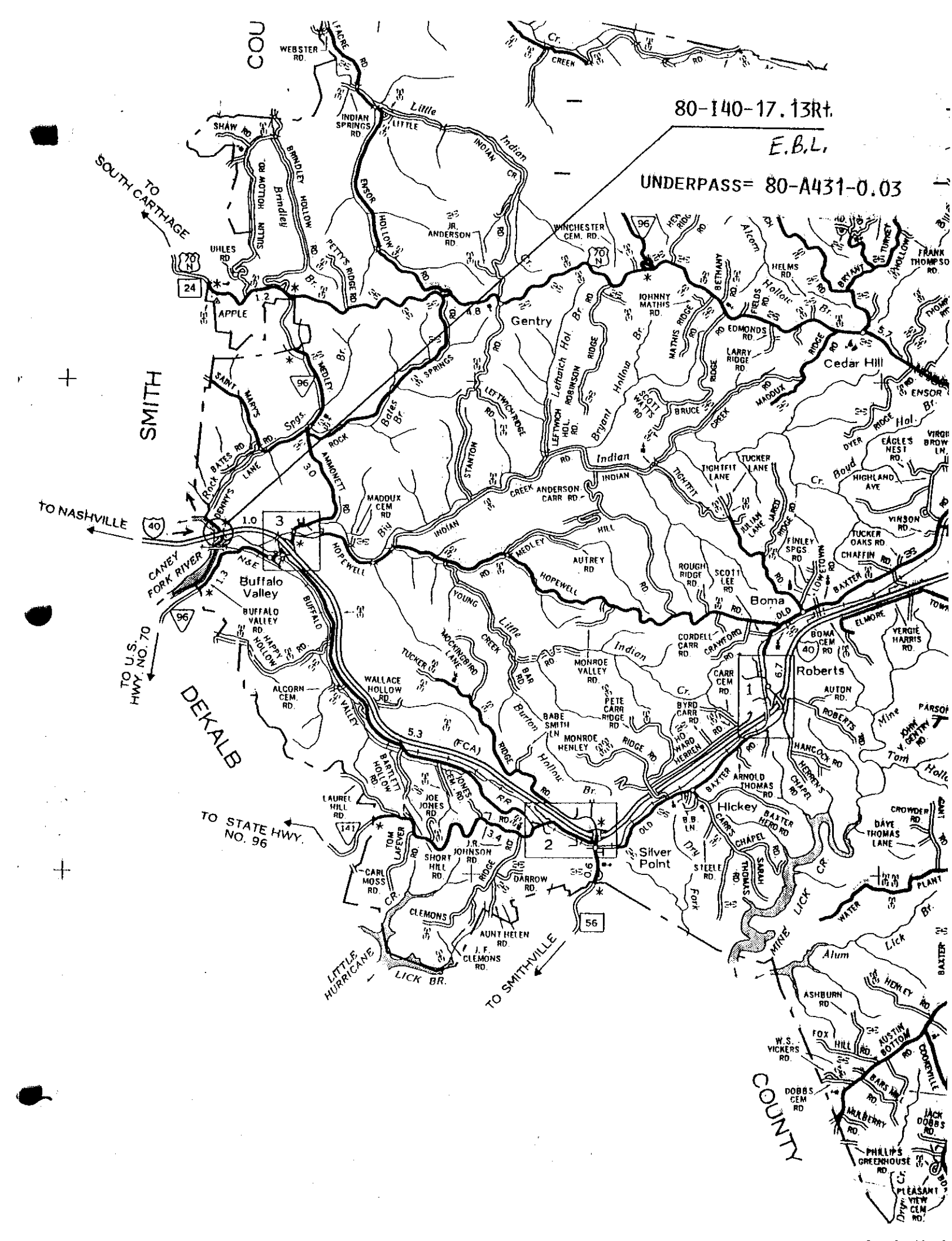
80-140-17.13Rt.
E.B.L.
UNDERPASS= 80-A431-0.03
SMITH
DEKALB
COUNTY
TO SOUTH CARTHAGE
TO NASHVILLE
TO U.S. HWY. NO. 70
TO STATE HWY. NO. 96
TO SMITHVILLE
Buffalo Valley
Gentry
Cedar Hill
Boma
Roberts
Hickey
Silver Point
APPLE
WEBSTER RD.
INDIAN SPRINGS RD.
SHAW RD.
BRADLEY HOLLOW RD.
SULLIN HOLLOW RD.
UHLES RD.
PETTY'S RIDGE RD.
ENSOR HOLLOW RD.
JR. ANDERSON RD.
WINCHESTER CEM. RD.
HEN RIDGE RD.
BETHANY RD.
HELMS RD.
FRANK THOMPSON RD.
JOHNNY MATHIS RD.
MATHIS RIDGE RD.
EDMONDS RD.
LARRY RIDGE RD.
FIELDS HOLLOW RD.
BRYANT RIDGE RD.
MADDUX RIDGE RD.
ENSOR RD.
SAINT MARYS SPGS.
MEDLEY BR.
BATES BR.
SPRINGS RD.
LEFTWICH RIDGE RD.
LEFTWICH HOL. RD.
ROBINSON RIDGE
BRYANT HOLLOW BR.
SCOTT RIDGE RD.
BRUCE CREEK
STANTON RD.
ROCK BATES LANE
DENNY'S LANE
AMMONETT RD.
MADDUX CEM RD
INDIAN CREEK
ANDERSON CARR RD.
TIGHTFIT LANE
TUCKER LANE
EAGLES NEST RD.
HIGHLAND AVE
VINSON RD.
TUCKER OAKS RD.
CHAFFIN RD.
FINLEY SPGS RD.
LOWE TOWN RD.
BAXTER RD.
CANEY FORK RIVER
N&E
BUFFALO VALLEY RD.
BUFFALO HAPPY HOLLOW RD.
HOPEWELL RD.
MEDLEY HILL
AUTREY RD.
ROUGH RIDGE RD.
SCOTT LEE RD.
YOUNG
Little Indian CREEK
MOCKINGBIRD LANE
TUCKER VALLEY
WALLACE HOLLOW RD.
ALCORN CEM. RD.
MONROE VALLEY RD.
BAR RD.
BABE SMITH LN.
PETE CARR RIDGE RD.
MONROE HENLEY RIDGE RD.
BYRD CARR RD.
HOWARD HERREN RD.
CORDELL CARR RD.
CRAWFORD RD.
CARR CEM RD.
AUTON RD.
BOMA CEM RD.
ELMORE RD.
YERGIE HARRIS RD.
ROBERTS RD.
HANCOCK RD.
HERRON'S CHAPEL RD.
ARNOLD THOMAS RD.
BAXTER HERD RD.
DAVE THOMAS LANE
CROWDER RD.
BARTLETT HOLLOW RD.
LAUREL HILL RD.
TOM LAFEVER RD.
JOE JONES RD.
CEM. JONES RD.
J.R. JOHNSON RD.
SHORT HILL RD.
CARL MOSS RD.
DARROW RD.
CLEMONS RD.
AUNT HELEN RD.
J.F. CLEMONS RD.
LITTLE HURRICANE CR.
LICK BR.
STEELE RD.
SARAH THOMAS RD.
B.B. LN.
OLD DRY FORK
MINE LICK CR.
WATER LICK BR.
Alum Lick
ASHBURN RD.
HENLEY RD.
FOX HILL RD.
AUSTIN BOTTOM RD.
COOKEVILLE RD.
W.S. VICKERS RD.
DOBBS CEM RD
BARS MILL RD.
MR. BERRY RD.
JACK DOBBS RD.
PHILLIPS GREENHOUSE RD.
PLEASANT VIEW CEM RD.
Dyer Cr.
1.2
4.8
5.7
1.0
1.3
3.0
5.3 (FCA)
3.4
0.6
6.7

Bridge Maintenance Recommendations

Bridge Location No.: 80 - I0040 - 17.13 R
Co. Route Log Mile

Crossing: CANEY FORK RIV & NFA A43*

Bridge Rating: GOOD

Inspection Cycle: 16

Inspection Date: 4/28/2003

Comments: -0-

Bridge Number: 80I00400035
County: Smith
Region: 03
District: 32
Maint.Resp.: 01
Spec.Case: 0
Co.Seq: 01

Maintenance Recommendations:

Maintenance Completed By / Date

REPAIR SIDEWALK UNDER BRIDGE

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 Location No.: 80 - I0040 - 17.13 R
Co. Route Log Mile

Crossing: CANEY FORK RIV & NFA A43*

Bridge Rating: GOOD

Inspection Cycle: 15

Inspection Date: 6/13/01

Comments: -0-

Bridge Number: 80I00400035
County: Smith
Region: 03
District: 32
Maint.Resp.: 01
Spec.Case: 0
Co.Seq: 01

Maintenance Recommendations:

Maintenance Completed By / Date

XXXXX	

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. : 80I00400035 BRIDGE NO. : 80 - I0040 - 1713 - R
OVER : CANEY FORK RIV & NFA A43*

DATE : 05/07/97 BRIDGE RATING : GOOD COUNTY : Smith
CO. SEQ. : 01 INSPECTION CYCLE : 14 MAINT DIST : 32
SPEC. CASE : 1 INSPECTION DATE : 06/17/99 REGION : 03

007 - FACILITY CARRIED BY STRUCT : I40
021 - MAINTENANCE RESPONSIBILITY : 01
022 - OWNER : 01
042 - TYPE OF STRUCTURE : 16
043 - STRUCTURE TYPE, MAIN : 505
044 - STRUCTURE TYPE, APPROACH : 000
045 - SPANS, MAIN UNIT : 004
046 - SPANS, APPROACH : 0000
049 - STRUCTURE LENGTH : 000320
032 - APPROACH ROADWAY WIDTH : 038
034 - SKEW : 90
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 XXXX 1 BY ____ DATE _____

: COMMENTS FOR BRIDGE SEQ. NO. : 80I00400035 :

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 Manger I

FROM: Mr. Phillip Shraybman
Structural Specialist Superviser 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

December 13, 1983

Mr. John McCormick
Engineer IV
Right of Way Office
Utilities Section
Suite 1100 - James K. Polk Bldg.
Nashville, TN 37219

RE: Utility Attachment of 6" Water Line
to I-40/Caney Fork River
Bridge No. 80-I40-17.15
Smith County

Dear Mr. McCormick:

In reply to your request to make the captioned attachment, we feel this proposed attachment will not meet the criteria set forth in the Department's Utility Manual, and we do not recommend this utility be attached to the bridge.

In addition, this structure is on the list of structures for future widening.

Please contact us if we can be of further service.

Yours very truly,

Clellon L. Loveall
Engineering Director, Structures

CEH:gp

cc: Mr. C. E. Hunter

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
NASHVILLE, TENNESSEE 37219

December 9, 1983

Mr. John McCormick
Engineer IV
Right of Way Office
Utilities Section
Suite 1100 - James K. Polk Bldg.
Nashville, TN 37219

RE: Utility Attachment of 6" Water Line to I-40/Caney Fork River Bridge No. 80-I40-17.15 Smith County

Dear Mr. McCormick:

We have reviewed the plans of the captioned structure and find it is a side by side prestressed box beam bridge with a 4" deck and 3'-3" curbs.

This type of construction prohibits the accommodation of any utility in accordance with the utilities accommodation manual.

The utility could be placed either on the top of the curb adjacent to the roadway or under the 1'-11" curb overhang. The latter appears to be the most desirable, however, either must be approved thru the hardship route. In addition the maximum depth of the utility and hardware below the curb would be 40 inches.

Please contact us if we can be of further service.

Yours very truly,

Charles E. Hunter
for
Clellon L. Loveall
Engineering Director, Structures

CEH:gp

cc: Mr. C. E. Hunter

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

Bridge Condition Coding Form

Revised 06/15/2000

County:	80
Route:	I0040
Special Case:	0
County Sequence:	01
Log Mile:	17.13

Bridge Number: (Includes Item 5A) 80I004000351

Feature Intersected: CANEY FORK RIV & NFA A43

CODE ONLY THOSE VALUES WHICH HAVE CHANGED

ITEM #	DESCRIPTION	VALUE
90	INSPECTION DATE	06/13/2001
		4 / 28 / 2003
10	MINIMUM V.C. OVER DECK (ROADWAY + SHOULDERS)	99 FT. 99 IN.
		____ FT. ____ IN.
520	MINIMUM V.C. OVER DECK (EXCLUDES SHOULDERS)	99 FT. 99 IN.
		____ FT. ____ IN.
36	TRAFFIC SAFETY FEATURES	
	Br. Rail / Trans. / Appr. Rail / Appr. Rail Ends	1 / 1 / 1 / 1
		--- / --- / --- / ---
41	STRC OPEN/CLOSED/POSTED (A K P)	A

58	DECK	7

59	SUPERSTRUCTURE	7

60	SUBSTRUCTURE	7

61	CHANL/CHANL PROTECTION	7

62	CULVERT AND RETAIN WALL	N

71	WATERWAY ADEQUACY	6

72	APPROACH RDWY ALIGNMENT (USE VALUES OF 3, 6, OR 8)	8

521	OVERALL CONDITION (Circle One)	
	GOOD FAIR POOR CRITICAL	

Gilbert Wayne Hunter — TEAM LEADER SIGNATURE

4/28/2003 — REVIEW DATE

CONDITION CODING GUIDELINES
(Values for Coding Items 58, 59, 60 and 62)

- N NOT APPLICABLE
- 9 EXCELLENT CONDITION
- 8 VERY GOOD CONDITION - NO PROBLEMS NOTED.
- 7 GOOD CONDITION - SOME MINOR PROBLEMS.
- 6 SATISFACTORY CONDITION - MINOR DETERIORATION OF STRUCTURAL ELEMENTS.
- 5 FAIR CONDITION - ALL PRIMARY STRUCTURAL ELEMENTS ARE SOUND BUT MAY HAVE MINOR SECTION LOSS, CRACKING, SPALLING OR SCOUR.
- 4 POOR CONDITION - ADVANCED SECTION LOSS, DETERIORATION, SPALLING OR SCOUR.
- 3 SERIOUS CONDITION - LOSS OF SECTION, DETERIORATION, SPALLING OR SCOUR HAVE SERIOURSLY AFFECTED PRIMARY STRUCTURAL COMPONENTS. LOCAL FAILURES ARE POSSIBLE. FATIGUE CRACKS IN STEEL OR SHEAR CRACKS IN CONCRETE MAY BE PRESENT.
- 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 "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.
- 0 FAILED CONDITION - OUT OF SERVICE AND BEYOND CORRECTIVE ACTION.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

Underpass Only* Condition Coding Form

Revised 06/15/2000

County: 80
Route: OA431
Special Case: 0
County Sequence: 01
Log Mile: 0003

Bridge Number: (Includes Item 5A) 80I00400035
Feature Intersected: I 40/Rest Area Ramp

CODE ONLY THOSE NUMBERS WHICH HAVE CHANGED

ITEM #	DESCRIPTION	Previous - 6/13/01	VALUE
90	INSPECTION DATE		4-28-03
10	MINIMUM V.C. OVER DECK (ROADWAY + SHOULDERS)		14 FT. 11 IN.
520	MINIMUM V.C. OVER DECK (EXCLUDES SHOULDERS)		14 FT. 11 IN.
47	TOTAL HORIZONTAL UNDERCLEARANCE		44 FT. 3 IN.

UNDERPASS SAFETY FEATURES

515 (A) TYPE UNDERPASS BARRIER _____ Revised Barrier Type

(B) ADEQUACY OF BARRIER OR RAIL ____

(C) ADEQUACY OF TRANSITIONS ____

(D) ADEQUACY OF TERMINALS ____

* Use when no overhead vehicular traffic bridge exists. Items 55 and 56 do not apply.

521 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.

555 COMMENTS _____

Gilbert Wayne Hunter — TEAM LEADER SIGNATURE

4/28/03 — REVIEW DATE

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

Bridge Condition Coding Form

Revised 06/15/2000

County:	80
Route:	10040
Special Case:	0
County Sequence:	01
Log Mile:	17.13

Bridge Number: (Includes Item 5A) 801004000351

Feature Intersected: CANEY FORK RIV & NFA A43

CODE ONLY THOSE VALUES WHICH HAVE CHANGED

ITEM #	DESCRIPTION	VALUE
90	INSPECTION DATE	06/17/1999 6/13/01
10	MINIMUM V.C. OVER DECK (ROADWAY + SHOULDERS)	99 FT. 99 IN. ____ FT. ____ IN.
520	MINIMUM V.C. OVER DECK (EXCLUDES SHOULDERS)	99 FT. 99 IN. ____ FT. ____ IN.
36	TRAFFIC SAFETY FEATURES	
	Br. Rail / Trans. / Appr. Rail / Appr. Rail Ends	1 / 1 / 1 / 1
41	STRC OPEN/CLOSED/POSTED (A / K / P)	A
58	DECK	7
59	SUPERSTRUCTURE	7
60	SUBSTRUCTURE	7
61	CHANL/CHANL PROTECTION	7
62	CULVERT AND RETAIN WALL	N
71	WATERWAY ADEQUACY	6
72	APPROACH RDWY ALIGNMENT (USE VALUES OF 3, 6, OR 8)	8
521	OVERALL CONDITION (Circle One)	GOOD / FAIR / POOR / CRITICAL

Gilbert Wayne Hunter — TEAM LEADER SIGNATURE

6/13/01 — REVIEW DATE

CONDITION CODING GUIDELINES
(Values for Coding Items 58, 59, 60 and 62)

- N NOT APPLICABLE
- 9 EXCELLENT CONDITION
- 8 VERY GOOD CONDITION - NO PROBLEMS NOTED.
- 7 GOOD CONDITION - SOME MINOR PROBLEMS.
- 6 SATISFACTORY CONDITION - MINOR DETERIORATION OF STRUCTURAL ELEMENTS.
- 5 FAIR CONDITION - ALL PRIMARY STRUCTURAL ELEMENTS ARE SOUND BUT MAY HAVE MINOR SECTION LOSS, CRACKING, SPALLING OR SCOUR.
- 4 POOR CONDITION - ADVANCED SECTION LOSS, DETERIORATION, SPALLING OR SCOUR.
- 3 SERIOUS CONDITION - LOSS OF SECTION, DETERIORATION, SPALLING OR SCOUR HAVE SERIOURSLY AFFECTED PRIMARY STRUCTURAL COMPONENTS. LOCAL FAILURES ARE POSSIBLE. FATIGUE CRACKS IN STEEL OR SHEAR CRACKS IN CONCRETE MAY BE PRESENT.
- 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 "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.
- 0 FAILED CONDITION - OUT OF SERVICE AND BEYOND CORRECTIVE ACTION.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

Underpass Only* Condition Coding Form

Revised 06/15/2000

County: 80
Route: 0A431
Special Case: 0
County Sequence: 01
Log Mile: 0003

Bridge Number: (Includes Item 5A) 80I00400035
Feature Intersected: I40/REST AREA RAMP

CODE ONLY THOSE NUMBERS WHICH HAVE CHANGED

ITEM #	DESCRIPTION	VALUE
90	INSPECTION DATE	6-13-01
10	MINIMUM V.C. OVER DECK (ROADWAY + SHOULDERS)	14 FT. 11 IN.
520	MINIMUM V.C. OVER DECK (EXCLUDES SHOULDERS)	14 FT. 11 IN.
47	TOTAL HORIZONTAL UNDERCLEARANCE	44 FT. 3 IN.

UNDERPASS SAFETY FEATURES

515 (A) TYPE UNDERPASS BARRIER _____ Revised Barrier Type

(B) ADEQUACY OF BARRIER OR RAIL ____

(C) ADEQUACY OF TRANSITIONS ____

(D) ADEQUACY OF TERMINALS ____

* Use when no overhead vehicular traffic bridge exists. Items 55 and 56 do not apply.

521 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.

555 COMMENTS _____

Gilbert Wayne Hunter — TEAM LEADER SIGNATURE

6/13/01 — REVIEW DATE

Bridge Condition Coding Form

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

County:	80
Route:	I0040
Special Case:	0
County Sequence:	1
Log Mile:	17.13

Bridge Number: (Includes Item 5A) 80I004000351

Feature Intersected: CANEY FORK RIV & NFA A43

CODE ONLY THOSE NUMBERS WHICH HAVE CHANGED

ITEM #	DESCRIPTION	VALUE
90	INSPECTION DATE	5/1/97 6/17/99
10	MINIMUM V.C. OVER DECK (ROADWAY + SHOULDERS)	99 FT. 99 IN. ____ FT. ____ IN.
520	MINIMUM V.C. OVER DECK (EXCLUDES SHOULDERS)	99 FT. 99 IN. ____ FT. ____ IN.
54	MINIMUM VERTICAL UNDERCLEARANCE (EXCLUDES SHOULDERS)	H 14 FT. 11 IN. Circle One: (H) R N ____ FT. ____ IN.
36	TRAFFIC SAFETY FEATURES	Br. Rail / Trans. / Appr. Rail / Appr. Rail Ends 1 / 1 / 1 / 1 — / — / — / —
41	STRC OPEN/CLOSED/POSTED (A K P)	A —
58	DECK	7 —
59	SUPERSTRUCTURE	7 —
60	SUBSTRUCTURE	7 —
61	CHANL/CHANL PROTECTION	7 —
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

Gilbert Wayne Hunter — SIGNATURE

6/17/99 — DATE

COMMENTS

RATINGS FOR CODING ITEMS 58, 59, 60 AND 62

N NOT APPLICABLE

9 EXCELLENT CONDITION

8 VERY GOOD CONDITION - NO PROBLEMS NOTED.

7 GOOD CONDITION - SOME MINOR PROBLEMS.

6 SATISFACTORY CONDITION - MINOR DETERIORATION OF STRUCTURAL ELEMENTS.

5 FAIR CONDITION - ALL PRIMARY STRUCTURAL ELEMENTS ARE SOUND BUT MAY HAVE MINOR SECTION LOSS, CRACKING, SPALLING OR SCOUR.

