

Date:

June 11, 1999

PIC8



UPSTREAM

PIC9



BOTTOM OF DECK

Bridge No.: 80 — 10040 — 1045
Crossing:: HICKMAN CREEK & NFA A156*
Federal No.: 80I00400021

Date: June 11, 1999

PIC10



ELEVATION INLET

ROUTINE BRIDGE INSPECTION REPORT

Page No. _____

Form BIR 3.0C

(Rev. 9-22-98)

DT-1537

Field Report No. 16Date 4-23-03Previous Report No. 15Date 6/11/2001Plans: yesBridge No. 80I00400021Bridge Location No. 80 - I0040 - 10.45

Eleven Digit No.

Co. Route Log Mile

I 40over HICKMAN CREEK & NFA A156*Indepth Insp. Req'd: no

Road Name

Crossing

(If yes itemize limits under comment)

Structure Type PPCIBFRACTURE 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. _____

INSPECTORSDanielCrutcherWallerThompsonCondition: **GOOD** (If change describe in comments)**Comments**

Approaches

G1gt. settlement @ "A" app.

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

G

b. Columns/Piles

G

c. Footings

N/V

d. Wing W./Breast W.

G

Scour/Erosion

G

Channel (Item 61)

G**UNDERWATER INSPECTION**To Be Performed By: N/A

Date Underwater Insp. _____

BRIDGE is: Open**COMMENTS:**Weight Limit Posted noGross..... / Tons2 Axle..... / Tons3 or more Axles.. / TonsSupervising Bridge Inspector: Martin DanielBRIDGE RATING: **GOOD**

SUMMARY
80-I40-10.45 RL
4/23/2003

I40/Hickman Creek & County Rd.
3 Span/P.P.C.I.B.

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

The wearing surface, parapet, and drains are good. There are no expansion joints. The bottom deck was fair due to a 3" deep breakout with exposed steel. Bearing devices, beams, diaphragms, and alignment of beams are good. There is a small 1" deep breakout in beam "F" span #2.

The abutments are in good condition, along with the piers. There is no problem with debris build-up or scour 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 6/11/99
Previous Report No. 15 Date 6-11-01
Plans: yes

Bridge No. 80I00400021
Eleven Digit No.

Bridge Location No. 80 - I0040 - 10.45 RL
Co. Route Log Mile

I 40

over HICKMAN CREEK & NFA A156*

Indepth Insp. Req'd: no

Road Name

Crossing

(If yes itemize limits under comment)

Structure Type PPCIB

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 1 (ft.-in.)

Vertical Under Clearance 20'-6" (ft.-in.)

Horizontal Under Clearance _____ (ft.-in.)

Deck Width Curb/Curb _____ (ft.-in.)

Deck Width Rail/Rail _____ (ft.-in.)

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	
F	random 3" dp Break outs w/ exposed steel
G	
G	1" dp Breakout in Beam "F" span # 2
G	
G	
G	
G	
G	
G	
G	
G	
G	
G	

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-I40-10.45 RL
6-11-01

I40/Hickman Creek & County Rd.
3 Span/P.P.C.I.B.

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

The wearing surface, parapet, and drains are good. There are no expansion joints. The bottom deck was fair due to a 3" deep breakout with exposed steel. Bearing devices, beams, diaphragms, and alignment of beams are good. There is a small 1" deep breakout in beam "F" span #2.

The abutments are in good condition, along with the piers. There is no problem with debris build-up or scour at this time.

Martin Daniel

BRIDGE INSPECTION REPORT

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

FIELD REPORT NO. 14 DATE 6-11-99
REVIEW REPORT NO. 13 DATE 5-6-97
PLANS ---- YES ☒ NO ☐

BRIDGE NO. 80I00400021
ELEVEN DIGIT NO.

BRIDGE LOC. NO. 80 - I40 - 10.45 R.L.
CO. ROUTE LOG MILE

I40 OVER Hickman Cr. # A156
ROAD NAME FEATURE INTERSECTED

YEAR CONSTRUCTED 1959 COUNTY Smith MAINTENANCE DISTRICT NO. 32
(ESTIMATED OR ACTUAL)

YEAR WIDENED ☒ 1991 YEAR REHABILITATED '91
(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 50° LT ☐ RT ☒

STRUCTURE TYPE PPCIB NO. SPANS 3
Main Span Main Span

STRUCTURE TYPE - NO. SPANS -
Approach Spans Approach Spans

MAXIMUM SPAN LENGTH 93' TOTAL LENGTH 279'

WIDTHS CLEARANCES
DECK OUT-TO-OUT 44' MIN. VERTICAL OVER DECK -
ROADWAY CURB/CURB 42' MIN. VERTICAL UNDER CL 20'-9"
SIDEWALK - RT - LT MIN. LATERAL UNDER CL 3' RT - LT
*APPROACH ROADWAY 24'
APPR. SHLD. 10 RT 3 LT
*DOES NOT INCLUDE SHOULDER

UNDERWATER INSPECTION

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

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

COMMENTS: _____

INSPECTORS

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

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

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

Gilbert Wayne Hunter
SUPERVISING BRIDGE INSPECTOR

BRIDGE RATING ☒ ☐ ☐ ☐
GOOD FAIR POOR CRITICAL

FORM BIR 3.1
Rev. 09/24/98
DT-0080

BRIDGE LOC. NO. 80 - I40 - 10.45 ^{RL}
CO. ROUTE L.M.

DATE: 6-11-99

PERFORMANCE EVALUATION

Time of day inspected 10:45 Weather conditions SUNNY 85°

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>NA</u>
Pavement	(G) F P C	<u>New AC overlay</u>
Embankment	(G) F P C	
Drains	G F P C	<u>NU</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 [] - []	[X]	[]	[]	GROSS _____ TONS
				2 AXLE _____ TONS
				3 OR MORE
				AXLES _____ TONS

Other Signs or Plaques _____

Comments Regarding Any Problems With Signing _____

Other Recommendations _____

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

BRIDGE LOC. NO. 80 - I40 - 10.45 R.L.
CO. ROUTE L.M.

DATE: 6-11-99

DECK

COMMENTS

WEARING SURFACE	(G)	F	P	C	<u>NEW A.S. OVERLAY</u>
DECK - STRUCTURAL	(G)	F	P	C	<u>Small Breakouts in span #1 & 2</u>
CONDITION					
CURBS	G	F	P	C	<u>NA</u>
MEDIAN	G	F	P	C	<u>NA</u>
SIDEWALKS	G	F	P	C	<u>NA</u>
PARAPET	(G)	F	P	C	
RAILING	G	F	P	C	<u>NA</u>
PAINT	G	F	P	C	<u>NA</u>
DRAINS	(G)	F	P	C	
LIGHTING STD'S	G	F	P	C	<u>NA</u>
UTILITIES	G	F	P	C	<u>NA</u>
JOINT LEAKAGE	(G)	F	P	C	
EXPANSION JOINTS	G	F	P	C	<u>NA</u>

SUPERSTRUCTURE

COMMENTS

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

TEXTURE COAT

CONDITION RATING	(G)	F	P	C	
OVERALL APPEARANCE	(G)	F	P	C	NEEDS SPOT PAINTING? YES [] NO [x]
STAINING	(G)	F	P	C	NEEDS REPAINTING? YES [] NO [x]
SCALING	(G)	F	P	C	
FADING	(G)	F	P	C	

COMMENTS: _____

RECOMMENDATIONS: _____

FORM BIR 3.3

Rev. 09/24/98

DT-0082

BRIDGE LOC. NO. 80 - I40 - 10.45 R.L.
CO. ROUTE L.M.DATE: 6-11-99SUBSTRUCTURE

ABUTMENTS

COMMENTS

CAPS	(G)	F	P	C	
BREASTWALL	G	F	P	C	<u>NA</u>
WINGS	(G)	F	P	C	
BACKWALL	G	F	P	C	<u>NA</u>
PLUMB	(G)	F	P	C	
FOOTING	G	F	P	C	<u>NA</u>
PILES	G	F	P	C	<u>NA</u>
EMBANKMENT	(G)	F	P	C	
BEARING SURFACE	(G)	F	P	C	
BEARINGS	(G)	F	P	C	
SLOPE PAVING	G	F	P	C	<u>NA</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	
COLUMNS	(G)	F	P	C	
PLUMB	(G)	F	P	C	
FOOTINGS	G	F	P	C	<u>NA</u>
PILES	G	F	P	C	<u>NA</u>
BEARING SURFACE	(G)	F	P	C	
BEARINGS	(G)	F	P	C	

SCOUR CONDITION NONE ☒

RECOMMENDATIONS: _____

STREAM CHANNEL DATA AND CONDITIONS

STREAM CROSSING: Hickman Creek

- I. 1. Type of bed material? Boulders & Bedrock
2. Has the channel shifted? YES [] NO [☒] NOT APPARENT []
3. Condition of rip-rap? G F P C Est. % failed N/A [☒]
4. Overall condition of channel? G F P C
5. Item 61 - Code values 0 thru 9 according to the recording and coding guide currently in effect: 4
6. Underwater diver inspection recommended? YES [] NO [☒]
If yes, why?

- II. Channel and bank stability conditions: (check if applicable)
1. Steep bank - Failures upstream [] downstream [] conditions
2. Moderate bank erosion [☒]
3. Bank (a) low growth [] (b) large timber [☒]
Vegetation (c) dead trees [] (d) clear banks []
4. Sediment or gravel accumulation: YES [] NO [☒] UNKNOWN []
5. Channel altered or straightened: YES [] NO [☒] UNKNOWN []
6. Stable conditions: (a) live growth [☒] (b) bedrock [☒]
(c) boulders [☒] (d) flat slopes [☒]
($\leq 2:1$)

- III. Waterway adequacy and debris characteristics: (check if applicable)
1. Bridge deck elevations:
(a) level with approach roadway [☒]
(b) higher than approach roadway. []
(c) roadway approach ≥ 0.6 m above natural ground line. [☒]
2. Abutment encroaches into channel []
3. Large scour (blowhole) under bridge. []
4. Indications that flood waters overtop bridge:
NO [☒] YES [] OCCASIONALLY [] FREQUENTLY [] UNKNOWN []
5. Debris characteristics:
(a) debris present YES [] NO [☒]
(b) debris likely to accumulate: YES [] NO [☒]
(c) dead trees upstream: [] or downstream: []

IV. Comments:

SPECIAL INSPECTION DATA - FOR REASONS OTHER THAN FC OR SCOUR

- I. Does this bridge need a special inspection? YES [] NO [☒]
II. Reason for special inspection:

NOTE: UNLESS OTHERWISE NOTED, MEASUREMENTS ARE TO BE TAKEN TO TWO (2) DECIMAL PLACES IN METERS.

SUMMARY
80-I40-10.45 RL
6-11-99

I40/Hickman Creek & County Rd.
3 Span/P.P.C.I.B.

This bridge was inspected and found to be in good condition. Approach alignment and approach areas are in fair condition with patches and some settlement at each end. The approach guardrail and bridge rail are standard type and in good condition. There are no paddleboards.

The wearing surface, parapet, and drains are good. There are no expansion joints. The bottom deck was fair due to a 3" deep breakout with exposed steel. Bearing devices, beams, diaphragms, and alignment of beams are good. There is a small 1" deep breakout in beam "F" span #2.

The abutments are in good condition, along with the piers. There is no problem with debris build-up or scour 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 6-11-99
DATE 5-6-97

INSPECTION REPORT FOR UNDERPASS ROUTE

BRIDGE NO. 80I004000Z1
ELEVEN DIGIT NUMBER

UNDERPASS LOC. NO. 80 - A156 - 0.14
CO. RTE. L.M.

80 - I40 - 10.45 ^{R.L.} OVER 80 - A156 - 0.14
CO. RTE. L.M. CO. RTE. L.M.

STRUCTURE NAME (IF NAMED)

COUNTY Smith

YEAR CONSTRUCTED 1959 YEAR WIDENED 1991
ESTIMATED [] ACTUAL [X]

YEAR REHABILITATED 1991

GEOMETRIC FEATURES UNDER BRIDGE

DIVIDED HIGHWAY - - - - LEFT RDWY [] RIGHT RDWY [] N.A. [X]
TYPE OF WEARING SURFACE - - - - CONCRETE [] ASPHALT [] GRAVEL [X]
WIDTH OF APPROACH TRAVELED ROADWAY 16 FT. (DOES NOT INCLUDE SHOULDERS)
WIDTH OF MEDIAN IF DIVIDED HIGHWAY — FT.
APPROACH SHOULDER WIDTH 0 FT. (RT.) 0 FT. (LT.)
*HORIZONTAL CLEARANCE UNDER BRIDGE 36 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 20 FT. 9 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. GRELLCO
3. DANIEL
4. CRUTEHAR
5. WALKER
6. —

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

UNDERPASS LOC. NO. 80 - I40 - 10.45 ^{AL}
 CO. RTE. L.M.

OTHER SIGNS OR PLAQUES _____

COMMENTS REGARDING ANY PROBLEM WITH SIGNING _____

BRIDGE FEATURES

BRIDGE SKEW _____	NO. SPANS _____
STRUCTURE TYPE _____	MAIN TYPE _____
STRUCTURE TYPE _____	NO. SPANS _____
APPROACH SPAN _____	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. } TO L OF BRIDGE)
NUMBER OF <u>LANES</u> /TRACKS ON BRIDGE _____	

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.

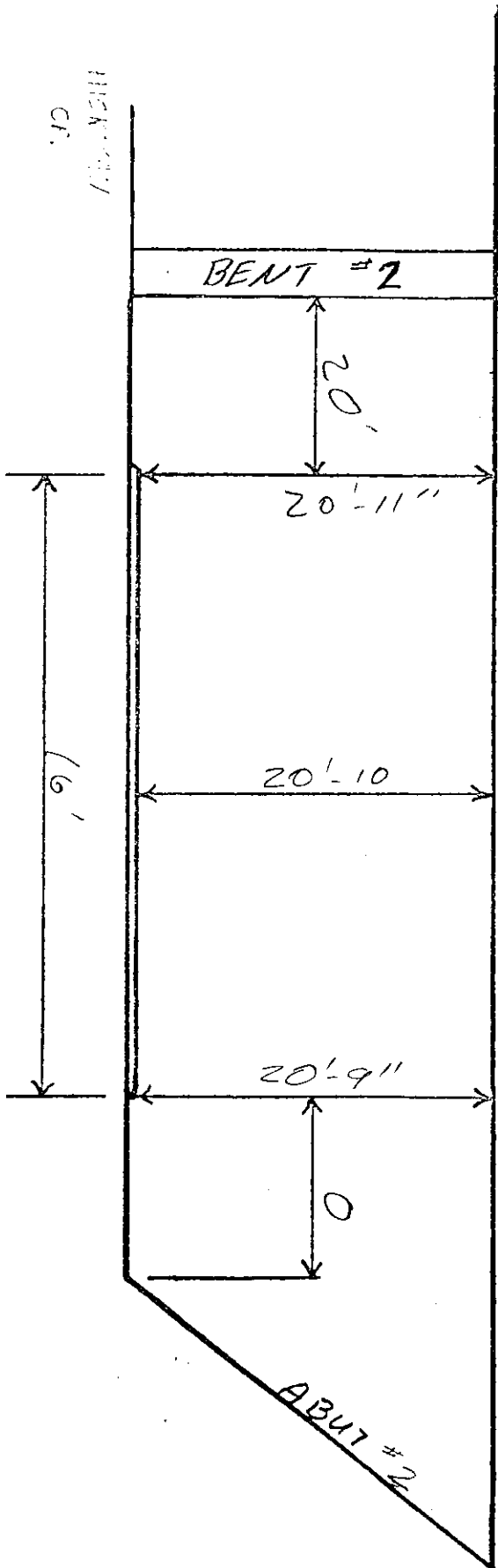
MINIMUM PICTURES REQUIRED

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

6-11-99 Qh

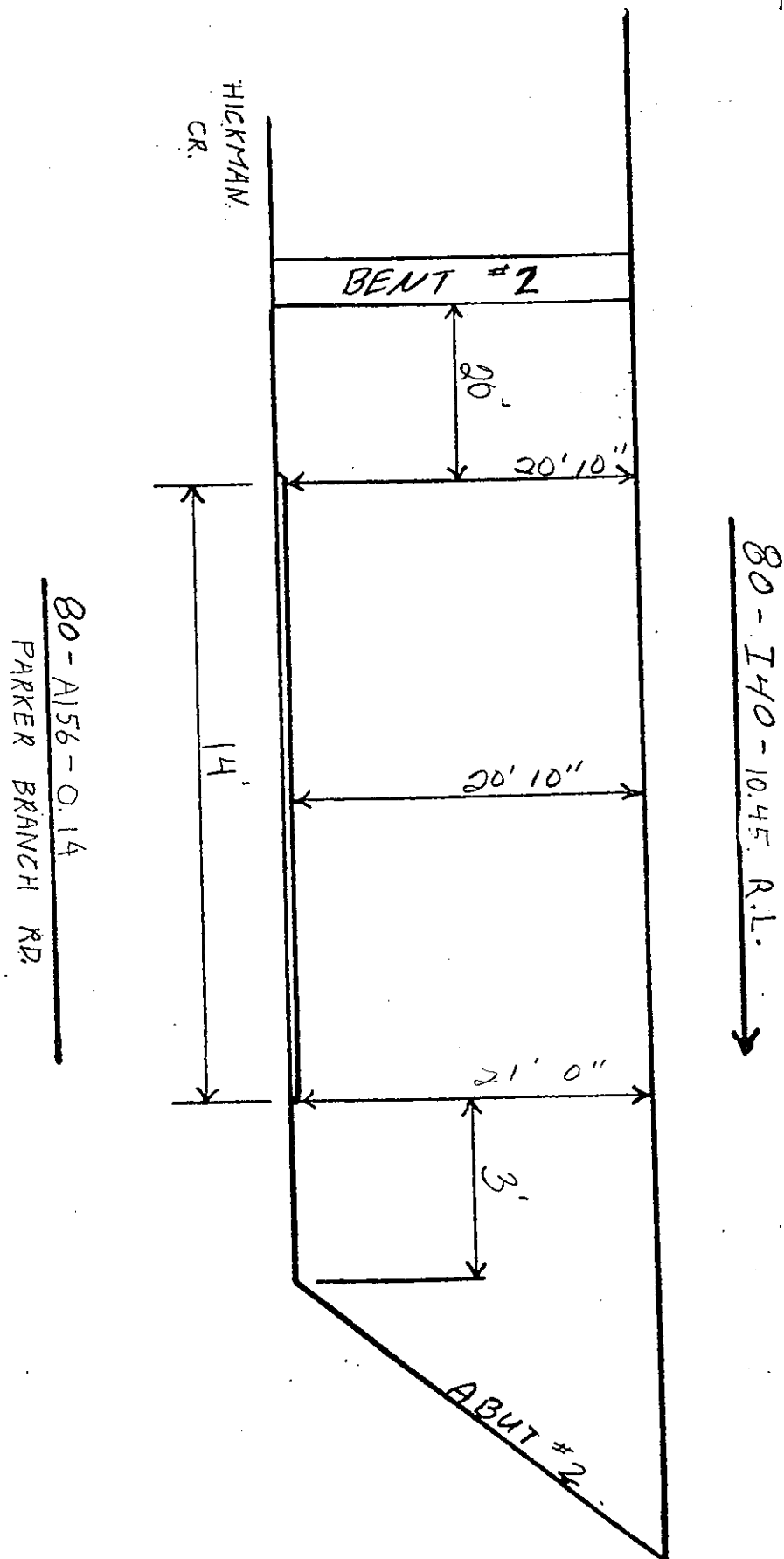
Clearance Sketch

80-140-10.45 R.L. →

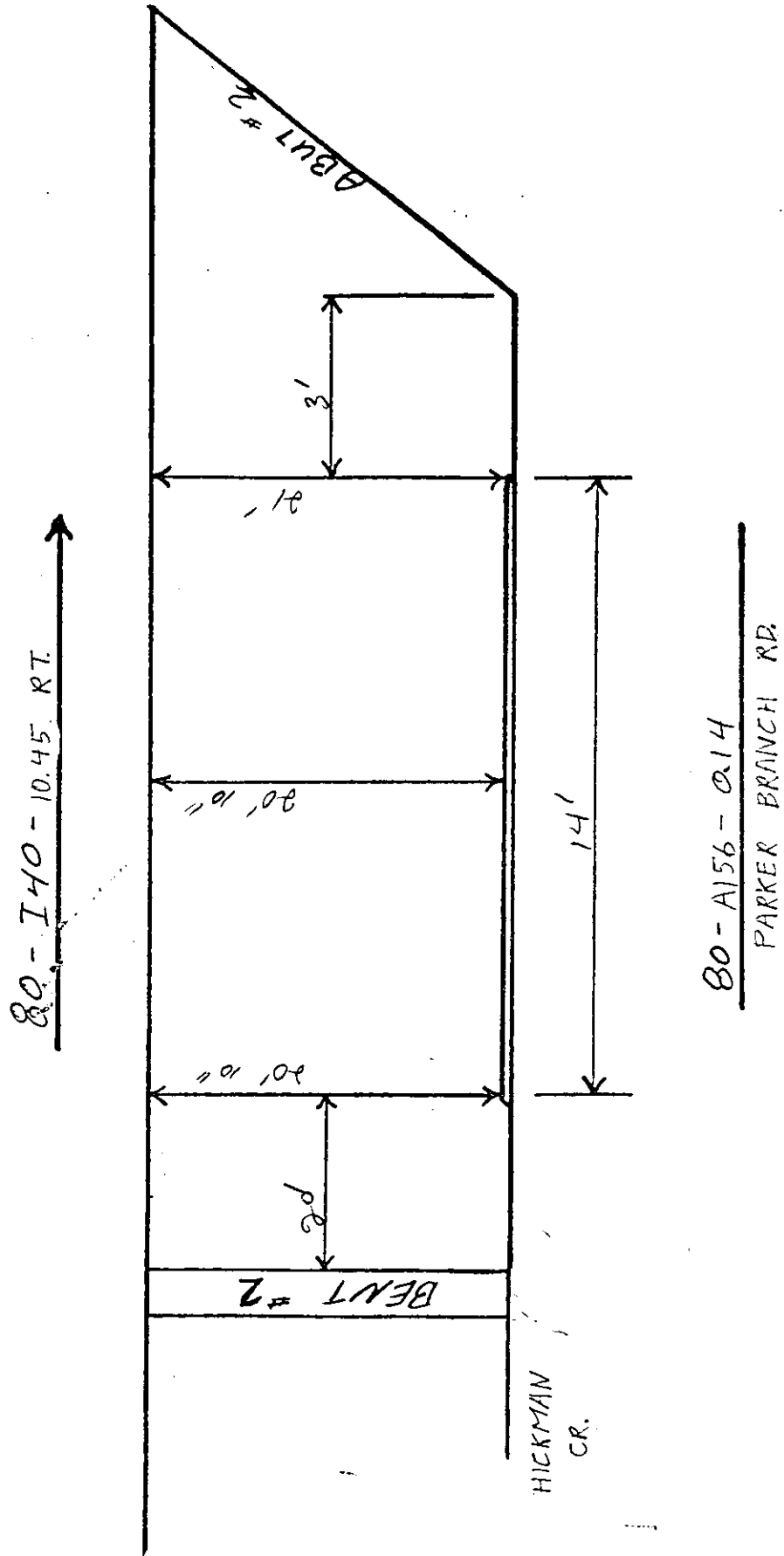


80-1456-0.14
PARKER BRIDGE RD.

MAR 23 1992

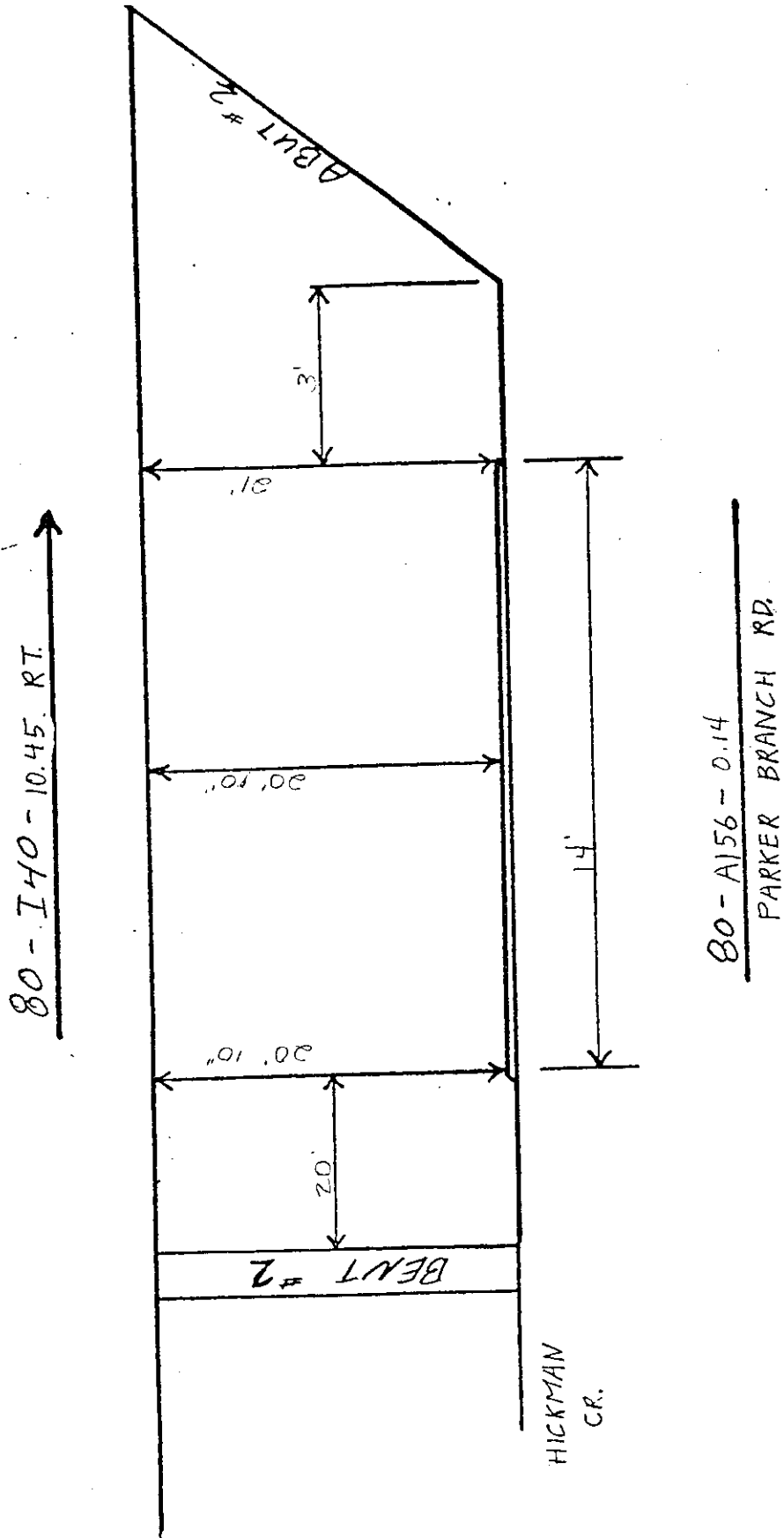


FEB 5 1990

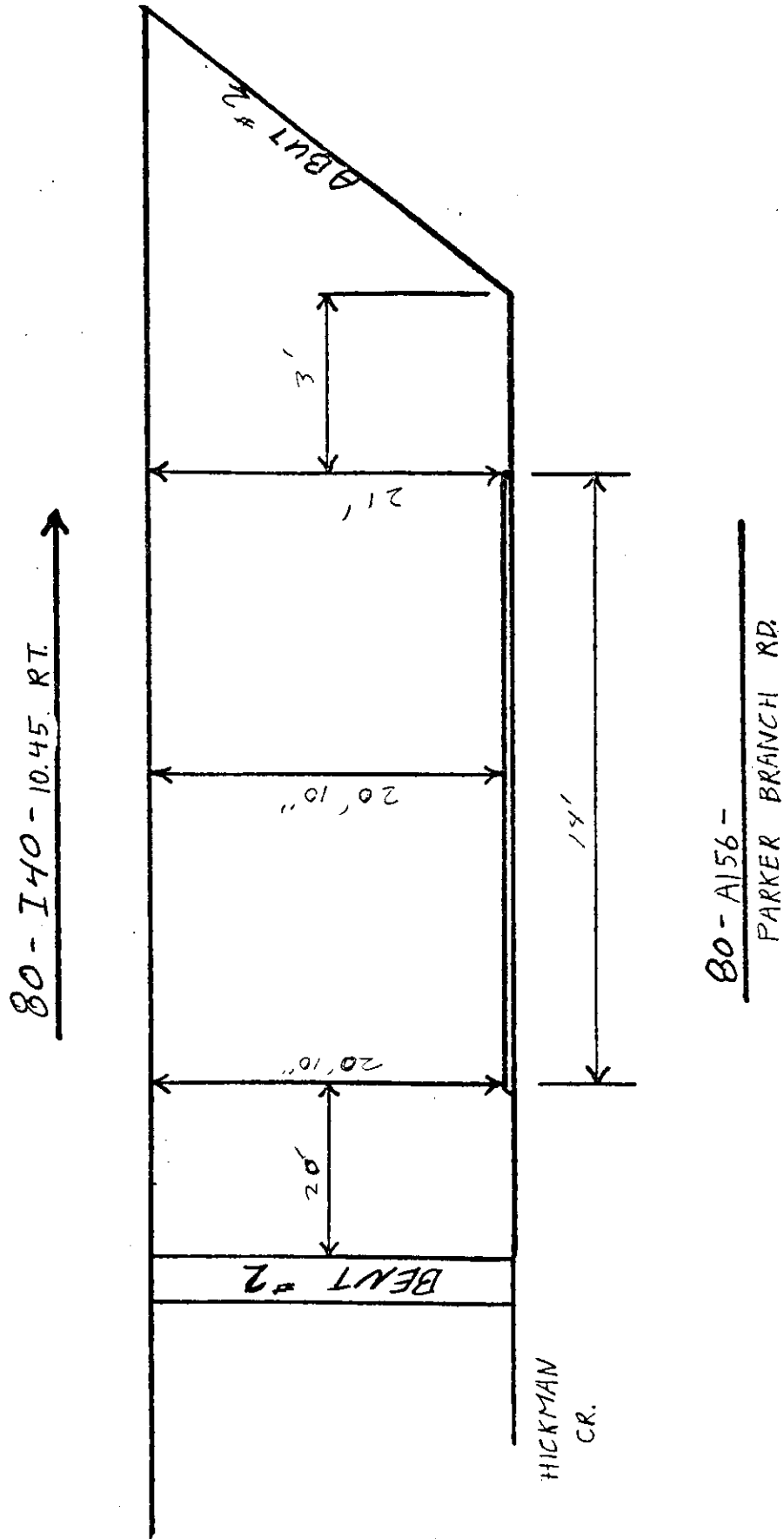


80 - A156 - 0.14
PARKER BRANCH RD.