4 POOR CONDITION - ADVANCED SECTION LOSS, DETERIORATION, SPALLING OR SCOUR.

3 SERIOUS CONDITION - LOSS OF SECTION, DETERIORATION, SPALLING OR SCOUR HAVE SERIOURSLY AFFECTED PRIMARY STRUCTURAL COMPONENTS. LOCAL FAILURES ARE POSSIBLE. FATIGUE CRACKS IN STEEL OR SHEAR CRACKS IN CONCRETE MAY BE PRESENT.

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 "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.

0 FAILED CONDITION - OUT OF SERVICE AND BEYOND CORRECTIVE ACTION.

Underpass Condition Coding Form

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

County: 80
Route: OA431
Special Case: C
County Sequence: 01
Log Mile: 0003

Bridge Number (Includes Item 5A): 80I0040000035
Feature Intersected: I40/REST AREA RAMP

CODE ONLY THOSE NUMBERS WHICH HAVE CHANGED

ITEM #	DESCRIPTION	VALUE
90	INSPECTION DATE	6/17/99
10	MINIMUM V.C. OVER DECK (ROADWAY + SHOULDERS)	14 FT. 11 IN.
520	MINIMUM V.C. OVER DECK (EXCLUDES SHOULDERS)	____ FT. ____ IN.
47	TOTAL HORIZONTAL UNDERCLEARANCE	44 FT. 3 IN.
55	MINIMUM LATERAL UNDERCLEARANCE ON RIGHT SIDE Circle One: (H) R N	3' FT. 0 IN.
56	MINIMUM LATERAL UNDERCLEARANCE ON LEFT SIDE	0 FT. 0 IN.

OVERALL CONDITION (Circle One)

(GOOD) FAIR POOR CRITICAL

UNDERPASS SAFETY FEATURES

(A) TYPE UNDERPASS BARRIER

Revised Barrier Type

(B) ADEQUACY OF BARRIER OR RAIL ____

(C) ADEQUACY OF TRANSITIONS ____

(D) ADEQUACY OF TERMINALS ____

VERTICAL CLEARANCE LISTED ON HEIGHT POSTING SIGNS

____ FT. ____ IN.

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

Gilbert W. Hunter
SIGNATURE

6/17/99
DATE

BARS UPDATE RATING FOR ADDITIONAL DEAD LOAD

BRIDGE NUMBER: 80-I40-17.13 L&R LANES 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)..		69.92
THICKNESS OF ADDITIONAL ASPHALT.....(INCHES)..		3.25
MOMENT CAPACITY AVAILABLE AT INVENTORY LEVEL.....(K-FT)..		810.9
MOMENT CAPACITY AVAILABLE AT OPERATING LEVEL.....(K-FT)..		1116.1
H LIVELOAD MOMENT.....(K-FT)..		280.1
HS LIVELOAD MOMENT.....(K-FT)..		517.8

OUTPUT DATA - DUE TO MOMENT

DLW/FT	MCAP-INV	MCAP-OPER	DEAD LOAD MOMENT
.253	810.9	1116.1	201.39

MOMENT AVAIL - INV	MOMENT AVAIL - OPER
609.51	914.71

H-LLM+I	HS-LLM+I
280.1	517.8

H AND HS RATINGS - DUE TO MOMENT

H@ INV	H @ OPER	HS @ INV	HS @ OPER
32.64	48.98	42.38	63.6

TENNESSEE BRIDGE INSPECTION PROGRAM
SUMMARY OF EVALUATION

REV. 03-05-2003

BRIDGE ID NO: 80I00400035 *LOCATION NO:* 80 - I0040 - 17.16 R

(6A) CROSSING: CANEY FORK RIV & NFA A43

(505) METHOD OF ANALYSIS: LOAD FACTOR METHOD

(548) RATING BASED ON: AASHTOWARE BRIDGE RATING (3.5" OF ASPHALT)

LOAD RATINGS IN TONS

INVENTORY (503) H	20	*(518B) HS*	36
OPERATING (504) H	45	*(519) HS*	58

(549) EVALUATOR: DCD

(522) EVAL. DATE: 8/16/2017

LAST UPDATED BY: DOMM

(29) ADT: 32,560 *(30) ADT YR:* 2018

(100) STRAHNET ROUTE: YES

(19) DETOUR LENGTH: 2 *KM*

(520) VC OVER RDWY: 99.99 *METERS*

CONDITION RATINGS

(58) DECK RATING:	7
(59) SUPERSTRUCTURE RATING:	7
(60) SUBSTRUCTURE RATING:	7
(61) CHANNEL PROTECTION:	7
(62) CULVERT RATING:	N
(113A) NBIS SCOUR CODE:	8
(113B) TDOT SCOUR CODE:	R

APPRAISAL RATINGS

(67) STRUCTURAL EVALUATION:	7
(68) DECK GEOMETRY:	8
(69) UNDER CLEARANCE:	4
(70) BRIDGE POSTING:	5
(71) WATERWAY ADEQUACY:	6
(72) APPROACH RDWY ALIGNMENT:	8

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

OTHER RATING ITEMS

(521) OVERALL CONDITION:	G	
(513) TEXTURE COAT RATING:	G	10
(514) PAINT CONDITION RATING:	N	
(41) WEIGHT POSTING CODE:	A	

(36) TRAFFIC SAFETY FEATURES: 1 0 0 0

(525) REPAIR LIST NO: N

COMMENTS

NO COMMENTS AT THIS TIME.

(502) SUFF. RATING:	90.9
(528) STR. DEFICIENT:	NO
(529) FUNC. OBSOLETE:	NO

Bridge Name: I-40 OVER CANEY FORK RIVER AND NFA A43
NBI Structure ID: 80I00400035
Bridge ID: 80I00400035

Analyzed By: bridgeware
Analyze Date: Thursday, April 18, 2019 14:02:37
Analysis Engine: AASHTO LFR Engine Version 6.8.1.3001
Analysis Preference Setting: None

Report By: bridgeware
Report Date: Thursday, April 18, 2019 14:10:55

Structure Definition Name: 70' SPAN (NEW BEAMS)
Member Name: G9
Member Alternative Name: NEW INT

Load Factor Rating Summary

Girder Summary

Live Load		Rating Factor	Controls	Capacity (Ton)	Span	Location (ft)	Percent	Impact	Lane
H 15-44	Inventory	1.281	PS Tensile Stress - Concrete	19.22	1	34.63	50.0	As Requested	As Requested
H 15-44	Operating	2.992	Design Flexure - Concrete	44.88	1	34.63	50.0	As Requested	As Requested
HS 20-44	Inventory	0.691	PS Tensile Stress - Concrete	24.89	1	34.63	50.0	As Requested	As Requested
HS 20-44	Operating	1.614	Design Flexure - Concrete	58.11	1	34.63	50.0	As Requested	As Requested
Type 3S2	Inventory	0.870	PS Tensile Stress - Concrete	31.30	1	34.63	50.0	As Requested	As Requested
Type 3S2	Operating	2.030	Design Flexure - Concrete	73.08	1	34.63	50.0	As Requested	As Requested
	Inventory	0.572		47.18	1	34.63	50.0	As Requested	As Requested

Annual Permit 1			PS Tensile Stress - Concrete						
Annual Permit 1	Operating	1.335	Design Flexure - Concrete	110.15	1	34.63	50.0	As Requested	As Requested
Annual Permit 2	Inventory	0.440	PS Tensile Stress - Concrete	36.33	1	34.63	50.0	As Requested	As Requested
Annual Permit 2	Operating	1.028	Design Flexure - Concrete	84.82	1	34.63	50.0	As Requested	As Requested
Gravel Truck	Inventory	0.631	PS Tensile Stress - Concrete	23.33	1	34.63	50.0	As Requested	As Requested
Gravel Truck	Operating	1.472	Design Flexure - Concrete	54.47	1	34.63	50.0	As Requested	As Requested
Overweight Permit	Inventory	0.421	PS Tensile Stress - Concrete	53.68	1	34.63	50.0	As Requested	As Requested
Overweight Permit	Operating	0.983	Design Flexure - Concrete	125.33	1	34.63	50.0	As Requested	As Requested
EV2	Operating	1.913	Design Flexure - Concrete	55.00	1	34.63	50.0	As Requested	As Requested
EV3	Operating	1.228	Design Flexure - Concrete	52.79	1	34.63	50.0	As Requested	As Requested
SU6 LFR	Operating	1.583	Design Flexure - Concrete	55.00	1	34.63	50.0	As Requested	As Requested
SU7 LFR	Operating	1.450	Design Flexure - Concrete	56.17	1	34.63	50.0	As Requested	As Requested

Note:
"N/A" indicates not applicable
"**" indicates not available

BARS INPUT FILE DATA REPORT

- General Data -

FILE NAME: 80- 123.DAT

REGION: 3

ROUTE: I0040

LOGMILE: 1713

SYSTEM BRIDGE?: YES

LANE (R/L): R

CROSSING: CANEY FORK RIVER

LEFT AND RIGHT LANES

- Specific Data -

STD. OVERLOAD BRIDGE?: YES

TIMBER SUBSTRUCTURE?: NO

STRUCTURE TYPE - I43: 505

ASPHALT DEPTH ON DECK: 4.

LAST REVISION DATE: 10/29/97

TYPE OF RATING ANALYSIS: LF

OVERALL CONDITION: G

TOTAL NUMBER OF SPANS: 3

IS BRIDGE POSTED?: NO

MAXIMUM SPAN LENGTH - I48: 90

YEAR BRIDGE WAS BUILT: 1971

DISTRIBUTION FACTOR FOR SIDE BY SIDE
PRESTRESSED BOX BEAMS OR PCCS BRIDGES

A.R.M. DATE: 10/30/97

INPUT DATA

(1) Enter your K value...: 1.000
See table ----------> K Value Table

Beam Type	K
Non-void rectangular	0.7
Rectangular with Circular voids	0.8
Rectangular with Square voids	1.0
Precast Channel beams	2.2

(2) Enter the overall bridge width in feet.....: 42.000

(3) Enter the span length in feet.....: 71.000

(4) Enter the number of lanes on the bridge.....: 2.000

(5) Enter the width of the PCBB or PCCS beam in feet.....: 4.000

(6) If the value of C (given below) is > 5 then enter 1.000
.....else enter 0.000 .....: 1.000

OUTPUT RESULTS

C Value.....= 0.591 DISTRIBUTION FACTOR..= 0.842

D Value.....= 4.750

G 01

DISTRIBUTION FACTOR FOR SIDE BY SIDE
PRESTRESSED BOX BEAMS OR PCCS BRIDGES

A.R.M. DATE: 10/30/97

INPUT DATA

(1) Enter your K value...: 1.000
See table ----------> K Value Table

Beam Type	K
Non-void rectangular	0.7
Rectangular with Circular voids	0.8
Rectangular with Square voids	1.0
Precast Channel beams	2.2

(2) Enter the overall bridge width in feet.....: 42.000

(3) Enter the span length in feet.....: 90.000

(4) Enter the number of lanes on the bridge.....: 2.000

(5) Enter the width of the PCBB or PCCS beam in feet.....: 4.000

(6) If the value of C (given below) is > 5 then enter 1.000
.....else enter 0.000 .....: 0.000

OUTPUT RESULTS

C Value.....= 0.466 DISTRIBUTION FACTOR..= 0.677

D Value.....= 5.900

DISTRIBUTION FACTOR FOR SIDE BY SIDE
PRESTRESSED BOX BEAMS OR PCCS BRIDGES

A.R.M. DATE: 10/30/97

INPUT DATA

(1) Enter your K value...: 1.000
See table ----------> K Value Table

Beam Type	K
Non-void rectangular	0.7
Rectangular with Circular voids	0.8
Rectangular with Square voids	1.0
Precast Channel beams	2.2

(2) Enter the overall bridge width in feet.....: 42.000

(3) Enter the span length in feet.....: 71.000

(4) Enter the number of lanes on the bridge.....: 2.000

(5) Enter the width of the PCBB or PCCS beam in feet.....: 3.000

(6) If the value of C (given below) is > 5 then enter 1.000
.....else enter 0.000 .....: 1.000

OUTPUT RESULTS

C Value.....= 0.591 DISTRIBUTION FACTOR..= 0.631

D Value.....= 4.750

G 03

DISTRIBUTION FACTOR FOR SIDE BY SIDE PRESTRESSED BOX BEAMS OR PCCS BRIDGES

A.R.M. DATE: 10/30/97

INPUT DATA

(1) Enter your K value...: 1.000
See table ----------> K Value Table

Beam Type	K
Non-void rectangular	0.7
Rectangular with Circular voids	0.8
Rectangular with Square voids	1.0
Precast Channel beams	2.2

(2) Enter the overall bridge width in feet.....: 42.000

(3) Enter the span length in feet.....: 90.000

(4) Enter the number of lanes on the bridge.....: 2.000

(5) Enter the width of the PCBB or PCCS beam in feet.....: 3.000

(6) If the value of C (given below) is > 5 then enter 1.000
.....else enter 0.000 .....: 0.000

OUTPUT RESULTS

C Value.....= 0.466 DISTRIBUTION FACTOR..= 0.508

D Value.....= 5.900

*AASHTO*AASHTO*AASHTO*AASHTO*AASHTO*AASHTO*AASHTO*AASHTO*AASHTO*AASHTO*AASHTO*AASHTO*AASHTO*AASHTO*AASHTO*AASHTO*

AMERICAN ASSOCIATION OF STATE HIGHWAY
AND TRANSPORTATION OFFICIALS

A PROPRIETARY COMPUTER SOFTWARE PRODUCT

AASHTOWAREtm

BBBBBBBBBBBB AAAAAAA RRRRRRRRRRR SSSSSSSSSSSS
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BBB BBB AA AA RRR RRR SSSS SSSS
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BBB BBB AAA AAA RRR RRR SSSS
BBBBBBBBBBBB AAA AAA RRRRRRRRRRRR SSSSSSSSSSSS
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BBB BBB AAA AAA RRR RRR SSSS SSSS
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BBBBBBBBBBBB AAA AAA RRR RRR SSSSSSSSSSS