JAN 28 1988



JUL 21 1986

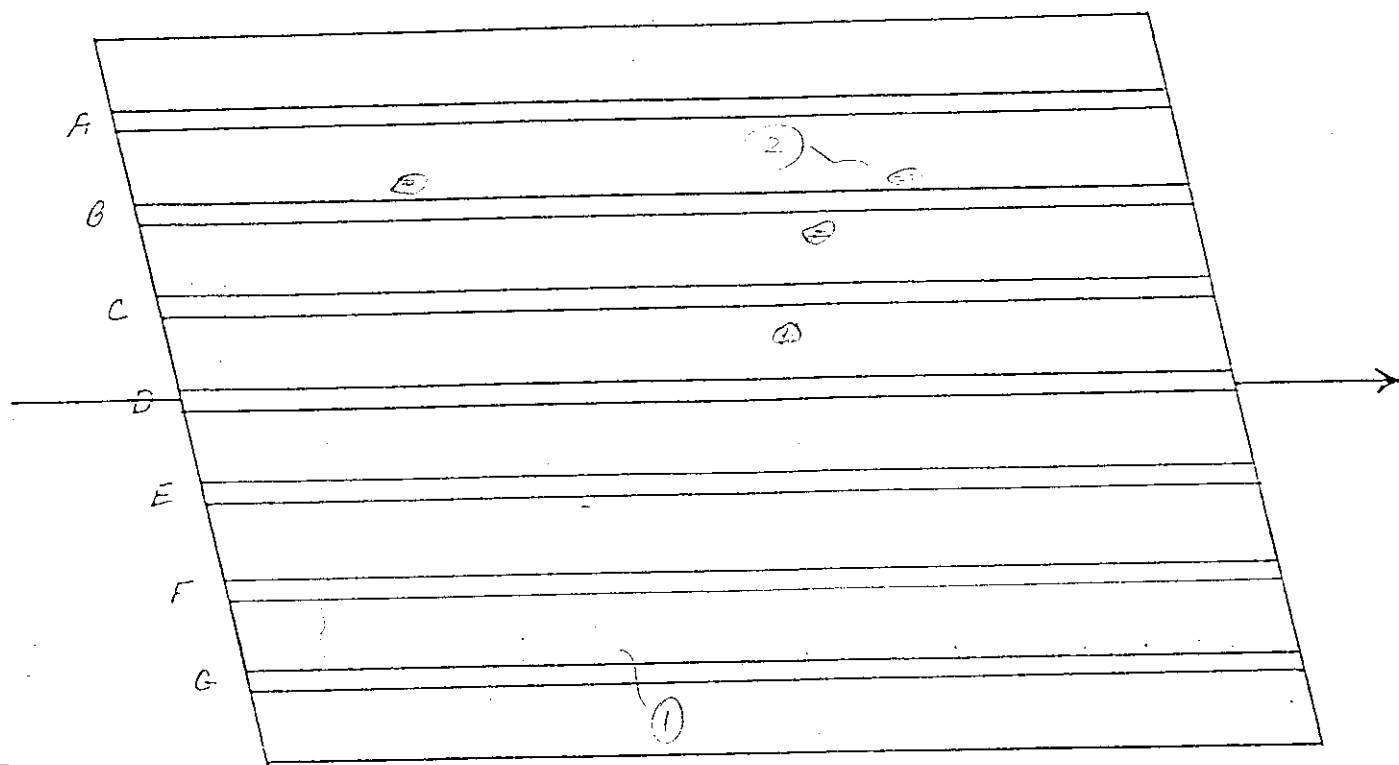




Br. ^{II} 80-I40-10.45 R.L.

Deck	NV	AC XERUDY
Parapet	G	
Drains	G	
Joints	NV	PAVED DET

6-11-94AD



Bottom Slab =

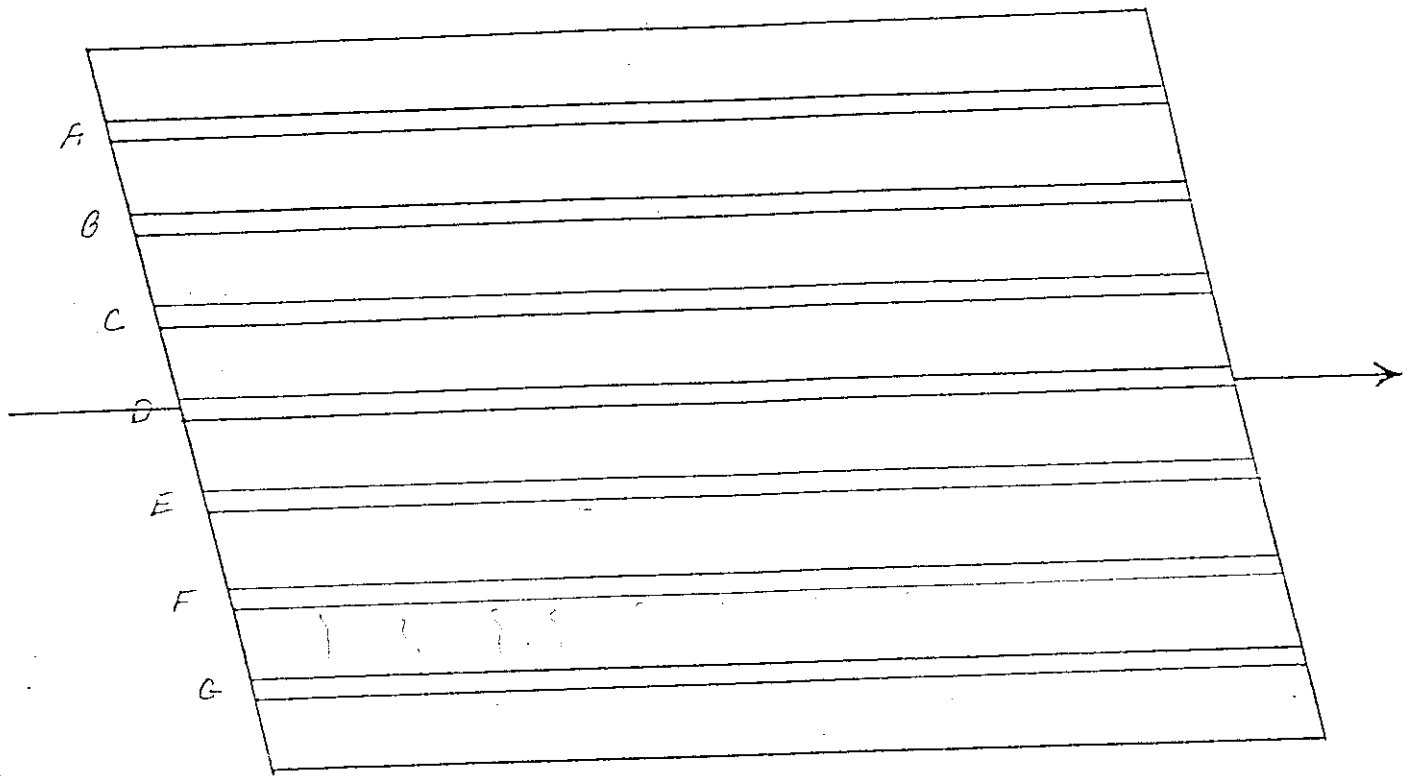
Br. = 80-140-10.45 R.L.

Deck Good (1) transverse hair cracks w/ eff. vol.
(2) deck repair breakouts up to 1' x 1' x 7.5" dp

Diaph. Good

Beams Good

6-11-79ad



BOTTOM SLAB = 2

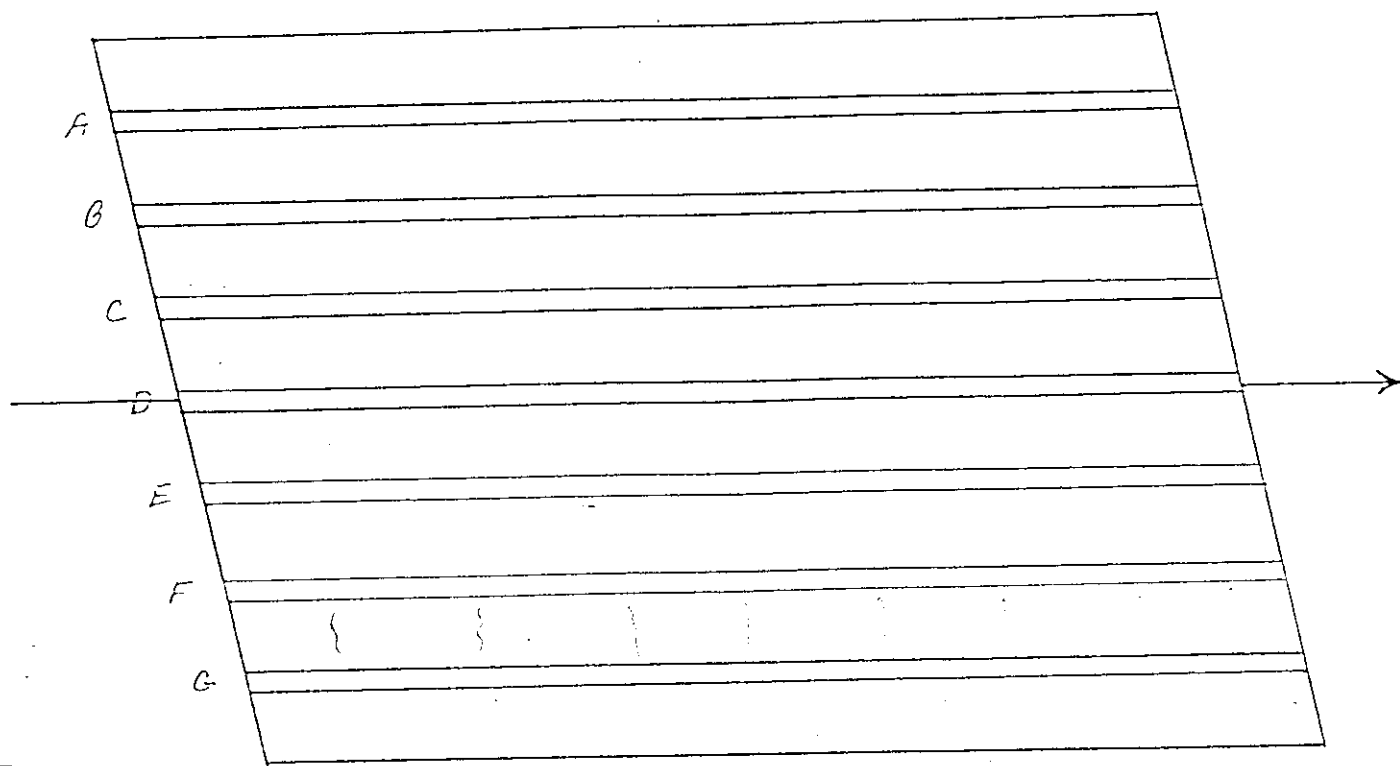
Br. = 80-I40-10.45 R.L.

Deck Good Transverse brgs w/ offhor. / 1'x1'x3" dp break-outs
w/ exp. steel

Diaph. G

Beams G

6-11-99AD



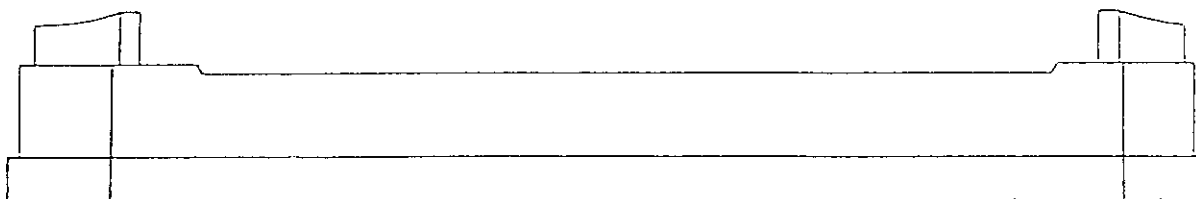
BOTTOM SLAB = ~~2~~ 3

Br. = 80-I40-10.45 R.L.

Deck	Good
------	------

Diaph.	Good
--------	------

Beams	Good
-------	------



ABUT =

Br = 80-140-10.45 R.L.

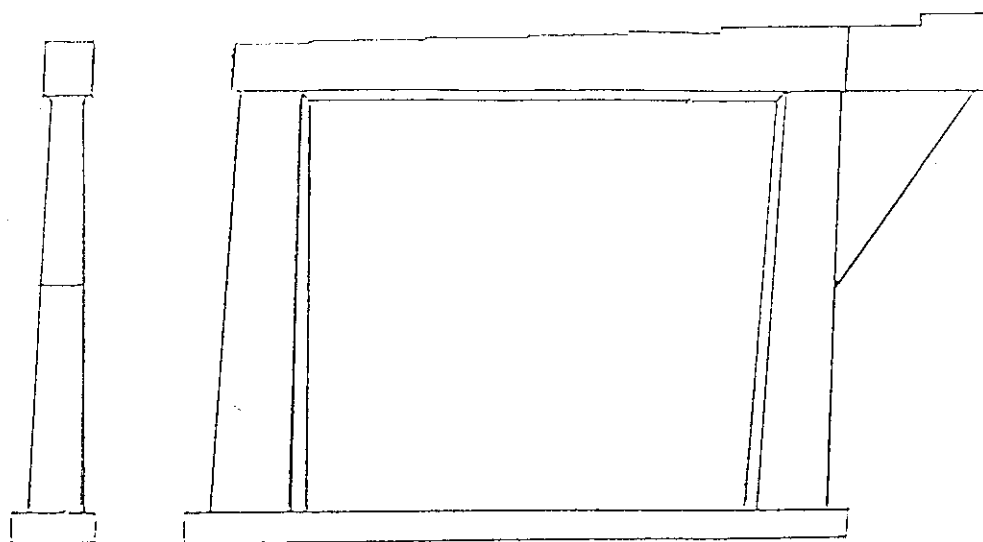
BACK

Wall NV

CAP Good

WINGS Good

Bearings N/V



Br. # 80-I40-10.45 R.L.

CAP	Good
Wall	Good
FTG.	NIV
Bearings	Good

The image displays four orthographic views of a mechanical component, arranged in a 2x2 grid. The views are as follows:

- Top View (Top Left):** Shows the component from above. It features a central rectangular opening. The left side has a sloped support structure. The top edge has a small rectangular protrusion on the left.
- Front View (Top Right):** Shows the component from the front. It is a tall, narrow rectangular shape with a small rectangular protrusion at the top.
- Left Side View (Bottom Left):** Shows the component from the left. It is a tall, narrow rectangular shape with a small rectangular protrusion at the top.
- Right Side View (Bottom Right):** Shows the component from the right. It features a central rectangular opening. The right side has a sloped support structure. The bottom edge has a small rectangular protrusion on the right.

Br. # 80-I40-10.45 R.L.

CAP	Good
Wall	Good
FTG.	N/V
Bearings	Good

Br. = 80-140-10.45 R.L.

wait	NV
------	----

CAP Good

WINGS	Good
-------	------

Bearings Good

80-I40-10.45 Rt.

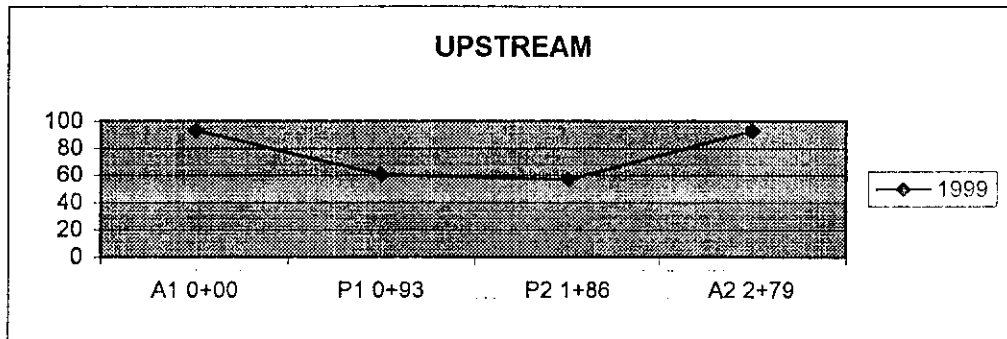
6/11/99

ASSUMED ELEV.-- 100 Ft.-- TOP OF HEADWALL

STATION ELEV.

1999

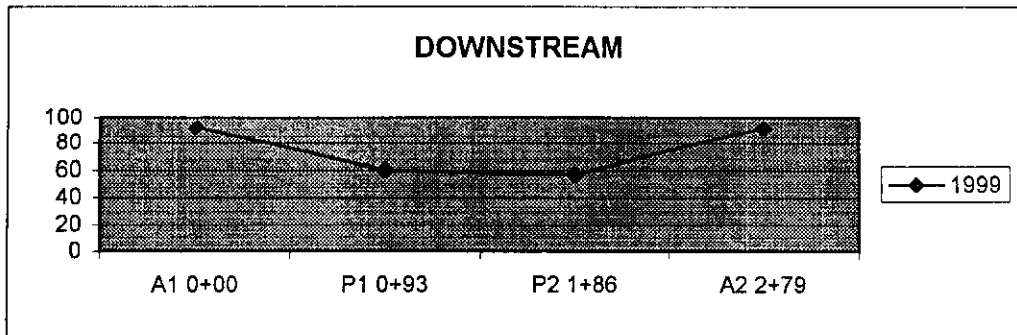
A1 0+00	93.2
P1 0+93	60.7
P2 1+86	57
A2 2+79	92.8

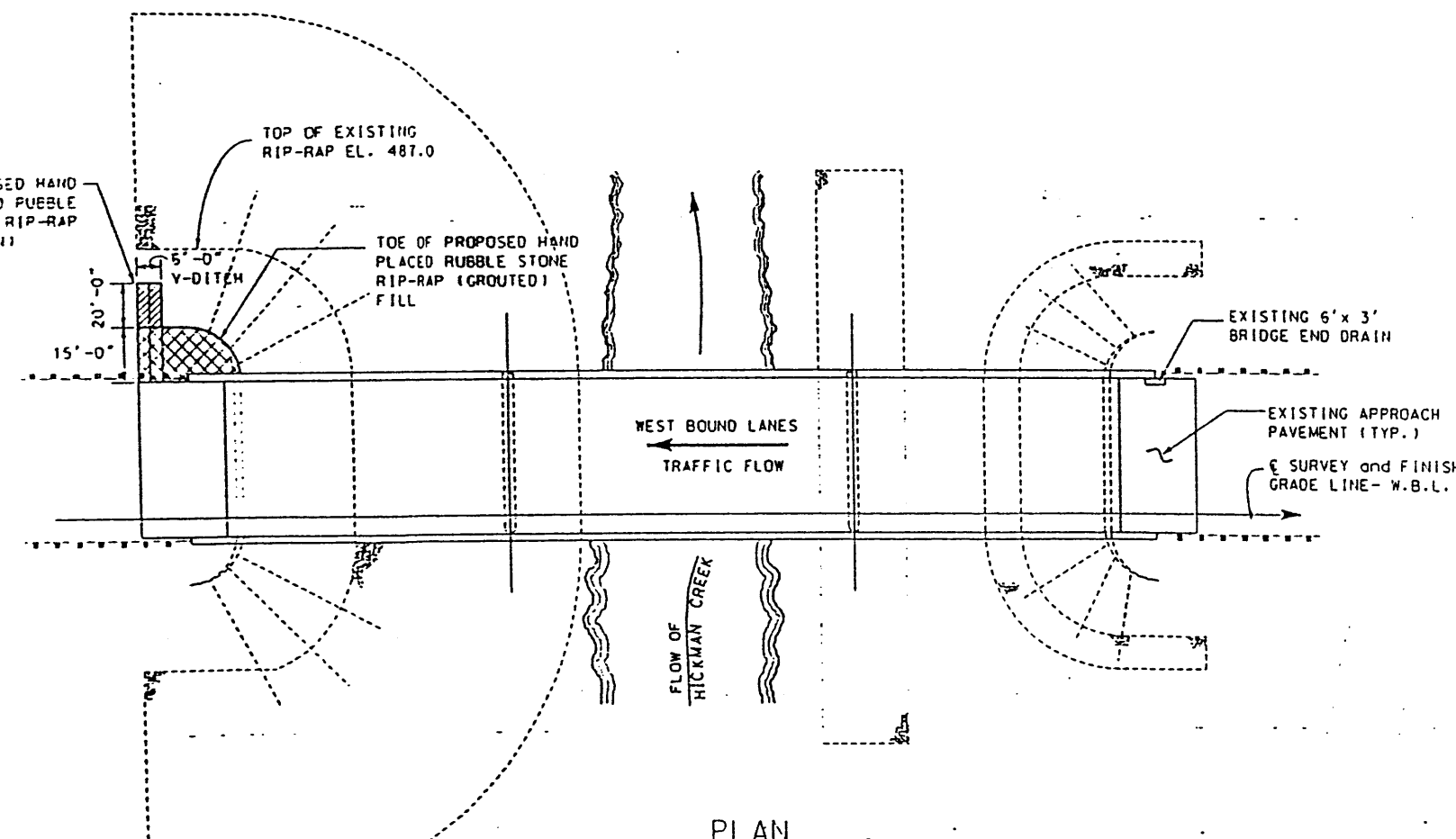
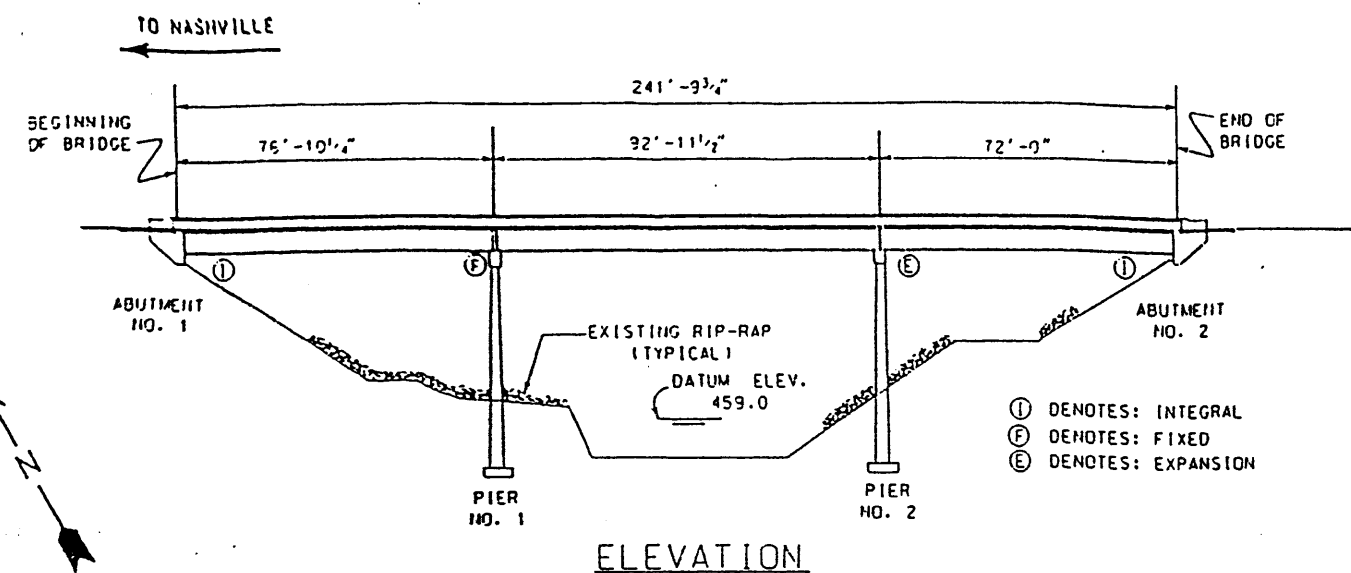


STATION ELEV.

1999

A1 0+00	92.4
P1 0+93	60
P2 1+86	56.9
A2 2+79	91.7





- GENERAL SCOPE OF WORK**
- 1) TRANSITION THE APPROACH PAVEMENT (300'-0") AT ABUTMENT NO.1 TO MATCH THE EXISTING CONCRETE PAVEMENT AT BRIDGE END.
 - 2) POUR NEW SUB-BEAM AT ABUTMENT NO.1 WHERE IT HAS BEEN UNDERMINED.
 - 3) PLACE RIP-RAP AROUND WINGWALL TO RE-ESTABLISH PROPER SLOPE LINES.
 - 4) EXCAVATE AND PLACE RIP-RAP FOR V-DITCH.
 - 5) PLACE GROUT IN DESIGNATED RIP-RAP AREAS.
 - 6) BACKFILL BEHIND THE ABUTMENT BACKWALL WITH A SUITABLE BACKFILL MATERIAL.
 - 7) RESET GUARDRAIL POSTS AND R.O.W. FENCE AT ABUTMENT NO.1.

LIST OF DRAWINGS

DRAWING NO.	LAST REV. DATE	DRAWING
BR-32-89		LAYOUT OF BRIDGE TO BE REPAIRED
BR-32-90		ESTIMATED QUANTITIES AND GENERAL NOTES
BR-32-91		BRIDGE REPAIR DETAILS
BR-32-92		BRIDGE REPAIR DETAILS

PROJECT NO.	YEAR	SHEET NO.
80001-1160-04	1998	
REVISIONS		
NO.	DATE	BY

LIST OF STANDARD DRAWINGS

DRAWING NO.	LAST REV. DATE	DRAWING
STD-9-1	12-19-94	REINFORCING BAR SUPPORT DETAILS FOR CONCRETE SLABS

LIST OF SPECIAL PROVISIONS

** DENOTES: CURRENT REVISION DATE, AS PER CONTRACT DOCUMENTS.

NO.	LAST REV. DATE	REGARDING
105A	**	APPROVAL OF SHOP DRAWINGS

LIST OF REFERENCE DRAWINGS

(TO BE PRINTED WITH PLANS)

DRAWING NO.	DRAWING
M-214-34, M-214-36 THRU 38, M-214-41, M-214-43 AND 44, M-214-47 AND 48, M-214-50, M-214-52A, M-214-53 AND 53A, M-214-55 THRU 58 AND M-214-59A	EXISTING BRIDGE DRAWINGS



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LAYOUT OF BRIDGE TO BE REPAIRED
INTERSTATE 40 (W.B.L.) OVER
HICKMAN CREEK
BRIDGE NO. 80-140-10.37
SMITH COUNTY
1998

BR-32-89

DESIGNED BY: Terry Mackie
DRAWN BY: Don Kline
CHECKED BY: J. S. Soper & J. Charles Mackie
DATE: April 1998

ESTIMATED QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	80-140-10.37	80-140-12.91	TOTAL
			OVER HICKMAN CREEK	OVER CANEEY FORK RIVER	
1-01	ROAD AND DRAINAGE EXCAVATION (UNCLASSIFIED)	C.Y.	5		5
03	BORROW EXCAVATION (UNCLASSIFIED)	C.Y.	10		10
03-01	BACKFILL MATERIAL (FLOWABLE MORTAR)	C.Y.	11		11
403-01	BITUMINOUS MATERIAL FOR TACK COAT (TC)	TON	1		1
411-01.01	MINERAL AGGREGATE (ACS) GRADING 0	TON	44		44
411-01.11	PERFORMANCE GRADE ASPHALT CEMENT (PG56-22) (BPM-BHM GR. 'D')	TON	3		3
415-01.02	COLD PLANING OF BITUMINOUS PAVEMENT	S.Y.	1350		1350
415-02.02	SALVAGE VALUE OF COLD PLANING	S.Y.	1350		1350
504-03.01	CLASS "A" CONCRETE (BRIDGES)	C.Y.	6		6
504-10.18	REINFORCING STEEL (REPAIRS)	LB.	253		253
504-10.31	RESETTING EXISTING EXPANSION JOINTS	L.F.		21	21
517-02	BRIDGE DECK REPAIRS (CRACK SEALING)	L.F.		54	54
517-05	SEALANT	GAL.		1	1
705-02.01	GUARDRAIL REMOVED AND RESET	L.F.	35		35
707-02.04	REMOVE AND RESETTING EXISTING CHAIN-LINK FENCE (4')	L.S.	1		1
709-02	RUBBLE STONE RIP-RAP (GROUTED)	C.Y.	59		59
709-07	RUBBLE STONE RIP-RAP (PLAIN)	C.Y.	5		5
712-01	TRAFFIC CONTROL	L.S.	.5	.5	1
712-02.02	INTERCONNECTED PORTABLE BARRIER RAIL	L.F.	610		610
712-04.01	FLEXIBLE DRUMS (CHANNELIZING)	EACH	200		200
712-05.01	WARNING LIGHTS (TYPE "A")	EACH	12		12
712-05.03	WARNING LIGHTS (TYPE "C")	EACH	35		35
712-06.01	VERTICAL PANELS	S.F.	48		48
712-06.10	NEW SIGNS (CONSTRUCTION)	S.F.	488		488
712-06.15	NEW SIGNS (CONSTRUCTION) ("BEE" ALERT)	EACH	4		4
715-02.01	PLASTIC PAVEMENT MARKING (4" LINE)	L.M.	0.23		0.23
715-02.01	REMOVAL OF PAVEMENT MARKING (LINE)	L.F.	1200		1200
717-01	MOBILIZATION	L.S.	.5	.5	1
801-01.00	SEEDING (WITH MULCH)	UNIT	6		6
801-03.00	WATER (SEEDING & SOODING)	M.G.	1		1
801-01.00	SOODING (NEW SOO)	S.Y.	20		20

1. INCLUDES ALL COST FOR REPLACING OR REWELDING EXISTING LOOSE OR BROKEN ANCHOR STRAPS TO EXPANSION JOINT AT PIER NO. 1 AND RESETTING JOINT IN NEW CONCRETE FOUR. SEE DRAWING NO. BR-32-94 FOR NOTES AND DETAILS.