BRIDGE ANALYSIS AND RATING SYSTEM

444 NORTH CAPITOL STREET, N.W., SUITE 249
WASHINGTON, D.C. 20001 U.S.A.
(202) 624-5800

RELEASE 5.5 - MOD 3.3

FEBRUARY 5, 1997

*AASHTO*AASHTO*AASHTO*AASHTO*AASHTO*AASHTO*AASHTO*AASHTO*AASHTO*AASHTO*AASHTO*AASHTO*AASHTO*AASHTO*AASHTO*AASHTO*

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                                  RECORD                                                                    REC.NO.
01      103097A. MCNABB           H15 HS20                                *LF*                              100
02ARM123A. MCNABB                           PCBB  61   322 0 0    42 0 0 4                               100
05ARM123L.M.17133 80 I-40                                                                                 200
06ARM1231 I-40 OVER CANEY FORK RIVER - G01 IS EXISTING BEAM IN SPANS 1 AND 4                              300
06ARM1232 G02 IS EXISTING BEAMS IN SPANS 2 AND 3 - G03 IS NEW BEAMS IN SPANS 1                            400
06ARM1233 AND 4 G04 IS NEW BEAMS IN SPANS 2 AND 3                                                         500
07ARM123           450060000                                                                              600
08ARM123G01  1       6911 4                    CPS          0.842                                        700
08ARM123G02  1       8910 4                    CPS          0.677                                        800
08ARM123G03  1       6911 0                    CPS  270     0.631                                        900
08ARM123G04  1       8910 0                    CPS  270     0.508                                       1000
10ARM123G01  1                  W 100.         6911 4                                                   1100
10ARM123G02  1                  W 100.         8910 4                                                   1200
10ARM123G03  1                  W 100.         6911 0                                                   1300
10ARM123G04  1                  W 100.         8910 0                                                   1400
11ARM123G01  1 1    6911 401                                                                            1500
11ARM123G02  1 1    8910 401                                                                            1600
11ARM123G03  1 1    6911 001                                                                            1700
11ARM123G04  1 1    8910 001                                                                            1800
14ARM123G01  1 1    6911 4C  01    48.0 8.048.0 1.0 48.0 9.0 5.00                                       1900
14ARM123G02  1 1    8910 4C  01    48.0 8.048.0 1.0 48.0 9.0 5.00                                       2000
14ARM123G03  1 1    6911 0C  01    36.0 8.036.0 1.0 36.0 9.5 5.25                                       2100
14ARM123G04  1 1    8910 0C  01    36.0 8.036.0 1.0 36.0 9.5 5.25                                       2200
15ARM123G01  01   26.539.0014.3  3300480       480          01A 1406  1.75                           2300
15ARM123G01  01                                             02A 2606  3.25                           2400
15ARM123G01  01                                             03A 0606  4.75                           2500
15ARM123G01  01                                             04B 0505 40.18                           2600
15ARM123G02  01   35.539.0018.4  4200480       480          01A 1806  1.75                           2700
15ARM123G02  01                                             02A 2206  3.25                           2800
15ARM123G02  01                                             03A 0606  4.75                           2900
15ARM123G02  01                                             04A 0406  6.25                           3000
15ARM123G02  01                                             05A 0406  7.75                           3100
15ARM123G02  01                                             06A 0406  9.25                           3200
15ARM123G02  01                                             07A 0406 10.75                           3300
15ARM123G02  01                                             08B 0505 49.18                           3400
15ARM123G03  01   16.527.0014.7  2700360       360          01L 1708  2.00                           3500
15ARM123G03  01                                             02L 0608  4.00                           3600
15ARM123G03  01                                             03B 0405 46.68                           3700
15ARM123G04  01   28.027.0020.5  3900360       360          01L 1708  2.00                           3800
15ARM123G04  01                                             02L 1208  4.00                           3900
15ARM123G04  01                                             03B 0405 46.68                           4000
```

THE FOLLOWING STRUCTURES WERE SELECTED

ARM123

STRUCTURE HEADER AND DESCRIPTION

100-- 2 A. MCNABB EA/I/O/P = FILE REQUESTS AND OUTPUT DATA EXCEPTIONS
TYPE = PCBB YEAR = 61 LEN = 322.00 FT. WIDTH = 42.00 FT. 4 SPANS SP.LOAD =
INV.LL.TRK.= OP.LL.TRK.=

STRUCTURE LOCATION AND PERMANENT IDENTIFICATION FACTORS

200-- 5 BRIDGE=L.M.1713 DIST./CO.= 3 80 CONST. ROUTE = I-40 CONST. SECT.= CONST. STA.= 0+ .
MICROFILM REEL NO. DESIGN PLANS= COMPUTATIONS= CORRESPONDENCE=
ROUTE I.D.= MARKED ROUTE =

COMMENTS

300-- 6 1 I-40 OVER CANEY FORK RIVER - G01 IS EXISTING BEAM IN SPANS 1 AND 4
400-- 6 2 G02 IS EXISTING BEAMS IN SPANS 2 AND 3 - G03 IS NEW BEAMS IN SPANS 1
500-- 6 3 AND 4 G04 IS NEW BEAMS IN SPANS 2 AND 3

SPECIFICATIONS GENERALLY APPLICABLE TO STRUCTURE MEMBERS

	STRUCT STEEL	REINF. CONCRETE	COMPOSITE STEEL/CONC	PRESTRESSED CONCRETE	IMPACT FACTOR INV OP POST SPEC	TIMBER
600-- 7	FY= 0.	FY = 0. F"C= 4500.	FY =60000. F"C= 0.	LOSS = 0. F"S = 0. EG/ES= .000 F"". C= 0.	MAX =.00 .00 .00 .00 MIN =.00 .00 .00 .00	FY = 0. FV = 0.

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

	MEMBER ID	SPANS SYMM	STIFF. CODE	SPAN 1 (SPAN 4)	SPAN 2 (SPAN 5)	SPAN 3 (SPAN 6)	MATL CODE	ALLOWABLE STRESS FY	FB	FC*	FC**	LL DIST. FACTOR	END FL.BM	THRU DECK	MAX INV	IMPACT OP.	IMPACT POST	IMPACT SPEC
700-- 8	G 1	1		69.938	.000	.000	CPS	.00		.00		.842			.00	.00	.00	.00
800-- 8	G 2	1		89.854	.000	.000	CPS	.00		.00		.677			.00	.00	.00	.00
900-- 8	G 3	1		69.917	.000	.000	CPS	270.00		.00		.631			.00	.00	.00	.00
1000-- 8	G 4	1		89.833	.000	.000	CPS	270.00		.00		.508			.00	.00	.00	.00

SUPERIMPOSED DEAD LOADS-GIRDERS,STRINGERS AND FLOOR BEAMS

	MEMBER ID	SYMM.	SPAN NO.	DISTANCE FR. LEFT SUPP.	LOAD TYPE	LOAD P OR W(L)	LOAD W(R)	LENGTH
1100--10	G 1		1	.000FT.	W	100.0	.0	69.938FT.
1200--10	G 2		1	.000FT.	W	100.0	.0	89.854FT.
1300--10	G 3		1	.000FT.	W	100.0	.0	69.917FT.
1400--10	G 4		1	.000FT.	W	100.0	.0	89.833FT.

SECTION RANGE SPECIFICATIONS

	MEMBER ID	SYMM.	SPAN NO.	RANGE NO.	RANGE LENGTH	SECTION NO. LEFT	SECTION NO. RIGHT	SEC. VAR.	HINGE CODE	HINGE 1 DIST.	HINGE 2 DIST.	HYBRID GIRDER CODE	HYBRID GIRDER FY	CODE	FY
1500--11	G 1		1	1	69.938FT.	1	0			.000FT.	.000FT.		0.		0.
1600--11	G 2		1	1	89.854FT.	1	0			.000FT.	.000FT.		0.		0.
1700--11	G 3		1	1	69.917FT.	1	0			.000FT.	.000FT.		0.		0.
1800--11	G 4		1	1	89.833FT.	1	0			.000FT.	.000FT.		0.		0.

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

	MEMBER ID	SPAN SYMM	SPAN RANGE	RANGE LENGTH	COMP CODE	N SECT SAME	A R	WIDTH	THICK -NESS	FILLET WIDTH	FILLET THICK.	EFFECT. WIDTH	EFFECT. THICK.	DIST TO TOP SECT.
1900--14	G 1	1	1	69.938FT.	C	0 1	0	48.00	8.00	48.00	1.00	48.00	9.00	5.00
2000--14	G 2	1	1	89.854FT.	C	0 1	0	48.00	8.00	48.00	1.00	48.00	9.00	5.00
2100--14	G 3	1	1	69.917FT.	C	0 1	0	36.00	8.00	36.00	1.00	36.00	9.50	5.25
2200--14	G 4	1	1	89.833FT.	C	0 1	0	36.00	8.00	36.00	1.00	36.00	9.50	5.25

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

	MEMBER ID.	SAME SECT	ADR	** VOIDS DESCRIPTION ** DEPTH	WIDTH	DIST.	BEAM DESCRIPTION CODE	DEPTH	TFLW	TFLT	TFIT	WEBT	BFIT	BFLT	BFLW	STRANDS I	ASI	DI
2300--15	G 1	1	0	26.5	39.00	14.3	33.00	48.0	.0	.00	48.00	.00	.0	.0	1	A	1406.00	1.75
2400--15	G 1	1	0	.0	.00	.0	.00	.0	.0	.00	.00	.00	.0	.0	2	A	2606.00	3.25
2500--15	G 1	1	0	.0	.00	.0	.00	.0	.0	.00	.00	.00	.0	.0	3	A	606.00	4.75
2600--15	G 1	1	0	.0	.00	.0	.00	.0	.0	.00	.00	.00	.0	.0	4	B	505.00	40.18
2700--15	G 2	1	0	35.5	39.00	18.4	42.00	48.0	.0	.00	48.00	.00	.0	.0	1	A	1806.00	1.75
2800--15	G 2	1	0	.0	.00	.0	.00	.0	.0	.00	.00	.00	.0	.0	2	A	2206.00	3.25
2900--15	G 2	1	0	.0	.00	.0	.00	.0	.0	.00	.00	.00	.0	.0	3	A	606.00	4.75
3000--15	G 2	1	0	.0	.00	.0	.00	.0	.0	.00	.00	.00	.0	.0	4	A	406.00	6.25
3100--15	G 2	1	0	.0	.00	.0	.00	.0	.0	.00	.00	.00	.0	.0	5	A	406.00	7.75
3200--15	G 2	1	0	.0	.00	.0	.00	.0	.0	.00	.00	.00	.0	.0	6	A	406.00	9.25
3300--15	G 2	1	0	.0	.00	.0	.00	.0	.0	.00	.00	.00	.0	.0	7	A	406.00	10.75
3400--15	G 2	1	0	.0	.00	.0	.00	.0	.0	.00	.00	.00	.0	.0	8	B	505.00	49.18
3500--15	G 3	1	0	16.5	27.00	14.7	27.00	36.0	.0	.00	36.00	.00	.0	.0	1	L	1708.00	2.00
3600--15	G 3	1	0	.0	.00	.0	.00	.0	.0	.00	.00	.00	.0	.0	2	L	608.00	4.00

3700--15	G	3	1	0	.0	.00	.0	.00	.0	.0	.00	.00	.00	.0	.0	3	B	405.00	46.68
3800--15	G	4	1	0	28.0	27.00	20.5	39.00	36.0	.0	.00	36.00	.00	.0	.0	1	L	1708.00	2.00
3900--15	G	4	1	0	.0	.00	.0	.00	.0	.0	.00	.00	.00	.0	.0	2	L	1208.00	4.00
4000--15	G	4	1	0	.0	.00	.0	.00	.0	.0	.00	.00	.00	.0	.0	3	B	405.00	46.68

SUMMARY OF RATING CALCULATIONS------STRUCTURE MEMBER G 1 BARS-PC RELEASE 5.5
INVENTORY AND/OR OPERATING ANALYSIS

INPUT CODING -- STRUCTURE L.M.1713 D/P STR. I.D.-- ARM-123

DATE 10/30/97
BY A. MCNABB

	INVENTORY		OPERATING	
	LIVE LOAD	RATING	LIVE LOAD	RATING
	H15	H 43.42	HS20	HS 43.11

STRUCTURE DESCRIPTION --

IDENTIFICATION	L.M.1713
TYPE	PCBB
YEAR OF CONSTR.	1961
LENGTH	322.00 FEET
ROADWAY WIDTH	42.00 FEET
NUMBER OF SPANS	4

LOCATION --

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

MICROFILM REEL NUMBERS --

DESIGN PLANS
COMPUTATIONS
CORRESPONDENCE

ANALYST REMARKS --

I-40 OVER CANEY FORK RIVER - G01 IS EXISTING BEAM IN SPANS 1 AND 4
G02 IS EXISTING BEAMS IN SPANS 2 AND 3 - G03 IS NEW BEAMS IN SPANS 1
AND 4 G04 IS NEW BEAMS IN SPANS 2 AND 3

INVENTORY RATING SUMMARY --

MEMBER ID.	G 1
SPAN	1
CRITICAL C.P. DIST.	35.0 FEET
LIVE LOAD DESIGNATION	H15

	MOMENT (FT. KIPS)
MEMBER CAPACITY	1509.2
DL EFFECT	698.3
CAPACITY FOR (LL+I)	810.9
ACTUAL (LL+I)	280.1

INVENTORY RATING H 43.42

OPERATING RATING SUMMARY --

MEMBER ID.	G 1
SPAN	1
CRITICAL C.P. DIST.	35.0 FEET
LIVE LOAD DESIGNATION	HS20

	MOMENT (FT. KIPS)
MEMBER CAPACITY	1814.5
DL EFFECT	698.3
CAPACITY FOR (LL+I)	1116.1
ACTUAL (LL+I)	517.8

OPERATING RATING HS 43.11

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

INPUT CODING -- STRUCTURE L.M.1713 D/P STR. I.D.-- ARM-123

DATE 10/30/97
BY A. MCNABB

	INVENTORY			OPERATING		
	LIVE LOAD		RATING	LIVE LOAD		RATING
	H15	H	54.73	HS20	HS	56.84

STRUCTURE DESCRIPTION --

IDENTIFICATION	L.M.1713
TYPE	PCBB
YEAR OF CONSTR.	1961
LENGTH	322.00 FEET
ROADWAY WIDTH	42.00 FEET
NUMBER OF SPANS	4

LOCATION --

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

MICROFILM REEL NUMBERS --

DESIGN PLANS
COMPUTATIONS
CORRESPONDENCE

ANALYST REMARKS --

I-40 OVER CANEY FORK RIVER - G01 IS EXISTING BEAM IN SPANS 1 AND 4
G02 IS EXISTING BEAMS IN SPANS 2 AND 3 - G03 IS NEW BEAMS IN SPANS 1
AND 4 G04 IS NEW BEAMS IN SPANS 2 AND 3

INVENTORY RATING SUMMARY --

MEMBER ID.	G 2
SPAN	1
CRITICAL C.P. DIST.	44.9 FEET
LIVE LOAD DESIGNATION	H15

	MOMENT (FT. KIPS)
MEMBER CAPACITY	2437.1
DL EFFECT	1237.9
CAPACITY FOR (LL+I)	1199.3
ACTUAL (LL+I)	328.7

INVENTORY RATING H 54.73

OPERATING RATING SUMMARY --

MEMBER ID.	G 2
SPAN	1
CRITICAL C.P. DIST.	44.9 FEET
LIVE LOAD DESIGNATION	HS20

	MOMENT (FT. KIPS)
MEMBER CAPACITY	2823.9
DL EFFECT	1237.9
CAPACITY FOR (LL+I)	1586.0
ACTUAL (LL+I)	558.1

OPERATING RATING HS 56.84

SUMMARY OF RATING CALCULATIONS------STRUCTURE MEMBER G 3 BARS-PC RELEASE 5.5
INVENTORY AND/OR OPERATING ANALYSIS

INPUT CODING -- STRUCTURE L.M.1713 D/P STR. I.D.-- ARM-123

DATE 10/30/97
BY A. MCNABB

INVENTORY LIVE LOAD	RATING	OPERATING LIVE LOAD	RATING
H15	H 47.83	HS20	HS 57.49

STRUCTURE DESCRIPTION --

IDENTIFICATION	L.M.1713
TYPE	PCBB
YEAR OF CONSTR.	1961
LENGTH	322.00 FEET
ROADWAY WIDTH	42.00 FEET
NUMBER OF SPANS	4

LOCATION --

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

MICROFILM REEL NUMBERS --

DESIGN PLANS
COMPUTATIONS
CORRESPONDENCE

ANALYST REMARKS --

I-40 OVER CANEY FORK RIVER - G01 IS EXISTING BEAM IN SPANS 1 AND 4
G02 IS EXISTING BEAMS IN SPANS 2 AND 3 - G03 IS NEW BEAMS IN SPANS 1
AND 4 G04 IS NEW BEAMS IN SPANS 2 AND 3

INVENTORY RATING SUMMARY --

MEMBER ID.	G 3
SPAN	1
CRITICAL C.P. DIST.	35.0 FEET
LIVE LOAD DESIGNATION	H15

	MOMENT (FT. KIPS)
MEMBER CAPACITY	1282.9
DL EFFECT	613.9
CAPACITY FOR (LL+I)	669.0
ACTUAL (LL+I)	209.8
INVENTORY RATING	H 47.83

OPERATING RATING SUMMARY --

MEMBER ID.	G 3
SPAN	1
CRITICAL C.P. DIST.	35.0 FEET
LIVE LOAD DESIGNATION	HS20

	MOMENT (FT. KIPS)
MEMBER CAPACITY	1728.9
DL EFFECT	613.9
CAPACITY FOR (LL+I)	1115.0
ACTUAL (LL+I)	387.9
OPERATING RATING	HS 57.49

SUMMARY OF RATING CALCULATIONS------STRUCTURE MEMBER G 4 BARS-PC RELEASE 5.5
INVENTORY AND/OR OPERATING ANALYSIS

INPUT CODING -- STRUCTURE L.M.1713 D/P STR. I.D.-- ARM-123

DATE 10/30/97
BY A. MCNABB

	INVENTORY		OPERATING	
	LIVE LOAD	RATING	LIVE LOAD	RATING
	H15	H 65.75	HS20	HS 86.05

STRUCTURE DESCRIPTION --

IDENTIFICATION	L.M.1713
TYPE	PCBB
YEAR OF CONSTR.	1961
LENGTH	322.00 FEET
ROADWAY WIDTH	42.00 FEET
NUMBER OF SPANS	4

LOCATION --

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

MICROFILM REEL NUMBERS --

DESIGN PLANS
COMPUTATIONS
CORRESPONDENCE

ANALYST REMARKS --

I-40 OVER CANEY FORK RIVER - G01 IS EXISTING BEAM IN SPANS 1 AND 4
G02 IS EXISTING BEAMS IN SPANS 2 AND 3 - G03 IS NEW BEAMS IN SPANS 1
AND 4 G04 IS NEW BEAMS IN SPANS 2 AND 3

INVENTORY RATING SUMMARY --

MEMBER ID.	G 4
SPAN	1
CRITICAL C.P. DIST.	44.9 FEET
LIVE LOAD DESIGNATION	H15

	MOMENT (FT. KIPS)
MEMBER CAPACITY	2221.8
DL EFFECT	1141.2
CAPACITY FOR (LL+I)	1080.7
ACTUAL (LL+I)	246.5

INVENTORY RATING H 65.75

OPERATING RATING SUMMARY --

MEMBER ID.	G 4
SPAN	1
CRITICAL C.P. DIST.	44.9 FEET
LIVE LOAD DESIGNATION	HS20

	MOMENT (FT. KIPS)
MEMBER CAPACITY	2942.3
DL EFFECT	1141.2
CAPACITY FOR (LL+I)	1801.1
ACTUAL (LL+I)	418.6

OPERATING RATING HS 86.05

*** FINAL SUMMARY OF RATING RESULTS FOR --- STRUCTURE ID. ARM-123 BARS-PC RELEASE 5.5
INVENTORY AND/OR OPERATING ANALYSIS

STRUCTURE L.M.1713 D/P STR. ID-- ARM-123

INPUT CODING--

DATE 10/30/97

BY A. MCNABB

	INVENTORY		OPERATING	
	LIVE LOAD	RATING	LIVE LOAD	RATING
	H15	H 43.4	HS20	HS 43.1

STRUCTURE DESCRIPTION--

IDENTIFICATION	L.M.1713
TYPE	PCBB
YEAR OF CONSTR.	1961
LENGTH	302.00 FEET
ROADWAY WIDTH	42.00 FEET
NUMBER OF SPANS	4

LOCATION--

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

MICROFILM REEL NUMBERS--

DESIGN PLANS
COMPUTATIONS
CORRESPONDENCE

ANALYST REMARKS--

I-40 OVER CANEY FORK RIVER - G01 IS EXISTING BEAM IN SPANS 1 AND 4 G02 IS EXISTING BEAMS IN SPANS 2 AND 3 - G03 IS NEW BEAMS IN SPANS 1 AND 4 G04 IS NEW BEAMS IN SPANS 2 AND 3

INVENTORY RATING SUMMARY

MEMBER I.D.	G 1
SPAN	1
CRITICAL C.P. DIST.	35.0 FEET
LIVE LOAD DESIGNATION	H15

	MOMENT (FOOT-KIPS)
MEMBER CAPACITY	1509.2
DL EFFECT	698.3
CAPACITY FOR (LL+I)	810.9
ACTUAL (LL+I)	280.1

INVENTORY RATING H 43.42

OPERATING RATING SUMMARY

MEMBER I.D.	G 1
SPAN	1
CRITICAL C.P. DIST.	35.0 FEET
LIVE LOAD DESIGNATION	HS20

	MOMENT (FOOT-KIPS)