2. INCLUDES ALL COSTS FOR INSTALLING THE BRIDGE DECK CRACK SEALER (HMWM) INCLUDING CRACK PREPARATION, CLEANING, LABOR, SAND AND ALL MISCELLANEOUS MATERIALS REQUIRED TO SEAL THE BRIDGE DECK CRACKS ACCORDING TO SPECIAL PROVISION 604CR AND MANUFACTURER'S SPECIFICATIONS. THIS ITEM DOES NOT INCLUDE THE COST OF FURNISHING THE BRIDGE DECK CRACK SEALER (HMWM). THE DEPARTMENT OF TRANSPORTATION, STATE OF TENNESSEE ENGINEER SHALL FIELD LOCATE ALL BRIDGE DECK CRACKS TO BE SEALED.

3. INCLUDES ALL COSTS FOR FURNISHING THE SEALER MATERIAL (HMWM) FOR SEALING CRACKS. THE SEALER (HMWM) SHALL BE IN ACCORDANCE WITH SPECIAL PROVISION 604CR.

4. INCLUDES APPROXIMATELY 20 L.F. OF 4' CHAIN-LINK FENCE AT NORTHWEST SIDE OF ABUTMENT NO. 1.

5. QUANTITY MAY BE ADJUSTED BY ENGINEER.

6. TO BE MOUNTED ON DRUM IN TRANSITION AREAS AS ENGINEER DEEMS NECESSARY.

7. INCLUDES 32 S.F. VP-1L AND 16 S.F. VP-1R.

8. INCLUDES THE INSTALLATION AND MAINTENANCE OF A NEW SIGN PANEL, SHEETING, AND SUPPORTS. SEE SPECIAL PROVISION NO. 712F.

UTILITY NOTES

THE LOCATION OF UTILITIES SHALL BE FIELD LOCATED BY THE CONTRACTOR, AND BY CONTACTING THE UTILITY COMPANIES INVOLVED. SOME UTILITIES CAN BE LOCATED BY CALLING THE TENNESSEE ONE CALL SYSTEM, INC. AT 1-800-351-1111.

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

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

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

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

GENERAL NOTES

SPECIFICATIONS: Standard Road and Bridge Specifications of the Tennessee Department of Transportation. (March 1, 1995 edition)

DESIGN SPECIFICATIONS: AASHTO 1996 Edition with addenda.

SHOP DRAWINGS: SHALL BE SUBMITTED ACCORDING TO SPECIAL PROVISION NO. 105A. EXCEPT SHOP DRAWINGS SHALL BE SUBMITTED TO THE HEADQUARTERS BRIDGE INSPECTION AND REPAIR OFFICE IN LIEU OF THE DIVISION OF STRUCTURES.

WELDING: ANSI/AASHTO/AWS D1.5-88 BRIDGE WELDING CODE and the Standard Specifications.

SPECIAL NOTE TO CONTRACTOR: Contractor shall use extreme care and take any measure necessary to insure that no debris is dropped into the stream. Any debris which is allowed to drop on the banks below the bridge shall not be allowed to enter the stream and shall be removed and disposed of by the contractor. Cost of removing and disposing of debris shall be included in items bid on.

CONCRETE (EXPANSION JOINT REPAIR): SHALL BE HIGH EARLY STRENGTH CONCRETE WITH A COMPRESSIVE STRENGTH OF 3000 psi AT 18 HOURS. THE CONTRACTOR SHALL PROVIDE PROOF PRIOR TO BEGINNING WORK THAT THE PROPOSED CONCRETE MIX WILL OBTAIN REQUIRED PROPERTIES. PROOF SHALL BE PROVIDED BY AN INDEPENDENT TESTING COMPANY AND SUBMITTED TO THE MATERIALS AND TEST DIVISION OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION FOR APPROVAL. THE MIX TO MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS CLASS "A", EXCEPT THE CEMENT CONTENT SHALL BE A MINIMUM OF 714 lb/c.y. A HIGH RANGE, WATER REDUCING ADMIXTURE (SUPERPLASTICIZER) SHALL BE USED SUBJECT TO THE APPROVAL OF THE ENGINEER. THE WATER CEMENT RATIO SHALL BE A MINIMUM OF 0.40, AND FLY ASH REPLACEMENT WILL BE PERMITTED AND THE CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 3000 psi IN 18 HOURS. TRAFFIC SHALL NOT BE PERMITTED ON ANY OF THE REPAIR AREAS UNTIL TEST SPECIMENS ATTAIN A COMPRESSIVE STRENGTH OF 3000 psi MINIMUM AND THE CONCRETE HAS BEEN IN PLACE A MINIMUM OF 18 HOURS.

CONCRETE CURING: ALL CONCRETE IN REPAIR AREAS SHALL BE CURED ACCORDING TO THE STANDARD SPECIFICATIONS.

CRACK SEAL (HMWM): APPLY HIGH MOLECULAR WEIGHT METHACRYLATE (HMWM) CRACK SEAL IN JOINTS AROUND NEW BRIDGE END DRAIN AND AROUND NEW EXPANSION JOINT. SEALER SHALL BE APPLIED AFTER ALL CONCRETE HAS BEEN IN PLACE A MINIMUM OF TWO DAYS.

EXPANSION JOINTS: FOR ADDITIONAL GENERAL NOTES APPLICABLE TO STRIP SEAL EXPANSION JOINTS, SEE STANDARD DRAWING NO. SBR-2-115, SBR-2-116 AND SBR-2-100. ALSO SEE SPECIAL PROVISION NO. 604S.

HIGH EARLY STRENGTH CONCRETE (SUB-FOOTING REPAIRS): THE MIX TO MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS, CLASS "A", EXCEPT THE CEMENT CONTENT SHALL BE A MINIMUM OF 714 LBS., THE WATER CEMENT RATIO SHALL BE A MAXIMUM OF 0.40, NO NO FLY ASH REPLACEMENT WILL BE PERMITTED, AND THE MINIMUM 28 DAY COMPRESSIVE STRENGTH SHALL BE 3,500 P.S.I. TRAFFIC SHALL NOT BE PERMITTED ON ANY OF THE REPAIR AREAS UNTIL TEST SPECIMENS ATTAIN A COMPRESSIVE STRENGTH OF 3,000 P.S.I. MINIMUM AND THE CONCRETE HAS BEEN IN PLACE A MINIMUM OF TEN (10) DAYS.

DEMOLITION: THE CONTRACTOR SHALL TAKE SPECIAL CARE TO PROTECT ANY PARTS OF THE STRUCTURE THAT ARE NOT TO BE REMOVED SPECIFICALLY. THE CONTRACTOR IS NOT ALLOWED TO USE A HYDRAULIC RAM MOUNTED ON A BACKHOE (COMMONLY CALLED A "HIE RAM") OR OTHER SIMILARLY HEAVY EQUIPMENT FOR CONCRETE REMOVAL. PNEUMATIC HAMMERS MAY BE USED TO REMOVE UNSOUND CONCRETE. FOR FULL DEPTH OF CONCRETE SLAB REMOVAL EXCEPT OVER BEAMS, THE MAXIMUM HAMMER SIZE IS 20 POUND CLASS. FOR PARTIAL DEPTH OF CONCRETE SLAB REMOVAL AND ANY WORK OVER BEAMS, THE MAXIMUM HAMMER SIZE IS 60 POUND CLASS. SAWING OR CUTTING OF THE CONCRETE IS ACCEPTABLE SO LONG AS ANY SPECIFIED PROJECTION OF THE EXISTING REINFORCING STEEL IS MAINTAINED. ALL DEVICES PROPOSED FOR CONCRETE DEMOLITION SHALL MEET THE APPROVAL OF THE ENGINEER.

RIP-RAP: RUBBLE STONE RIP-RAP SHALL BE HAND PLACED IN ACCORDANCE WITH SUBSECTION 709.06 AND 709.07 OF THE STANDARD SPECIFICATION AND SHALL BE MEASURED AND PAID FOR UNDER ITEM NOS. 709-07 AND 709-02.

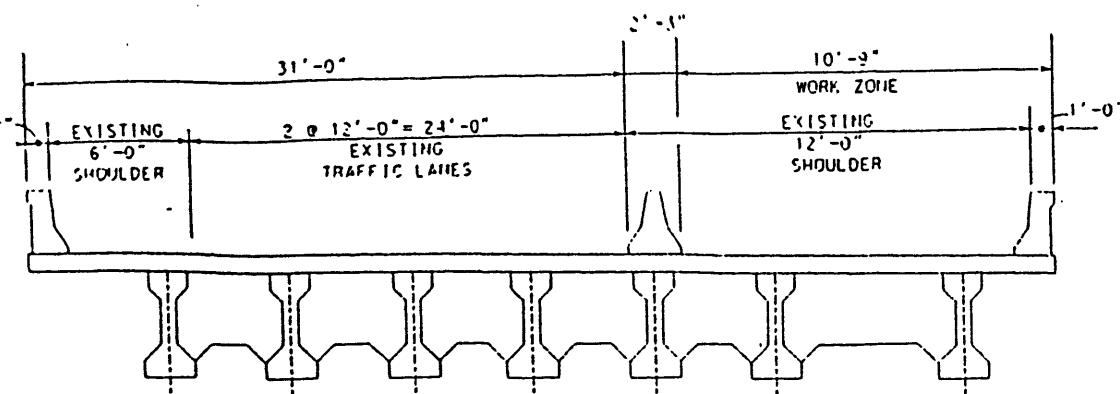


DEPARTMENT OF TRANSPORTATION
ESTIMATED QUANTITIES & GENERAL NOTES
INTERSTATE 40 (W.B.L.) OVER
HICKMAN CREEK AND CANEY FORK RIVER
BRIDGE NO. 80-140-10.37
BRIDGE NO. 80-140-12.91
SMITH COUNTY
1998

BR-32-90

DESIGNED BY: JERRY MACFEE 5/4 05/1998
CHECKED BY: C. C. NELSON 5/4 05/1998
SUPERVISOR BY: J. D. WILSON & J. CHRISTIANSON 5/4 05/1998
DATE: 5/4/98

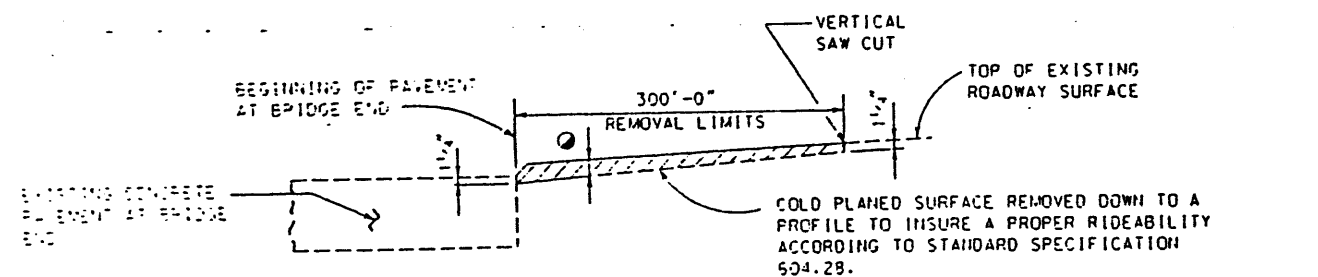
PROJECT NO.	YEAR	SHEET NO.
80001-1100-11	1998	
REVISIONS		
NO.	DATE	BY



TYPICAL CROSS-SECTION

PHASE I
LOOKING WEST

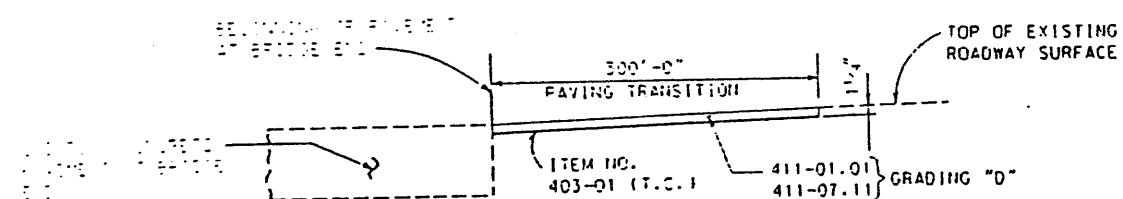
NOTE: AFTER PHASE I CONSTRUCTION IS FINISHED, THE APPROACH ASPHALT SHALL BE COLD-PLANED AND A NEW 1 1/2" ASPHALT OVERLAY PLACED. THE NEW ASPHALT OVERLAY SURFACE SHALL MEET PROPER RIDEABILITY STANDARDS. TEMPORARY TRAFFIC CONTROL WILL BE NEEDED DURING THE COLD PLANING AND REPAVING OPERATIONS.



ASPHALT REMOVAL

⊙ DENOTES: VARYING ASPHALT THICKNESS (1 1/4" TO 2 1/2") TO BE REMOVED

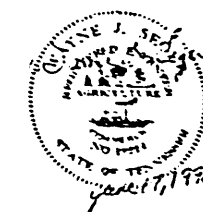
▨ DENOTES: ASPHALT TO BE REMOVED



NEW ASPHALT TRANSITION

PAVEMENT TRANSITION DETAILS

NOTE: THE CONTRACTOR SHALL BE REQUIRED TO COLD PLANE AND PAVE IN THE DIRECTION OF TRAFFIC.



DEPARTMENT OF TRANSPORTATION

BRIDGE REPAIR DETAILS
INTERSTATE 40 (W.B.L.) OVER
HICKMAN CREEK
BRIDGE NO. 80-140-10.37
SMITH COUNTY
1998

SR-32-91

DESIGNED BY: J. J. Mackle
DRAWN BY: J. J. Mackle
CHECKED BY: J. J. Mackle
APPROVED BY: J. J. Mackle

April 1998

May 1998

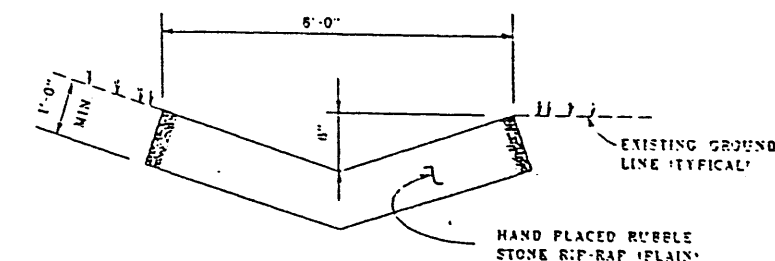
June 1998

July 1998

PROJECT NO.	YEAR	SHEET NO.
80001-140-01	1979	
REVISIONS		
NO.	DATE	BY

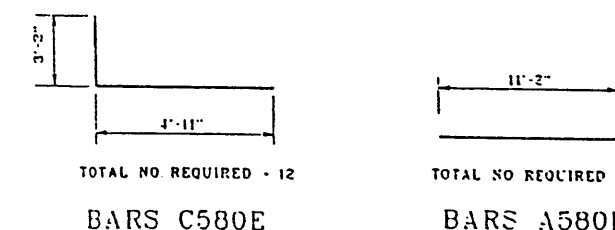
NOTES:

- BEFORE ADDITION OF NEW SUB-FOOTING, EXISTING BACKFILL SHALL BE EXCAVATED SUFFICIENT TO EXPOSE FRONT AND BACK OF ALL PILES WITHIN LIMITS OF NEW SUB-FOOTING.
- CONSTRUCT ABUTMENT SUB-FOOTING USING CLASS "A" 10,000 PSI CONCRETE. SUB-FOOTING SHALL BE CAST AS INDICATED IN DETAILS THIS SHEET, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. COST OF MATERIAL AND LABOR SHALL BE INCLUDED IN THE BID ITEMS 604-03.01 AND 604-10.18.
- REESTABLISH FILL SLOPE TO LINES SHOWN.
- AFTER EXCAVATION AND PLACING RIP-RAP, THE CONTRACTOR SHALL GRADE AND REPAIR ALL ENDFILL AND SIDE FILL SLOPE AREAS INCLUDING SEEDING AND SOODING. COST OF ALL GRADING, SEEDING AND SOODING SHALL BE INCLUDED IN ITEMS BID ON.



SECTION "X-X"

SHOWING DETAILS OF NEW DRAINAGE DITCH. COST OF PLACING NEW DRAINAGE DITCH AS SHOWN IN SECTION X-X ABOVE TO BE INCLUDED IN ITEM NO. 709-07. RUBBLE STONE RIP-RAP (PLAIN, C.Y.) APPROXIMATELY 35'-0" LINEAR FEET OF NEW DRAINAGE DITCH WILL BE REQUIRED AT ABUTMENT NO. 1. SIDE FILL SLOPE AREAS. SEE PLAN VIEW OF EXISTING ABUTMENT NO. 1 THIS SHEET.

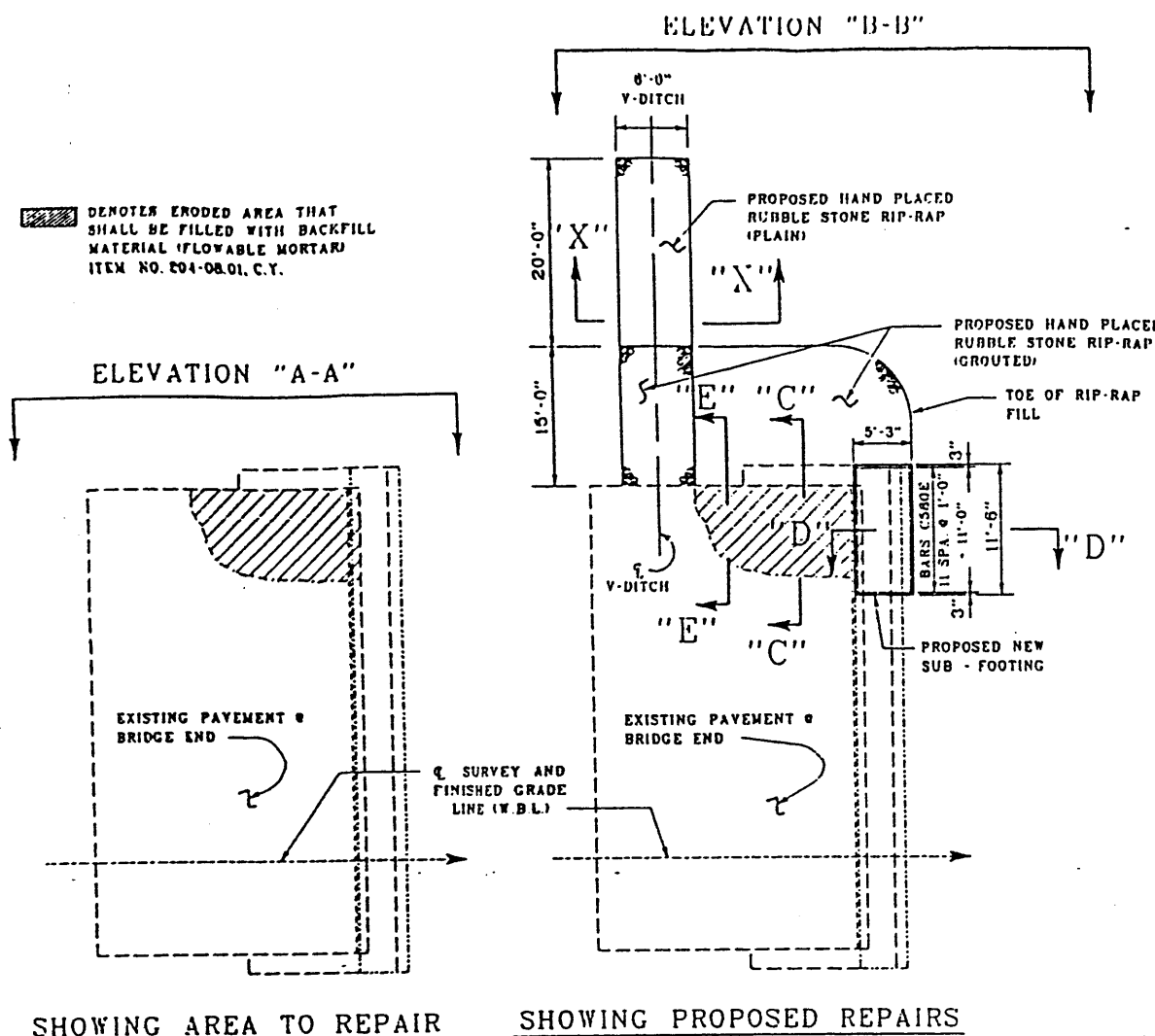


BAR BENDS



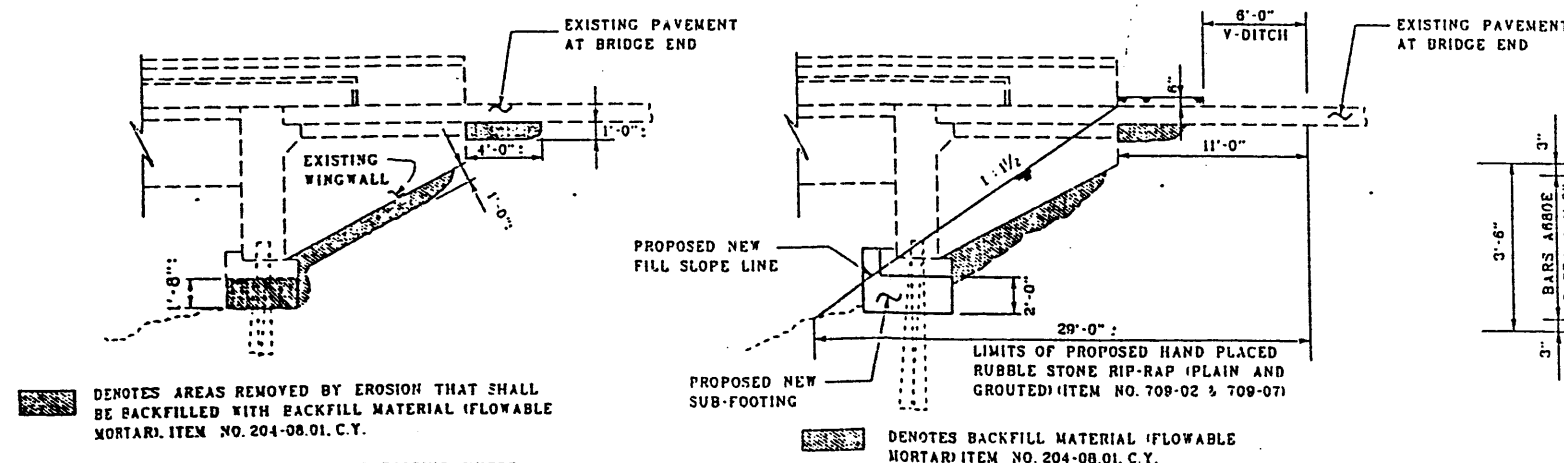
BRIDGE REPAIR DETAILS
INTERSTATE 40 OVER
HICKMAN CREEK
BRIDGE NO. 80-140-10.37
SMITH COUNTY
1998

FR-32-92



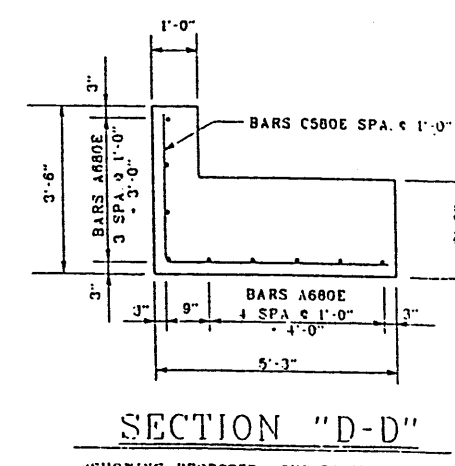
PLAN VIEW OF EXISTING ABUTMENT NO.1 (W.B.L.)

HIGH EARLY STRENGTH CONCRETE (SUB-FOOTING REPAIRS): THE MIX TO MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS, CLASS "A", EXCEPT THE CEMENT CONTENT SHALL BE A MINIMUM OF 714 LBS. THE WATER CEMENT RATIO SHALL BE A MAXIMUM OF 0.40. NO FLY ASH REPLACEMENT WILL BE PERMITTED. AND THE MINIMUM 28 DAY COMPRESSIVE STRENGTH SHALL BE 3,500 p.s.i. TRAFFIC SHALL NOT BE PERMITTED ON ANY OF THE REPAIR AREAS UNTIL TEST SPECIMENS ATTAIN A COMPRESSIVE STRENGTH OF 3,000 p.s.i. MINIMUM AND THE CONCRETE HAS BEEN IN PLACE A MINIMUM OF TEN (10) DAYS. COST OF THE CONCRETE SHALL BE INCLUDED IN ITEM NO. 604-03.01.



ELEVATION "A-A"

ELEVATION "B-B"



SECTION "D-D" (SHOWING PROPOSED SUB-FOOTING ONLY)

CONSTR. NO. 80001-3152-44			
PROJECT NO.		YEAR	SHEET NO.
IR-40-5(91)257		1989	
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION
1	10/13/89	HP	ELIMINATED PEEV NOTE, AD NEW NOTE
2	9/29/89	DWT	CONSTR. JT. ADDED
</			

Notes:

For Roadway Data not shown, see Roadway plans.

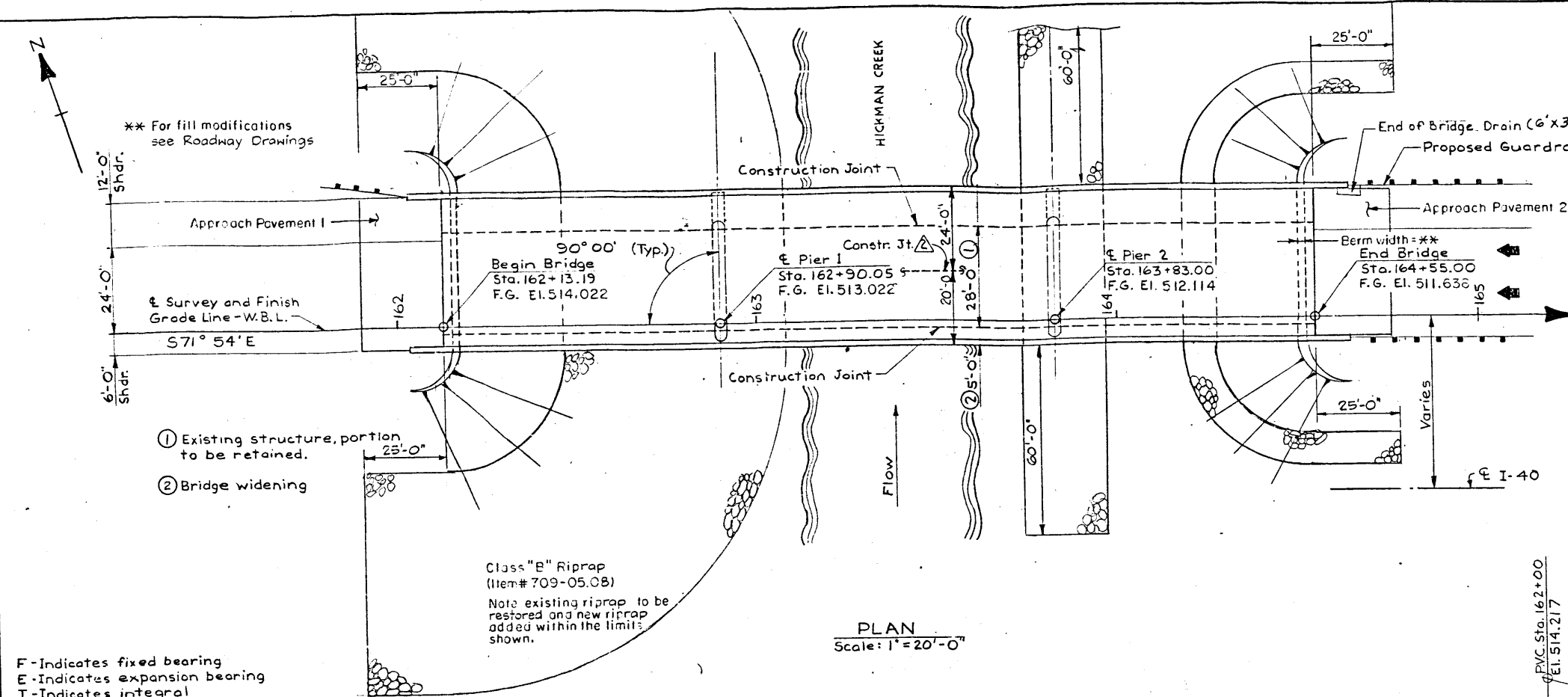
➡ Denotes direction of one lane of traffic.

2009 ADT = 30,000

Design velocity = 65 mph.

NOTE: FOR CONSTRUCTION SEQUENCE SEE DWO NO. M-214-59A.