MEMBER CAPACITY	1814.5
DL EFFECT	698.3
CAPACITY FOR (LL+I)	1116.1
ACTUAL (LL+I)	517.8

OPERATING RATING HS 43.11

DETAIL DATA FOR FLEXURAL MEMBER

DATE 10/30/97

D/P STRUCTURE I.D. ARM-123
MEMBER I.D.--G01
MATERIAL--CPS
LL DIST. FACT. = .842

NO. SPANS = 1
NOT SYMMETRICAL

SPAN NO.	LENGTH FT.	RNG. NO.	LENGTH FT.	SEC.NO. LT	SEC.NO. RT	VAR CODE S T P	VAR CODE S T B	DL DUE TO MEM. WEIGHT W(LT) LBS/FT	DL DUE TO MEM. WEIGHT W(RT) LBS/FT
1	69.938	1	69.938	01	01			592.2	592.2

SUPERIMPOSED DISTRIBUTED DL(S) LENGTH DISTRIBUTED**** DIST. FROM LT SUPPORT**** SPAN NO.	W(LT) LBS/FT	W(RT) LBS/FT	* FT.	* FT.
1	100.0	100.0	.000	69.938

SUPERIMPOSED CONCENTRATED DL(S) DIST. FROM LT SUPPORT**** STIFF TRANS.	SPAN LONG. NO.	P KIPS	* FT.

CHECK POINTS RATED--

SPAN NO.	DIS FRM LT SPRT FT.	FUNC M	FUNC VL	FUNC VR
1	.000			X
1	34.969	X		
1	69.938		X	

DETAIL DATA FOR FLEXURAL MEMBER

DATE 10/30/97

D/P STRUCTURE I.D. ARM-123
MEMBER I.D.--G02
MATERIAL--CPS
LL DIST. FACT. = .677

NO. SPANS = 1
NOT SYMMETRICAL

SPAN NO.	LENGTH FT.	RNG. NO.	LENGTH FT.	SEC.NO. LT	SEC.NO. RT	VAR CODE S T P	VAR CODE S T B	DL DUE TO MEM. WEIGHT W(LT) LBS/FT	DL DUE TO MEM. WEIGHT W(RT) LBS/FT
1	89.854	1	89.854	01	01			676.6	676.6

SUPERIMPOSED DISTRIBUTED DL(S) LENGTH DISTRIBUTED*** DIST. FROM LT SUPPORT*** SPAN NO.	W(LT) LBS/FT	W(RT) LBS/FT	* FT.	* FT.
1	100.0	100.0	.000	89.854

SUPERIMPOSED CONCENTRATED DL(S) DIST. FROM LT SUPPORT**** STIFF TRANS.	SPAN LONG. NO.	P KIPS	* FT.

CHECK POINTS RATED--

SPAN NO.	DIS FRM LT SPRT FT.	FUNC M	FUNC VL	FUNC VR
1	.000			X
1	44.927	X		
1	89.854		X	

SPAN NO.	DIS FRM LT SPRT FT.	FUNC M	FUNC VL	FUNC VR

DETAIL DATA FOR FLEXURAL MEMBER

DATE 10/30/97

D/P STRUCTURE I.D. ARM-123
MEMBER I.D.--G03
MATERIAL--CPS
LL DIST. FACT. = .631

NO. SPANS = 1
NOT SYMMETRICAL

SPAN NO.	LENGTH FT.	RNG. NO.	LENGTH FT.	SEC.NO. LT	SEC.NO. RT	VAR CODE S T P	VAR CODE S T B	DL DUE TO MEM. WEIGHT W(LT) LBS/FT	DL DUE TO MEM. WEIGHT W(RT) LBS/FT	SUPERIMPOSED DISTRIBUTED DL(S) LENGTH DISTRIBUTED********** DIST. FROM LT SUPPORT*** SPAN NO.	W(LT) LBS/FT	W(RT) LBS/FT	* FT.	* FT.	SUPERIMPOSED CONCENTRATED DL(S) DIST. FROM LT SUPPORT**** STIFF TRANS.	SPAN LONG.	P NO.	P KIPS	* FT.
1	69.917	1	69.917	01	01			567.2	567.2	1	100.0	100.0	.000	69.917					

CHECK POINTS RATED--

SPAN NO.	DIS FRM LT SPRT FT.	FUNC M	FUNC VL	FUNC VR
1	.000			X
1	34.958	X		
1	69.917		X	

DETAIL DATA FOR FLEXURAL MEMBER

DATE 10/30/97

D/P STRUCTURE I.D. ARM-123
MEMBER I.D.--G04
MATERIAL--CPS
LL DIST. FACT. = .508

NO. SPANS = 1
NOT SYMMETRICAL

SPAN NO.	LENGTH FT.	RNG. NO.	LENGTH FT.	SEC.NO. LT	SEC.NO. RT	VAR CODE S T P	VAR CODE S T B	DL DUE TO MEM. WEIGHT W(LT) LBS/FT	DL DUE TO MEM. WEIGHT W(RT) LBS/FT	SUPERIMPOSED DISTRIBUTED DL(S) LENGTH DISTRIBUTED**** DIST. FROM LT SUPPORT**** SPAN NO.	W(LT) LBS/FT	W(RT) LBS/FT	* FT.	* FT.	SUPERIMPOSED CONCENTRATED DL(S) DIST. FROM LT SUPPORT**** STIFF TRANS.	SPAN LONG.	P NO.	P KIPS	* FT.
1	89.833	1	89.833	C1	01			693.8	693.8	1	100.0	100.0	.000	89.833					

CHECK POINTS RATED--

SPAN NO.	DIS FRM LT SPRT FT.	FUNC M	FUNC VL	FUNC VR	SPAN NO.	DIS FRM LT SPRT FT.	FUNC M	FUNC VL	FUNC VR
1	.000			X					
1	44.917	X							
1	89.833		X						

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

BARS RELEASE 5.5

DATE 10/30/97

D/P STRUCTURE I.D. ARM-123
MEMBER I.D.--G01
C.P. LOCATION 1.50

***** SECTION PROPERTIES IN COMPOSITE RANGE 10F SPAN 1

	H IN.	AREA SQ.IN.	AS SQ.IN.	CT IN.	DA IN.	ECC IN	FI KIPS	IX + BEND IN**4	IX - BEND IN**4	C (BOT) IN.	TOP + BEND IN**3	TOP - BEND IN**3	BOTTOM + BEND IN**3	BOTTOM - BEND IN**3	C O M
NON-COM	33.00	568.50	3.68	13.12	1.80	16.89	638.0	77697.1	77697.1	19.88	5923.7	5923.7	3907.6	3907.6	P
					LOSS =		51322.5	151746.2	77697.1	26.55	23510.3	.0	5716.4	.0	N
SLAB RESTEEL			1.55	40.18		FF =	449.4	110143.8	77697.1	22.83	10825.5	.0	4825.5	.0	3N
NON-COMP: D =		30.01	KD =	8.22	JD =	27.59		*** COMP:		D=	40.01	KD =	10.96	JD =	36.31	

***** INFLUENCE LINE (SIMPLE SPAN)

X-DIST (FT.)	.000	34.969	69.938	POS AREA = 611.4
Y-ORDINATE	.000	17.484	.000	

***** ORDINATES OF AND AREAS UNDER INFLUENCE LINE (CONTINUOUS SPAN)

	SPAN	SPAN	SPAN	SPAN	SPAN	SPAN	
T 0							
E 1							
N 2							
T 3							
H 4							
5							
P 6							
O 7							
I 8							
N 9							
T 0							
AREA TOTALS							
POS AREA	611.4	.0	.0	.0	.0	.0	.0 POS
NEG AREA	.0	.0	.0	.0	.0	.0	.0 NEG

***** ULTIMATE STRENGTH ***** MOMENT CAPACITY

PRESTRESS STEEL / CONC	PSI	PSI	TOP - BEND FT-KIPS	TOP - BEND FT-KIPS	BOTTOM + BEND FT-KIPS	BOTTOM - BEND FT-KIPS
SLAB *=FY	40000.*	4500.0				
INVENTORY	248000.0	5000.0	1229.9	-95.4	1229.9	-95.4
OPERATING	248000.0	5000.0	2049.8	-159.0	2049.8	-159.0
POST VEH1	.0	.0	.0	.0	.0	.0
POST VEH2	.0	.0	.0	.0	.0	.0
POST VEH3	.0	.0	.0	.0	.0	.0
POST SPEC	.0	.0	.0	.0	.0	.0

***** DL MOMENT EFFECT

DL FT-KIPS	SDL FT-KIPS
637.2	61.1

**** ULT MOM CAP FT-KIPS

POS	2664.8
NEG	-206.7

***** AVAIL.CAPAC.FOR LL+IMPACT

	TOP +BEND F-KPS	TOP -BEND F-KPS	BOT +BEND F-KPS	BOT -BEND F-KPS
INVENTORY	810.9	514.4	810.9	514.4
OPERATING	1351.5	857.3	1116.1	857.3
VEH. 1	.0	.0	.0	.0
VEH. 2	.0	.0	.0	.0
VEH. 3	.0	.0	.0	.0
SPECIAL	.0	.0	.0	.0

***** LIVE LOAD AND RATING CALCULATIONS (IMPACT FACTOR = .256 FOR +BEND AND = .256 FOR -BEND)

LIVE LOAD		TRUCK LOAD LL+IMP FT-KIPS	TRUCK LOAD LL FT-KIPS	LOC.NO. 1 WHEEL FT.	DIR	AXLE SPACE FT.	LANE LOAD LL+IMP FT-KIPS	LANE LOAD LL FT-KIPS	LOC.CONC LOAD FT.	LOC.CONC LOAD 2 FT.	RATING FACT.	SAFE LOAD CAPACITY TONS	RATING VALUE
INV H15	+BEND	255.3	203.1	20.969	L	.0	280.1	222.9	34.969		2.895	43.4	H 43.4
	-BEND	.0	.0	.000	L	.0	.0	.0	.000	.000			
OPER HS20	+BEND	517.8	412.1	20.969	L	.0	373.5	297.2	34.969		2.156	77.6	HS 43.1
	-BEND	.0	.0	.000	L	.0	.0	.0	.000	.000			
POST	+BEND	.0	.0	.000							.000	.0	
	-BEND	.0	.0	.000									
POST	+BEND	.0	.0	.000							.000	.0	
	-BEND	.0	.0	.000									
POST	+BEND	.0	.0	.000							.000	.0	
	-BEND	.0	.0	.000									
POST SPEC	+BEND	.0	.0	.000							.000	.0	
	-BEND	.0	.0	.000									

#43.4

598

517.8

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

BARS RELEASE 5.5

DATE 10/30/97

D/P STRUCTURE I.D. ARM-123
MEMBER I.D.--G02
C.P. LOCATION 1.50

***** SECTION PROPERTIES IN COMPOSITE RANGE 10F SPAN 1

	H IN.	AREA SQ.IN.	AS SQ.IN.	CT IN.	DA IN.	ECC IN	FI KIPS	IX + BEND IN**4	IX - BEND IN**4	C (BOT) IN.	SECTION MODULUS TOP + BEND IN**3	TOP - BEND IN**3	BOTTOM + BEND IN**3	BOTTOM - BEND IN**3	C O M
NON-COM	42.00	649.50	4.95	16.34	1.87	21.34	860.0	139049.0	139049.0	25.66	8507.8	8507.8	5419.7	5419.7	P
						LOSS =	54295.9	245983.1	139049.0	32.82	26793.8	.0	7495.0	.0	N
SLAB RESTEEL			1.55	49.18		FF =	591.0	184743.3	139049.0	28.73	13924.2	.0	6429.8	.0	3N
NON-COMP: D =		37.69	KD =	11.06	JD =	34.42		*** COMP:	D=	47.69	KD =	14.00	JD =	42.83	

***** INFLUENCE LINE (SIMPLE SPAN)

X-DIST (FT.)	.000	44.927	89.854	POS AREA = 1009.2
Y-ORDINATE	.000	22.464	.000	

***** ORDINATES OF AND AREAS UNDER INFLUENCE LINE (CONTINUOUS SPAN)

	SPAN	SPAN	SPAN	SPAN	SPAN	SPAN
T 0						
E 1						
N 2						
T 3						
H 4						
S						
P 6						
O 7						
I 8						
N 9						
T 0						
AREA TOTALS	.0 POS	.0	.0	.0	.0	.0
POS AREA	1009.2	.0	.0	.0	.0	.0
NEG AREA	.0	.0	.0	.0	.0	.0

***** ULTIMATE STRENGTH ***** MOMENT CAPACITY

PRESTRESS	STEEL / CONC PSI	PSI	TOP + BEND	TOP - BEND	BOTTOM - BEND	BOTTOM - BEND
SLAB *=FY	40000.*	4500.0	FT-KIPS	FT-KIPS	FT-KIPS	FT-KIPS
INVENTORY	248000.0	5000.0	1942.0	-116.9	1942.0	-116.9
OPERATING	248000.0	5000.0	3236.7	-194.8	3236.7	-194.8
POST VEH1	.0	.0	.0	.0	.0	.0
POST VEH2	.0	.0	.0	.0	.0	.0
POST VEH3	.0	.0	.0	.0	.0	.0
POST SPEC	.0	.0	.0	.0	.0	.0

***** DL MOMENT EFFECT

DL FT-KIPS	SDL FT-KIPS
1137.0	100.9

***** AVAIL.CAPAC.FOR LL+IMPACT

	TOP +BEND F-KPS	TOP -BEND F-KPS	BOT +BEND F-KPS	BOT -BEND F-KPS
INVENTORY	1199.3	859.6	1199.3	859.6
OPERATING	1998.8	1432.6	1586.0	1432.6
VEH. 1	.0	.0	.0	.0
VEH. 2	.0	.0	.0	.0
VEH. 3	.0	.0	.0	.0
SPECIAL	.0	.0	.0	.0

***** ULT MOM CAP FT-KIPS
4207.7
-253.2

***** LIVE LOAD AND RATING CALCULATIONS (IMPACT FACTOR = .233 FOR +BEND AND = .233 FOR -BEND)

LIVE LOAD		TRUCK LOAD LL+IMP FT-KIPS	TRUCK LOAD LL FT-KIPS	LOC.NO. 1 WHEEL LOAD FT.	DIR	AXLE SPACE FT.	LANE LOAD LL+IMP FT-KIPS	LANE LOAD LL FT-KIPS	LOC.CONC LOAD FT.	LOC.CONC LOAD 2 FT.	RATING FACT.	SAFE LOAD CAPACITY TONS	RATING VALUE
INV H15	+BEND	263.7	213.9	30.927	L	.0	328.7	266.6	44.927		3.649	54.7	H 54.7
	-BEND	.0	.0	.000	L	.0	.0	.0	.000	.000			
OPER HS20	+BEND	558.1	452.7	30.927	L	.0	438.2	355.5	44.927		2.842	102.3	HS 56.8
	-BEND	.0	.0	.000	L	.0	.0	.0	.000	.000			
POST	+BEND	.0	.0	.000							.000	.0	
	-BEND	.0	.0	.000									
POST	+BEND	.0	.0	.000							.000	.0	
	-BEND	.0	.0	.000									
POST	+BEND	.0	.0	.000							.000	.0	
	-BEND	.0	.0	.000									
POST SPEC	+BEND	.0	.0	.000							.000	.0	
	-BEND	.0	.0	.000									

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

BARS RELEASE 5.5

DATE 10/30/97

D/P STRUCTURE I.D. ARM-123
MEMBER I.D.--G03
C.P. LOCATION 1.50

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

	H IN.	AREA SQ.IN.	AS SQ.IN.	CT IN.	DA IN.	ECC IN	FI KIPS	IX + BEND IN**4	IX - BEND IN**4	C (BOT) IN.	SECTION MODULUS TOP + BEND IN**3	TOP - BEND IN**3	BOTTOM + BEND IN**3	BOTTOM - BEND IN**3	C O M P
NON-COM	27.00	544.50	3.52	14.76	2.02	9.72	712.6	50514.7	50514.7	12.24	3423.3	3423.3	4125.8	4125.8	P
						LOSS =	37321.0	126528.4	50514.7	18.74	15316.2	.0	6752.2	.0	N
SLAB RESTEEL			1.24	46.68		FF =	581.3	82662.1	50514.7	15.01	6892.4	.0	5508.3	.0	3N
NON-COMP: D =		24.48	KD =	6.71	JD =	22.50		*** COMP:	D=	34.98	KD =	9.58	JD =	31.78	

***** INFLUENCE LINE (SIMPLE SPAN)

X-DIST (FT.)	.000	34.959	69.917	POS AREA = 611.0
Y-ORDINATE	.000	17.479	.000	

***** ORDINATES OF AND AREAS UNDER INFLUENCE LINE (CONTINUOUS SPAN)

	SPAN	SPAN	SPAN	SPAN	SPAN	SPAN
T 0						
E 1						
N 2						
T 3						
H 4						
5						
P 6						
O 7						
I 8						
N 9						
T 0						
AREA						
POS AREA	611.0	.0	.0	.0	.0	.0
NEG AREA	.0	.0	.0	.0	.0	.0

***** ULTIMATE STRENGTH ***** MOMENT CAPACITY

PRESTRESS STEEL / CONC PSI	PSI	TOP - BEND FT-KIPS	TOP - BEND FT-KIPS	BOTTOM + BEND FT-KIPS	BOTTOM - BEND FT-KIPS
SLAB *=FY 40000.*	4500.0				
INVENTORY 270000.0	5000.0	1037.3	-88.7	1037.3	-88.7
OPERATING 270000.0	5000.0	1728.9	-147.8	1728.9	-147.8
POST VEH1 .0		.0	.0	.0	.0
POST VEH2 .0		.0	.0	.0	.0
POST VEH3 .0		.0	.0	.0	.0
POST SPEC .0		.0	.0	.0	.0

***** DL MOMENT EFFECT

DL FT-KIPS	SDL FT-KIPS
552.8	61.1

TOTALS FT-KIPS POS 2247.6 NEG -192.2

***** AVAIL.CAPAC.FOR LL+IMPACT

	TOP +BEND F-KPS	TOP -BEND F-KPS	BOT +BEND F-KPS	BOT -BEND F-KPS
INVENTORY	669.0	457.0	669.0	457.0
OPERATING	1115.0	761.7	1115.0	761.7
VEH. 1	.0	.0	.0	.0
VEH. 2	.0	.0	.0	.0
VEH. 3	.0	.0	.0	.0
SPECIAL	.0	.0	.0	.0

***** LIVE LOAD AND RATING CALCULATIONS (IMPACT FACTOR = .257 FOR +BEND AND = .257 FOR -BEND)

LIVE LOAD		TRUCK LOAD LL+IMP FT-KIPS	TRUCK LOAD LL FT-KIPS	LOC.NO. 1 WHEEL FT.	DIR	AXLE SPACE FT.	LANE LOAD LL+IMP FT-KIPS	LANE LOAD LL FT-KIPS	LOC.CONC LOAD FT.	LOC.CONC LOAD 2 FT.	RATING FACT.	SAFE LOAD CAPACITY TONS	RATING VALUE
INV H15	+BEND	191.2	152.2	20.958	L	.0	209.8	167.0	34.958		3.188	47.8	H 47.8
	-BEND	.0	.0	.000	L	.0	.0	.0	.000	.000			
OPER HS20	+BEND	387.9	308.7	20.958	L	.0	279.8	222.6	34.958		2.874	103.5	HS 57.5
	-BEND	.0	.0	.000	L	.0	.0	.0	.000	.000			
POST	+BEND	.0	.0	.000							.000	.0	
	-BEND	.0	.0	.000									
POST	+BEND	.0	.0	.000							.000	.0	
	-BEND	.0	.0	.000									
POST	+BEND	.0	.0	.000							.000	.0	
	-BEND	.0	.0	.000									
POST SPEC	+BEND	.0	.0	.000							.000	.0	
	-BEND	.0	.0	.000									

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

BARS RELEASE 5.5

DATE 10/30/97

D/P STRUCTURE I.D. ARM-123
MEMBER I.D.--G04
C.P. LOCATION 1.50

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

	H IN.	AREA SQ.IN.	AS SQ.IN.	CT IN.	DA IN.	ECC IN	EI KIPS	IX + BEND IN**4	IX - BEND IN**4	C (BOT) IN.	SECTION MODULUS TOP + BEND IN**3	TOP - BEND IN**3	BOTTOM + BEND IN**3	BOTTOM - BEND IN**3	C O M
NON-COM	39.00	666.00	4.44	21.11	2.04	15.06	898.5	135261.2	135261.2	17.89	6407.5	6407.5	7560.7	7560.7	P
					LOSS =		38531.8	273841.7	135261.2	25.32	20018.0	.0	10815.1	.0	N
SLAB RESTEEL			1.24	46.68	FF =		727.5	191985.0	135261.2	20.94	10630.4	.0	9168.4	.0	3N
NON-COMP: D =		36.17	KD =	10.04	JD =	33.21		*** COMP:	D=	46.67	KD =	12.95	JD =	42.24	

***** INFLUENCE LINE (SIMPLE SPAN)

X-DIST (FT.)	.000	44.917	89.833	POS AREA = 1008.8
Y-ORDINATE	.000	22.458	.000	

***** ORDINATES OF AND AREAS UNDER INFLUENCE LINE (CONTINUOUS SPAN)

	SPAN	SPAN	SPAN	SPAN	SPAN	SPAN	
T 0							
E 1							
N 2							
T 3							
H 4							
5							
P 6							
O 7							
I 8							
N 9							
T 0							
AREA TOTALS							
POS AREA	1008.8	.0	.0	.0	.0	.0	.0 POS
NEG AREA	.0	.0	.0	.0	.0	.0	.0 NEG

***** ULTIMATE STRENGTH ***** MOMENT CAPACITY

PRESTRESS	STEEL / CONC PSI	CONC PSI	TOP + BEND	TOP - BEND	BOTTOM + BEND	BOTTOM - BEND
SLAB *=FY	40000.*	4500.0	FT-KIPS	FT-KIPS	FT-KIPS	FT-KIPS
INVENTORY	270000.0	5000.0	1765.4	-88.7	1765.4	-88.7
OPERATING	270000.0	5000.0	2942.3	-147.8	2942.3	-147.8
POST VEH1	.0	.0	.0	.0	.0	.0
POST VEH2	.0	.0	.0	.0	.0	.0
POST VEH3	.0	.0	.0	.0	.0	.0
POST SPEC	.0	.0	.0	.0	.0	.0

***** DL MOMENT EFFECT

DL FT-KIPS	SDL FT-KIPS
1040.3	100.9

***** ULT MOM CAP

	FT-KIPS

***** AVAIL.CAPAC.FOR LL+IMPACT

	TOP +BEND F-KPS	TOP -BEND F-KPS	BOT +BEND F-KPS	BOT -BEND F-KPS
INVENTORY	1080.7	773.4	1080.7	773.4
OPERATING	1801.1	1289.0	1801.1	1289.0
VEH. 1	.0	.0	.0	.0
VEH. 2	.0	.0	.0	.0
VEH. 3	.0	.0	.0	.0
SPECIAL	.0	.0	.0	.0

***** LIVE LOAD AND RATING CALCULATIONS (IMPACT FACTOR = .233 FOR +BEND AND = .233 FOR -BEND)

LIVE LOAD		TRUCK LOAD LL+IMP FT-KIPS	TRUCK LOAD LL FT-KIPS	TRUCK LOAD LOC.NO. 1 WHEEL FT.	DIR	AXLE SPACE FT.	LANE LOAD LL+IMP FT-KIPS	LANE LOAD LL FT-KIPS	LOC.CONC LOAD FT.	LOC.CONC LOAD 2 FT.	RATING FACT.	SAFE LOAD CAPACITY TONS	RATING VALUE
INV H15	+BEND	197.8	160.5	30.917	L	.0	246.5	200.0	44.917		4.383	65.7	H 65.7
	-BEND	.0	.0	.000	L	.0	.0	.0	.000	.000			
OPER HS20	+BEND	418.6	339.6	30.917	L	.0	328.7	266.7	44.917		4.302	154.9	HS 86.0
	-BEND	.0	.0	.000	L	.0	.0	.0	.000	.000			
POST	+BEND	.0	.0	.000							.000	.0	
	-BEND	.0	.0	.000									
POST	+BEND	.0	.0	.000							.000	.0	
	-BEND	.0	.0	.000									
POST	+BEND	.0	.0	.000							.000	.0	
	-BEND	.0	.0	.000									
POST SPEC	+BEND	.0	.0	.000							.000	.0	
	-BEND	.0	.0	.000									

SUMMARY OF SHEAR ANALYSIS

DATE 10/30/97

D/P STRUCTURE I.D. ARM-123

MEMB. ID	MATL	SPAN NO.	DIS FRM L LT SPRT R FT.	DL SHEAR KIPS	SDL SHEAR KIPS	---INVENTORY--- LL+I MAX.V KIPS	T L	LL+I MIN.V KIPS	T L	---OPERATING--- LL+I MAX.V KIPS	T L	LL+I MIN.V KIPS	T L	--VEH. 1 -- LL+I MAX.V KIPS	LL+I MIN.V KIPS	--VEH. 2 -- LL+I MAX.V KIPS	LL+I MIN.V KIPS	--VEH. 3 -- LL+I MAX.V KIPS	LL+I MIN.V KIPS	--SPECIAL-- LL+I MAX.V KIPS	LL+I MIN.V KIPS
G01	CPS	1	.000 L	36.4	3.5	19.2	L	.0	T	33.0	T	.0	T								
		1	34.969 L	.0	.0	7.6	T	7.6	T	14.4	T	14.4	T								
		1	69.938 L	36.4	3.5	.0	T	19.9	L	.0	T	34.1	T								
G02	CPS	1	.000 L	50.6	4.5	17.1	L	.0	T	26.9	T	.0	T								
		1	44.927 L	.0	.0	6.2	T	6.2	T	12.5	T	12.5	T								
		1	89.854 L	50.6	4.5	.0	T	18.1	L	.0	T	28.4	T								
G03	CPS	1	.000 L	31.6	3.5	14.4	L	.0	T	24.7	T	.0	T								
		1	34.958 L	.0	.0	5.7	T	5.7	T	10.8	T	10.8	T								
		1	69.917 L	31.6	3.5	.0	T	14.9	L	.0	T	25.6	T								
G04	CPS	1	.000 L	46.3	4.5	12.9	L	.0	T	20.2	T	.0	T								
		1	44.917 L	.0	.0	4.6	T	4.6	T	9.4	T	9.4	T								
		1	89.833 L	46.3	4.5	.0	T	13.6	L	.0	T	21.3	T								

PRESTRESSED BEAM DESIGN

$$EGAD424098002120504 DUGGER,PUTNAM CO. 71-I40-267.58 SPAN 2 OR 3

28f

INPUT

```
 1 1 1 3 6 0  89.875  89.000  90.000  48.00  4.00 3000. 6000. 4800.   50.00    0.0   1.0000    2  1  0
48.00 42.00  4.500  2.000  4.500 1 1.75 1.50  0 18. 22.  6.  4.  4.  4.  4.  0.  0.  0.  0.  0.  0.  0.  0.
```

STRAND TYPE IS ASTM

BEAM SECTION PROPERTIES (ALL DIMENSIONS IN INCHES)
YT= 23.63 YB= 18.37
MOMENT OF INERTIA= 149382.
SECTION MODULUS TOP= 6322.
SECTION MODULUS BOTTOM= 8132.
AREA OF CONCRETE= 649.50

COMPOSITE SECTION PROPERTIES (ALL DIMENSIONS IN INCHES)
EFFECTIVE SLAB WIDTH= 48.00
YT SLAB= 23.20 YT BEAM= 19.20 YB= 22.80
MOMENT OF INERTIA= 223327.
SECTION MODULUS TOP OF SLAB= 9627.
SECTION MODULUS TOP OF BEAM= 11632.
SECTION MODULUS BOTTOM= 9795.

APPLIED STRESSES CENTER	TOP	BOTTOM
WEIGHT OF BEAM	1271.57	988.53
WEIGHT OF SLAB	375.89	292.22
WEIGHT OF DIAPHRAMS	0.0	0.0
UNIFORM LD. ON NON-COMP. SECT.	93.97	73.06
UNIFORM LD. ON COMP. SECT.	0.0	0.0
LIVE LOAD	502.09	596.30
TOTAL STRESS	2243.53	1950.11

STRAND PLACEMENT
PLACE 18. STRAND IN ROW 1.
PLACE 22. STRAND IN ROW 2.
PLACE 6. STRAND IN ROW 3.
PLACE 4. STRAND IN ROW 4.
PLACE 4. STRAND IN ROW 5.
PLACE 4. STRAND IN ROW 6.
PLACE 4. STRAND IN ROW 7.

PRESTRESS LOSSES
INITIAL LOSS (INITIAL STRAND RELAXATION + ELASTIC SHORTENING) =
9450.00 + 11416.10 = 20866.10PSI

FINAL LOSS = 46109.45 PSI

ELASTIC SHORTENING = 11416.10 PSI
SHRINKAGE = 6500.00 PSI

CREEP = 17574.74 PSI
RELAXATION OF PRESTRESSING STEEL = 10618.61 PSI

CONDITIONS AT THE CENTER
INITIAL PRESTRESS + D.L. GIRDER IN THE TOP = -569.47 + 1271.57 = 702.10 PSI
INITIAL PRESTRESS + D.L. GIRDER IN THE BOTTOM = 2722.01 - 988.53 = 1733.48 PSI
PRESTRESS + FINAL STRESS IN THE TOP = -483.97 + 2243.53 = 1759.55 PSI
PRESTRESS + FINAL STRESS IN THE BOTTOM = 2313.34 + -1950.11 = 363.22 PSI

********** RATING FOR H15 **********
* MEMBER CAPACITY = 2778.09 PSI *
* DEAD LOAD EFFECT = 1353.81 PSI *
* LIVE LOAD + IMPACT CAPACITY = 1424.28 PSI *
* ACTUAL LIVE LOAD + IMPACT STRESS = 596.30 PSI *
* INVENTORY AND OPERATING RATING = 35.83 TONS *
****

BOND BREAKS ARE NOT NEEDED TO SATISFY CONDITIONS AT THE END OF THE BEAM

CONDITIONS AT THE END OF THE BEAM
INITIAL PRESTRESS + D.L. GIRDER IN THE TOP = -569.47 + 88.61 = -480.87 PSI
INITIAL PRESTRESS + D.L. GIRDER IN THE BOTTOM = 2722.01 - 68.88 = 2653.13 PSI
PRESTRESS + FINAL STRESS IN THE TOP = -483.97 + 141.16 = -342.81 PSI
PRESTRESS + FINAL STRESS IN THE BOTTOM = 2313.34 + -118.00 = 2195.33 PSI

EMBEDMENT LENGTH = 4.80 FT.

ULTIMATE STRENGTH DESIGN AT L/2
ACTUAL= 2248.8 FT. KIPS
ALLOWABLE= 4016.7 FT. KIPS

DEFLECTIONS
DEAD LOAD CENTER = 1.864624 INCHES 1/4 POINT = 1.328545 INCHES
PRESTRESS CENTER = 2.426424 INCHES
SLAB + DIAPH. CENTER =0.402482 IN. 1/4 POINT =0.286769 IN.

SHEAR DESIGN (DIMENSIONS IN SQUARE INCHES)
REQUIRED AREA OF REINFORCEMENT= 0.24
MINIMUM AREA OF REINFORCEMENT= 0.36
VC = 63268. LBS VU = 109513. LBS
BASED ON 24 IN. SPACING AND 60000 PSI STEEL

END OF PROBLEM

STRAND TYPE IS ASTM

BEAM SECTION PROPERTIES (ALL DIMENSIONS IN INCHES)
YT= 23.63 YB= 18.37
MOMENT OF INERTIA= 149382.
SECTION MODULUS TOP= 6322.
SECTION MODULUS BOTTOM= 8132.
AREA OF CONCRETE= 649.50

COMPOSITE SECTION PROPERTIES (ALL DIMENSIONS IN INCHES)
EFFECTIVE SLAB WIDTH= 48.00
YT SLAB= 23.20 YT BEAM= 19.20 YB= 22.80
MOMENT OF INERTIA= 223327.
SECTION MODULUS TOP OF SLAB= 9627.
SECTION MODULUS TOP OF BEAM= 11632.
SECTION MODULUS BOTTOM= 9795.

APPLIED STRESSES CENTER	TOP	BOTTOM
WEIGHT OF BEAM	1271.57	988.53
WEIGHT OF SLAB	375.89	292.22
WEIGHT OF DIAPHRAMS	0.0	0.0
UNIFORM LD. ON NON-COMP. SECT.	93.97	73.06
UNIFORM LD. ON COMP. SECT.	0.0	0.0
LIVE LOAD	854.68	1015.06
TOTAL STRESS	2596.12	2368.87

STRAND PLACEMENT
PLACE 18. STRAND IN ROW 1.
PLACE 22. STRAND IN ROW 2.
PLACE 6. STRAND IN ROW 3.
PLACE 4. STRAND IN ROW 4.
PLACE 4. STRAND IN ROW 5.
PLACE 4. STRAND IN ROW 6.
PLACE 4. STRAND IN ROW 7.

PRESTRESS LOSSES
INITIAL LOSS (INITIAL STRAND RELAXATION + ELASTIC SHORTENING) =
9450.00 + 11416.10 = 20866.10PSI

FINAL LOSS = 46109.45 PSI

ELASTIC SHORTENING = 11416.10 PSI
SHRINKAGE = 6500.00 PSI
CREEP = 17574.74 PSI
RELAXATION OF PRESTRESSING STEEL = 10618.61 PSI

CONDITIONS AT THE CENTER
INITIAL PRESTRESS + D.L. GIRDER IN THE TOP = -569.47 + 1271.57 = 702.10 PSI
INITIAL PRESTRESS + D.L. GIRDER IN THE BOTTOM = 2722.01 - 988.53 = 1733.48 PSI
PRESTRESS + FINAL STRESS IN THE TOP = -483.97 + 2596.12 = 2112.15 PSI
PRESTRESS + FINAL STRESS IN THE BOTTOM = 2313.34 + -2368.87 = -55.53 PSI