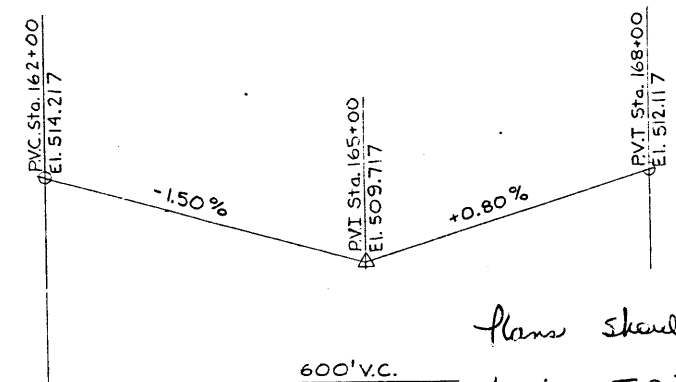
The contractor shall perform all possible work as determined by the engineer prior to traffic being detoured.



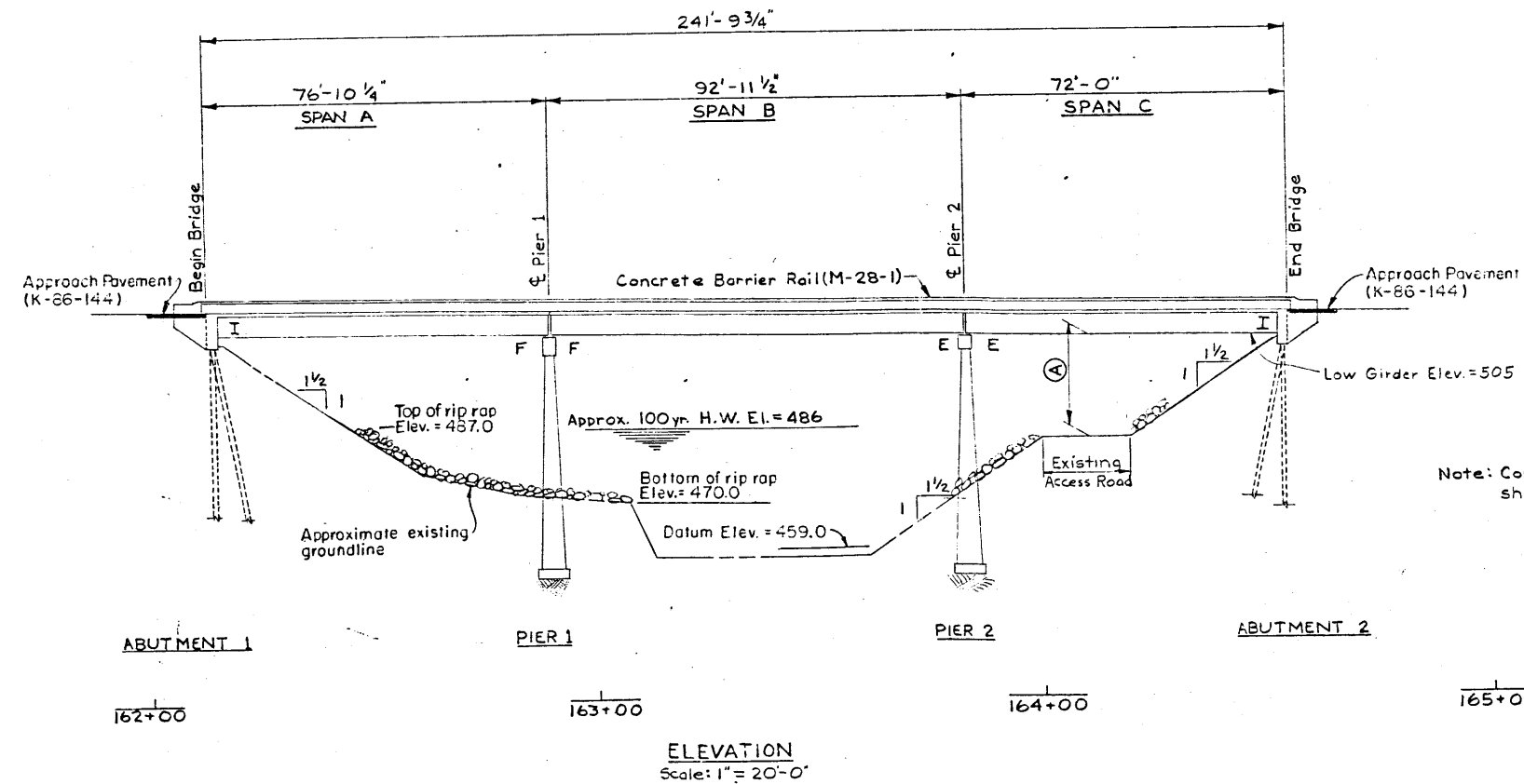
F - Indicates fixed bearing
E - Indicates expansion bearing
I - Indicates integral

(A) 16'-6" minimum vertical clearance

* Actual vertical clearance = 24'-0"



Plans should show the bridge ID# of 8010040022 for the WBL of I-40



Note: Conditions of fixity are shown for new beams.

Hydraulic Design Data

Drainage Area = 46.0 sq. miles

Design Discharge (100 yr) = 17700 cfs

Area Below 100 yr elevation = 2300 sq. ft.

Velocity (100 yr) = 7.7 fps

Roadway over topping elevation = 511.9

500 yr Discharge = 23100 cfs

BRIDGE NO. 1

Sheet 1 of 2

STATE OF TENNESSEE

DEPARTMENT OF TRANSPORTATION

BUREAU OF HIGHWAYS

LAYOUT OF BRIDGE WIDENING

I-40 W.B.L. OVER

HICKMAN CREEK

STA. 162+13.19 W.B.L. I-40

BRIDGE ID# WBL-80100400021

SMITH COUNTY

1989

DESIGNED BY D.W. TAYLOR DATE 10-88

DRAWN BY W.D. MCGREADY DATE 10-88

SUPERVISED BY W.S. HUFFSTETLER DATE 10-88

CHECKED BY D.W. TAYLOR DATE 1-89

CORRECT

ENGINEER OF STRUCTURES

APPROVED

DIRECTOR OF HIGHWAYS

M-214-34

CLASS "A", GRADING "D" = 28 C.Y. 80-I-40-10mbs 3

LIST OF DRAWINGS

Layout of Bridge Widening - W.B.L.	M-214-34
Layout of Bridge Widening - E.B.L.	M-214-35
General Notes	M-214-36
Estimated Quantities	M-214-37
Repair Details	M-214-38
Superstructure Details - W.B.L.	M-214-41
Superstructure Details - E.B.L.	M-214-42
Prestressed Concrete - I-Beam (Type IV) - Spans A&C - W.B.L.	M-214-43
Prestressed Concrete - I-Beam (Type IV) - Span B - W.B.L.	M-214-44
Prestressed Concrete - I-Beam (Type IV) - Spans A&C - E.B.L.	M-214-45
Prestressed Concrete - I-Beam (Type IV) - Span B - E.B.L.	M-214-46
Bearing Details	M-214-47
Abutment Details (1)	M-214-48
Abutment Details (2)	M-214-49
Abutment Details (3)	M-214-50
Abutment Details (4)	M-214-51
Abutment Details (5)	M-214-52
Piers 1 & 2	M-214-53
Piers 1 & 2	M-214-53A
Piers 1 & 2	M-214-54
Bill of Steel	M-214-55
Bill of Steel	M-214-56
Bar Bending Details	M-214-57
Sounding Sketch - W.B.L.	M-214-58
Sounding Sketch - E.B.L.	M-214-59

DRAWING NO.

LATEST REV. DATE

G-15-16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28 & 29
G-10-99

CONSTRUCTION SEQUENCE

Existing Bridge Drawings

**Note: Only Existing Bridge Dwg's G-15-16 & G-15-22 to be printed with Plans.
Note: Drawing No.'s M-214-39 & M-214-40 not used.

STANDARD DRAWINGS

Std. Reinf. Bar Support	K-80-14	08-27-76
Misc. Abutment & Drainage Details	K-85-150	06-25-87
Pneumatic Concrete Repairs	K-86-4	02-05-73
Reinf. Concrete Pavement at Bridge Ends	K-86-144	07-17-81
Bridge Railing-Concrete Parapet	M-28-1	11-01-88
Concrete Median Barrier and Parapet Drains	M-28-1A	09-08-87
Std. Pile Details	M-174-150	

*Asterisk denotes these standards to be printed with plans.

LIST OF SPECIAL PROVISIONS

SPECIAL PROVISION NUMBER	Date LATEST REVISION	LIST OF SPECIAL PROVISIONS
105A	07-21-87	Regarding Approval of Shop Drawings
602	05-15-89	Regarding 602 Steel Structures Section
603A	11-01-88	Regarding Painting
604	11-06-87	Regarding Concrete Structures
604C	01-26-88	Regarding Structural Concrete
604R	01-20-89	Regarding Rideability of Bridge Decks and Roadway Approaches
709	03-20-88	Regarding Side Drain and Bridge Drains
709A	05-04-87	Regarding Machined Rip Rap
907A	03-25-85	Regarding Epoxy Coated Reinforcing Steel

① Stage Construction-Abutments Bridge No. 1, 3 & 6 M-214-52A

GENERAL NOTES

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

LOADING: HS20-44 with Alternate Military.

DESIGN SPECIFICATIONS: AASHTO 1983 Edition with addenda.

CONCRETE: To be Class 'A'. $f'c = 4,500$ psi for superstructure concrete and 3,000 psi for substructures and parapets.

Class A Concrete for bridge decks shall be in accordance with Section 604 of the Standard Specifications except as modified by Special Provisions 604-C.

BRIDGE DECK SURFACE FINISH: To be in accordance with Note (c) sheet 2 of Special Provisions 604.

BRIDGE DECK FORMS: Bridge Deck Forms for concrete decks shall be constructed using removable forms only. The contractor shall take steps to assure the stability of the exterior girder against twisting or over turning during slab pouring operations. When the width of the overhang exceeds the depth of the exterior girder, details and design calculations for the cantilever support system shall be submitted to the Engineer for approval.

Bearing Devices shall be in accordance with the details and dimensions shown on drawing M-214-47.

REINFORCING STEEL: To be ASTM A615 Grade 60. Standard CRSI hook details apply unless otherwise noted on Bill of Steel. Spacing dimensions are center to center and cover dimensions are clear distance unless otherwise noted. Placing Tolerances are $\pm 1/2$ for spacing and $-1/8$ or $+ 3/8$ for cover. The suffix E, for bars so marked, denotes epoxy coated reinforcement. See Special Provisions 907A.

PILES: To be HP10x42 driven to refusal on rock or minimum bearing of 55 tons per pile.

Piles at Abutment 1&2 shall be equipped with APF 20 lb. Pruyt 7575Q DFP 23 lb. Hard-bite, VERSA-BITE 20 lb. V831Q, I.C.E. 20 lb. Std. pile point driving tips or approved equal welded to the pile in accordance with the manufacturers recommendation. The cost of the driving tips shall be included in the unit price bid for piles.

BRIDGE RAIL SYSTEM: Build parapets according to Standard DRAWING M-28-1.

GROUTED BARS IN DRILLED HOLES: Horizontally drilled holes shall be drilled $1/2$ in diameter larger than the bar, cleaned, packed with non shrink grout and driven to its seat. Vertically drilled holes shall be drilled $1/4$ in diameter larger than the bar, cleaned, packed with epoxy grout and driven to its seat. All grouting material shall be approved by T.D.O.T. Materials and Tests.

SHOP DRAWINGS: See Special Provision No. 105A.

DRILLED-IN ANCHORS:

Certification: The contractor shall furnish certified anchor pull out data from an independent testing laboratory using Class 'A' concrete as prescribed by Tennessee Highway Specifications. The required ultimate load for $7/8$ dia. Anchor is 19,000 lbs., 18,000 lbs. for $3/4$ dia. Anchors, 12,000 lbs. for $5/8$ dia. Anchors and 9,000 lbs. for $1/2$ dia. Anchors. In Place Requirements: The units shall be sub-set $3/32$ to $1/4$ and torqued, with base plate in place, to an equivalent direct pull out load of 60 percent of required ultimate load. Slippage shall not exceed $1/4$. The Department will perform testing of Anchors on site to insure the specified in place requirements. Installations not meeting these requirements must be corrected at the contractors expense.

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.

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 II finish. The color of the finish shall be similar to Mountain Gray, Federal Specification No. 3544Q, Federal Color Standard No. 535a, 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-C4.01 & 604-C4.02.

NOTE: The Contractor shall check the location of all existing substructures and verify span lengths before fabricating girders.

NOTE: The fills at the ends of the bridge shall be in place and thoroughly compacted before any abutment piles are driven.

RP-RAP: Machined rip-rap shall be Class B in accordance with Special Provision 709 and shall be paid for under Item 709-05.08 ton.

PAINT: System B - Inorganic zinc - Urethane Finish Bright Green Top Coat - See Tennessee Standard Specification 603.05(b) and Special Provision 603A.

STRUCTURAL STEEL: See notes on Drawing No. M-214-53A.

WELDING: See Special Provisions No. 602 and notes on Drawing No. M-214-53A.

RADIOGRAPHIC, ULTRASONIC, AND MAGNETIC INSPECTION: See Special Provision No. 602 on Drawing No. M-214-53A.

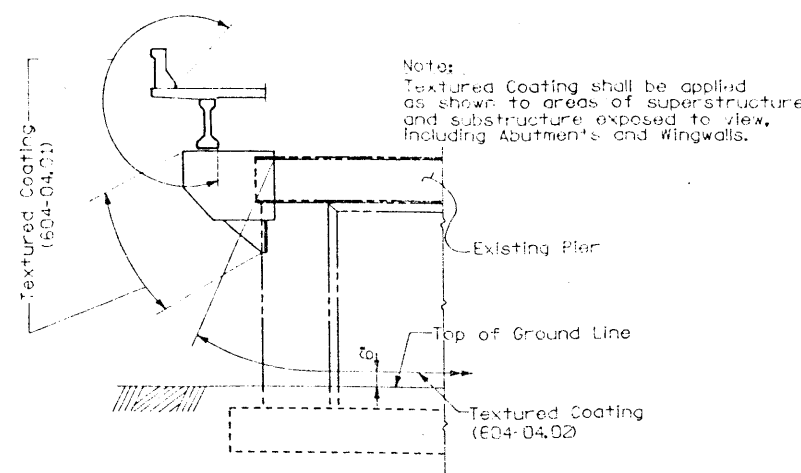
STEEL STRUCTURES: See Tennessee Standard Specification Section 602 and notes on Drawing No. M-214 53A.

NOTE: The Contractor shall accept full responsibility of maintaining the structural integrity of the existing bridge during construction. Any damage to structural members to be left in place shall be repaired to the satisfaction of the Engineer and paid for at the Contractor's expense.

TESTING MECHANICAL COUPLERS: In addition to requirements stated elsewhere within these plans, the Contractor will prepare, under field conditions, two (2) specimens of each size utilized. This will be in addition to required certifications. Each coupled rebar in the specimens shall be a minimum of 30 inches in length. The Department will test, at their discretion, each specimen 125 % of the specified tension yield strength of the rebar prior to coupler approval.

CONSTR. NO. 80001-3152-44

PROJECT NO.	YEAR	SHEET NO.	
IR-40-EX91257	1989		
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION
1	10/10/89	W.P.	ADDED DWG. NO. M-214-52A
2	9-29-89	DWT	ADDED DWG. NO. M-214-52A M-214-166A



DETAIL SHOWING LIMITS OF TEXTURED COATING

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS
GENERAL NOTES
I-40 OVER
HICKMAN CREEK
STA. 162+13.19 W.B.L.
STA. 165+29.50 E.B.L.
SMITH COUNTY
1989

CORRECT

ENGINEER OF STRUCTURES

APPROVED

SECTION OF HIGHWAYS

M-214-36

DESIGNED BY: HCL
DRAWN BY: EAB/TLK
SUPERVISED BY: HSH
CHECKED BY: HCL
DATE: 11/88
DATE: 11/88
DATE: 11/88
DATE: 3/89

- ① NOTE: Cost of 4 bridge deck drains to be included in the unit price bid for Class 'A' Concrete (Bridge Deck). For Drain Locations see Dwg. No. M-214-34 & M-214-35.
- ② NOTE: Cost of Elastomeric pads, rubber bonding cement, and anchor bolts to be included in the cost of prestressed beam.
- ③ NOTE: Cost of polyethylene sheeting and all miscellaneous items necessary for installation to be included in cost of perforated Pipe.
- ④ NOTE: The cost of 14 Insert assemblies and 56 7/8" dia. x 4" hex head bolts, (A307), to be included in Item M-28-1.

- ⑤ NOTE: The cost of removing the exterior portion of the existing slab, portions of the existing abutment, and the bridge rail shall be included in the unit price bid for Item 202-04.01.
- ⑥ All reinforcing steel in the parapet shall be epoxy coated. Cost to be included in the price bid for Item 620-03.
- ⑦ The cost of removing any existing asphalt overlay shall be included in the unit price bid for scarifying.
- ⑧ Items No.'s 604-10.30, 604-10.50, 709-05.08, and 622-01, shall be bid with the contingency that these items may be increased, decreased or eliminated as directed by the Engineer.

- ⑨ BRIDGE ID# W.B.L. - 80100400021 (Sta. 162+13.19)
BRIDGE ID# E.B.L. - 80100400022 (Sta. 165+29.50)
- ⑩ NOTE: Square yard for pavement at bridge ends shall be measured as road surface area and shall include all concrete, reinforcing steel, piles, joint material, notch for roadway drain, surface finish as per SP 604 and any other incidentals necessary for complete installation.
- ⑪ NOTE: For sketches and notes on Concrete repairs, see Drawing M-214-38.
- ⑫ Includes blast cleaning and painting existing bridge bearings.
- ⑬ Support Frame for Pier Extension.
- ⑭ Excavation based on existing ground.

- ⑮ The use of a rammer is prohibited for removal of concrete. See notes on Dwg. No. M-214-38.
- ⑯ Guardrail attachment to bridge rail post shall be installed prior to all traffic being detoured onto Westbound Bridge. All Materials, Labor, etc. for installation shall be included under Item 705-10.23.
- ⑰ Includes quantities for Abutment Sub-beam, see Dwg. M-214-38.

CONSTR. NO. 80001-3152-44

PROJECT NO.	YEAR	SHEET NO.
IR-40-5(9)1257	1989	
REVISIONS		
NO.	DATE	BY
1	9/25/88	DWT
		Revised Reinf.

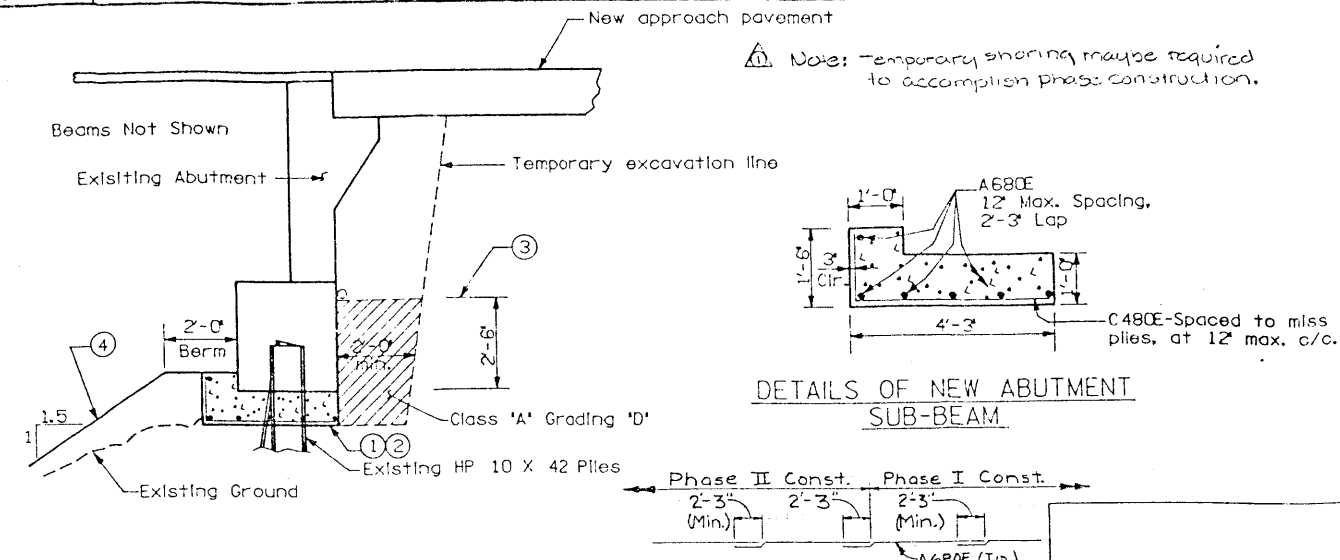
ESTIMATED QUANTITIES

ESTIMATED QUANTITIES																										
BID ITEM NO.	202-04.01 REMOVAL OF STRUCTURES	204-02.01 DRY EXCAVATION (BRIDGES)	602-02.01 STRUCTURAL STEEL	603-02.01 REPAINTING EXISTING STEEL STRUCTURES	604-01.12 CLASS 'A' CONCRETE (BRIDGE DECK)	604-02.03 EPOXY COATED REINFORCING STEEL	604-03.01 CLASS 'A' CONCRETE (BRIDGES)	604-03.02 STEEL BAR REINFORCEMENT (BRIDGES)	604-03.04 PAVEMENT AT BRIDGE ENDS	604-04.01 APPLIED TEXTURE FINISH (NEW STRUCTURES)	604-04.02 APPLIED TEXTURE FINISH (EXISTING STRUCTURES)	604-10.30 BRIDGE DECK REPAIR (FULL DEPTH)	604-10.50 BRIDGE DECK REPAIR (PARTIAL DEPTH)	604-36 SCARIFYING	606-02.03 STEEL PILES (10 INCH)	615-01.04 PRESTRESSED CONCRETE I-BEAM (TYPE IV) 54" ~~48~~ DEEP	620-03 CONCRETE PARAPET (M-28-1)	622-01 PNEU- MATICALLY PLACED CONCRETE	705-10.23 GUARDRAIL ATTACHMENT TO BRIDGE RAIL POST	709-05.08 MACHINED RIP-RAP (CLASS B)	710-09.01 6" PERF. PIPE WITH VERTICAL DRAIN SYSTEM	710-09.02 6" PIPE UNDERDRAIN				
ITEM	⑤⑨⑮ L.S.	⑭ C.Y.	⑨⑬ LB.	⑨② L.S.	① C.Y.	⑰① LB.	⑰ C.Y.	LB.	⑩ S.Y.	S.Y.	S.Y.	⑧⑪ S.Y.	⑧⑪ S.Y.	⑦ S.Y.	L.F.	② L.F.	④⑥ L.F.	⑧⑪ S.F.	⑮ L.F.	⑧ TON	③ L.F.	③ L.F.				
STRUCTURE																										
WEST BOUND LANE																										
Superstructure					230	53090				839	193					239										
Abutment 1		33			25	1861	8	2507		41	11				47							54	12			
Pier 1			3400				11	2233		31	316							70								
Pier 2			3400				11	2233		31	307							570								
Abutment 2		33			25	1861	8	2507		41	11				48						54	12				
Subtotal	.5	66	6800	.5	280	56812	38	9480	220	983	838	104	128	752	95	239	526	640		355	106	24				
EAST BOUND LANE																										
Superstructure					257	60026				941	223					274										
Abutment 1		7			35	1688	4	2191		44	16				60						37	12				
Pier 1			4100				14	2750		31	414							120								
Pier 2			4100				14	2750		31	293							870								
Abutment 2		7			35	1688	4	2152		44	15				45						37	12				
Subtotal	.5	14	8200	.5	327	63402	36	9243	0	1091	961	0	90	915	95	274	611	990		235	74	24				
Totals	1.0	80	15000	1.0	607	120214	74	19323	220	2074	1799	104	218	1667	190	513	1137	1630		590	182	48				

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS
ESTIMATED QUANTITIES
I-40 OVER
HICKMAN CREEK
STA. 162+13.19 W.B.L.
STA. 165+29.50 E.B.L.
SMITH COUNTY
1989

DESIGNED BY: HCL
DRAWN BY: EAB/MLK
SUPERVISED BY: WSH
CHECKED BY: HCL
DATE: 11-88
DATE: 11-88
DATE: 11-88
DATE: 2-89

CORRECT
ENGINEER OF STRUCTURES
APPROVED
DATE: 11-88



SECTION THRU W.B.L. ABUTMENTS 1 AND 2

NOTES:

- Before addition of new approach pavement, backfill shall be excavated sufficient to expose front and back of all piles. Vehicular and construction loads will not be permitted on the constructed portion of the bridge during this operation. Corroded areas of piles shall be wire brushed or blast cleaned and repainted per Specification Section 606.15. No separate payment will be made for painting or cleaning.
- Construct abutment sub-beam using Class 'A', f'c=3,000 psi concrete. Sub-beam shall be cast full length of existing retained abutment beam and to the depth specified, unless otherwise directed by the Engineer. Cost of material and labor shall be included in the bid items 604-03.01 and 604-02.03.
- Backfill to limit shown with Class A Grading D Material. Install backfill and underdrain in compliance with Std. Drawing K-85-15Q.
- Reestablish fill slope to lines shown.

REBAR PLACEMENT SKETCH



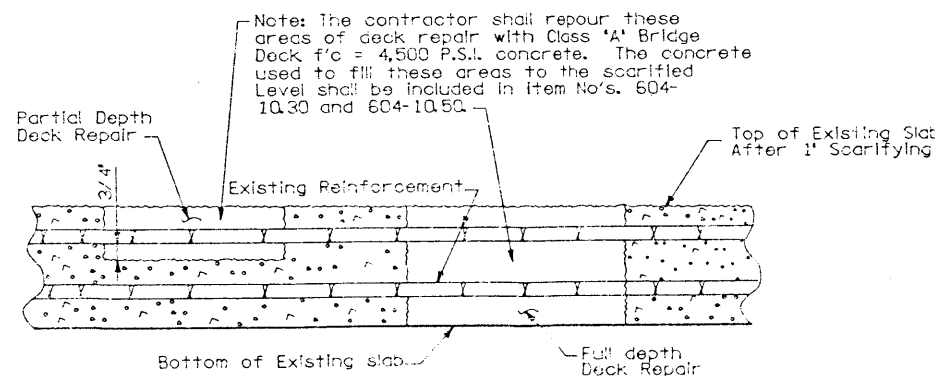
Denotes: Areas for pneumatic concrete repair. The areas to be repaired will be sufficiently larger than the spoiled areas to insure that patches extend into sound concrete. Care shall be taken when removing existing deteriorated concrete in repair areas so as not to damage existing reinforcing steel. All existing reinforcing exposed shall be blast cleaned to remove all rust before placement of pneumatic concrete.

Note: See Tennessee Standard Specifications Section 622 Pneumatically Placed Concrete and Standard Drawing K-85-4.

Note: Cost of removing all unsound and deteriorated concrete, placing of pneumatic concrete, and all labor and materials necessary for completing the work shall be paid for under item no. 622-01 Pneumatically Placed Concrete, sq. ft.

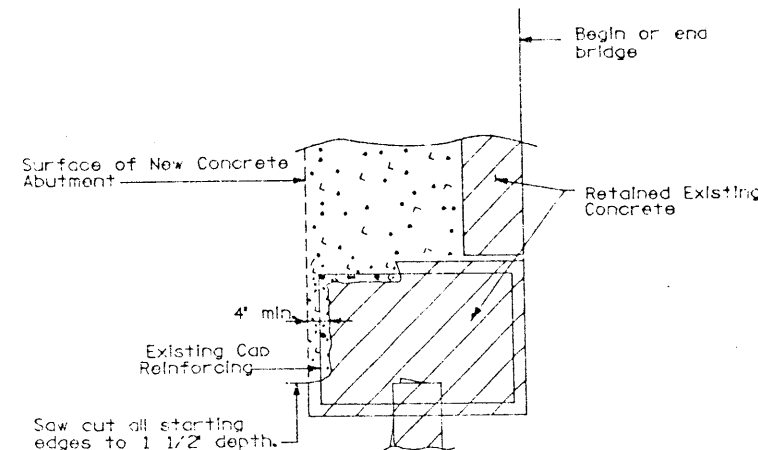
The following areas (minimally), are to be repaired (see elevation sketch):

- Left and end of E.B.L. Pier 1 Cap (approximate area 50 sq. ft.)
- Fire damage areas of E.B.L. Pier 2 forward side (area approximately 300 sq. ft.)
- All cap sides with fillet areas and including top cap surfaces for E.B.L. Pier 2, W.B.L. Pier 2 (approx. area 500 sq. ft. each)
- All exposed surfaces of slab edge beams (between I-beams) at existing expansion joints at Piers 1 and 2, E.B.L. and W.B.L., approx. area 140 sq. ft. each bridge. (Not shown by sketch, see Section B-B, existing bridge Dwg. G-15-2B).



DETAIL SHOWING FULL AND PARTIAL DEPTH DECK REPAIR

Remove concrete in all delaminated areas to a depth of 3/4" below the top mat of Reinforcing steel. All reinforcing steel in areas of deck repair shall be blast cleaned. Areas of concrete removed shall be designated by personnel from the Division of Structures. Deck repair will be paid for under item No. 604-10.5Q Bridge deck repair, (partial depth of slab), S.Y. If deteriorated concrete is encountered which appears to run full depth of slab, the Engineer may designate these areas to be repaired under item No. 604-10.30 Bridge deck repair, (full depth of slab), S.Y. Power driven hand tools used for removal of unsound concrete in making partial depth repairs are subject to the following restrictions: 1) Pneumatic hammers heavier than 35 pound class shall not be used. 2) Chipping hammers of the 15 pound class shall be used to remove concrete from beneath any reinforcing steel.



SECTION THRU EXISTING ABUTMENT BEAMS

This section shall apply where surfaces of abutment beams are deteriorated or have significant surface scaling, and the cap beam is not otherwise replaced by new construction. Deteriorated concrete shall be removed by chipping to sound concrete. If reinforcing is exposed, concrete shall be removed at least 3/4 inch behind reinforcing. The entire area shall be blast cleaned, and all reinforcing corrosion removed before placement of new concrete. No separate payment for these repairs will be made.

CONSTR. NO. 80001-3152-44

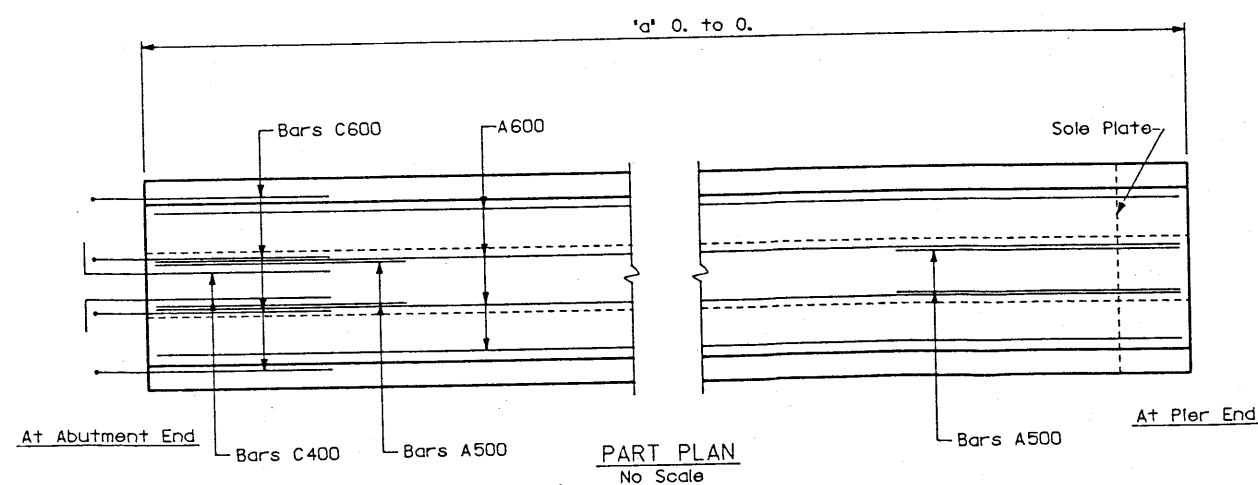
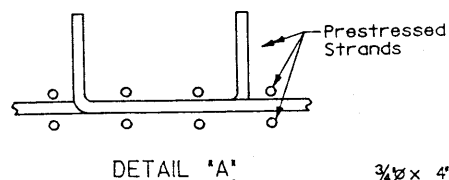
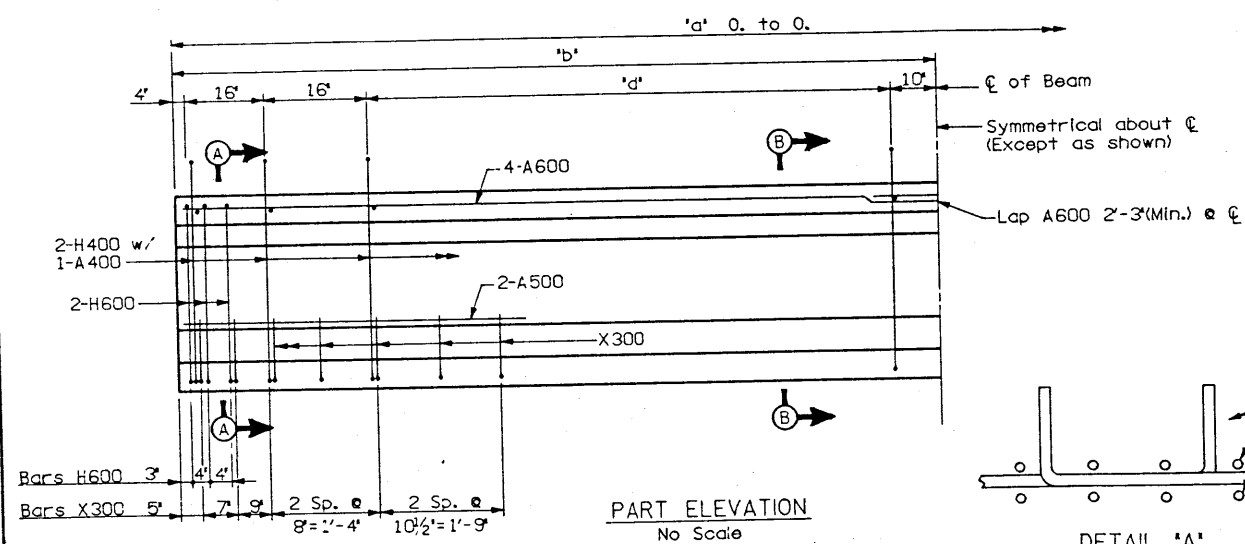
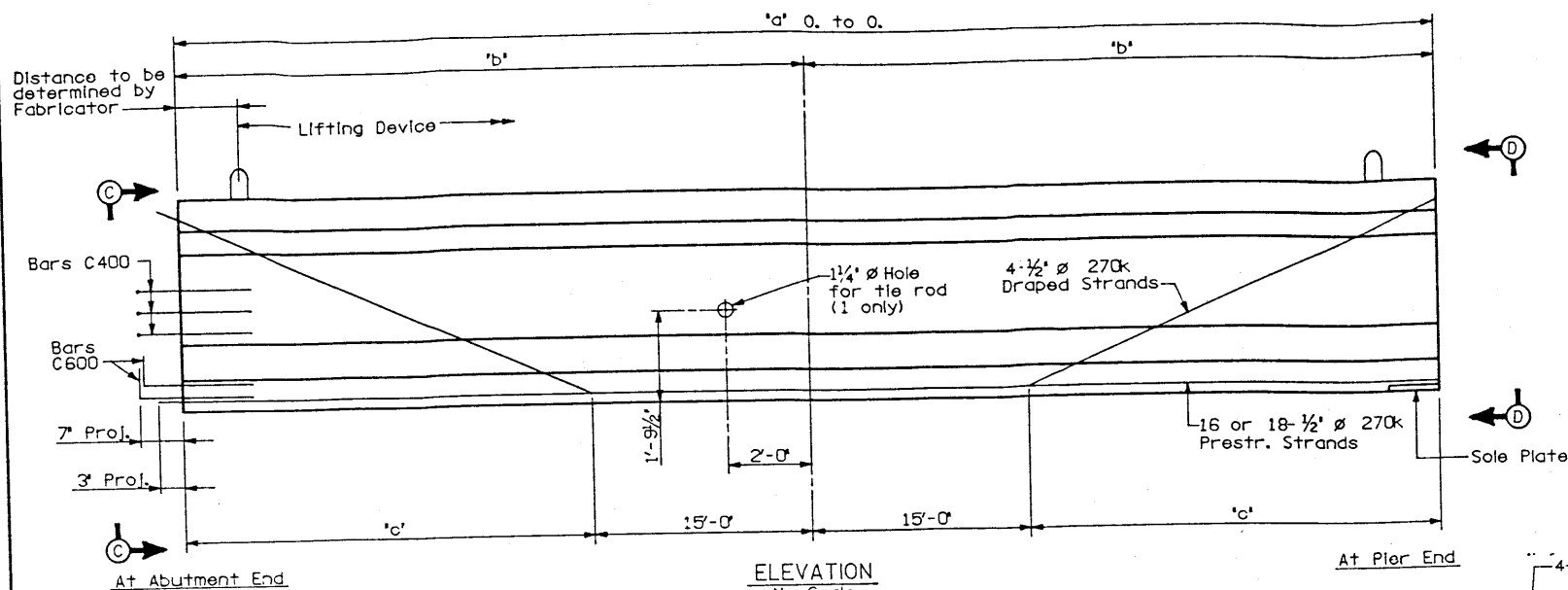
PROJECT NO.	YEAR	SHEET NO.	
IR-40-591257	1989		
REVISIONS			
NO.	DATE	BY	REVISION DESCRIPTION
1	5-6-89	SSD	Added and Revised Notes
2	9-29-89	DWT	Sketch Added

SPECIAL NOTE

Necessary concrete repairs at piers of this bridge are shown before the addition of the cantilever beam bracket. In general, these repairs which may be conflicting or may be obscured by the angle strap will be required to be completed before the addition of the angle support frame and the concrete bracket. However, the necessary surface removal and chipping for the bracket addition will override or preclude the need for surface repairs to some end portions of these piers. The Contractor need not first perform surface or other damage repair within the area limits scheduled for the bracket addition or its strap tie system, as shown by relevant details within these plans. Where these repair details overlap the 'footprint' of the bracket addition, the resulting construction shall have neat and appropriately formed lines and surfaces, regardless of the order of construction. The Contractor will not be paid for any surface repairs within the area bounded by the bracket connection to each pier.

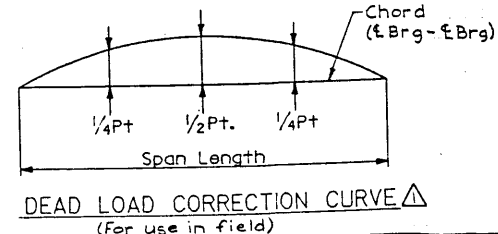
DESIGNED BY WSH DATE 1/89
 DRAWN BY LK DATE 2/89
 SUPERVISED BY JST DATE 2/89
 CHECKED BY M DATE 2/89

CORRECTED BY
 EXPANDED BY
 APPROVED BY
 DIRECTOR OF HIGHWAYS

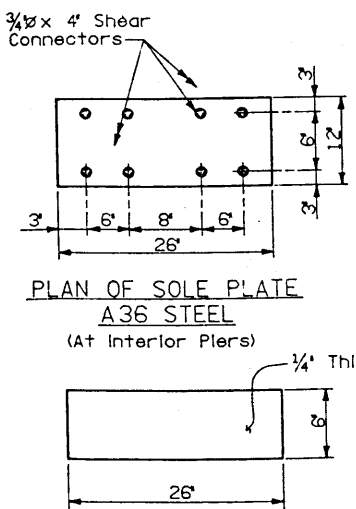
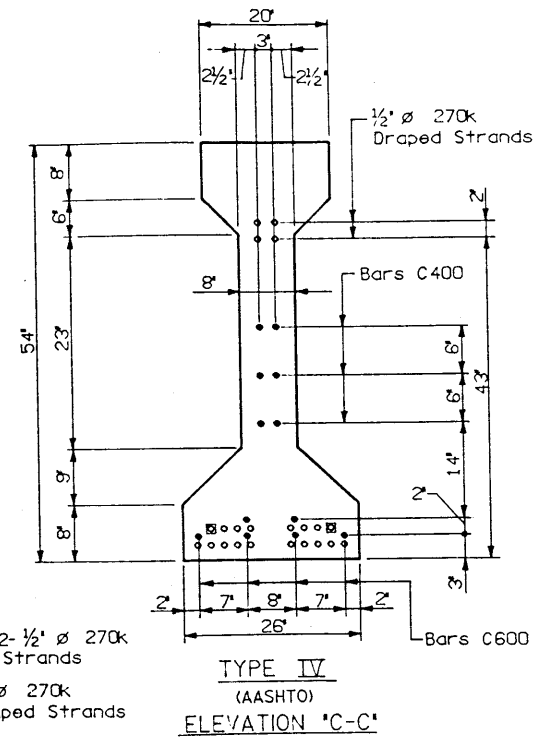
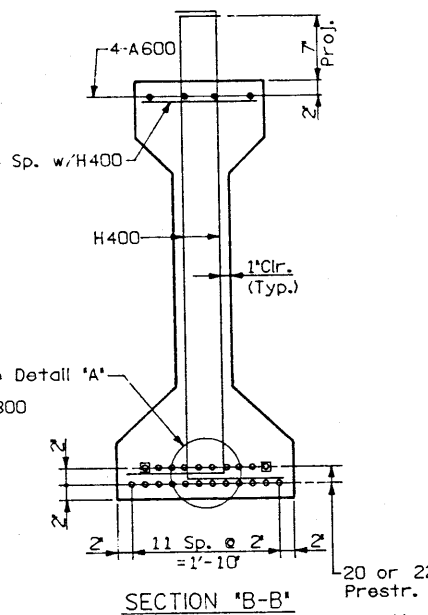
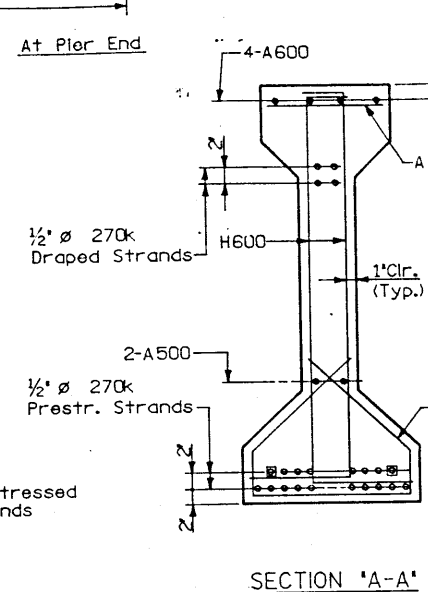
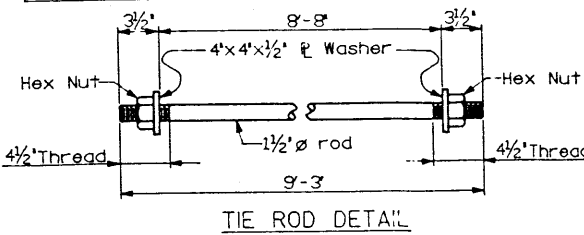


DEAD LOAD CORRECTION CURVE			
SPAN	1/4Pt.	1/2Pt.	3/4Pt.
A	1 1/8"	1 1/2"	1 3/8"
C	7/8"	1 1/8"	7/8"

DESIGNED BY: DWT DATE: 11-88
 DRAWN BY: FAR DATE: 11-88
 SUPERVISED BY: WSH DATE: 11-88
 CHECKED BY: HJZ DATE: 2-89



WESTBOUND LANE					
BILL OF STEEL - ONE BEAM					
BARS	SIZE	NO. REQ'D	LENGTH	NO. REQ'D	LENGTH
A400	4	46	1'-6"	44	1'-6"
A500	5	4	5'-0"	4	5'-0"
A600	6	8	39'-4"	8	36'-11"
C400	4	6	3'-6"	6	3'-6"
C600	6	6	3'-6"	6	3'-6"
H400	4	92	6'-5"	88	6'-5"
H600	6	12	5'-8"	12	5'-8"
X300	3	14	6'-8"	14	6'-8"



ELASTOMERIC BEARING PAD
 (At Abutment)
 (2 Req'd)

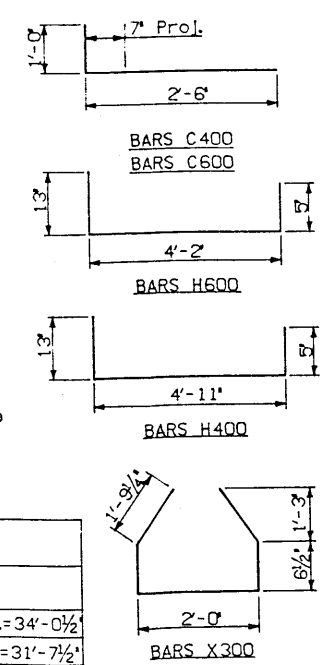
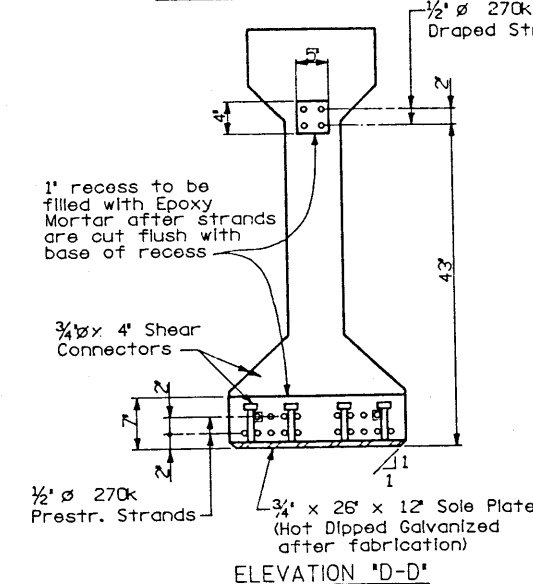


TABLE OF DIMENSIONS					
SPAN	NUMBER OF STRANDS	'a'	'b'	'c'	'd'
A	22	75'-9"	37'-10 1/2"	22'-10 1/2"	2-H400 w/1-A400 Sp. @ 20 Eq. Sp.=34'-0 1/2"
C	20	70'-11"	35'-5 1/2"	20'-5 1/2"	2-H400 w/1-A400 Sp. @ 19 Eq. Sp.=31'-7 1/2"

WESTBOUND LANE				
ESTIMATED QUANTITIES - ONE BEAM				
ITEM	UNIT	SPAN A	SPAN C	
CLASS 'A' CONCRETE	C.Y.	15.4	14.4	
REINFORCING STEEL	LB.	1,130	1,080	
PRESTRESSING STRANDS	LB.	900	750	

- Denotes Prestressing Strand
- Denotes Omitted Strand for 20 Strand Pattern
- Denotes Grade 60 Reinf. Steel

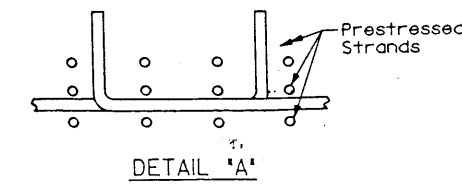
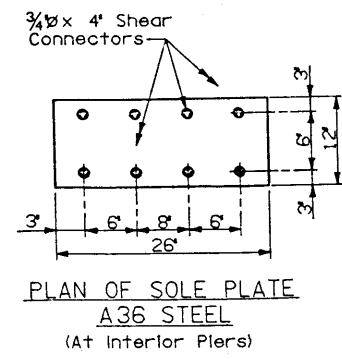
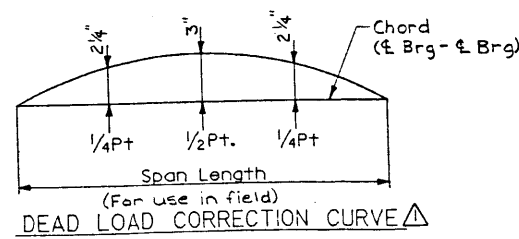
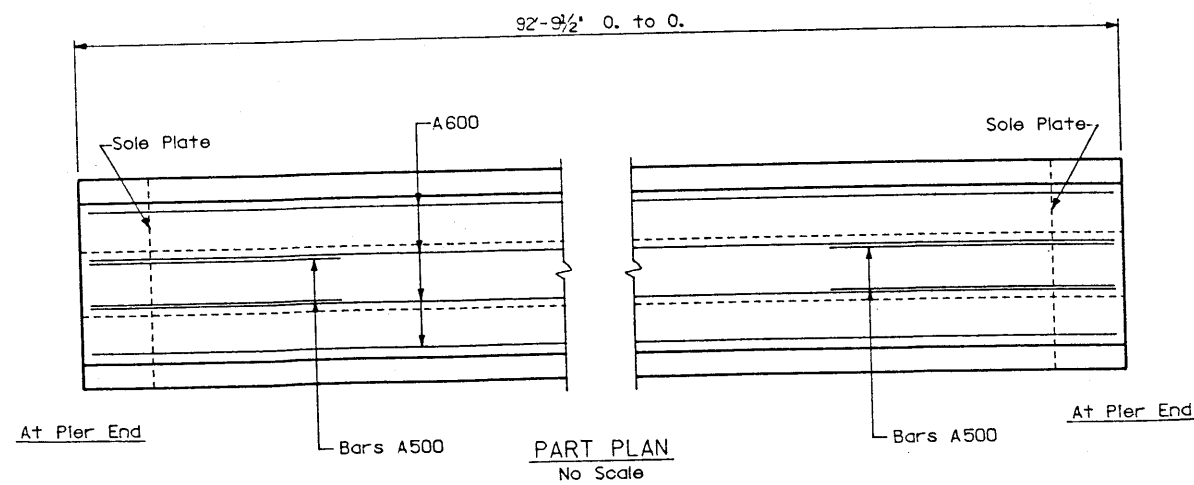
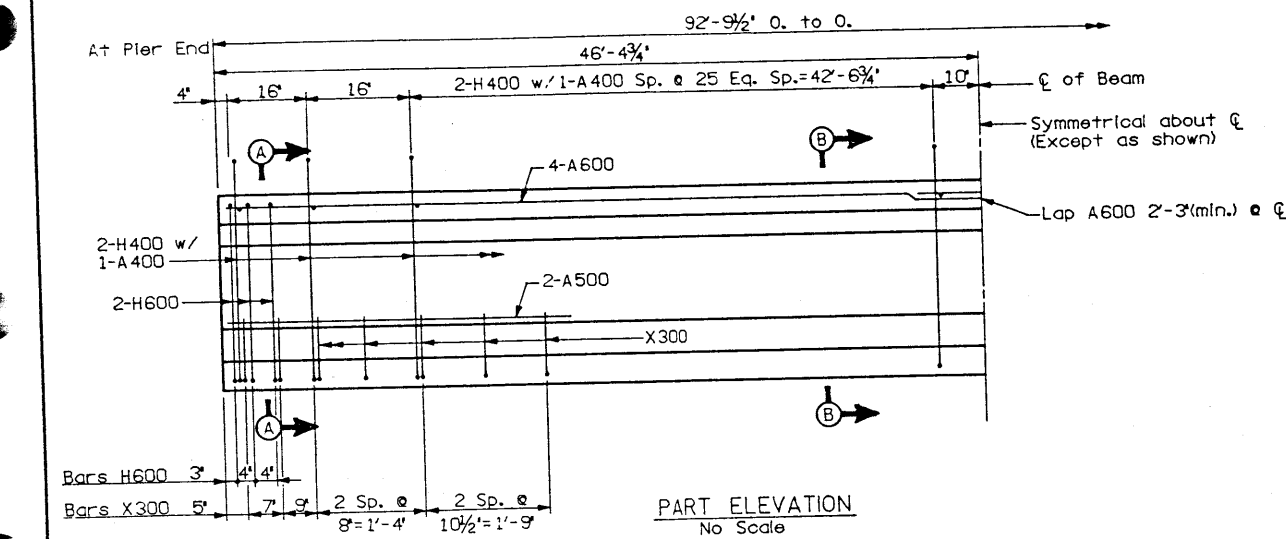
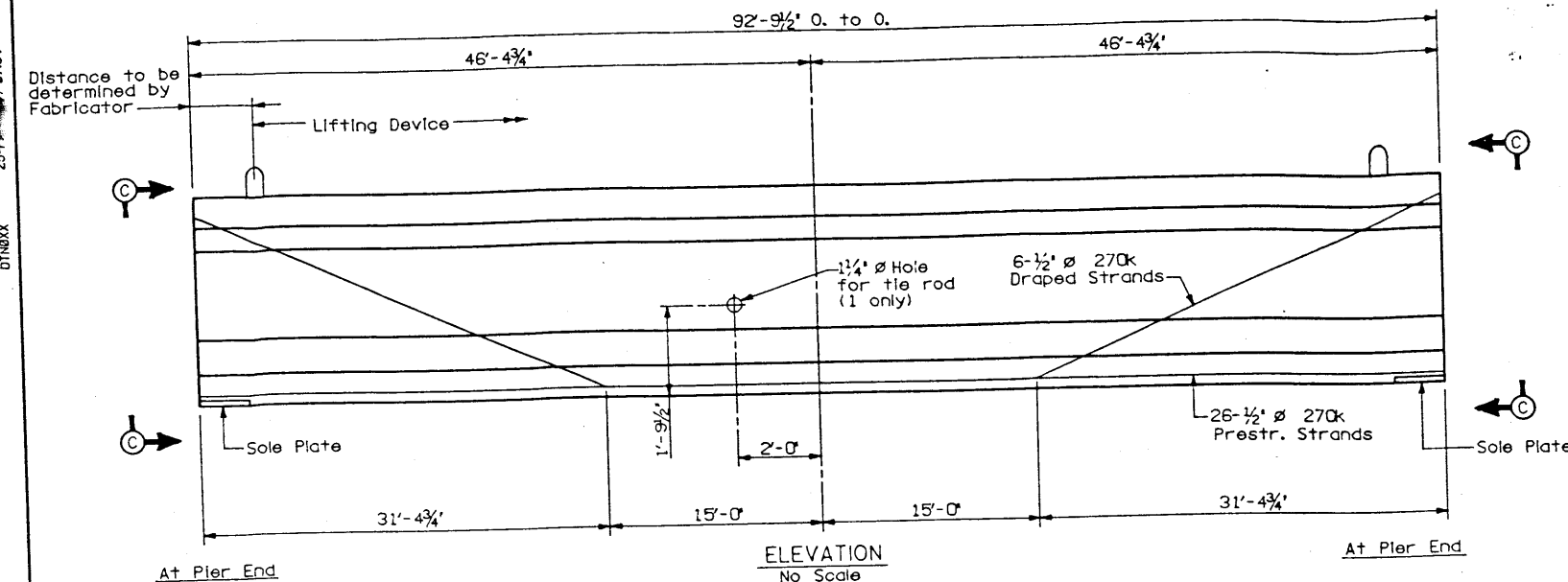
PROJECT NO.	YEAR	SHEET NO.
IR-40-59J257	1989	

REVISIONS			
NO.	DATE	BY	REVISION
1	9-29-89	DWT	Revised Dead Load Correction Values

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 bituminous fiberboard, 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. Low relaxation prestressing strands.
 An initial force at anchorage (after seating) of 31,000 Lbs., shall be applied to each strand in all beams.
 All beams are AASHTO - PCI standard type IV.
 After the beam is removed from the prestressing bed, bars C600 and C400, at abutment end, shall be bent as shown.
 The prestressing strands shall be left projecting 3" +/- from the ends of the beams at abutment ends. There shall not be any protective coating placed on the ends of the beams or on the projecting strands. At pier ends, 1" recess shall be formed and fill with epoxy mortar as shown.
 Elastomeric pads to be 6"x26"x1/4" (Plain) at abutment ends. For details of bearings at pier ends, see Dwg. No. M-214-47.
 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 (4,000 PSI). See General Notes for Concrete finishing note.
 NOTE: Cost of 1/4" plain elastomeric pads, elastomeric bearings, anchor bolts, sole plates, bearing plates, tie rods and rubber bonding cement to be included in the cost of prestressed beam.
 The sequence for transfer of stress or the cutting strands shall be in accordance with Article 615.14 of the 'Standard Specifications for Road and Bridge Construction' and shall be shown on the approved shop drawings. At no time shall more than 1/6th of the total prestressing force be eccentric about the centerline of the beam.
 DEAD LOAD CORRECTION CURVE: This curve is for dead load slab and all dead loads that are applied after slab is in place and should be corrected to compensate for the effects due to vertical curve.