```
**************** RATING FOR HS20*****************
* MEMBER CAPACITY =  2778.09  PSI                 *
* DEAD LOAD EFFECT =  1353.81  PSI                *
* LIVE LOAD + IMPACT CAPACITY =  1424.28  PSI     *
* ACTUAL LIVE LOAD + IMPACT STRESS = 1015.06 PSI *
* INVENTORY AND OPERATING RATING =    50.51 TONS *
*************************************************
```

STRESSES EXCEED ALLOWABLE UNDER INITIAL CONDITIONS TOP
ALLOWABLE = 520. PSI T
ACTUAL = ********* PSI
DISTANCE FROM END = ******* FT.
STRESSES EXCEED ALLOWABLE UNDER INITIAL CONDITIONS BOTTOM
ALLOWABLE = 2880. PSI C
ACTUAL = ********* PSI
DISTANCE FROM END = ******* FT.

CONDITIONS AT ****** FT. FROM THE END OF THE BEAM
INITIAL PRESTRESS + D.L. GIRDER IN THE TOP = -569.47 + ******** = ******** PSI
INITIAL PRESTRESS + D.L. GIRDER IN THE BOTTOM = 2722.01 - ******** = ******** PSI
PRESTRESS + FINAL STRESS IN THE TOP = -483.97 + ********* = ******** PSI
PRESTRESS + FINAL STRESS IN THE BOTTOM = 2313.34 + ********* = ******** PSI

CONDITIONS AT THE END OF THE BEAM
INITIAL PRESTRESS + D.L. GIRDER IN THE TOP = -569.47 + 88.61 = -480.87 PSI
INITIAL PRESTRESS + D.L. GIRDER IN THE BOTTOM = 2722.01 - 68.88 = 2653.13 PSI
PRESTRESS + FINAL STRESS IN THE TOP = -483.97 + 318.76 = -165.22 PSI
PRESTRESS + FINAL STRESS IN THE BOTTOM = 2313.34 + -328.92 = 1984.41 PSI

EMBEDMENT LENGTH = 4.80 FT.

ALLOWABLE ULTIMATE MOMENTS
BREAK NO. STRANDS ALLOWABLE MOMENT (FT KIPS)
1 62. 0.
CUT OFF LENGTH + TWICE THE EMBEDMENT LENGTH****** FT. IS GREATER THAN L/2 FOR BREAK NO. 1

ULTIMATE STRENGTH DESIGN AT L/2
ACTUAL= 2990.5 FT. KIPS
ALLOWABLE= 4016.7 FT. KIPS

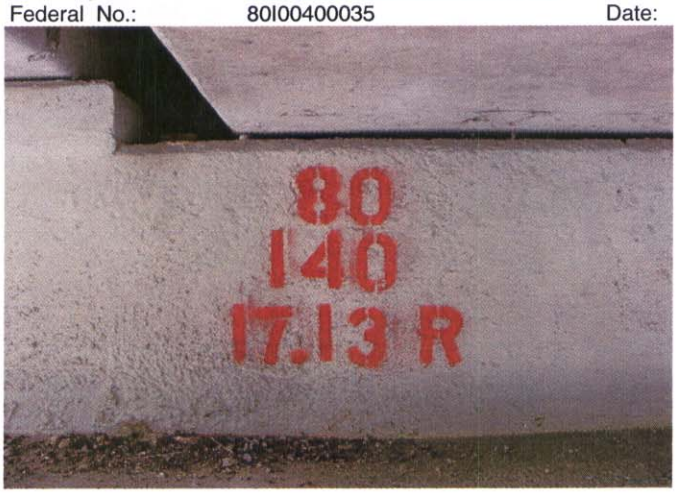
DEFLECTIONS
DEAD LOAD CENTER = 1.864624 INCHES 1/4 POINT = 1.328545 INCHES
PRESTRESS CENTER = 0.0 INCHES
SLAB + DIAPH. CENTER =0.402482 IN. 1/4 POINT =0.286769 IN.
*** WARNING NET DEFLECTION IS DOWNWARD ***

SHEAR DESIGN (DIMENSIONS IN SQUARE INCHES)
REQUIRED AREA OF REINFORCEMENT= 0.54
MINIMUM AREA OF REINFORCEMENT= 0.36
VC = 63268. LBS VU = 168205. LBS
BASED ON 24 IN. SPACING AND 60000 PSI STEEL

END OF PROBLEM

Bridge No.: 80 — I0040 — 1713
Crossing:: CANEY FORK RIV & NFA A43*
Federal No.: 80I00400035 Date: April 28, 2003

PIC1



BRIDGE NO. AT ABUTMENT # 1

Bridge No.: 80 — I0040 — 1713
Crossing:: CANEY FORK RIV & NFA A43*
Federal No 80I00400035 Date: April 28, 2003

PIC2

VIEW ACROSS DECK FROM A-APPR

PIC3

INLET-ELEV & R. SIDE APPR

Bridge No.: 80 — I0040 — 1713
Crossing:: CANEY FORK RIV & NFA A43*
Federal No.: 80I00400035 Date: April 28, 2003

PIC4

POTHOLES @ A-APPR SLAB

PIC5

SETTLEMENT @ R. SIDEWALK

Bridge No.: 80 — I0040 — 1713
Crossing:: CANEY FORK RIV & NFA A43*
Federal No.: 80I00400035 Date: April 28, 2003

PIC6

CLEARENCE SIGN 14' 6"

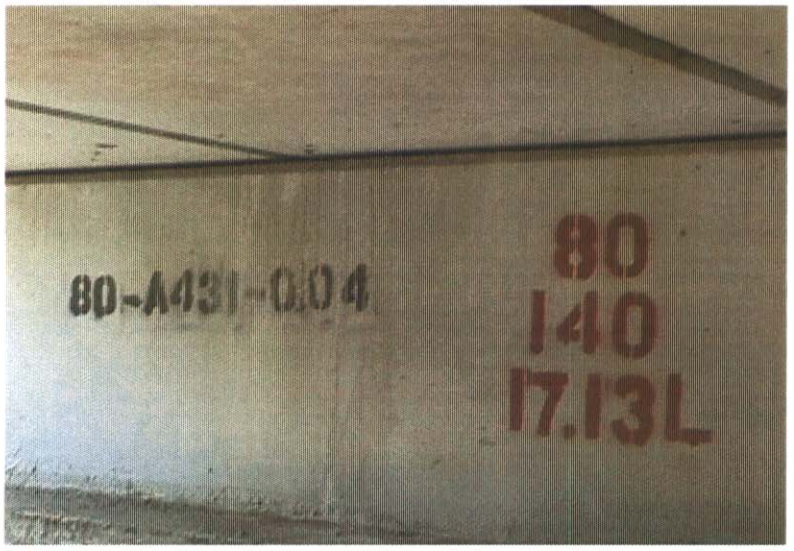
Bridge No.: 80 — I0040 — 1713
Crossing:: CANEY FORK RIV & NFA A43*
Federal No.: 80I00400036 Date: June 13, 2001

PIC1

VIEW ACROSS DECK

Bridge No.: 80 — I0040 — 1713
Crossing:: CANEY FORK RIV & NFA A43*
Federal N 80I00400036 Date: June 13, 2001

PIC2



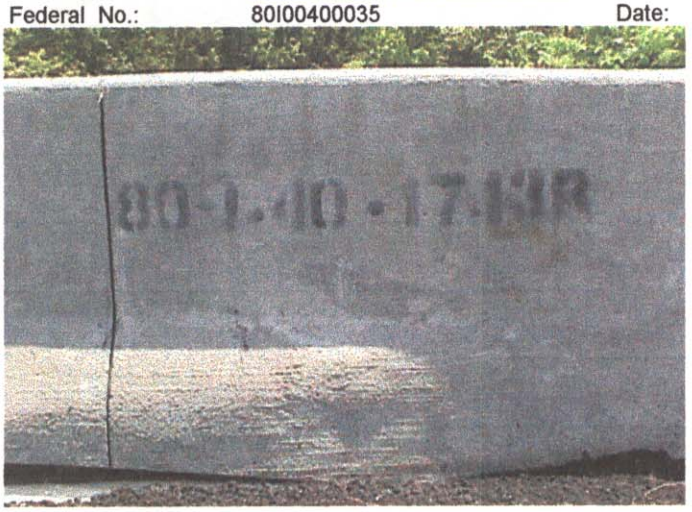
BRIDGE NO. AT ABUTMENT # 1

PIC3

RIGHT SIDE VIEW

Bridge No.: 80 — I0040 — 1713
Crossing:: CANEY FORK RIV & NFA A43*
Federal No.: 80I00400035 Date: June 17, 1999

PIC1



BRIDGE NO. AT ABUTMENT # 1

Bridge No.: 80 — I0040 — 1713
Crossing:: CANEY FORK RIV & NFA A43*
Federal No 80I00400035 Date: June 17, 1999

PIC2

APPROACH #1

PIC3

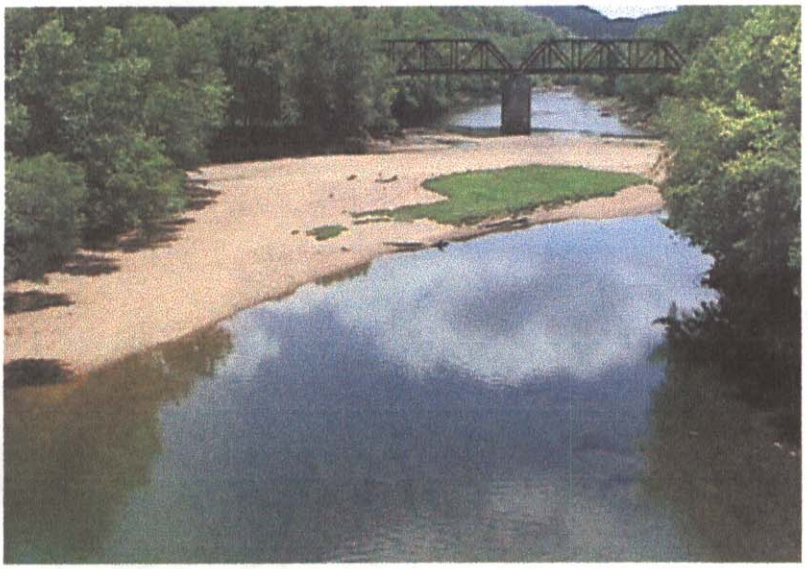
APPROACH #2

Bridge No.: 80 — I0040 — 1713
Crossing:: CANEY FORK RIV & NFA A43*
Federal No.: 80I00400035 Date: June 17, 1999

PIC4

ACROSS TOP OF DECK

PIC5



UPSTREAM

Bridge No.: 80 — I0040 — 1713
Crossing:: CANEY FORK RIV & NFA A43*
Federal No.: 80I00400035 Date: June 17, 1999

PIC6

ABUTMENT TYPICAL

PIC7

PIER TYPICAL

Bridge No.: 80 — I0040 — 1713
Crossing:: CANEY FORK RIV & NFA A43*
Federal No.: 80I00400035 Date: June 17, 1999

PIC8

DOWNSTREAM

PIC9

BOTTOM OF DECK

Bridge No.: 80 — I0040 — 1713
Crossing:: CANEY FORK RIV & NFA A43*
Federal No.: 80I00400035 Date: June 17, 1999

PIC10

ELEVATION INLET

ROUTINE BRIDGE INSPECTION REPORT

Page No.___

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

Field Report No. 16 Date 4-28-2003
Previous Report No. 15 Date 6/13/2001
Plans: Yes

Bridge No. 80I00400035 (Eleven Digit No.)

Bridge Location No. 80 - I0040 - 17.13 R (Co. - Route - Log Mile)

I 40 (Road Name) over CANEY FORK RIV & NFA A43* (Crossing)

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

Structure Type PPCBB

FRACTURE CRITICAL: NO

FEATURE CHANGES:

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

CLEARANCE CHANGES: (If yes make changes below)

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

INSPECTORS

Hunter Thompson
Daniel
Crutcher
Waller

Condition: **GOOD** (If change describe in comments)

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

UNDERWATER INSPECTION

To Be Performed By: none required
Date Underwater Insp. ___
BRIDGE is: Good

Weight Limit Posted NO

Gross..... ___ Tons
2 Axle..... ___ Tons
3 or more Axles.. ___ Tons

COMMENTS:

Supervising Bridge Inspector: Gilbert Wayne Hunter BRIDGE RATING: **GOOD**

SUMMARY
80-I40-17.13 RT
4/28/2003

I40/Caney Fork River & Rest Area Ramp
4 Span/P.P.C.B.B.

This bridge was inspected and found to be in **good** condition. The deck is rated good. The new A.C. wearing surface is good. The clearance is posted at 14'6'. The sidewalk is broken and tilted over on right side of underpass roadway.

The superstructure and sub-structure are rated good.

The channel is rated good.

Gilbert Hunter

ROUTINE BRIDGE INSPECTION REPORT

Page No.___

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

Field Report No. 14 Date 6/17/99
Previous Report No. 15 Date 6/13/01
Plans: Yes

Bridge No. 80I00400035 (Eleven Digit No.)
Bridge Location No. 80 - I0040 - 17.13 R (Co. Route Log Mile)

I40 (Road Name) over CANEY FORK RIV & NFA A43* (Crossing)
Indepth Insp. Req'd: NO
(If yes itemize limits under comment

Structure Type PPCBB
FRACTURE CRITICAL: NO

FEATURE CHANGES:
Wearing Surface ____ Type ____ Depth ____ (in.)
Bridge Rail ____ Describe changes:
Approach Rail ____

CLEARANCE CHANGES: (If yes make changes below)

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

INSPECTORS
Hunter
Daniel
Waller
Thompson

Condition: **GOOD** (If change describe in comments)

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

UNDERWATER INSPECTION
To Be Performed By: none required
Date Underwater Insp. ____
BRIDGE is: open

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

COMMENTS:

Supervising Bridge Inspector: Gilbert Wayne Hunter
BRIDGE RATING: **GOOD**

SUMMARY
80-I40-17.13 RT
6-13-01

I40/Caney Fork River & Rest Area Ramp
4 Span/P.P.C.B.B.

This bridge was inspected and found to be in **good** condition. The deck is rated good. The new A.C. wearing surface is good.

The superstructure and sub-structure are rated good.