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAYS
PRESTRESSED CONCRETE I-BEAM (TYPE IV)
SPANS A & C - WESTBOUND LANE
I-40 OVER HICKMAN CREEK
STA.162+3.19 W.B. I-40
SMITH COUNTY
1989

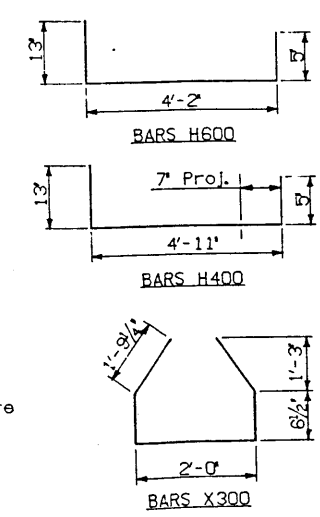
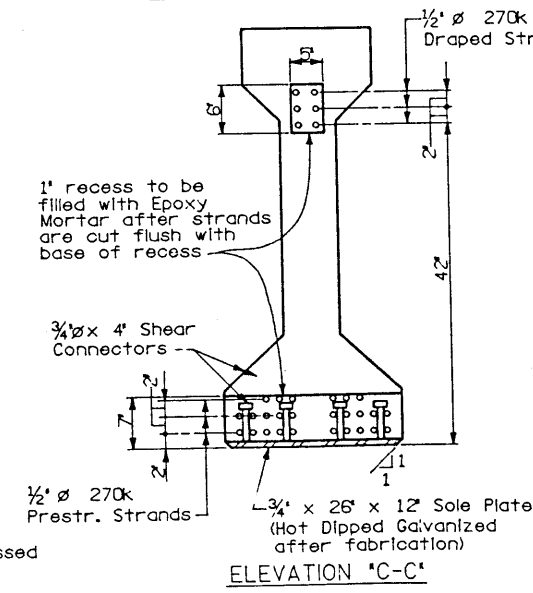
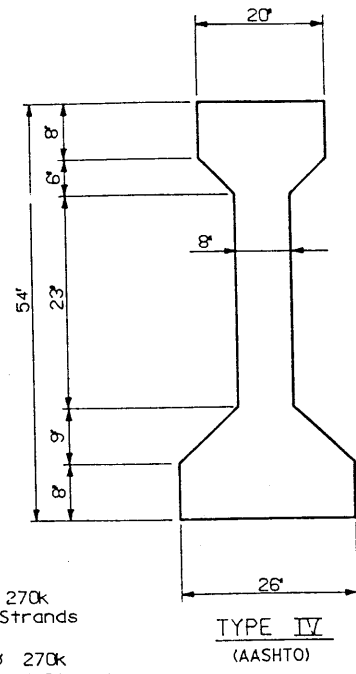
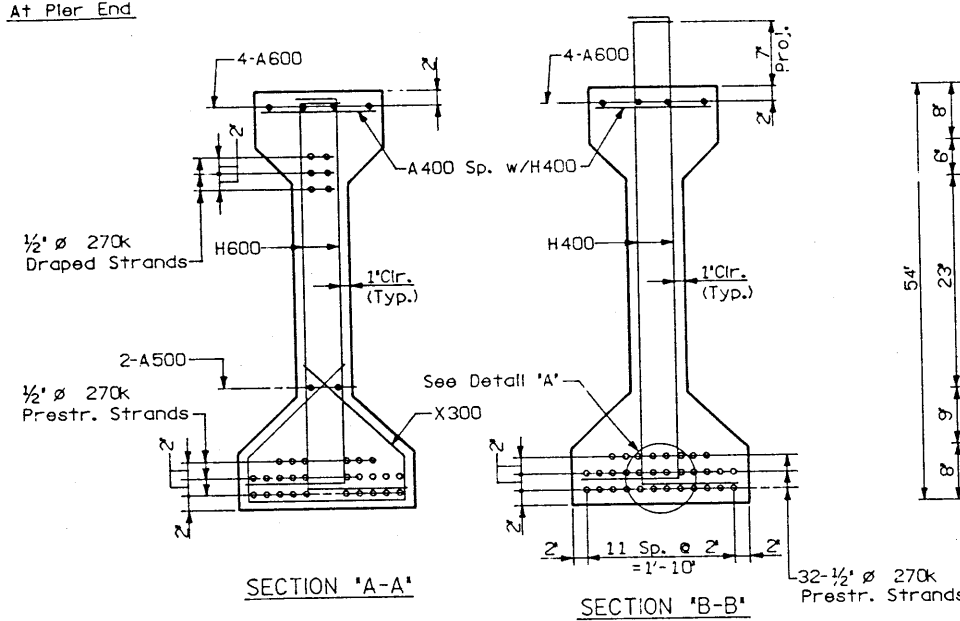
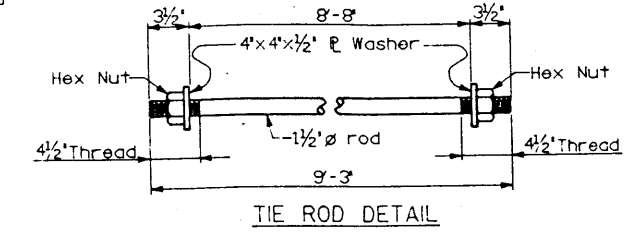
CORRECT
 ENGINEER OF STRUCTURES
 APPROVED
 DIRECTOR OF HIGHWAYS
 M-214-43



WESTBOUND LANE			
BILL OF STEEL - ONE BEAM			
BARS	SIZE	NO. REQ'D	LENGTH
A400	4	56	1'-8"
A500	5	4	5'-0"
A600	6	8	47'-9"
H400	4	112	6'-5"
H600	6	12	5'-8"
X300	3	14	6'-8"

- Denotes Grade 60 Reinf. Steel
- Denotes Prestressing Strand

WESTBOUND LANE		
ESTIMATED QUANTITIES - ONE BEAM		
CLASS 'A' CONCRETE	REINFORCING STEEL	PRESTRESSING STRANDS
C.Y.	LB.	LB.
18.8	1,230	1,562



CONSTR. NO. 80001-3152-44			
PROJECT NO.		YEAR	SHEET NO.
IR-40-5(91)257		1989	
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION
1	9-29-89	DWT	Revised Dead Load Correction Values

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 bituminous fiberboard, 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" 270k ASTM Grade 270k, 7 wire uncoated Low relaxation prestressing strands.

An initial force at anchorage (after seating) of 31,000 Lbs., shall be applied to each strand in all beams.

All beams are AASHTO - PCI standard type IV.

1' recess shall be formed at each end of beam and fill with epoxy mortar as shown. For details of bearings at pier ends, See Dwg. No. M-214-47.

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 (4,000 PSI). See General Notes for Concrete finishing note.

NOTE: Cost of elastomeric bearings, anchor bolts, sole plates, bearing plates, tie rods and rubber bonding cement to be included in the cost of prestressed beam.

The sequence for transfer of stress or the cutting strands shall be in accordance with Article 615.14 of the 'Standard Specifications for Road and Bridge Construction' and shall be shown on the approved shop drawings. At no time shall more than 1/6th of the total prestressing force be eccentric about the centerline of the beam.

DEAD LOAD CORRECTION CURVE: This curve is for dead load slab and all dead loads that are applied after slab is in place and should be corrected to compensate for the effects due to vertical curve.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS
PRESTRESSED CONCRETE I-BEAM (TYPE IV)
SPAN B - WESTBOUND LANE
I-40 OVER HICKMAN CREEK
STA. 162+3.19 W.B. I-40
SMITH COUNTY
1989

DESIGNED BY: DWT
DRAWN BY: EAS
SUPERVISED BY: WSH
CHECKED BY: HJZ
DATE: 11-88
DATE: 11-88
DATE: 11-88
DATE: 2-89

CORRECT
ENGINEER OF STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS
M-214-44

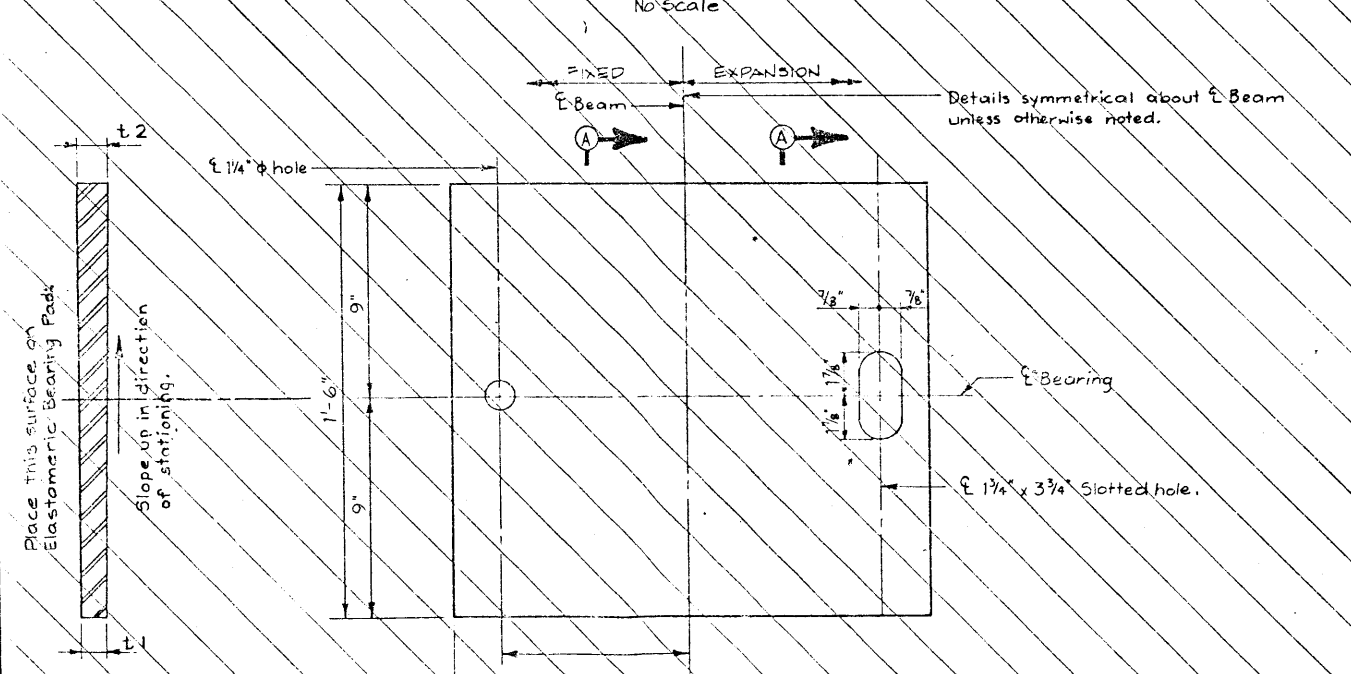
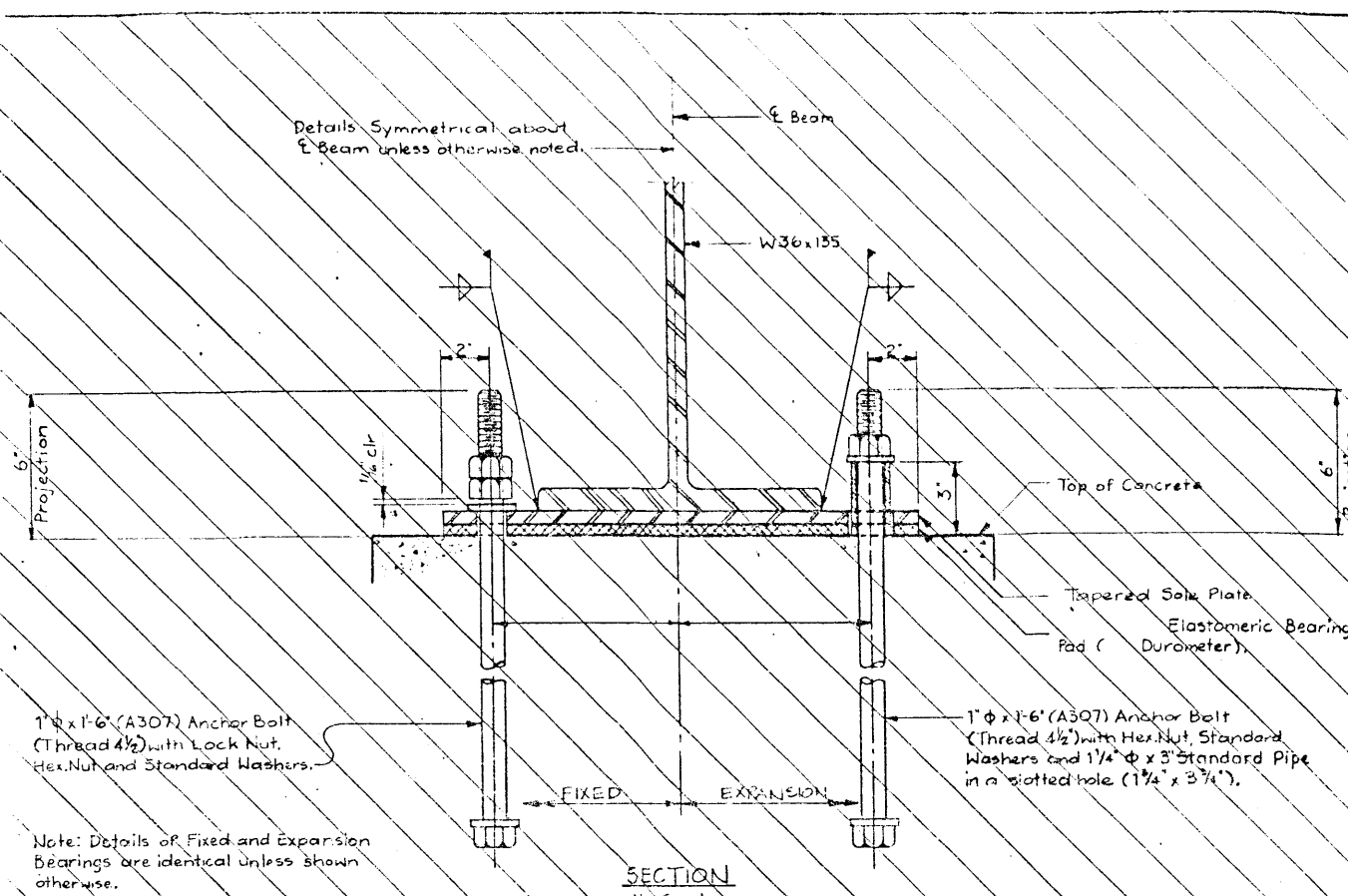


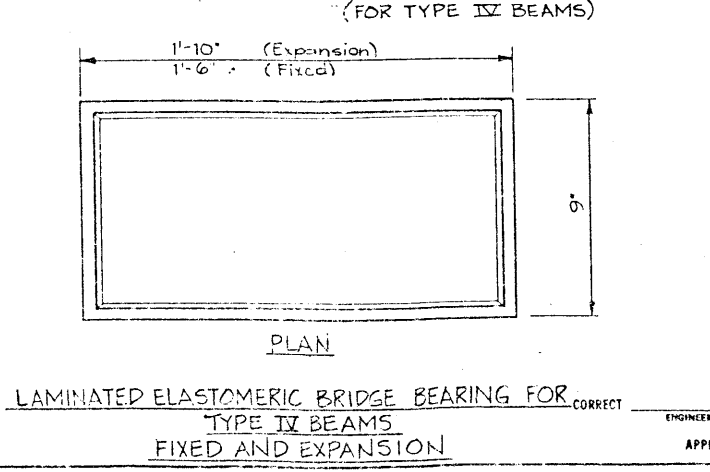
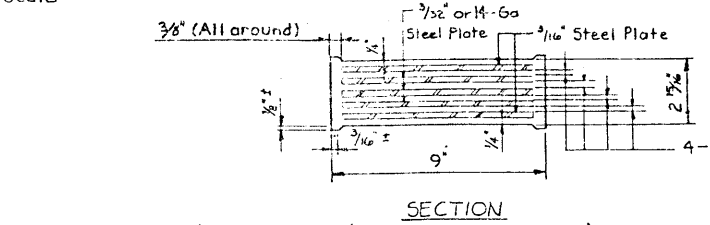
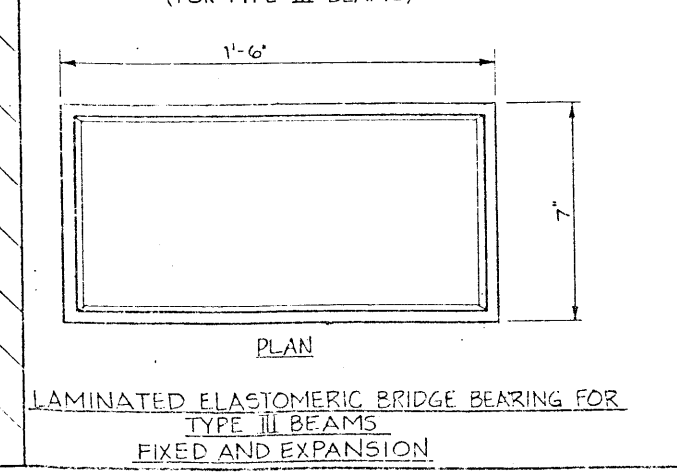
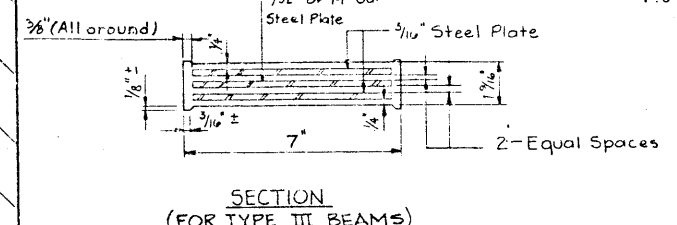
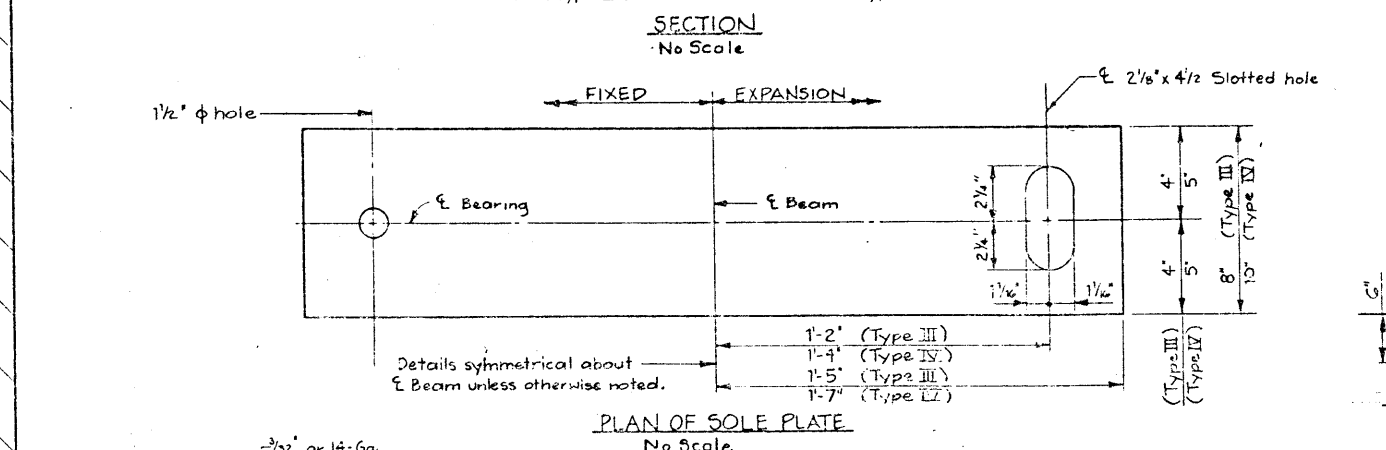
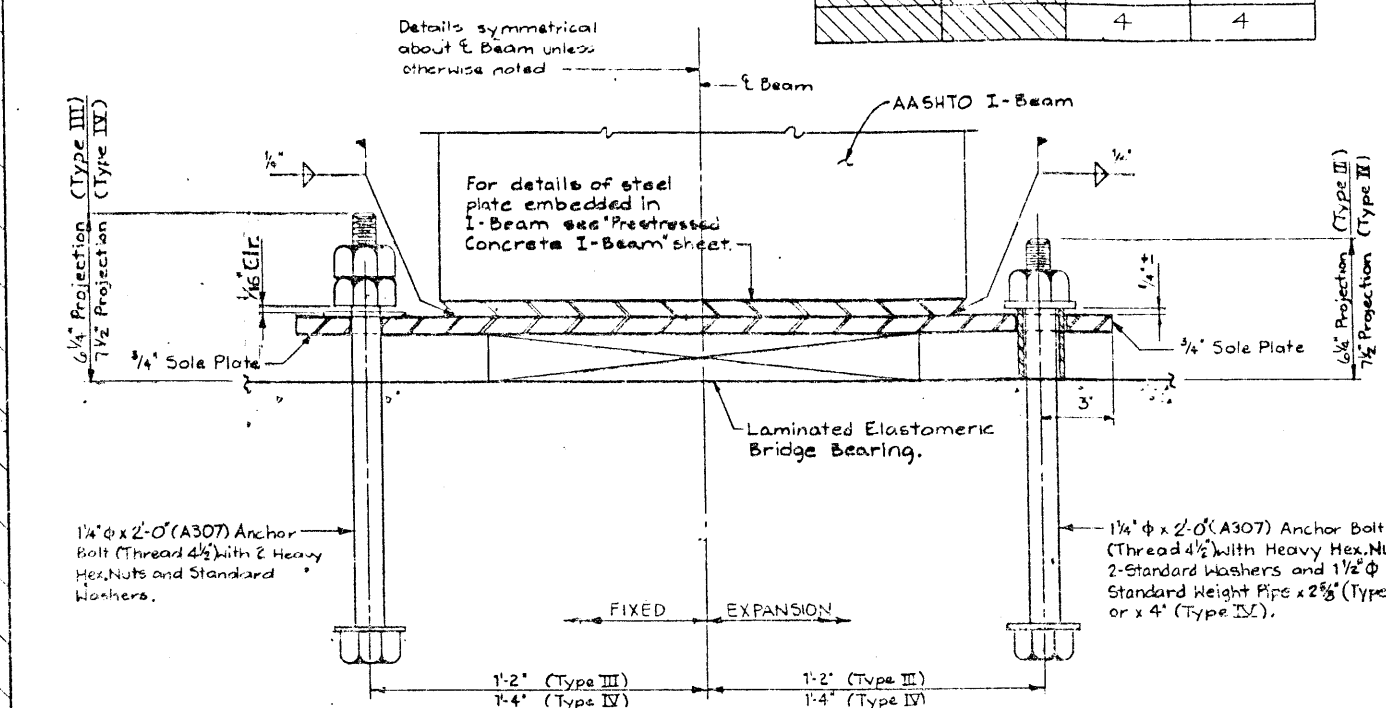
TABLE OF DIMENSIONS

	E.B.L.	W.B.L.
t1		
t2		

DESIGNED BY: H.I.Z./D.W.T. DATE: 11-88
 DRAWN BY: T.L.K. DATE: 11-88
 SUPERVISED BY: W.S.H. DATE: 11-88
 CHECKED BY: H.I.Z./D.W.T. DATE: 1-89

Notes: (Type III) - Denotes AASHTO Type III Beam
 (Type IV) - Denotes AASHTO Type IV Beam
 Details of Fixed and Expansion Bearings are identical unless shown otherwise.

NUMBER OF BEARINGS REQUIRED			
AASHTO TYPE III		AASHTO TYPE IV	
FIXED	EXPANSION	FIXED	EXPANSION
		4	4



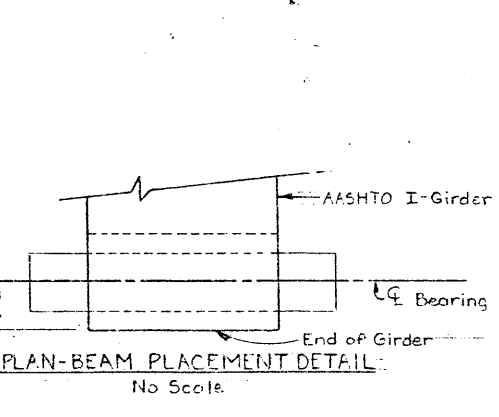
CONSTR. NO. 80001-3152-44

PROJECT NO.	YEAR	SHEET NO.
IR-40-5(11)257	1989	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

Notes: All sole plates, anchor bolts, washers, nuts & pipe shall be galvanized after fabrication in accordance with ASTM A123 or ASTM A153 as appropriate. Areas of galvanized surfaces where any field welds are made or any other damage to galvanized surfaces shall be field galvanized. Field galvanizing shall be made with Z.R.C. Cold Galvanizing Compound by Z.R.C. Chemical Products Co., Quincy, Mass. or approved equal. The materials, fabrication and installation of the laminated elastomeric bridge bearing shall be in accordance with AASHTO Section 25-Division II. All costs associated with the materials, fabrication and installation of the complete bearing assembly shall be included in the price bid for Item # 615-01.03 or Item # 615-01.04.

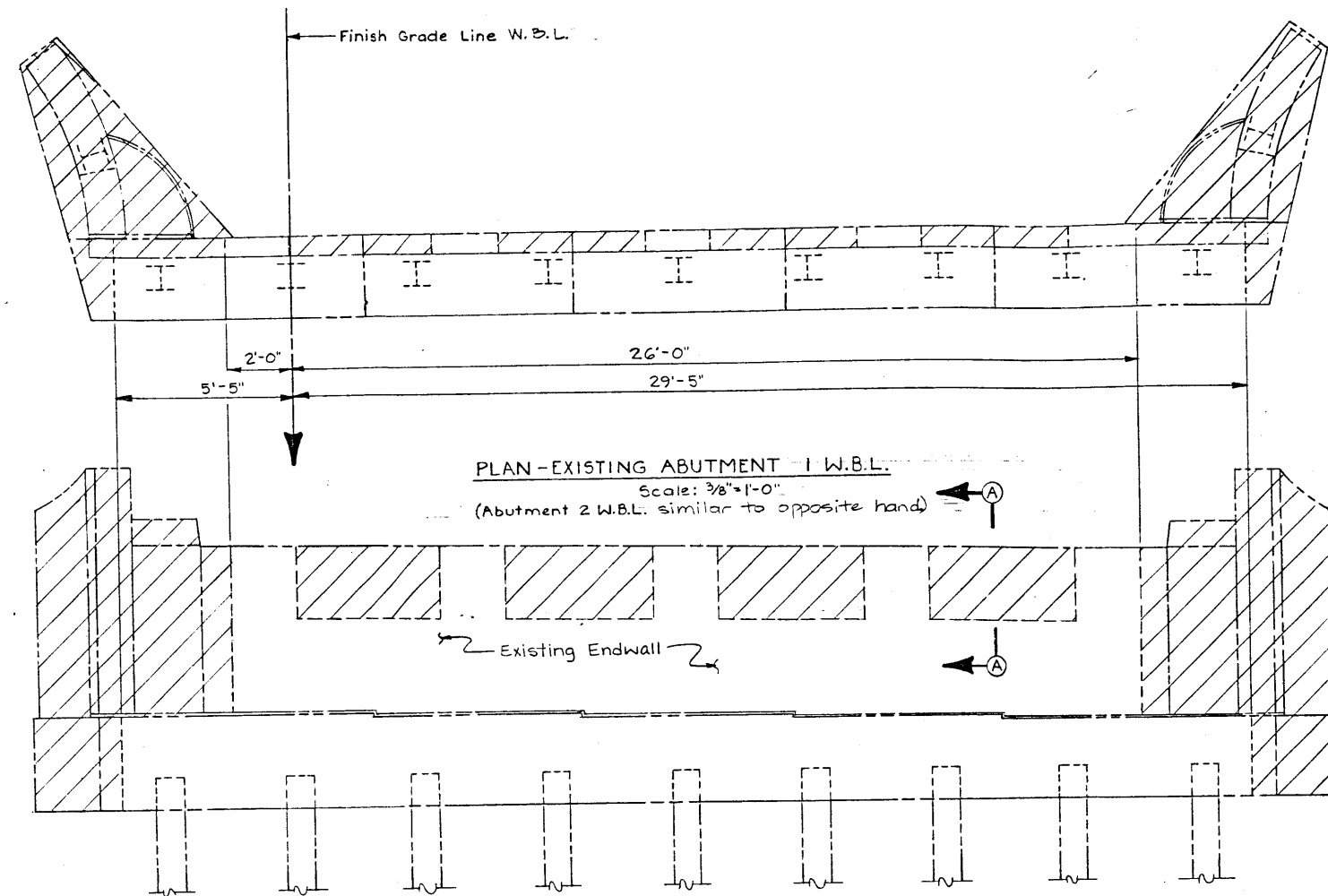


STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAYS
BEARING DETAILS
 I-40 OVER
 HICKMAN CREEK
 STA. 162+13.19 W.B.L. I-40
 STA. 165+29.50 E.B.L. I-40
 SMITH COUNTY
 1989

ENGINEER OF STRUCTURES
 APPROVED: _____
 DIRECTOR OF HIGHWAYS

M-214-47

PROJECT NO.	YEAR	SHEET NO.
1R-40-5(91)257	1989	

[illegible]

Note:

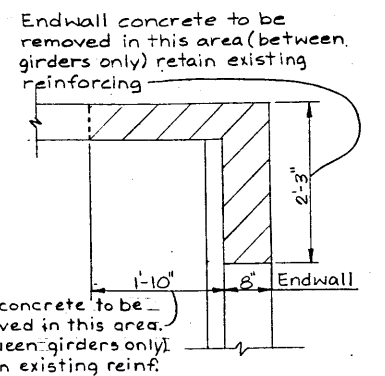
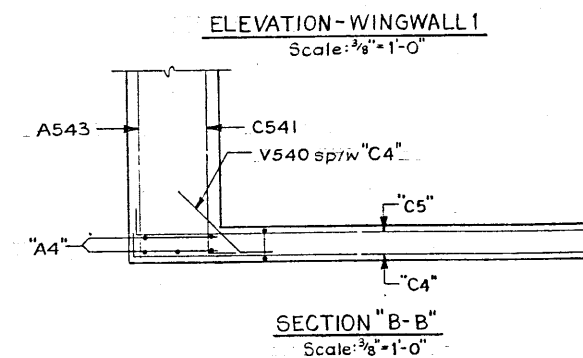
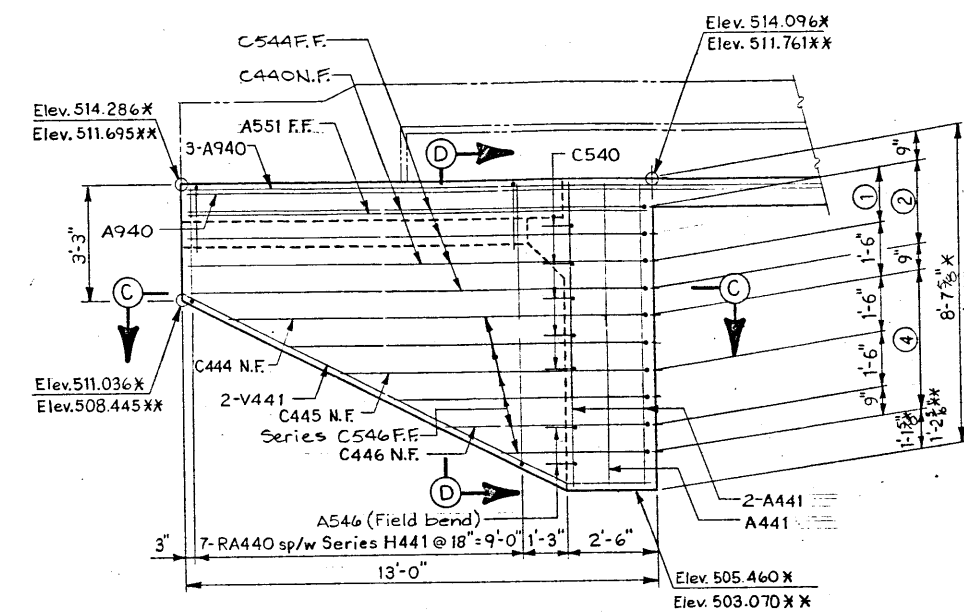
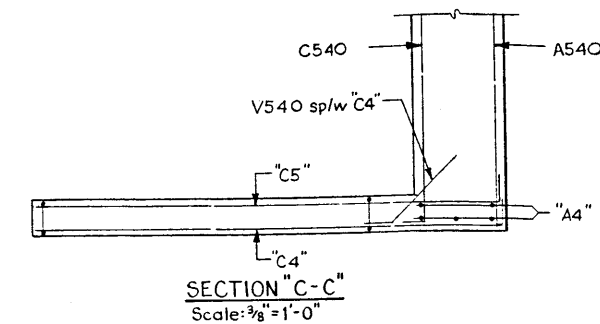
☒ - Denotes parts of structure to be removed.

Retain all existing reinforcing steel within the confines of the final Abutment shape. Field cut existing reinforcing steel outside these limits to provide 3"± final clearance.

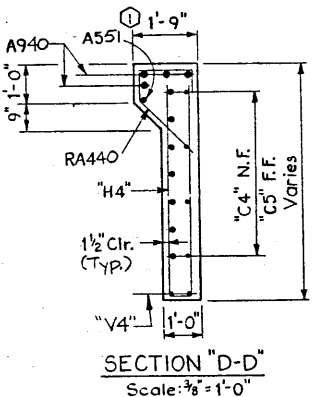
All materials removed become the property of the Contractor and shall be disposed of by him.

All costs associated with the demolition, disposal and surface preparation required shall be included in the price bid for Item No. 202-04.01.

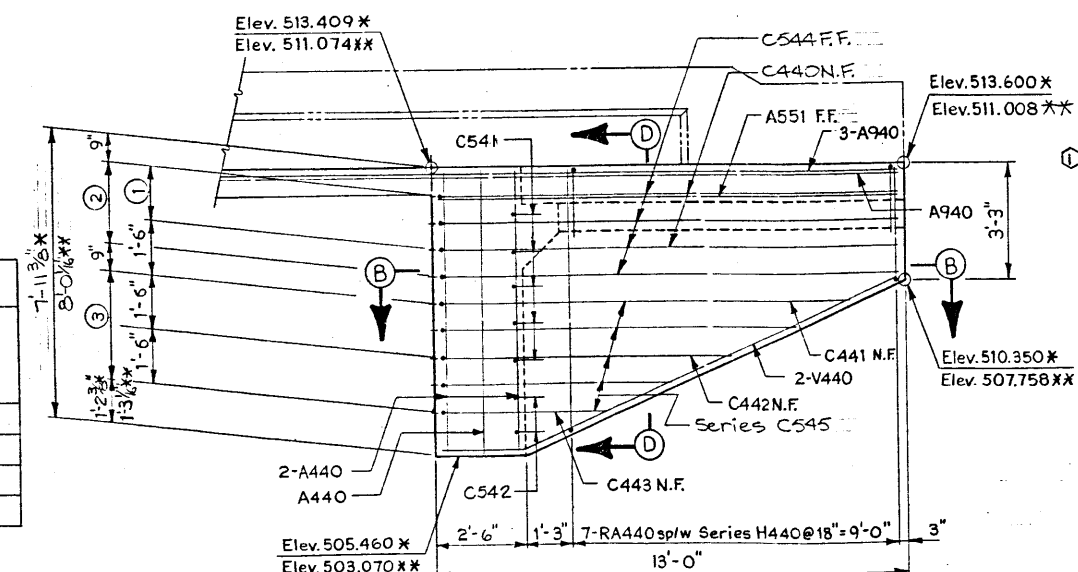
ESTIMATED QUANTITIES					
ITEM	CLASS "A" CONCRETE (BRIDGES) CY.	CLASS "A" CONCRETE (BRIDGE DECK) CY.	STEEL BAR REINFORCEMENT (BRIDGES) LBS.	EPOXY COATED REINFORCING STEEL (LBS.) ▲	STEEL PILES (HP 10 x 42) L.F.
ABUTMENT 1 E.B.L.	4	35	2191	1688	50
ABUTMENT 2 E.B.L.	4	35	2152	1628	45
ABUTMENT 1 W.B.L.	8	25	2507	1861	47
ABUTMENT 2 W.B.L.	8	25	2507	1861	48



SECTION "A-A"
Scale: $\frac{3}{4}" = 1'-0"$



- ① 2-C440 @ 18" N.F.
- ② 4-C544 @ 9" = 2'-3" F.F.
- ③ Series C545 @ 9" = 3'-0" F.F.
- ④ Series C546 @ 9" = 3'-9" F.F.



ELEVATION-WINGWALL 2
Scale: $\frac{3}{8}'' = 1'-0''$

CORRECT

ENGINEER OF STRUCTURES

APPROVED

DIRECTOR OF HIGHWAYS

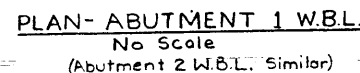
M-214-48

tment 1 W.B.L.
tment 2 W.B.L.

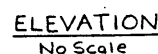
① Note: At Wingwall reduce 1'-9" dimension to 1'-0" in vicinity of bridge end drain only. (Eliminate Bracket) Form at constant 1'-0" height for full height at these locations. Omit Bars RA4" and field cut "A9" & "A5" at drains. Adjust placement of remaining reinforcing to fit while maintaining clearances. See SWS D-BE-3.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

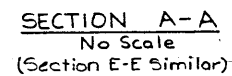
ABUTMENT DETAILS (1)
I-40 W.B.L. OVER
HICKMAN CREEK
STA. 162+13.19 W.B.L I-40
SMITH COUNTY
1989



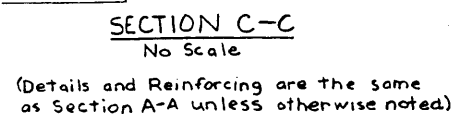
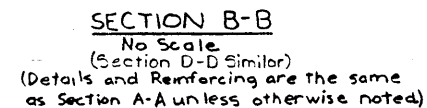
N.F. - Near Face
F.F. - Far Face
*- Abutment 1 W.B.L.
**- Abutment 2 W.B.L.



(Abutment 1 W.B.L. looking back on Stationing
Abutment 2 W.B.L. similar)



—Note: This section shall not be poured until the beam is in place.
Also, this section shall be poured concurrently with the end of the slab.



- ① 3 bar groups of 1-H541, 1-H540E, 1-R540, H546
 $\frac{1}{2}$ 1-C543 E @ 1'-2".
- ② 4 bar groups of 1-A547, 1-H540E, 1-R540
 $\frac{1}{2}$ 1-C543 E @ 3 equal spaces = 2'-4.
- ③ 5 bar groups of 2-A547, 1-H542E $\frac{1}{2}$ 1-C543 E
 @ 12" = 4'-0" (Typical between existing girders)
- ④ 4 bar groups of 1-A547, 1-H540E, 1-R540 $\frac{1}{2}$
 1-C543 E @ 3 equal spaces = 2'-10".
- ⑤ 3 bar groups of 1-H541, 1-H540E, 1-R540, H546 $\frac{1}{2}$
 1-C543 E @ 2 equal spaces = 1'-8"
- ⑥ 4 bar groups of 1-H541, 1-H540E, 1-R540, H546 $\frac{1}{2}$
 1-C543 E @ 3 equal spaces = 2'-6".
- ⑦ 5-A540 N.F. $\frac{1}{2}$ 5-C540 F.F.
 @ 12" = 4'-0"
- ⑧ 5-A541 N.F. @ 12" = 4'-0"
 (Typical between existing girders)
- ⑨ 5-A542 N.F. @ 12" = 4'-0"
- ⑩ 5-A543 N.F. $\frac{1}{2}$ 5-C541 F.F. @
 12" = 4'-0"
- ⑪ 7-RC 540 @ 6" = 3'-0" (Typ. between
 existing airders.)

Notes:
Cost of bridge rail and wingpost is to be included in the cost of bridge rail system.

All costs associated with providing and installing mechanical couplers or field bending reinforcing steel shall be included in the price bid for Item No. 604-03.02.

△ See Dwg. No. M-214-52A for construction joint and phase construction details.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

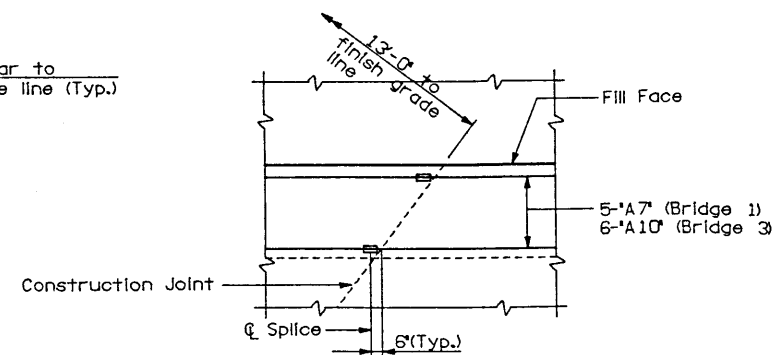
ABUTMENT DETAILS (3)
I-40 W.B.L. OVER
HICKMAN CREEK
STA. 162+13.19 W.B.L. I-40
SMITH COUNTY
1989

DESIGNED BY DWT DATE 1-89
 DRAWN BY WDM DATE 1-89
 SUPERVISED BY WSH DATE 1-89
 CHECKED BY HIZ DATE 2-89

CORRECT _____
ENGINEER OF STRUCTURES

APPROVED _____
DIRECTOR OF HIGHWAY

M-214-50

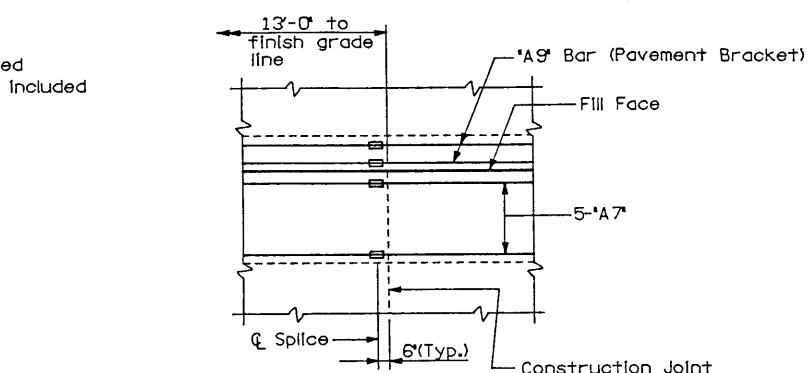
[illegible]

Notes:

↔ - Indicates mechanical coupler
to comply with AASHTO Art. 8.32.2.3
and General Notes Drawing.

Note: Abutment demolition, surface preparation & New Construction in beam bays ①, ② & ③ shall be included in Phase I Construction. Beam bays ④ & ⑤ shall be included in Phase II.

DETAIL 'A'



SECTION B-B

The diagram illustrates the cross-section of a concrete bridge deck with the following details:

- Top Reinforcement:** Labeled as 'A9' Bar (Pavement Bracket).
- Deck Thickness:** Indicated as 6'-A10'.
- Construction Joint:** A vertical dashed line on the left side of the deck.
- Splice:** A vertical dashed line at the bottom of the deck, labeled 'Splice'.
- Bottom Reinforcement:** Labeled as 5'(Typ.) at the bottom center.
- Fill Face:** Indicated by a horizontal line on the right side of the deck.
- Finish Grade:** A dashed line at the top of the deck, labeled 'Finish grade' with an arrow pointing to it.

For splicing of Bundled ' $A10$ ' bars, see Detail 'A'.

' $A10$ ' bars (Bundled)

' $A10$ ' bars

' $A10$ ' bars

ϕ Splice

6"

Phase II Phase I

DETAIL 'B'

The diagram illustrates the cross-section of a bridge abutment with a total width of 44'-0". The structure is divided into two main construction phases by a central vertical line. The left side, measuring 20'-0" from the centerline, is designated for Phase II Construction. The right side, measuring 24'-0" from the centerline, is designated for Phase I Construction. A 'Finish Grade Line' is indicated on the left. The abutment is supported by a series of piers numbered 1 through 6 from right to left. Pier 1 is labeled 'New Beam', and piers 2 through 6 are labeled 'Existing Beam'. A 'Construction Joint (Footing Beam)' is shown at the centerline. Reinforcement details are shown at the bottom, including 'Bundled 'A10'' bars, 'A5' bars, and 'A10' bars. A note specifies: 'For splicing of Bundled 'A10' bars, see Detail 'A''. A splice is indicated for the 'A10' bars. A note at the bottom right states: 'Note: Abutment demolition, surface preparation & New Construction in beam bays (1), (2) & (3) shall be as shown on Detail 'A'.'

For splicing of
Bundled 'A10' bars,
see Detail 'A'.

Note: Abutment demolition, surface preparation & New Construction in beam bays (1), (2) & (3) shall be included in Phase I Construction. Beam bays (4), (5) & (6) shall be included in Phase II.

TYPICAL SECTION - BRIDGES 1 (EBL) & 3
(Bridge 3 shown, Bridge 1 (EBL) similar)

PART PLAN A-A
(Bridge 6 Abutments 1 & 2 EBL & WBL)

DESIGNED BY: DWT DATE: 9-89
 DRAWN BY: EAB DATE: 9-89
 SUPERVISED BY: WSH DATE: 9-89
 CHECKED BY: DWT DATE: 9-89

CORRECT _____
ENGINEER OF STRUCTURES
APPROVED _____
DIRECTOR OF HIGHWAY

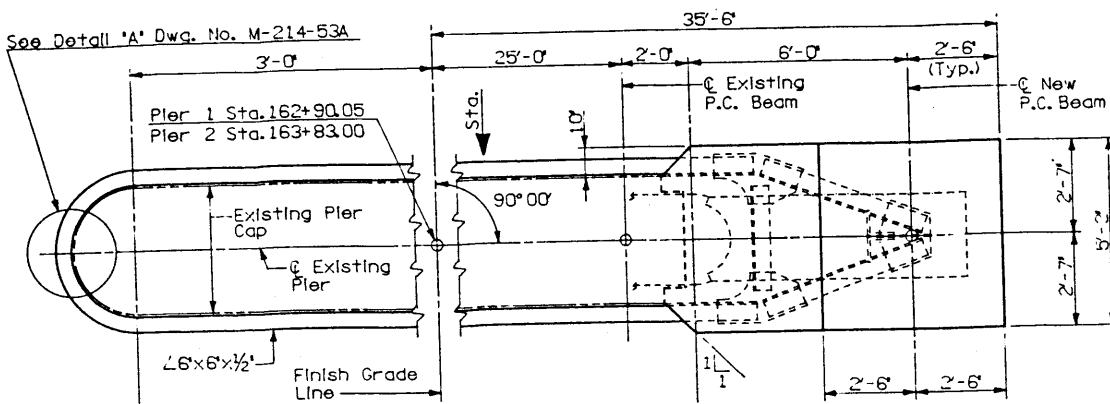
STAGE CONSTRUCTION - ABUTMENTS 
BRIDGE NO. 1, 3 & 6
I-40 OVER CANEY FORK RIVER
& I-40 OVER HICKMAN CREEK
SMITH COUNTY
1989

M-214-52A

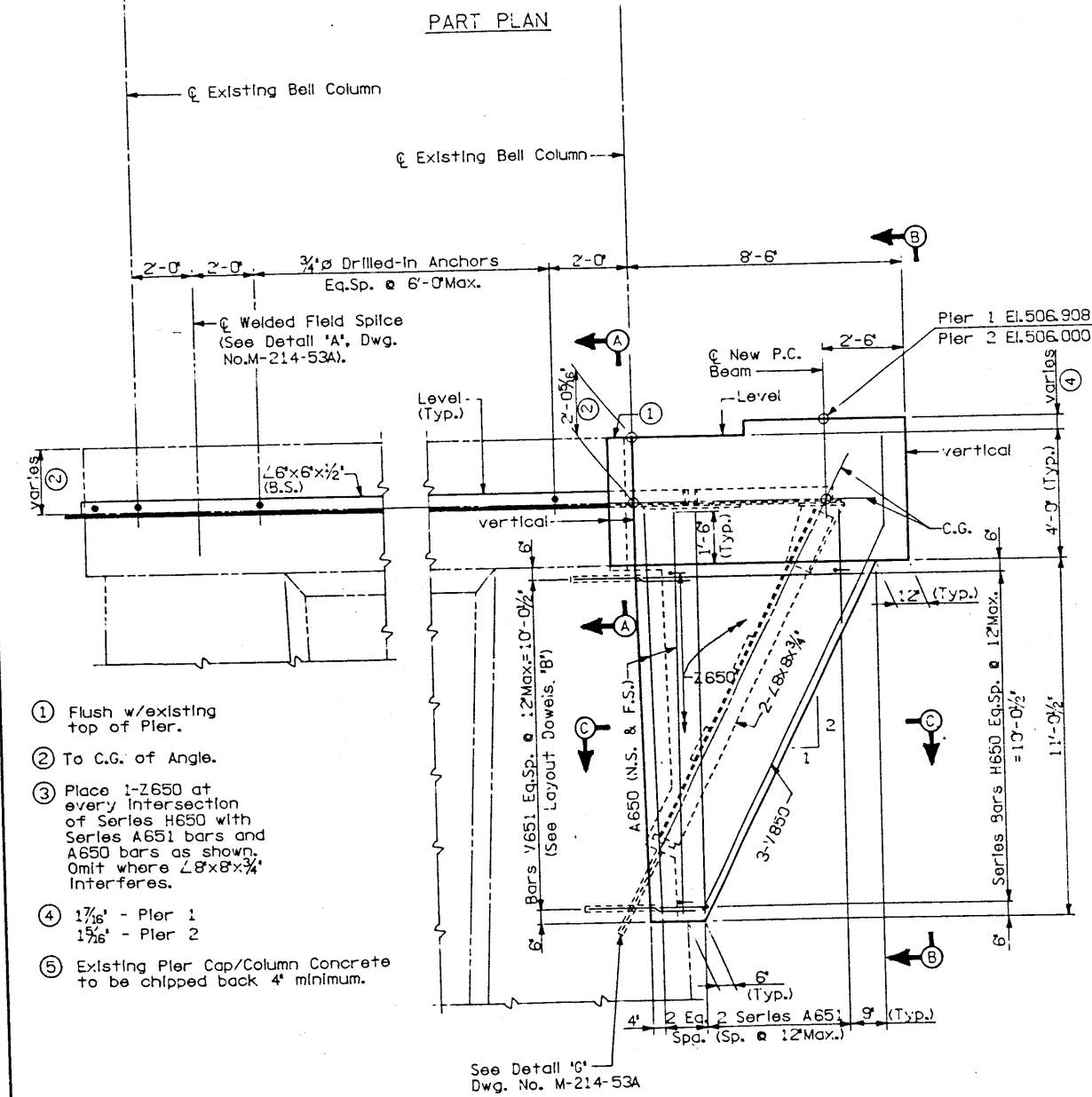
REVISIONS			
NO.	DATE	BY	DESCRIPTION

Note:
For notes, see Dwg. No. M-214-53A.

ESTIMATED QUANTITIES - W.B.L.			
Item	Class 'A' Concrete (Bridges)	Structural Steel	Steel Bar Reinforcement (Bridges)
Pier No.	C.Y.	Lb.	Lb.
1	11	3,400	2,233
2	11	3,400	2,233

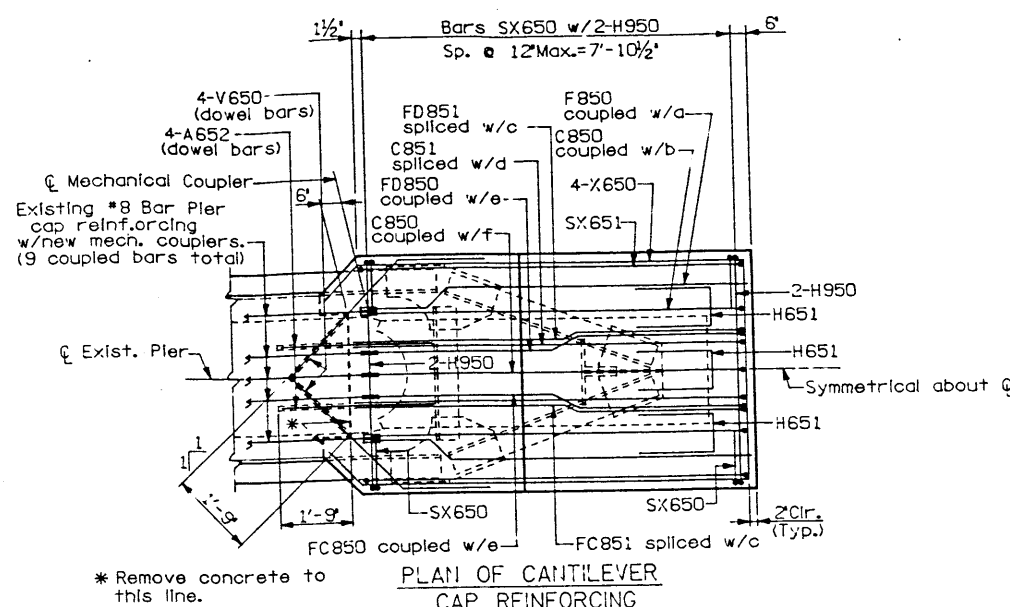


PART PLAN



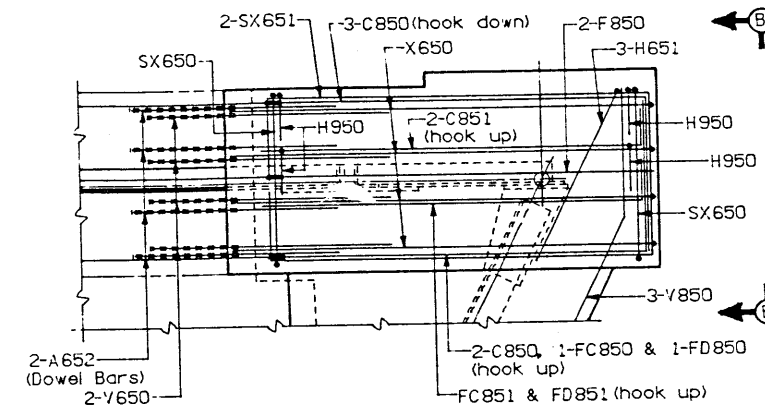
PART ELEVATION
(Showing Cantilever Column Reinforcing)

- ① Flush w/existing top of Pier.
- ② To C.G. of Angle.
- ③ Place 1-Z650 at every intersection of Series H650 with Series A651 bars as shown. Omit where 2-8x8x3/4 interferes.
- ④ 1 7/8" - Pier 1
1 5/8" - Pier 2
- ⑤ Existing Pier Cap/Column Concrete to be chipped back 4" minimum.

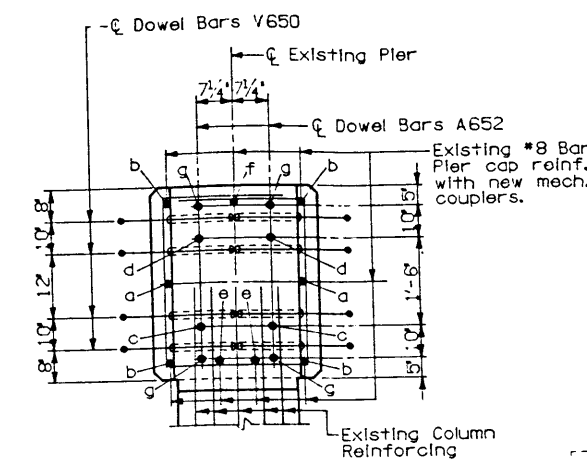


* Remove concrete to this line.

PLAN OF CANTILEVER CAP REINFORCING

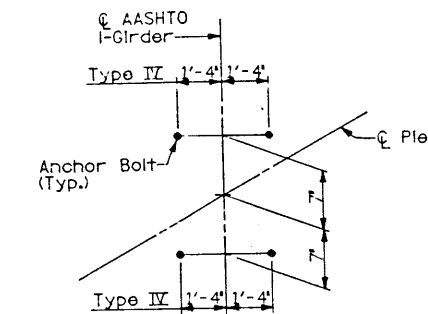


ELEVATION OF CANTILEVER CAP REINFORCING

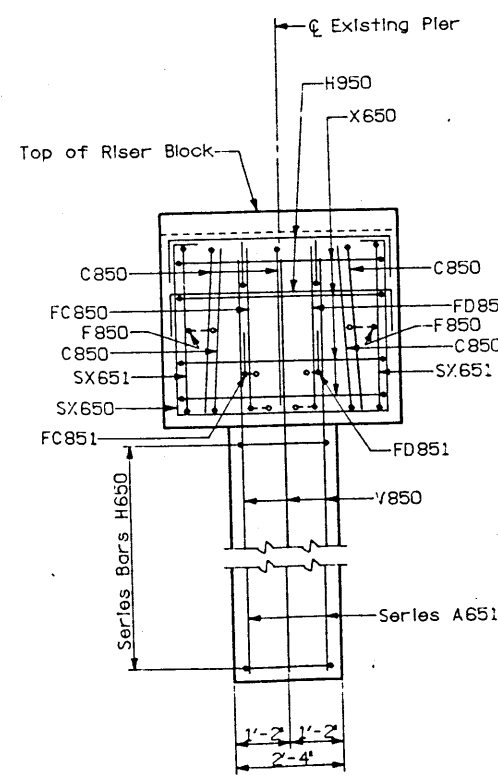


SECTION A-A

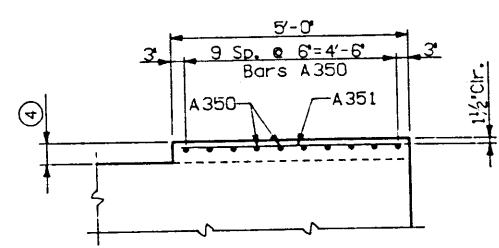
g - Denotes A652 dowel bars only.



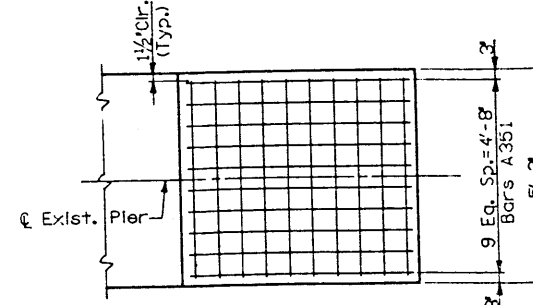
ANCHOR BOLT PLACEMENT SKETCH
No Scale



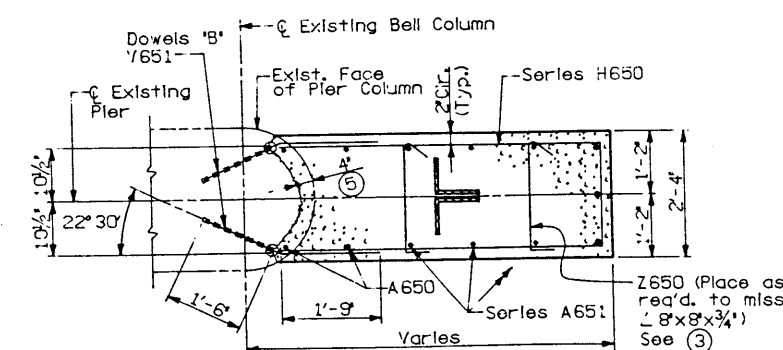
ELEVATION B-B



ELEVATION - RISER BLOCK



PLAN - RISER BLOCK



SECTION C-C
(Layout Dowels 'B')

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS
PIERS 1 & 2
I-40 W.B.L. OVER
HICKMAN CREEK
STA. 162+13.19± W.B.L. I-40
SMITH COUNTY
1989

DESIGNED BY: WGA
DRAWN BY: FAB
SUPERVISED BY: WSH
CHECKED BY: WGA
DATE: 2-89
DATE: 2-89
DATE: 2-89
DATE: 2-89

CORRECT
ENGINEER OF STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS
Scale: None
M-214-53

[illegible]

Note: An 'E' in the 'T', Type, column indicates that the bar shall be Epoxy-Coated.