The channel is rated good.

Gilbert Hunter

BRIDGE INSPECTION REPORT

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

FIELD REPORT NO. 14 DATE 6-17-99
REVIOUS REPORT NO. 13 DATE 5-7-97
PLANS ---- YES [X] NO [ ]

BRIDGE NO. 80I00400035 (ELEVEN DIGIT NO.)
BRIDGE LOC. NO. 80 - I40 - 17.13 Rt (CO. ROUTE LOG MILE)

I40 E.B.L. (ROAD NAME) OVER A431 & Cany Fork River (FEATURE INTERSECTED) _____ (STRUCTURE NAME (IF NAMED))

YEAR CONSTRUCTED 1960 (ESTIMATED OR ACTUAL) [ ] COUNTY Smith MAINTENANCE DISTRICT NO. 32

YEAR WIDENED 1990 (ESTIMATED OR ACTUAL) [ ] [X]
YEAR REHABILITATED _____ (ESTIMATED OR ACTUAL) [ ] [ ]

FEATURES

WEARING SURFACE-- CONCRETE [X] TIMBER [ ] ASPHALT [X] (DEPTH= 3 1/4")
FLARED WIDTH --------- YES [ ] NO [X]
NAVIGATIONAL CONTROL-- YES [ ] NO [X]
MEDIAN WIDTH -------- OPEN [ ] NONE [X] CLOSED [ ]
BRIDGE SKEW 90° LT [ ] RT [ ]

STRUCTURE TYPE PPCBB (Main Span) NO. SPANS 4 (Main Span)
STRUCTURE TYPE - (Approach Spans) NO. SPANS - (Approach Spans)
MAXIMUM SPAN LENGTH 90' TOTAL LENGTH 322'

WIDTHS

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

CLEARANCES

MIN. VERTICAL OVER DECK -
MIN. VERTICAL UNDER CL 14' 11"
MIN. LATERAL UNDER CL 4' RT
0 LT

INSPECTORS

1. Hunter
2. Daniel
3. Love
4. Crutcher
5.
6.
7.
8.
9.

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

UNDERWATER INSPECTION

INSPECTION PERFORMED BY:
DOT FIELD TEAM [ ] DATE _____
CONTRACT DIVERS [ ] DATE _____
NONE REQUIRED [X]

FRACTURE CRITICAL DETAILS: YES [ ] NO [X]
IF YES, INCLUDE BIR 3.9

CHANGE IN STRUCTURAL CONDITION YES [ ] NO [X]
MAJOR REPAIRS MADE YES [ ] NO [X]

COMMENTS: _____

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 - 17.13 Rt
CO. ROUTE L.M.

DATE: 6-17-99

PERFORMANCE EVALUATION

Time of day inspected 1:30 Weather conditions Sunny 70°

Vehicles observed Tractor Trailer & passenger type

LIVE LOAD BEHAVIOR	YES	NO	COMMENTS
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	NV
Joints	G	F	P	C	NV
Pavement	(G)	F	P	C	New AC. Overlay
Embankment	(G)	F	P	C	
Drains	(G)	F	P	C	

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 - 17.13 Rt. DATE: 6-17-99
CO. ROUTE L.M.

DECK					*COMMENTS*
WEARING SURFACE	(G)	F	P	C	New A.C. overlay
DECK - STRUCTURAL CONDITION	G	F	P	C	NV
CURBS	G	F	P	C	NA
MEDIAN	G	F	P	C	NA
SIDEWALKS	G	F	P	C	NA
PARAPET	(G)	F	P	C	
RAILING	G	F	P	C	NA
PAINT	G	F	P	C	NA
DRAINS	G	F	P	C	NA
LIGHTING STD'S	G	F	P	C	NA
UTILITIES	G	F	P	C	NA
JOINT LEAKAGE	(G)	F	P	C	
EXPANSION JOINTS	G	F	P	C	NV

SUPERSTRUCTURE					*COMMENTS*
BEARING DEVICES	(G)	F	P	C	
GIRDERS OR BEAMS	(G)	F	P	C	
FLOOR BEAMS	G	F	P	C	NA
STRINGERS	G	F	P	C	NA
DIAPHRAGMS	G	F	P	C	NA
BRACING	G	F	P	C	NA
TRUSSES - GENERAL	G	F	P	C	
- PORTALS	G	F	P	C	
- BRACING	G	F	P	C	
PAINT	G	F	P	C	NA
ALIGNMENT OF MEMBERS	(G)	F	P	C	

TEXTURE COAT

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

NEEDS SPOT PAINTING? YES [ ] NO [X]
NEEDS REPAINTING? YES [ ] NO [X]

COMMENTS:

RECOMMENDATIONS

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

BRIDGE LOC. NO. 80 - I 40 - 17.13 Rt.
CO. ROUTE L.M.

DATE: 6-17-99

SUBSTRUCTURE

ABUTMENTS					COMMENTS
CAPS	(G)	F	P	C	
BREASTWALL	G	F	P	C	NA
WINGS	(G)	F	P	C	
BACKWALL	G	F	P	C	NV
PLUMB	(G)	F	P	C	
FOOTING	G	F	P	C	NV
PILES	G	F	P	C	NV
EMBANKMENT	(G)	F	P	C	
BEARING SURFACE	(G)	F	P	C	
BEARINGS	(G)	F	P	C	
SLOPE PAVING	(G)	F	P	C	

PIERS					
CAPS	(G)	F	P	C	
COLUMNS	(G)	F	P	C	
PLUMB	(G)	F	P	C	
FOOTINGS	G	F	P	C	NV
PILES	G	F	P	C	NV
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	NV
PILES	G	F	P	C	NV
BEARING SURFACE	(G)	F	P	C	
BEARINGS	(G)	F	P	C	

SCOUR CONDITION NONE [X]

RECOMMENDATIONS: ~

FORM BIR 3.8
Rev. 3-1-97
DT-1508

BRIDGE LOC. NO. 80 - I40 - 17.13 Rt. ( ) DATE: 6-17-99
CO. ROUTE L.M. (LOG km)

STREAM CHANNEL DATA AND CONDITIONS

STREAM CROSSING: Carey Fork River

I. 1. Type of bed material? Bedrock & Gravel
2. Has the channel shifted? YES [ ] NO [ ] NOT APPARENT [X]
3. Condition of rip-rap? G F P C Est. % failed ____ N/A [X]
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: 7
6. Underwater diver inspection recommended? YES [ ] NO [X]
If yes, why? _____

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

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

IV. Comments: _____

* *

SPECIAL INSPECTION DATA - FOR REASONS OTHER THAN FC OR SCOUR

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

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

SUMMARY
80-I40-17.13 RT
6-17-99

I40/Caney Fork River & Rest Area Ramp
4 Span/P.P.C.B.B.

This bridge was inspected and found to be in good condition. The deck is rated good. The new A.C. wearing surface is good.

The superstructure and sub-structure are rated good.

The channel is rated good.

Gilbert Hunter

CURRENT FIELD REPORT NO. 14 DATE 6-17-99
PREVIOUS FIELD REPORT NO. 13 DATE 5-7-97

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

INSPECTION REPORT FOR UNDERPASS ROUTE

BRIDGE NO. 80I00400035 (ELEVEN DIGIT NUMBER) UNDERPASS LOC. NO. 80 (CO.) - A431 (RTE.) - 0.03 (L.M.)

80 (CO.) - I40 (RTE.) - 17.13 (L.M.) Ft. OVER 80 (CO.) - A431 (RTE.) - 0.03 (L.M.) STRUCTURE NAME (IF NAMED) —

COUNTY Smith

YEAR CONSTRUCTED 1960 YEAR WIDENED 1990 YEAR REHABILITATED ____
ESTIMATED [ ] ACTUAL [X]

GEOMETRIC FEATURES UNDER BRIDGE

DIVIDED HIGHWAY - - - - LEFT RDWY [ ] RIGHT RDWY [X] N.A. [ ]
TYPE OF WEARING SURFACE - - - - CONCRETE [ ] ASPHALT [X] GRAVEL [ ]
WIDTH OF APPROACH TRAVELED ROADWAY 13' FT. (DOES NOT INCLUDE SHOULDERS)
WIDTH OF MEDIAN IF DIVIDED HIGHWAY — FT.
APPROACH SHOULDER WIDTH 5' FT. (RT.) 2 FT. (LT.)
*HORIZONTAL CLEARANCE UNDER BRIDGE 44 FT. 3" IN.
*DISTANCE BETWEEN PIER PROTECTION GUARDRAIL AND SUBSTRUCTURE 11' FT. (RT.) 0 FT. (LT.)
*WIDTH OF SIDEWALK UNDER BRIDGE 3' FT. (RT.) 0 FT. (LT.)
*MINIMUM VERTICAL CLEARANCE 14' FT. 11" IN.

*SHOW ON SKETCH

TRAFFIC SAFETY FEATURES FOR UNDERPASS ROUTE		STANDARD	SUB-STANDARD	
PIER PROTECTION RAILING OR PARAPET	(G) F P C	[X]	[ ]	NON EXIST [ ]
APPROACH GUARDRAIL TRANSITIONS	(G) F P C	[X]	[ ]	NON EXIST [ ]
APPROACH GUARDRAIL	(G) F P C	[X]	[ ]	NON EXIST [ ]
APPROACH GUARDRAIL TERMINAL	(G) F P C	[X]	[ ]	NON EXIST [ ]

SIGNING FOR UNDERPASS ROUTE

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

INSPECTORS
1. Hunter
2. Daniel
3. Love
4. Crutcher
5. ____
6. ____

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

UNDERPASS LOC. NO. 80 (CO.) - A431 (RTE.) - 0.03 (L.M.)

OTHER SIGNS OR PLAQUES —

COMMENTS REGARDING ANY PROBLEM WITH SIGNING —

BRIDGE FEATURES

BRIDGE SKEW 90°
STRUCTURE TYPE PPCBB (MAIN SPAN) NO. SPANS 4 (MAIN TYPE)
STRUCTURE TYPE — (APPROACH SPAN) NO. SPANS — (APPROACH TYPE)
MAXIMUM SPAN LENGTH 90' FT. TOTAL LENGTH 320' FT.
WIDTH OF BRIDGE OUT-TO-OUT 44' FT. (RT. < TO L OF BRIDGE)
WIDTH OF BRIDGE ALONG SKEW _____ FT. (IF UNABLE TO MEASURE AT RT. ∢ TO L OF BRIDGE)
NUMBER OF (LANES)/TRACKS ON BRIDGE 2

BRIDGE CONDITION (G) F P C

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

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