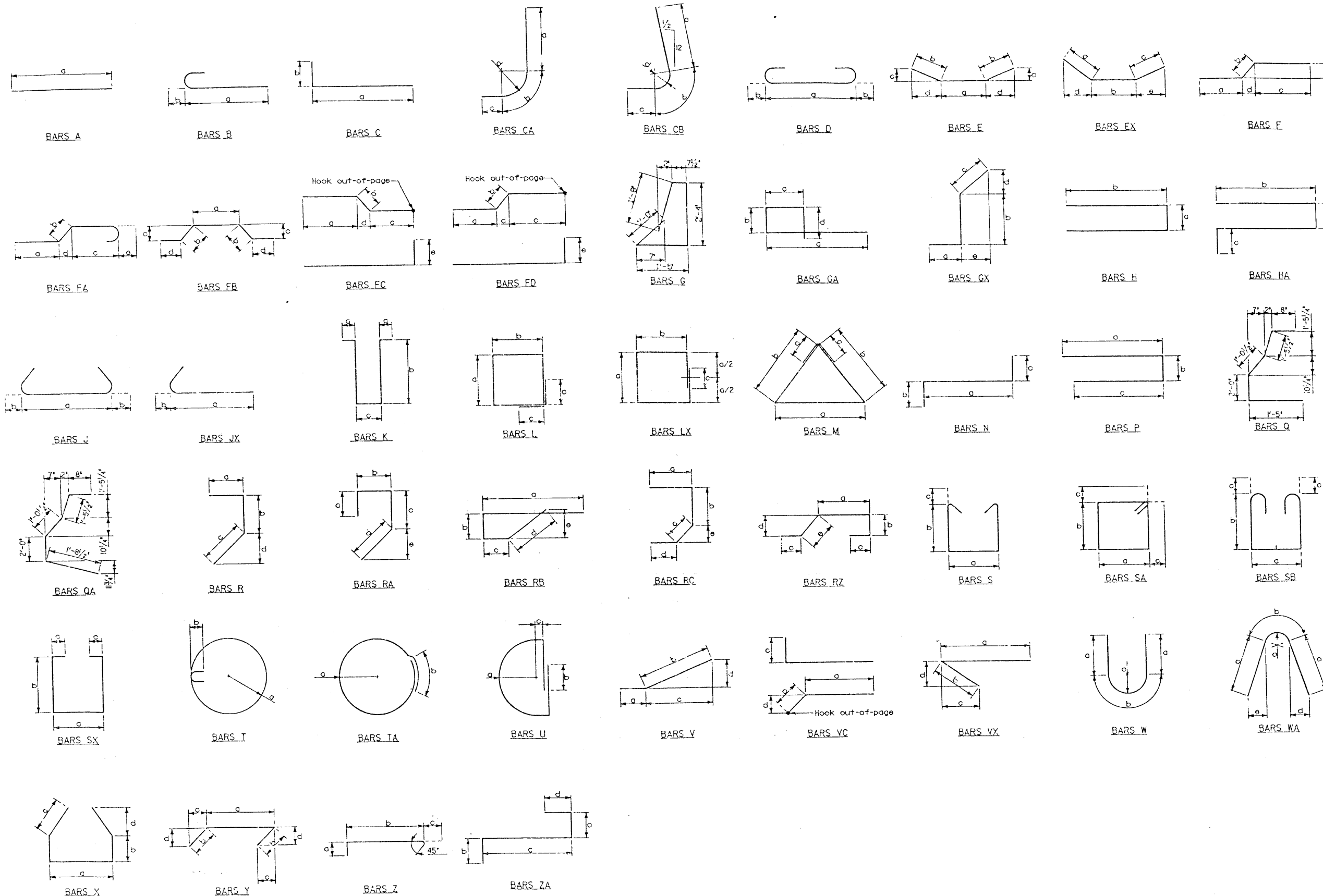
CORRECT _____
ENGINEER OF STRUCTURES
APPROVED _____
DIRECTOR OF HIGHWAYS

M-214-55

SPAN A THRU C - E.B.L.												ABUTMENT 1 E.B.L.												ABUTMENT 2 E.B.L.											
MARK	T	LOCATION	SZ	NO. RD'D	DIMENSIONS FT-IN					LENGTH FT-IN	WEIGHT LBS	MARK	T	LOCATION	SZ	NO. RD'D	DIMENSIONS FT-IN					LENGTH FT-IN	WEIGHT LBS	MARK	T	LOCATION	SZ	NO. RD'D	DIMENSIONS FT-IN					LENGTH FT-IN	WEIGHT LBS
A500	E	DECK	5	660	4-1					4-1	2811	VX542	WINGWALL 3	5	4	16-8	0-10	0-6%	0-7%		17-6	73	A442	WINGWALL 6	4	5	7-8					7-8	26		
A501	E	"	5	648	10-1					10-1	6815	VX543	"	5	1	15-4	0-10	0-6%	0-7%		16-2	63	A444	WINGWALL 5	4	5	8-3					8-3	28		
A502	E	"	5	392	30-0					30-0	12266	* 5 BAR SERIES		EACH	TO								A547	ABUTMENT	5	58	3-9					3-9	227		
A503	E	"	5	98	29-1					29-1	2973	* 5 BAR SERIES		EACH	TO								A548	"	5	2	3-2					3-2	7		
A504	E	"	5	1	3-11					3-11	4	RA440	WINGWALL 3 & 4	4	18	0-8	1-6	0-10	2-2	1-6%	5-2	62	A549	"	5	2	3-2					3-2	7		
A505	E	"	5	82	35-6					35-6	3036	* 12 BAR SERIES		EACH	TO								A550	"	5	5	2-10					2-10	15		
A506	E	"	5	1	9-11					9-11	90	* 12 BAR SERIES		EACH	TO								A552	"	5	5	6-10					6-10	36		
***TOTAL INCLUDES 1688 LBS OF EPOXY COATED BARS												***TOTAL WEIGHT (LBS) 3879												ABUTMENT 2 E.B.L.											
***TOTAL INCLUDES 2191 LBS OF NON EPOXY COATED BARS												PIER 1 - E.B.L.												ABUTMENT 2 E.B.L.											
A507	E	"	5	1	4-6					4-6	88	* 12 BAR SERIES		EACH	TO								A553	"	5	25	3-11					3-11	102		
A507	E	"	5	1	9-9					9-9	88	* 12 BAR SERIES		EACH	TO								A554	"	5	5	5-1					5-1	27		
A510	E	DIAPHRAGM	5	8	5-9					5-9	48	A350	RISER BLOCK	3	10	4-11					4-11	18	A743	E	"	7	5	31-8				31-8	224		
A5500	E	DECK	5	1	19-8	0-7				20-3	425	A351	"	3	10	4-9					4-9	18	A744	ABUTMENT	7	10	9-0					9-0	184		
***TOTAL INCLUDES 60026 LBS OF EPOXY COATED BARS												***TOTAL WEIGHT (LBS) 60026												ABUTMENT 2 E.B.L.											
A5502	E	"	5	628	19-10	0-7				20-5	13373	A650	CANT.COLUMN	6	4	15-0					15-0	90	A745	"	7	10	1-1					1-1	22		
K500	E	DIAPHRAGM	5	7	0-4	3-5	0-5			7-11	58	A651	"	6	2	15-0					15-0	159	A943	WINGWALL 5 & 6	9	8	17-2					17-2	467		
B501	E	DECK	5	616	25-9	0-7				26-4	16721	A652	CANT.CAP	6	8	3-6					3-6	42	CS43	E	ABUTMENT	5	18	10-0	0-10				10-10	203	
CONTINUED ON SHEET 166A												***TOTAL WEIGHT (LBS) 60026												ABUTMENT 2 E.B.L.											
***TOTAL INCLUDES 60026 LBS OF EPOXY COATED BARS												PIER 2 - E.B.L.												ABUTMENT 2 E.B.L.											
A442	WINGWALL 3	4	5	7-8						7-8	26	FC850	"	8	5	9-5 1/4	3-5 1/2				12-11	172	H446	WINGWALL 5	4	1	7-11	0-9				9-5	14		
A443	WINGWALL 4	4	5	8-7						8-7	29	FC851	"	8	2	9-8%	1-0				10-9	57	* 3 BAR SERIES		EACH	TO					TO				
A547	ABUTMENT	5	58	3-9						3-9	227	FC850	"	8	1	4-11%	0-10%	3-8	0-9	3-5 1/2	13-0	35	H447	WINGWALL 6	4	1	7-6	0-9				9-0	41		
A548	"	5	2	3-1						3-1	6	FC851	"	8	1	5-7 1/4	0-2	3-8	0-1%	1-0	10-5	28	* 9 BAR SERIES		EACH	TO					TO				
A549	"	5	2	3-11						3-11	8	* 14 BAR SERIES		EACH	TO								* 9 BAR SERIES		EACH	TO					TO				
A550	"	5	5	2-10						2-10	15	H651	CANT.CAP	6	3	1-0	4-0				9-0	41	H543	E	ABUTMENT	5	18	4-0	4-11			13-10	260		
A552	"	5	5	6-10						6-10	36	H650	"	9	22	4-10	1-0				6-10	511	H544	"	5	10	4-0	4-8				13-4	139		
A553	"	5	25	3-11						3-11	102	SX650	"	6	11	4-9 1/2	3-7 1/2	1-0			14-1	233	H545	E	"	5	25	3-3	4-11				13-1	341	
A554	"	5	5	5-1						5-1	27	SX651	"	6	2	3-5 3/4	9-8%	1-9			26-5	79	H547	"	5	10	4-0	0-10				5-8	59		
A555	WINGWALL 3 & 4	5	2	17-2						17-2	36	V650	"	6	8	3-3	1-9	1-2%	1-2%		5-0	60	V448	WINGWALL 5	4	2	4-1	14-2	13-1%	5-4%		18-3	24		
A556	ABUTMENT	5	2	9-5						9-5	20	V651	CANT.COLUMN	6	28	1-9	1-9	1-7%	0-8		3-6	147	V449	WINGWALL 6	4	2	17-2	0-8	0-5%	0-6%		17-10	24		
A557	E	"	5	25	11-6					11-6	300	V850	"	8	3	16-8	2-4 1/2	2-1 1/2	1-0%		19-1	153	V450	"	4	1	15-10	0-8	0-5%	0-6%		16-6	11		
A743	E	ABUTMENT	7	5	31-8					31-8	324	X650	CANT.CAP	6	4	4-7 3/4	9-7 3/4	1-0	0-8 1/2		25-11	156	V451	"	4	1	11-10	0-8	0-5%	0-6%		12-6	8		
A744	"	7	10	9-0						9-0	184	Z650	CANT.COLUMN	6	73	1-0	2-0	0-8			3-8	402	V452	"	4	1	7-10	0-8	0-5%	0-6%		8-6	6		
A745	"	7	10	1-1						1-1	22	***TOTAL WEIGHT (LBS) 2750												ABUTMENT 2 E.B.L.											
A943	WINGWALL 3 & 4	9	8	17-2						17-2	467	A350	RISER BLOCK	3	10	4-11					4-11	18	V543	"	5	5	0-10	3-6	3-2%	1-5%		4-4	23		
CS43	E	ABUTMENT	5	18	10-0	0-10				10-10	203	A351	"	3	10	4-9					4-9	18	V544	WINGWALL 5	4	2	17-2	0-8	0-5%	0-6%		17-10	24		
H442	"	4	2	4-0	0-8					5-4	7	A650	CANT.COLUMN	6	4	15-0					15-0	90	V545	"	4	1	12-3	0-8	0-5%	0-6%		12-11	9		
H443	"	4	2	9-4	0-8					10-8	14	A651	"	6	2	15-0					15-0	159	V546	"	4	1	8-7	0-8	0-5%	0-6%		9-3	6		
H444	WINGWALL 3	4	1	7-4	0-9					8-10	40	* 6 BAR SERIES		EACH	TO								VX447	"	4	1	15-11	0-8	0-5%	0-6%		16-7	11		
***TOTAL INCLUDES 1688 LBS OF EPOXY COATED BARS												***TOTAL WEIGHT (LBS) 2750												ABUTMENT 2 E.B.L.											
***TOTAL INCLUDES 2152 LBS OF NON EPOXY COATED BARS												PIER 2 - E.B.L.												ABUTMENT 2 E.B.L.											
H445	WINGWALL 4	4	1	8-2	0-9					9-8	43	A652	CANT.CAP	6	8	3-6					3-6	42	VX448	ABUTMENT	5	5	5-5	0-10	0-6%	0-7%		6-3	33		
***TOTAL INCLUDES 1688 LBS OF EPOXY COATED BARS												***TOTAL WEIGHT (LBS) 2750												ABUTMENT 2 E.B.L.											
***TOTAL INCLUDES 2152 LBS OF NON EPOXY COATED BARS												PIER 2 - E.B.L.												ABUTMENT 2 E.B.L.											
H446	"	4	1	16-2%	0-8	0-5%	0-6%			16-11	11	FC850	"	8	2	9-8%	1-0				10-9	57	VX449	WINGWALL 5	5	1	15-3	0-10	0-6%	0-7%		16-1	72		
H447	"	4	1	12-8	0-8	0-5%	0-6%			13-4	9	FC851	"	8	1	4-11%	0-10%	3-8	0-9	3-5 1/2	13-0	35	RA440	WINGWALL 6	4	18	0-8	1-6	0-10	2-2	1-6%	5-2	62		
H448	"	4	1	9-2	0-8	0-5%	0-6%			9-10	7	FC851	"	8																					
V540	ABUTMENT	5	5	0-10	5-4	2-6	4-1%			6-2	32	H651	CANT.CAP	6	3	1-0	4-0				9-0	41	A747	E	ABUTMENT	7	5	25-4					25-4	260	
V541	WINGWALL 4	5	5	0-10	3-6	3-2	1-5%			4-4	23	H650	"	9	22	4-10	1-0				6-10	511	* 5 BAR SERIES		EACH	TO					TO				
V542	WINGWALL 3	5	5	0-10	4-6	1-10%	4-1			5-4	28	SX650	"	6	11	4-9 1/2	3-7 1/2	1-0			14-1	233	A747	E	ABUTMENT	7	5	25-4					25-4	260	
V543	WINGWALL 4	5	4	17-11	0-10	0-6%	0-7%			18-9	78	SX651	"	6	2	3-5 3/4	9-8%	1-9			26-5	79	* 5 BAR SERIES		EACH	TO					TO				
V544	"	5	1	16-9	0-10	0-6%	0-7%			17-7	83	V650	"	6	8	3-3	1-9	1-2%	1-2%		5-0	60	* 5 BAR SERIES		EACH	TO					TO				
***TOTAL INCLUDES 1688 LBS OF EPOXY COATED BARS												***TOTAL WEIGHT (LBS) 2750												ABUTMENT 2 E.B.L.											
***TOTAL INCLUDES 2152 LBS OF NON EPOXY COATED BARS												PIER 2 - E.B.L.												ABUTMENT 2 E.B.L.											
V440	WINGWALL 3	4	2	17-4	0-8	0-5%	0-6%			18-0	24	V650	CANT.CAP	6	3	15-8	2-4 1/2	2-1 1/2	1-0%		19-1	153	VX444	WINGWALL 5	4	2	17-2	0-8	0-5%	0-6%		17-10	24		
V441	"	4	1	15-11%	0-8	0-5%	0-6%			16-8	11	Z650	CANT.COLUMN	6	73	1-0	2-0	0-8			3-8	402	"	4	1	11-10	0-8	0-5%	0-6%		12-6	8			
V442	"	4	1	11-10	0-8	0-5%	0-6%			12-6	8	***TOTAL WEIGHT (LBS) 2750												ABUTMENT 2 E.B.L.											
V443	"	4	1	7-9	0-8	0-5%	0-6%			8-5	6	ABUTMENT 2 E.B.L.												ABUTMENT 2 E.B.L.											
V540	ABUTMENT	5	2	9-5	0-10	0-6%	0-7%			10-3	21	ABUTMENT 2 E.B.L.												ABUTMENT 2 E.B.L.											
V541	"	5	5	13-2	0-10	0-6%	0-7%			14-0	73	ABUTMENT 2 E.B.L.												ABUTMENT 2 E.B.L.											
A747	E	"	7	5	25-4					25-4	260	ABUTMENT 2 E.B.L.												ABUTMENT 2 E.B.L.											

PROJECT NO.	YEAR	SHEET NO.
IR-40-(591)257	1989	

REVISIONS

[illegible]

DESIGNED BY: W. S. HUFFSTETLER DATE: 1-89
 DRAWN BY: EAB DATE: 1-89
 SUPERVISED BY: W. S. HUFFSTETLER DATE: 1-89
 CHECKED BY: DWT DATE: 2-89

CORRECT

ENGINEER OF STRUCTURES

APPROVED _____

M-214-57

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS
REINFORCING STEEL
BAR BENDING DETAILS
I-40 OVER
HICKMAN CREEK
STA. 162+13.19 W.B.L.
STA. 165+29.50 E.B.L.
SMITH COUNTY
1989

Const. No. 80 001 3152.44

PROJECT NO.	YEAR	SHEET NO.
IR 40-5(91)257	1989	

REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION

LEGEND

Number and letter combination shown thus:
 A1(L-37) - Indicates proposed boring identification number and location.

YN(R-XX) - Number denotes distance in feet from Finish Grade Line to boring location measured along the skew unless otherwise noted.

Letter offset denotes direction (R=right; L=left) from survey centerline.

Number or number-letter combination denote bent, abutment or retaining wall number.

Beach Mark:

Left side abutment 1 E.B.L.
 at top of abutment beam
 Elev. 506.84

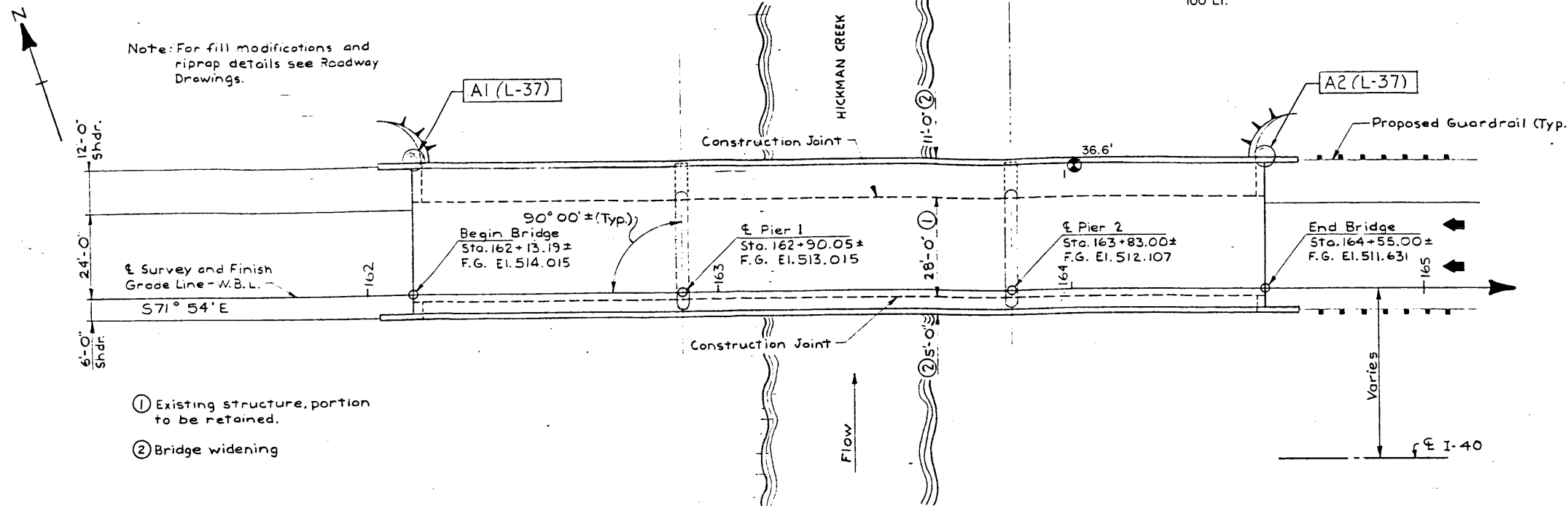
Note: This drawing is for Foundation Data, only & not to be used as a Layout.

Bridge No. 1 - WBL

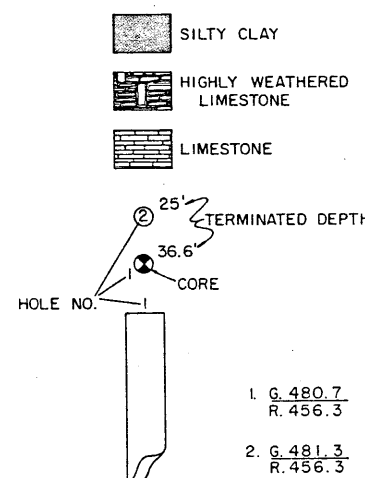
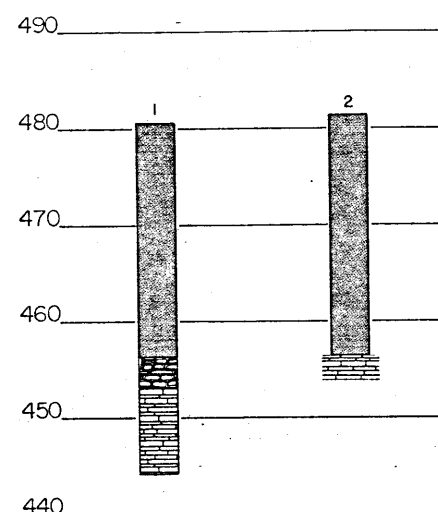
STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAYS

SOUNDING SKETCH FOR BRIDGE WIDENING

I-40 W.B.L. OVER
 HICKMAN CREEK
 STA. 162+13.19± W.B.L. I-40
 SMITH COUNTY
 1989



- ① Existing structure, portion to be retained.
- ② Bridge widening



DESIGNED BY D.W. TAYLOR DATE 10-88
 DRAWN BY W.D. MCGREADY DATE 10-88
 SUPERVISED BY W.S. HUFFSTETLER DATE 10-88
 CHECKED BY D.W. TAYLOR DATE 10-88

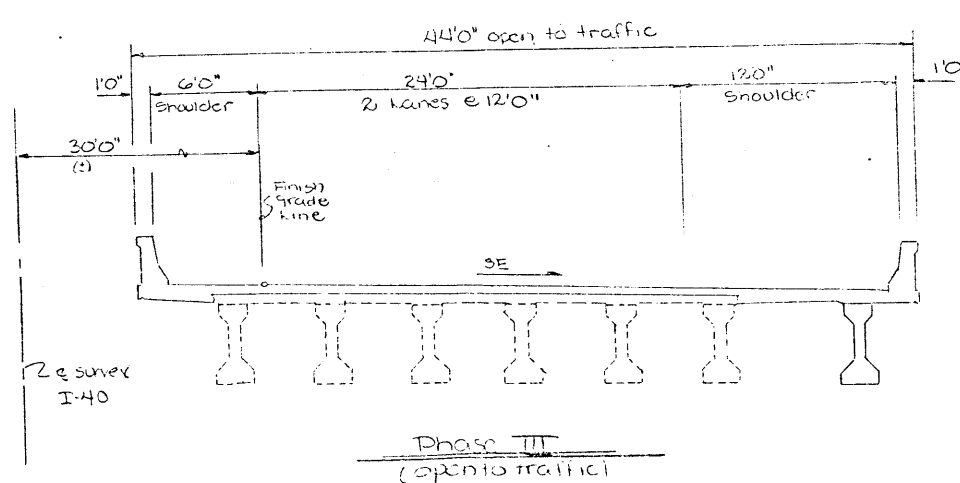
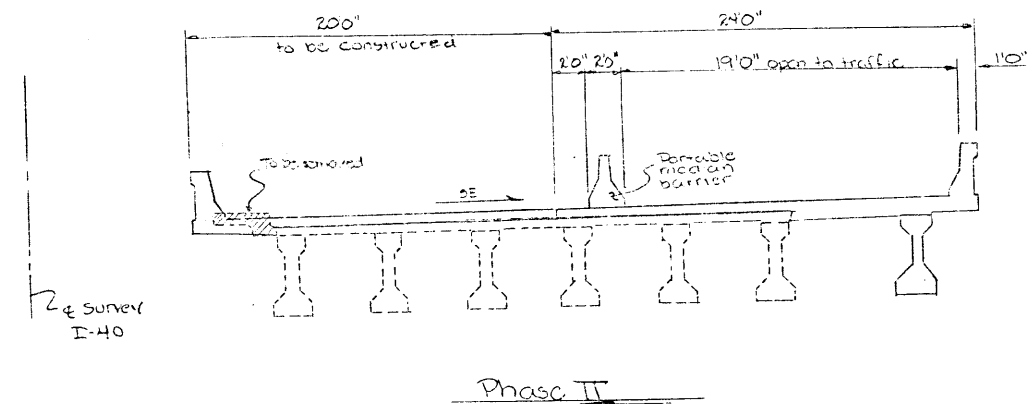
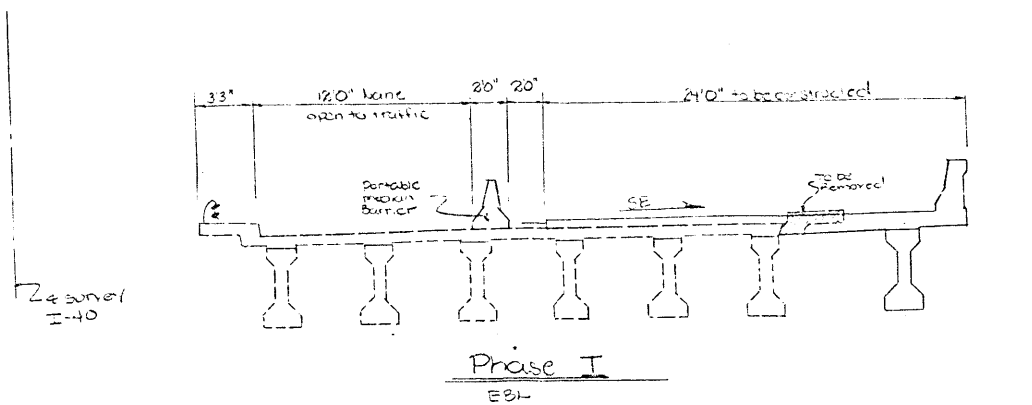
CORRECT ENGINEER OF STRUCTURES
 APPROVED DIRECTOR OF HIGHWAYS

M-24-58

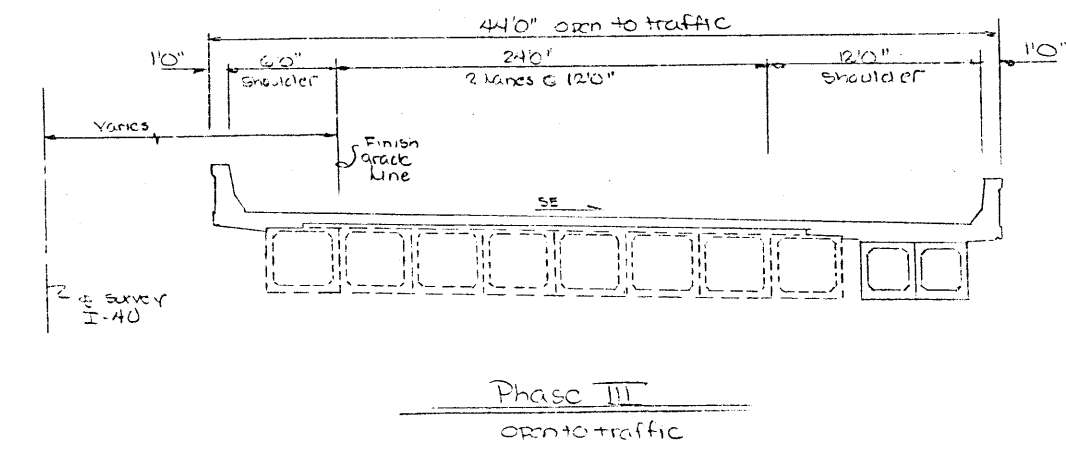
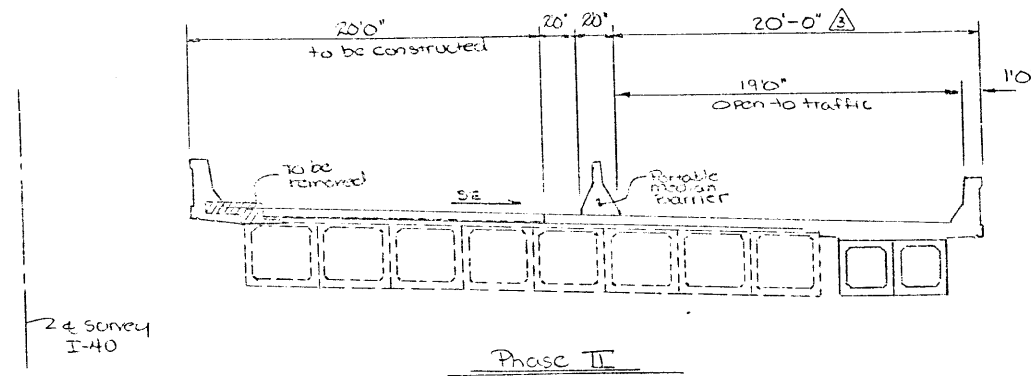
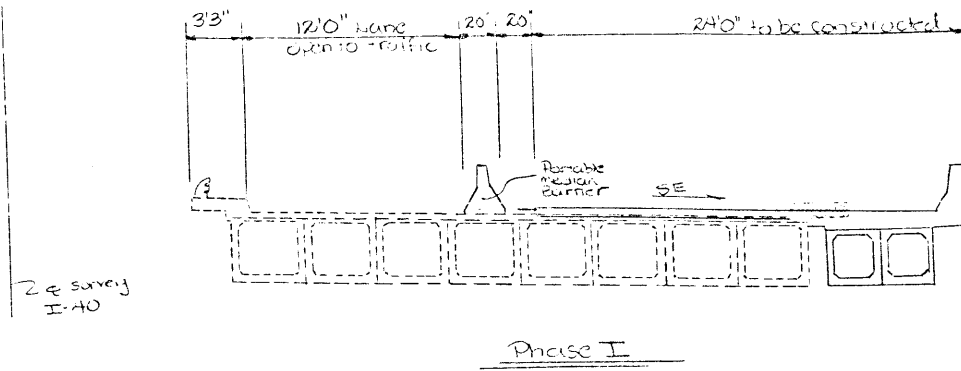
Const. No. 80001-3152-44

PROJECT NO.		YEAR	SHEET NO.
IR-40-5(9) 257		1989	
REVISIONS			
NO.	DATE	BY	BRIEF DESCRIPTION
1	6/12/89	DWT	ADD SHEET
2	8/1/89	DWT	REMOVED
3	9-14-89	DWT	Note Added/Removed

Stage construction for Bridges No. 1, 3, 4, and 5



Stage construction for Bridge No. 2 and 6



Notes Regarding Construction Sequence and maintenance of traffic

1) See Special Provision 108 B

⚠

⚠ Note: Pier Bracket Construction in it's entirety shall be included in Phase I Construction.

⚠ Construction stages for approach pavements shall be identical to slab stages. Provide a 1'-6" lap at the construction joint for all bars A490. Bars A790 shall be mechanically coupled at the construction joint using a coupler in accordance with AASHTO 8.32.2.3 and General Notes drawing.

⚠

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

Construction Sequence
I-40 Bridge widening
Smith County
1989

DESIGNED BY: W. B. B. DATE: 6/12/89
DRAWN BY: W. B. B. DATE: 6/12/89
SUPERVISED BY: W. B. B. DATE: 6/12/89
CHECKED BY: W. B. B. DATE: 6/12/89

CORRECT: _____ ENGINEER OF STRUCTURES
APPROVED: _____ DIRECTOR OF HIGHWAYS
M-214-89A