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

CURRENT FIELD REPORT NO. 14 DATE 6-17-99
PREVIOUS FIELD REPORT NO. 13 DATE 5-7-97

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

INSPECTION REPORT FOR UNDERPASS ROUTE

BRIDGE NO. 80I00400035 (ELEVEN DIGIT NUMBER) UNDERPASS LOC. NO. 80 (CO.) - A431 (RTE.) - 0.03 (L.M.)

80 (CO.) - I-40 (RTE.) - 17.13 (L.M.) Ft OVER 80 (CO.) - A431 (RTE.) - 0.03 (L.M.) STRUCTURE NAME (IF NAMED)

COUNTY SMITH

YEAR CONSTRUCTED 1960 YEAR WIDENED 1990 YEAR REHABILITATED ____
ESTIMATED [ ] ACTUAL [X]

GEOMETRIC FEATURES UNDER BRIDGE

DIVIDED HIGHWAY - - - - LEFT RDWY [X] RIGHT RDWY [ ] N.A. [ ]
TYPE OF WEARING SURFACE - - - - CONCRETE [ ] ASPHALT [X] GRAVEL [ ]
WIDTH OF APPROACH TRAVELED ROADWAY 13' FT. (DOES NOT INCLUDE SHOULDERS)
WIDTH OF MEDIAN IF DIVIDED HIGHWAY 7' FT.
APPROACH SHOULDER WIDTH 6.3' FT. (RT.) 1' FT. (LT.)
*HORIZONTAL CLEARANCE UNDER BRIDGE 44 FT. 3 IN.
*DISTANCE BETWEEN PIER PROTECTION GUARDRAIL AND SUBSTRUCTURE ____ FT. (RT.) ____ FT. (LT.)
*WIDTH OF SIDEWALK UNDER BRIDGE 3' FT. (RT.) ____ FT. (LT.)
*MINIMUM VERTICAL CLEARANCE 14' FT. 11" IN.

*SHOW ON SKETCH

TRAFFIC SAFETY FEATURES FOR UNDERPASS ROUTE	STANDARD	SUB-STANDARD	
PIER PROTECTION RAILING OR PARAPET	G F P C	[ ]	[ ] NON EXIST [X]
APPROACH GUARDRAIL TRANSITIONS	G F (P) C	[ ]	[X] NON EXIST [ ]
APPROACH GUARDRAIL	G F (P) C	[X]	[ ] NON EXIST [ ]
APPROACH GUARDRAIL TERMINAL	(G) F P C	[X]	[ ] NON EXIST [ ]

SIGNING FOR UNDERPASS ROUTE

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

INSPECTORS

1. Hunter
2. Daniel
3. Love
4. Crutcher
5. ____
6. ____

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

UNDERPASS LOC. NO. 80 (CO.) - A431 (RTE.) - 0.03 (L.M.)

OTHER SIGNS OR PLAQUES —

COMMENTS REGARDING ANY PROBLEM WITH SIGNING —

BRIDGE FEATURES

BRIDGE SKEW 90°
STRUCTURE TYPE PPCBB (MAIN SPAN) NO. SPANS 4 (MAIN TYPE)
STRUCTURE TYPE — (APPROACH SPAN) NO. SPANS — (APPROACH TYPE)
MAXIMUM SPAN LENGTH 90° FT. TOTAL LENGTH 320' FT.
WIDTH OF BRIDGE OUT-TO-OUT 44' FT. (RT. < TO L OF BRIDGE)
WIDTH OF BRIDGE ALONG SKEW _____ FT. (IF UNABLE TO MEASURE AT RT. ∢ TO L OF BRIDGE)
NUMBER OF (LANES)/TRACKS ON BRIDGE 2

BRIDGE CONDITION (G) F P C

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

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

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

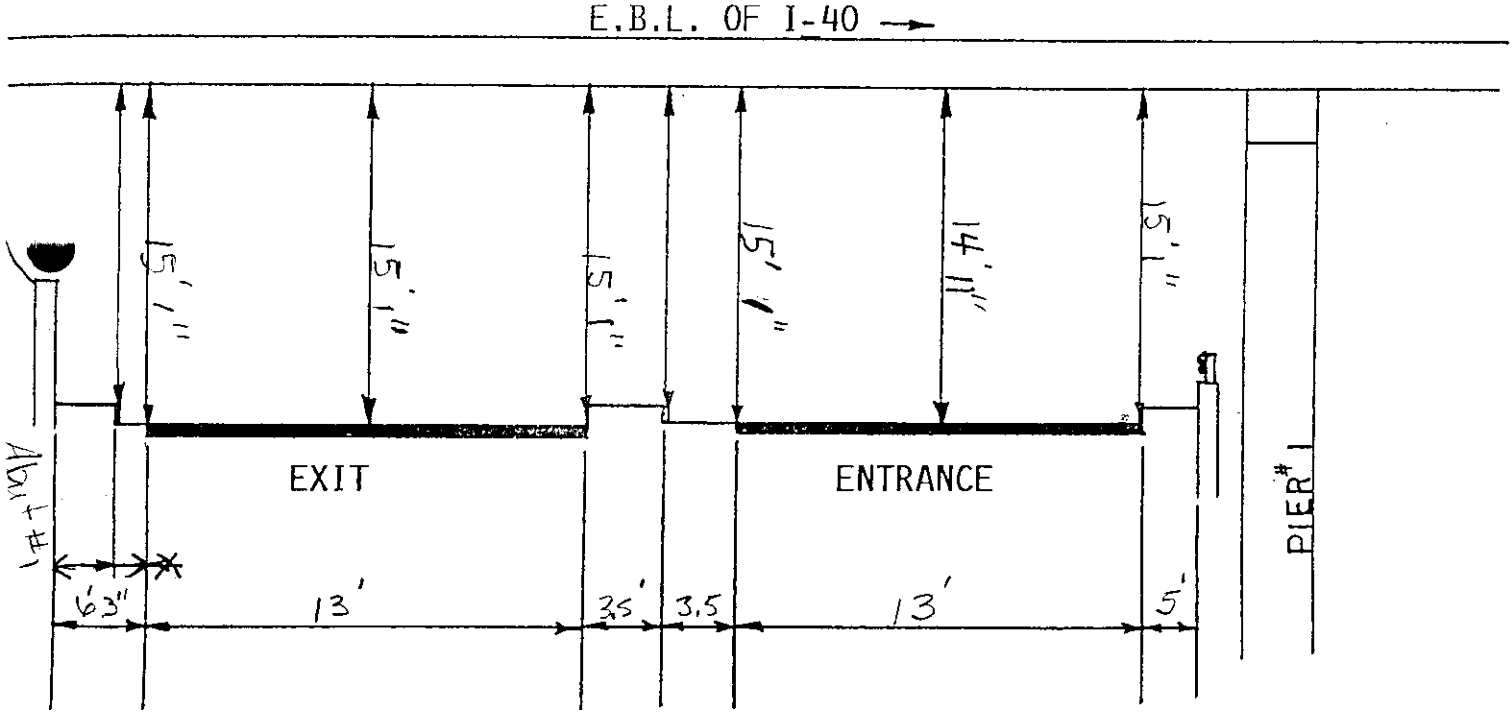
1. ELEVATION VIEW OF BRIDGE ON BOTH SIDES SHOWING UNDERPASS
2. VIEW SHOWING BOTH APPROACHES TO BRIDGE
3. VIEW SHOWING SAFETY FEATURES
4. VIEW SHOWING ANY PROBLEMS

HORIZONTAL & VERTICAL CLEARANCES

PAGE NO. ____

80 COUNTY | I-40 ROUTE | 17.13 RT. LA. LOG MILE

DATE 6-17-99 MD

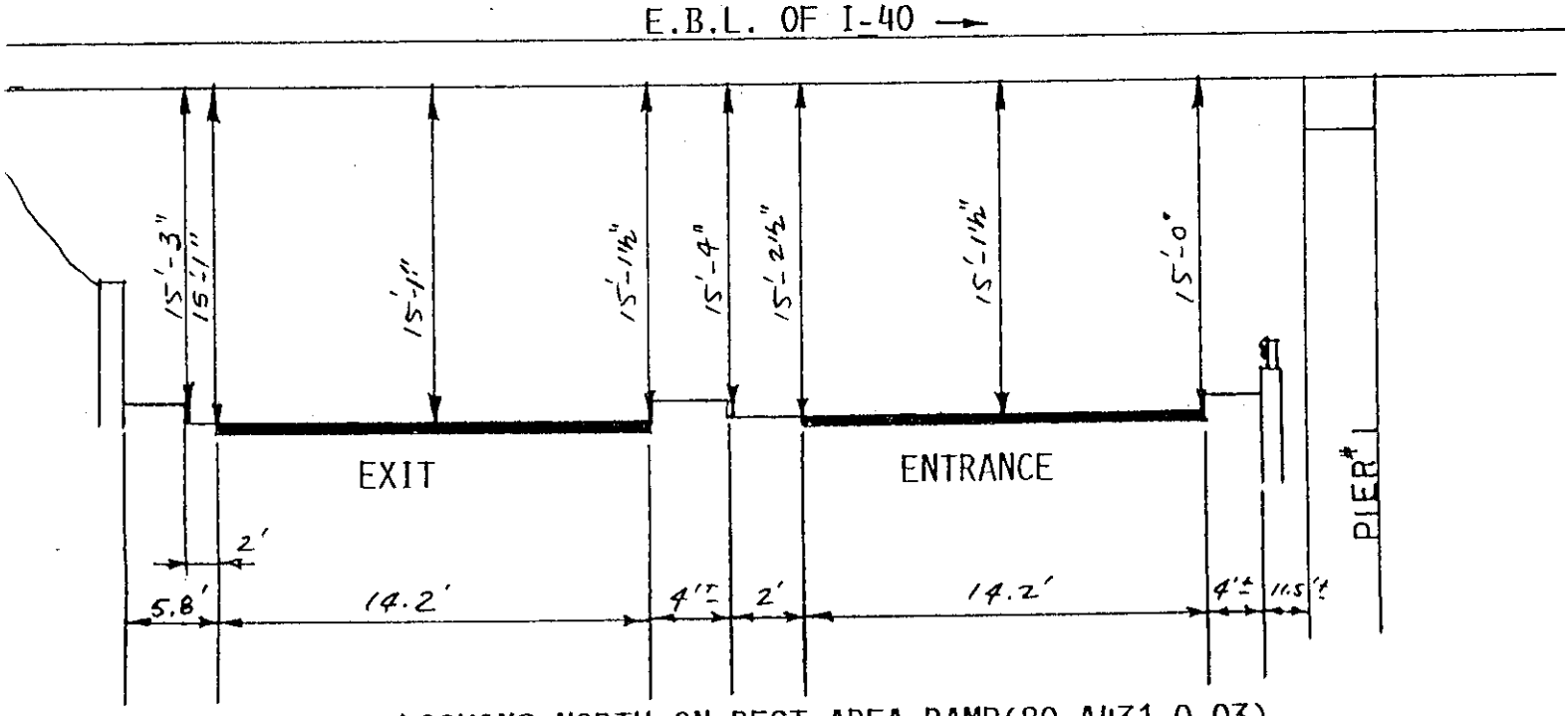


LOOKING NORTH ON REST AREA RAMP(80-A431-0.03)

HORIZONTAL & VERTICAL CLEARANCES

80 COUNTY | I-40 ROUTE | 17.13 RT. LA. LOG MILE

DATE 3/8/93



LOOKING NORTH ON REST AREA RAMP(80-A431-0.03)

ELEVATIONS OF DECK

DT0905

80	I40	17.13R (EBL)	3/26/91
COUNTY	ROUTE	LOG MILE	DATE

STATION	TOP OF PARAPET	GUTTER	CENTER LINE	GUTTER	TOP OF PARAPET
Abt. 1	521.33	518.60	518.28	518.03	520.86
Pier 1	522.04	519.30	519.00	518.70	521.42
Pier 2	522.97	520.20	519.92	519.59	522.31
Pier 3	523.90	521.07	520.81	520.50	523.25
Abt. 2	524.52	521.78	521.53	521.21	523.96

BENCH MARK: Top of N.E. Bolt in base of outside leg of Sign - 30' Rt. of ℄ of Rt. La. - Sta. 522+00

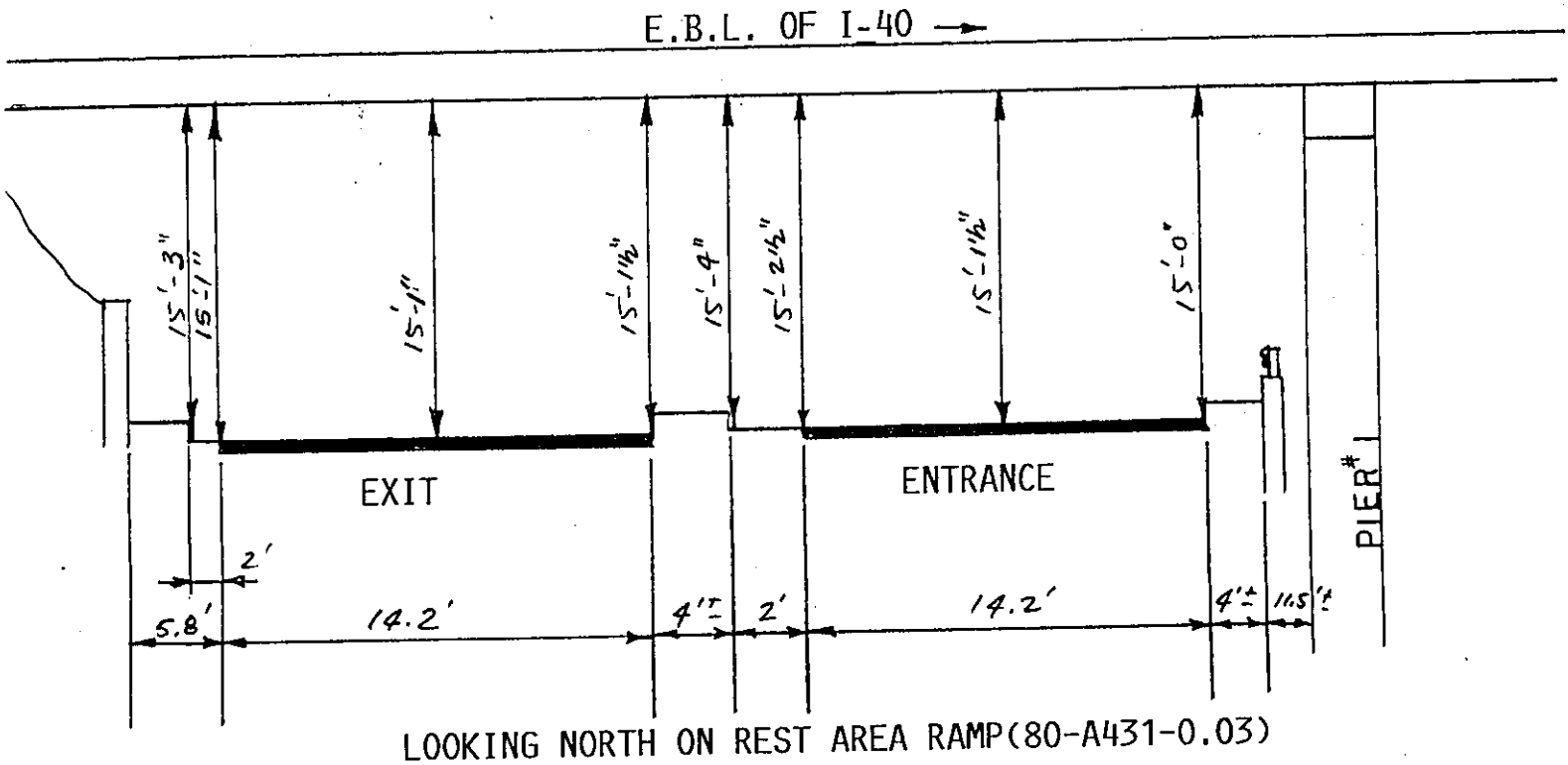
LOCATION

517.79

ELEVATION

HORIZONTAL & VERTICAL CLEARANCES

80 COUNTY | I-40 ROUTE | 17.13 RT. LA. LOG MILE | DATE 2/22/91



LOOKING NORTH ON REST AREA RAMP(80-A431-0.03)

ELEVATIONS OF DECK

DT0905

80 COUNTY | I-90 ROUTE | 17.13R LOG MILE | 4/3/89 DATE

STATION	TOP OF CURB	GUTTER	CENTER LINE	GUTTER	TOP OF CURB
Abt. 1	518.83	518.19	518.20	517.78	518.33
Pier 1	519.52	519.00	518.87	518.48	519.07
Pier 2	520.46	519.90	519.80	519.32	520.00
Pier 3	521.36	520.88	520.71	520.33	520.85
Abt. 2	522.05	521.47	521.43	520.97	521.60

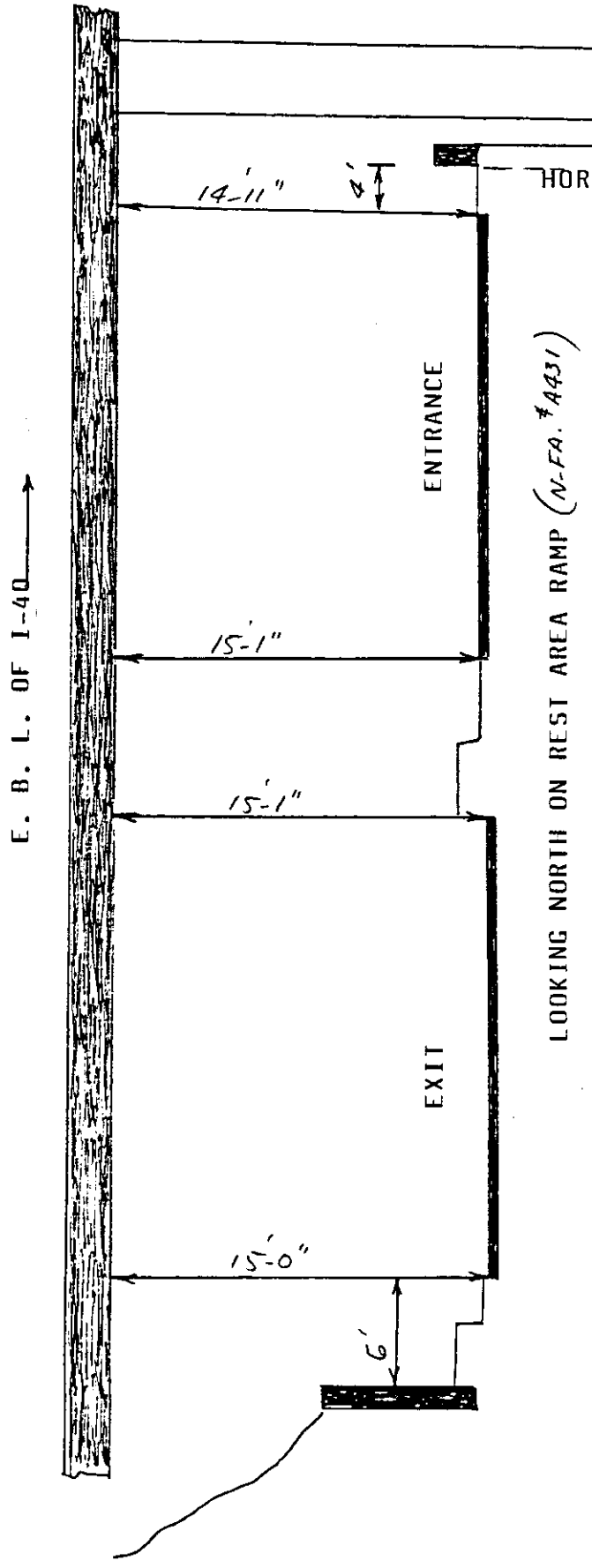
BENCH MARK Top of N.E. Bolt in base of inside Leg of Sign - 36' Rt. of ℄ of Rt. Lane - Sta. 522+00
LOCATION

519.81
ELEVATION

BRIDGE NO 80 (COUNTY) I-40 (ROUTE) 17.13R (EBL) (LOG MILE)

4/3/89
DATE

HORIZONTAL AND VERTICAL CLEARANCES



No Significant Change 17.13R

Page No. 22

BRIDGE NO. 80 (CO.) I-40 (ROUTE) ~~19.23~~ Right Lane (LOG MILE)

Date: 8/12/81

ELEVATIONS OF DECK

STATION	TOP OF CURB	GUTTERLINE	CENTERLINE	GUTTERLINE	TOP OF CURB
518+50 ±	518.80	518.18	518.05	517.75	518.31
519+20 ±	519.48	519.00	518.77	518.48	519.06
520+10 ±	520.45	519.87	519.72	519.43	519.98
521+00 ±	521.35	520.80	520.65	520.35	520.91
521+70 ±	522.05	521.43	521.35	520.98	521.61

BENCH MARK: Top of N.E. Bolt in Base of Inside Leg of Sign - 30' Rt. of ℄ of Rt. Lane - Sta. 522+00

(LOCATION)

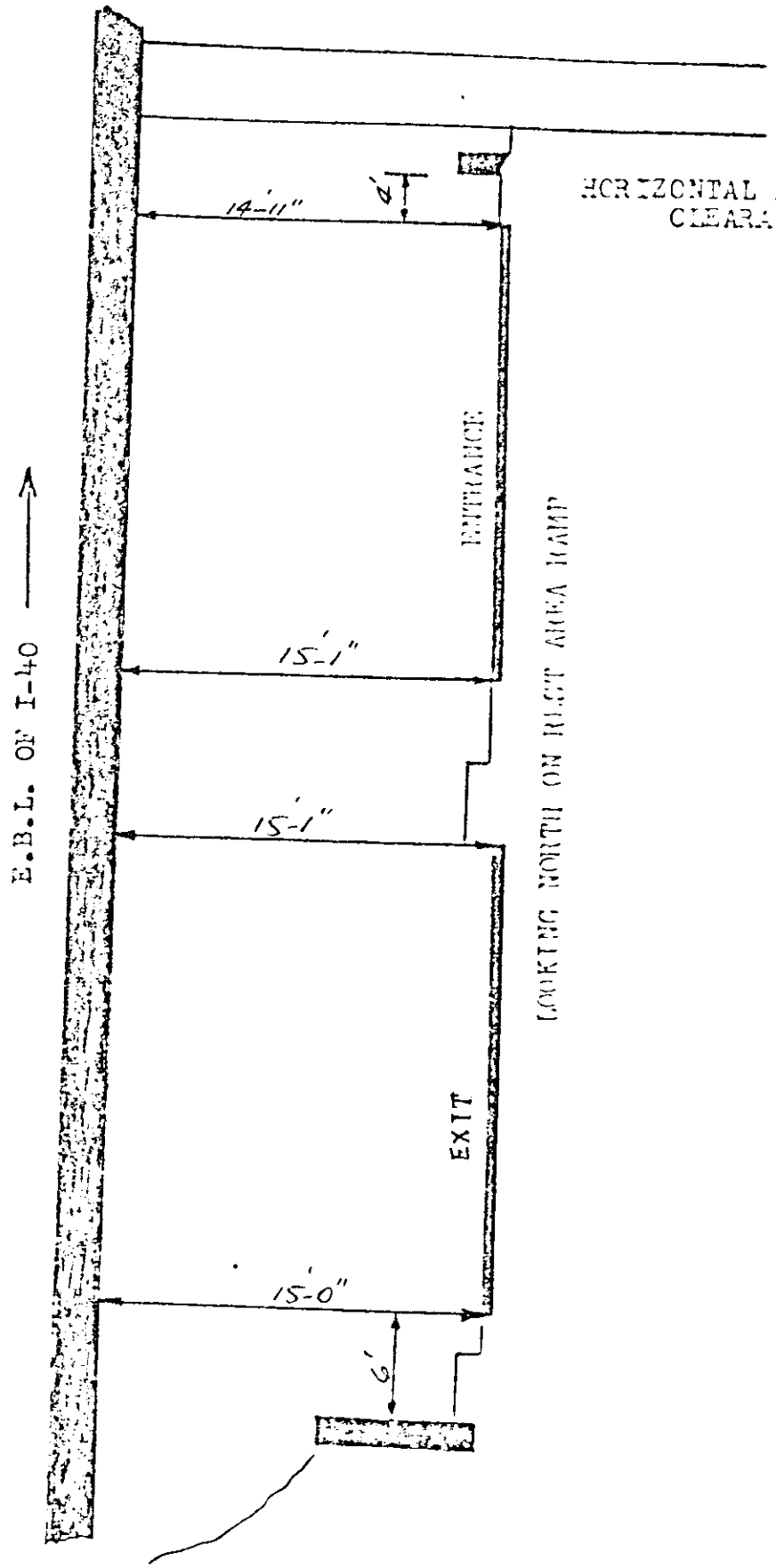
BENCH MARK: 519.81

(ELEVATION)

BRIDGE NO. 80 (COUNTY) I-40 (ROUTE) 17.13 Rt. (LOG MILS)

4/1/87
DATE

HORIZONTAL AND VERTICAL CLEARANCES



No Significant Change 17.13R

Page No. 16

BRIDGE NO. 80 (CO.) I-40 (ROUTE) ~~17.23~~ Right Lane (LOG MILE) Date: 8/12/81

ELEVATIONS OF DECK

STATION	TOP OF CURB	GUTTERLINE	CENTERLINE	GUTTERLINE	TOP OF CURB
518+50 ±	518.80	518.18	518.05	517.75	518.31
519+20 ±	519.48	519.00	518.77	518.48	519.06
520+10 ±	520.45	519.87	519.72	519.43	519.98
521+00 ±	521.35	520.80	520.65	520.35	520.91
521+70 ±	522.05	521.43	521.35	520.98	521.61

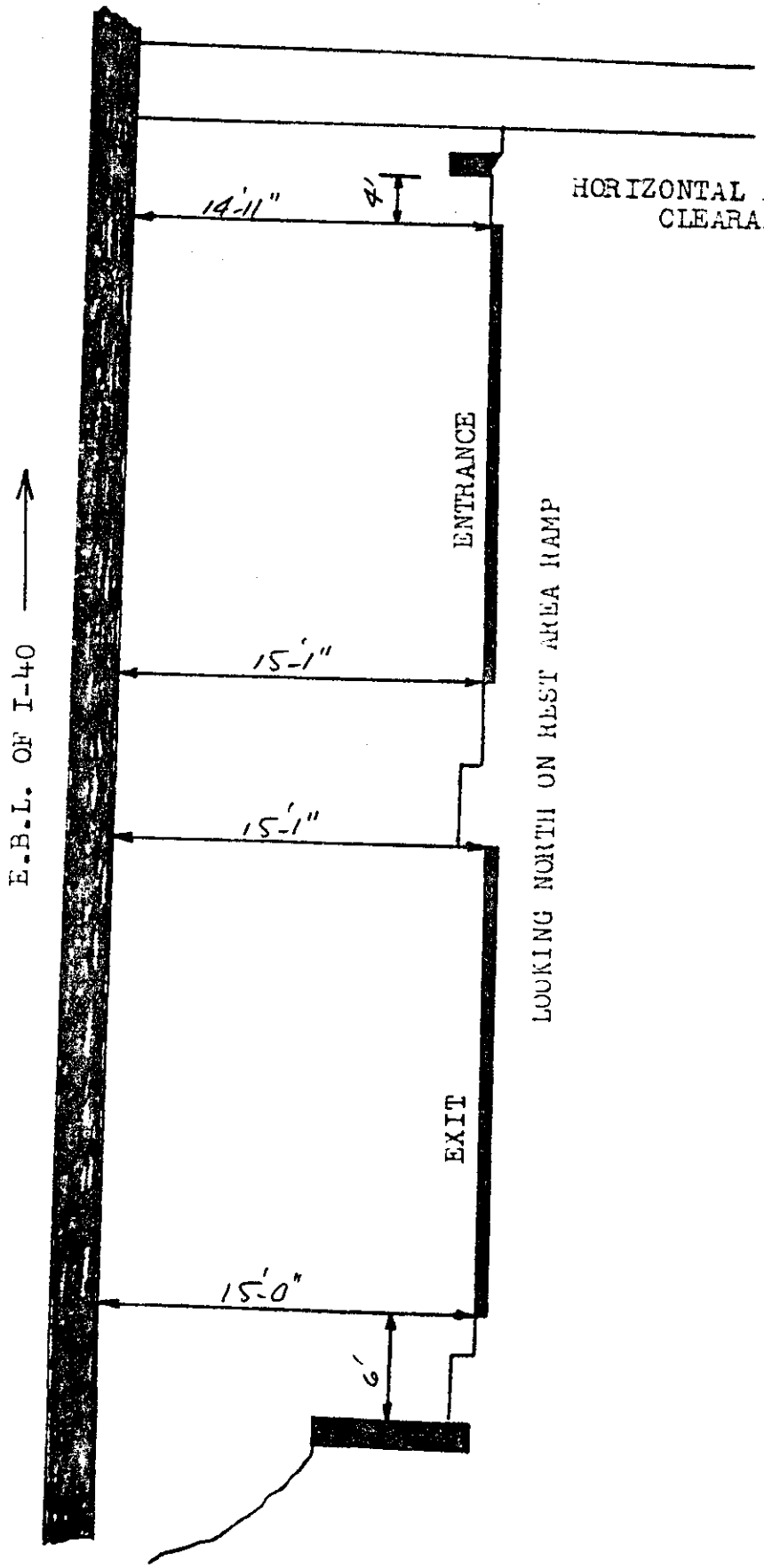
BENCH MARK: Top of N.E. Bolt in Base of Inside Leg of Sign - 30' Rt. of ℄ of Rt. Lane - Sta. 522+00
(LOCATION)

BENCH MARK: 519.81
(ELEVATION)

BRIDGE NO. 80 (COUNTY) I-40 (ROUTE) 17.13R (LOG MILE)

5/3/85 (DATE)

HORIZONTAL AND VERTICAL CLEARANCES

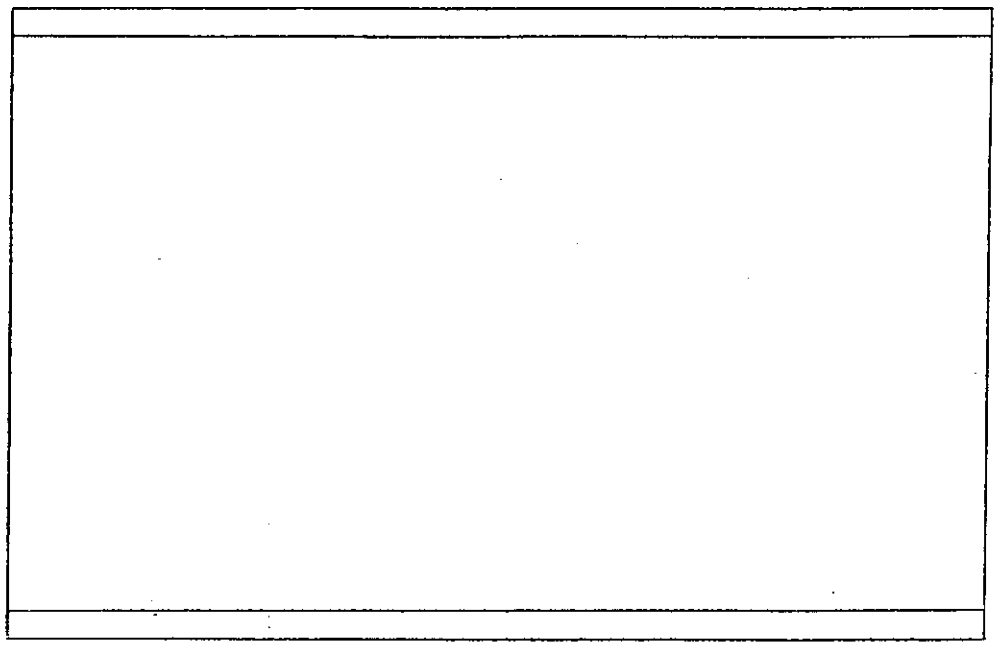


BRIDGE NO. 80 County [illegible] Route [illegible] Log [illegible] Mile.

PAGE NO. 1

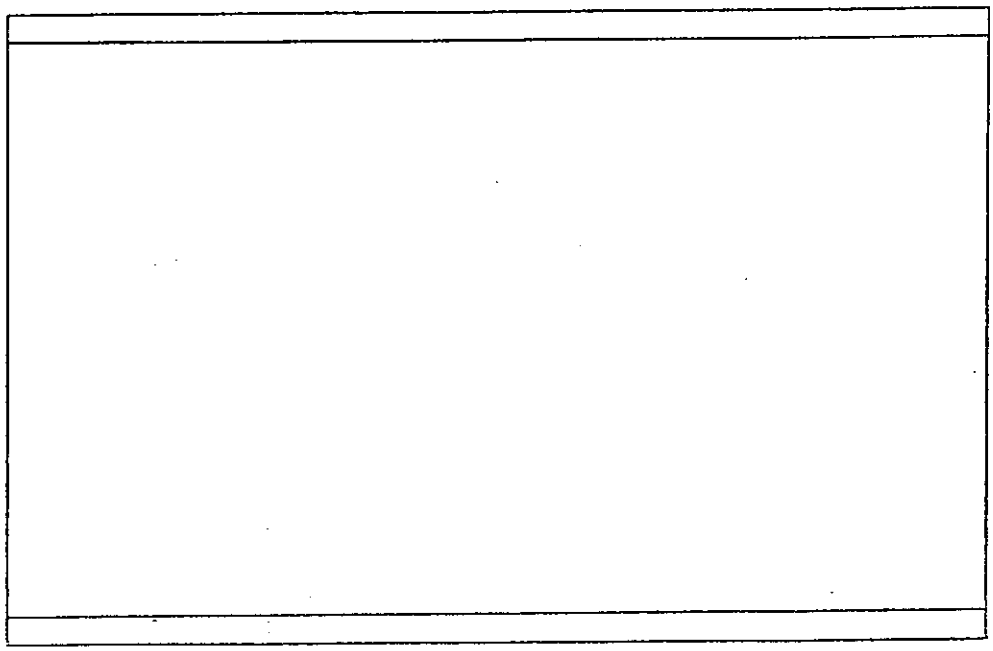
6/16/82 DATE

6-17-11
R



TOP SLAB # 1 Br. # 80-I-40-17.13 RT.

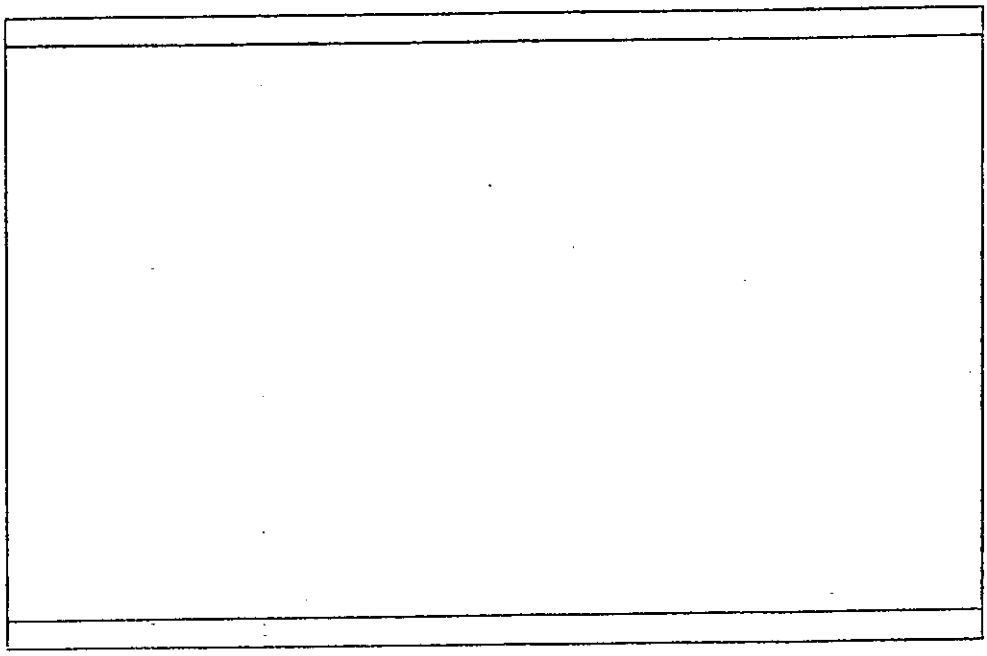
DECK	NV	AC OVERLAY
PARAPET	G	
DRAINS	NV	
JOINTS	NV	PAVED OVER



TOP Slab # 2 Br. # 80-I-40-17.13 RT

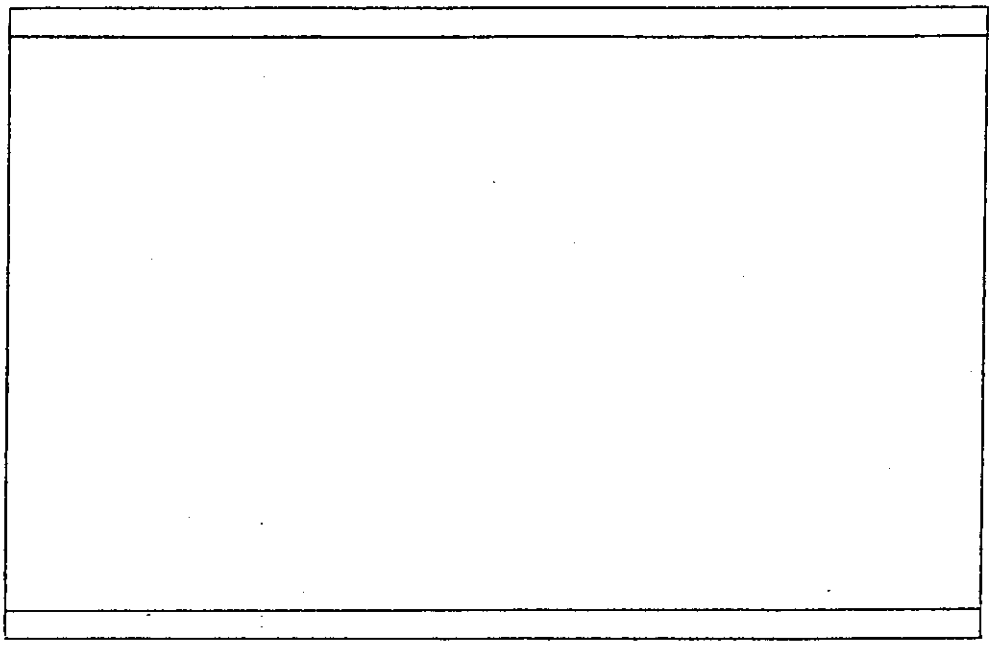
DECK	NV	AC OVERLAY
PARAPET	G	
DRAINS	NA	
JOINTS	NV	PAVED OVER

6-17-11
2



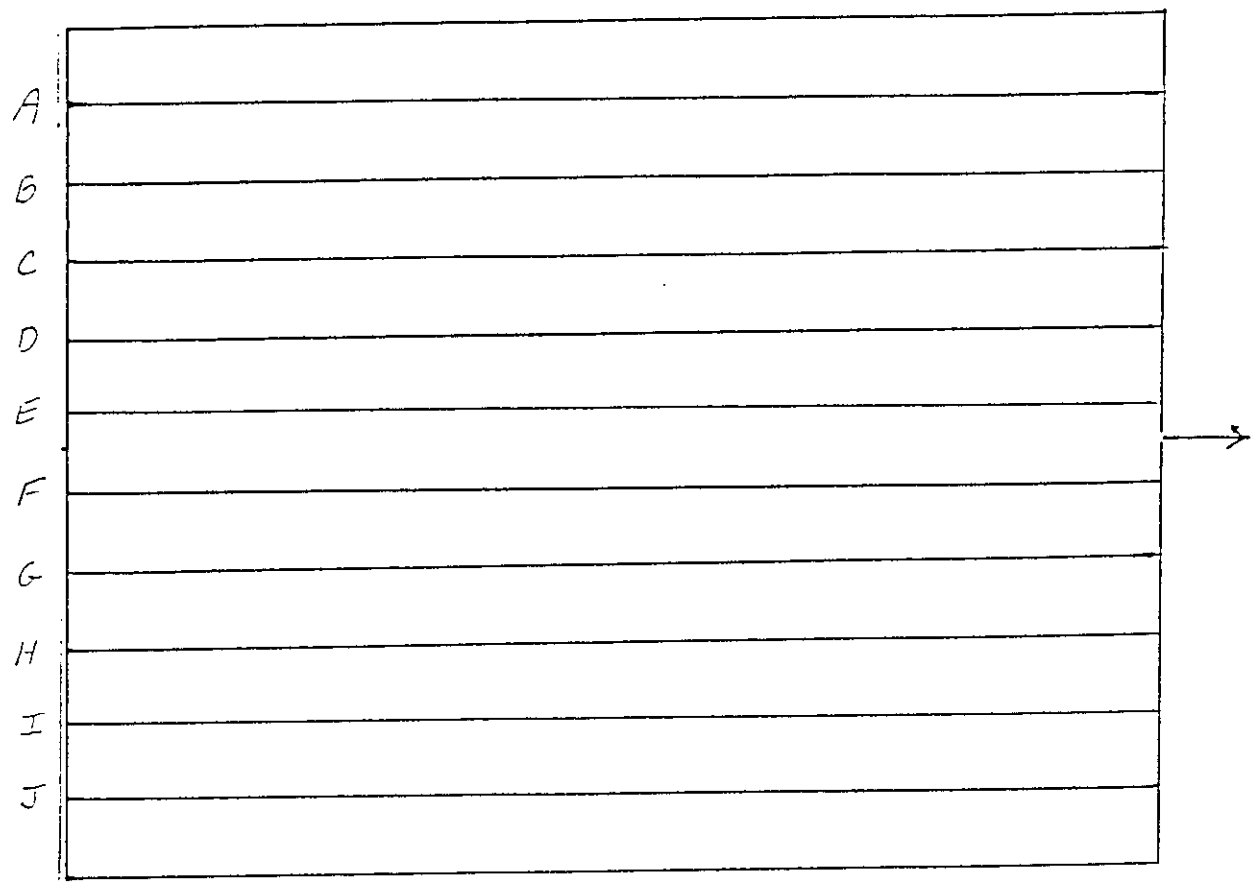
TOP SLab # 3 Br. # 80-I-40-17.13 RT.

DECK	NV	
PARAPET	G	
DRAINS	NA	
JOINTS	NV	PAVED OVER



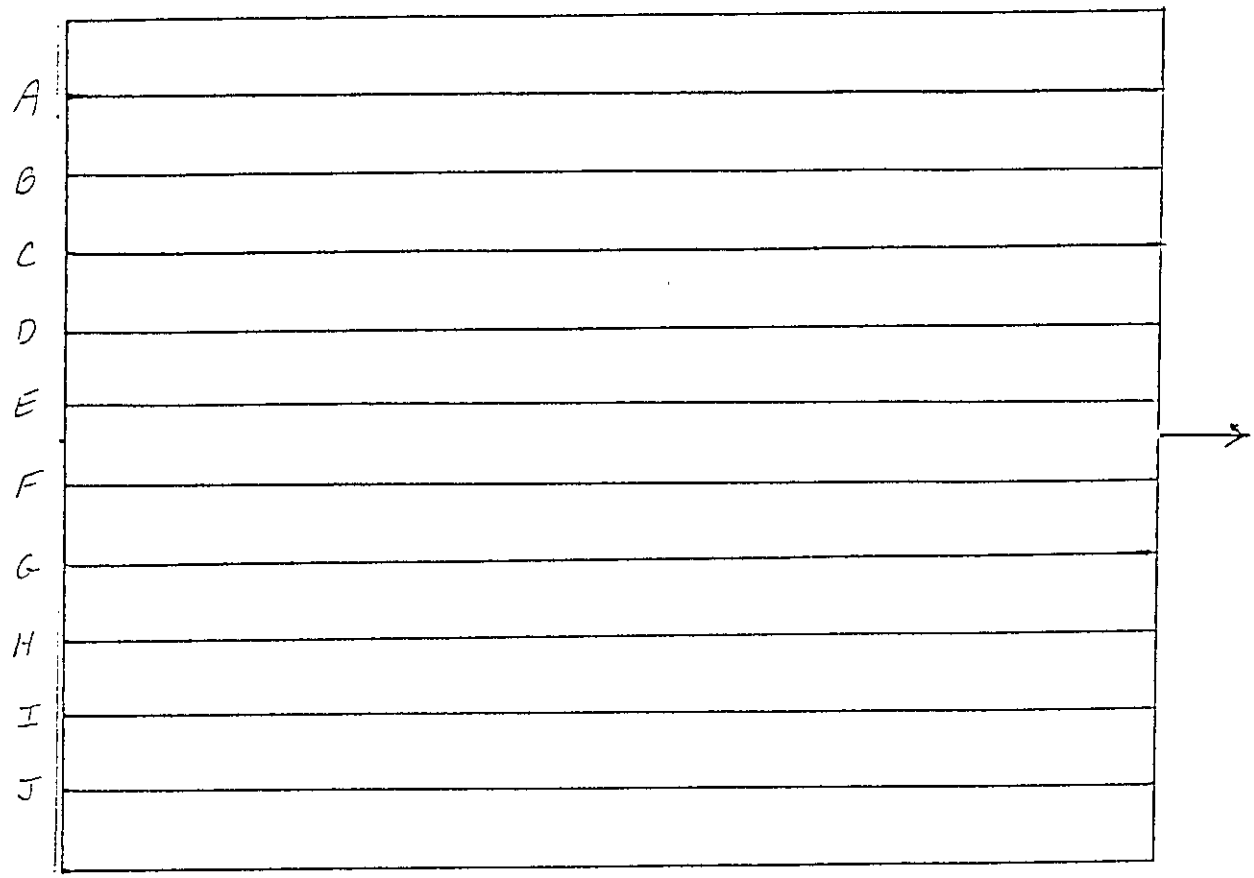
TOP SLAB # 4 Br. # 80-I-40-171.3 RT

DECK	NV	NO OVERLAY
PARAPET	G	
DRAINS	NA	
JOINTS	NV	PAVED OVER



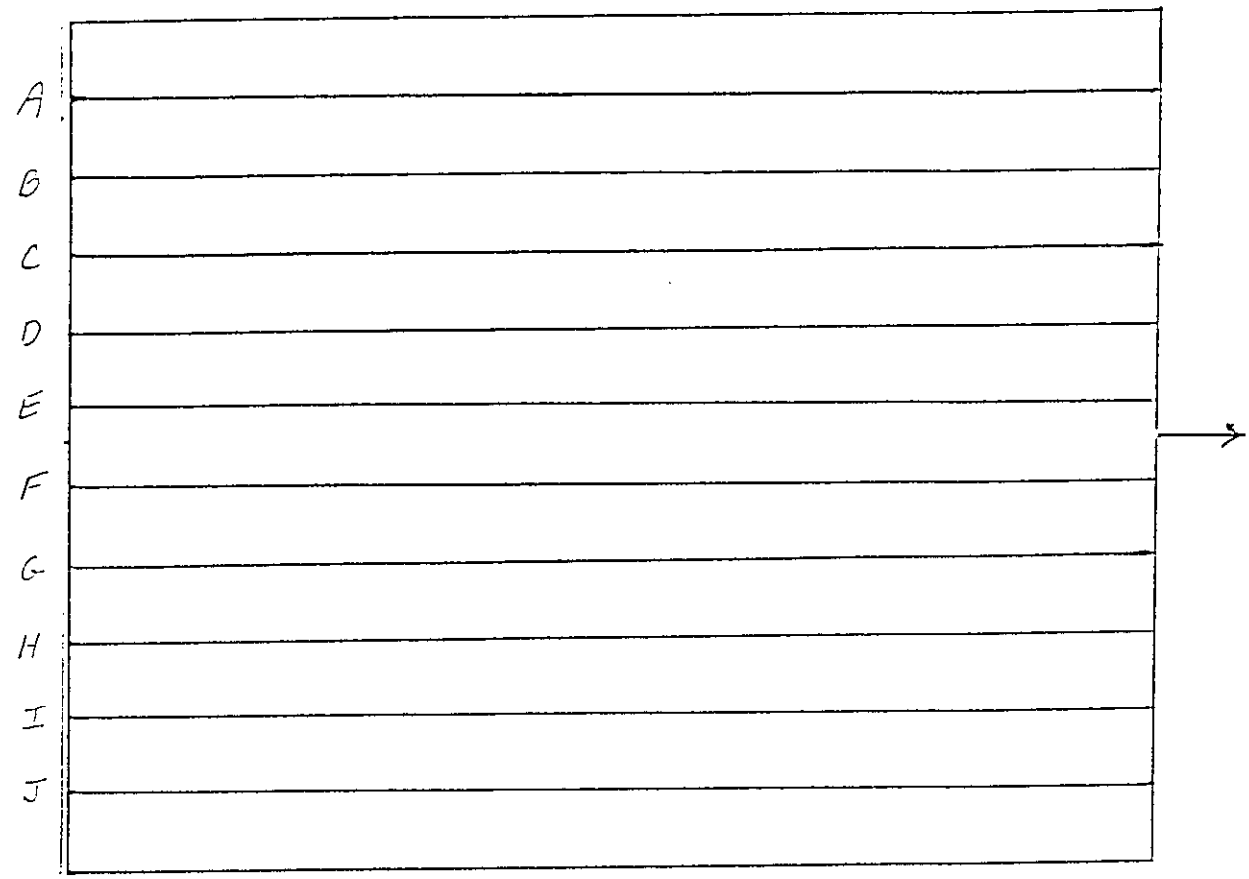
Bottom Slab = 1 Br. = 80-I40-17.73 RT.

Deck	U.I.
Diaph.	N/V
Beams	C



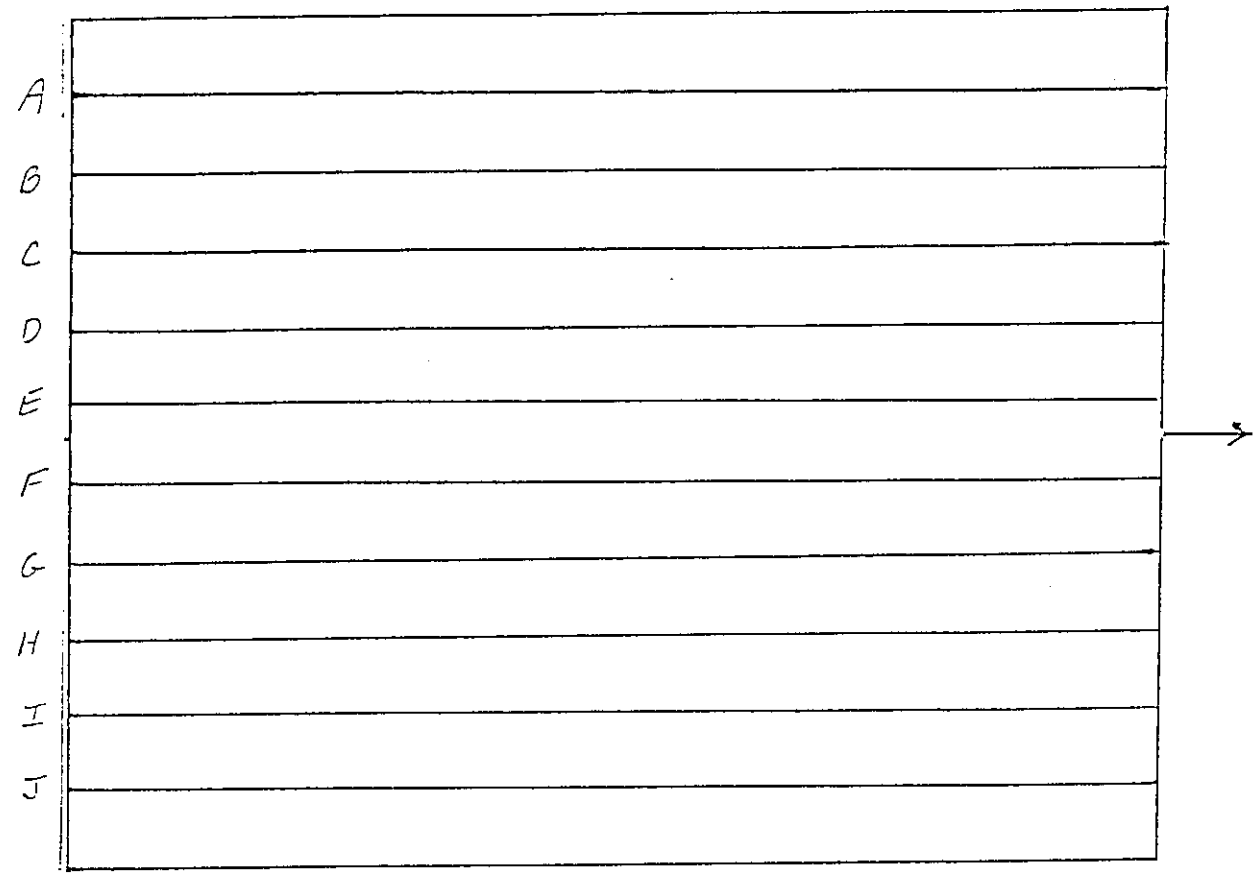
Bottom Slab = Z Br. = 80-I40-17.13 PT

Deck	UI
	N/V
Diaph.	N/A
Beams	G



Bottom Slab = 4 Br. = 80-I40-17.13 RT

Deck	U.I.
Diaph.	N/A
Beams	8

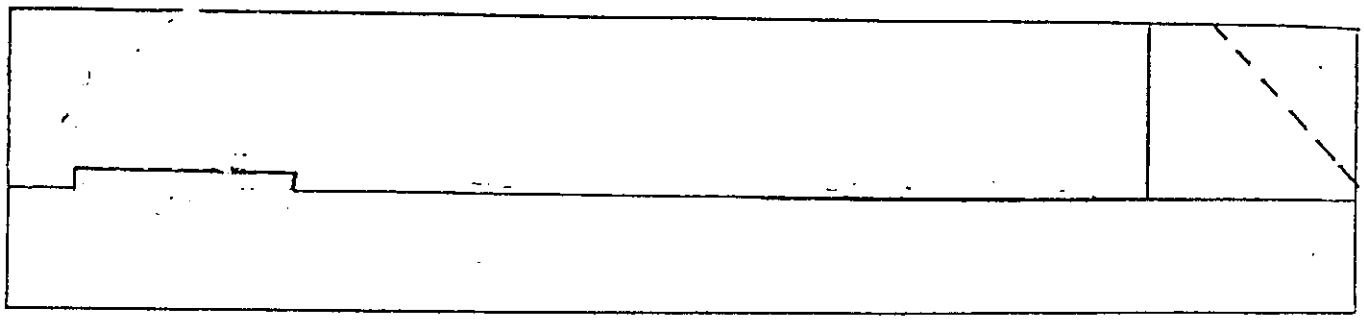


Bottom Slab = 3

Br. = 80-I 40 - 17.13 RT

Deck	UI
	N/V
Diaph.	N/A
Beams	C

6-17-97 BR

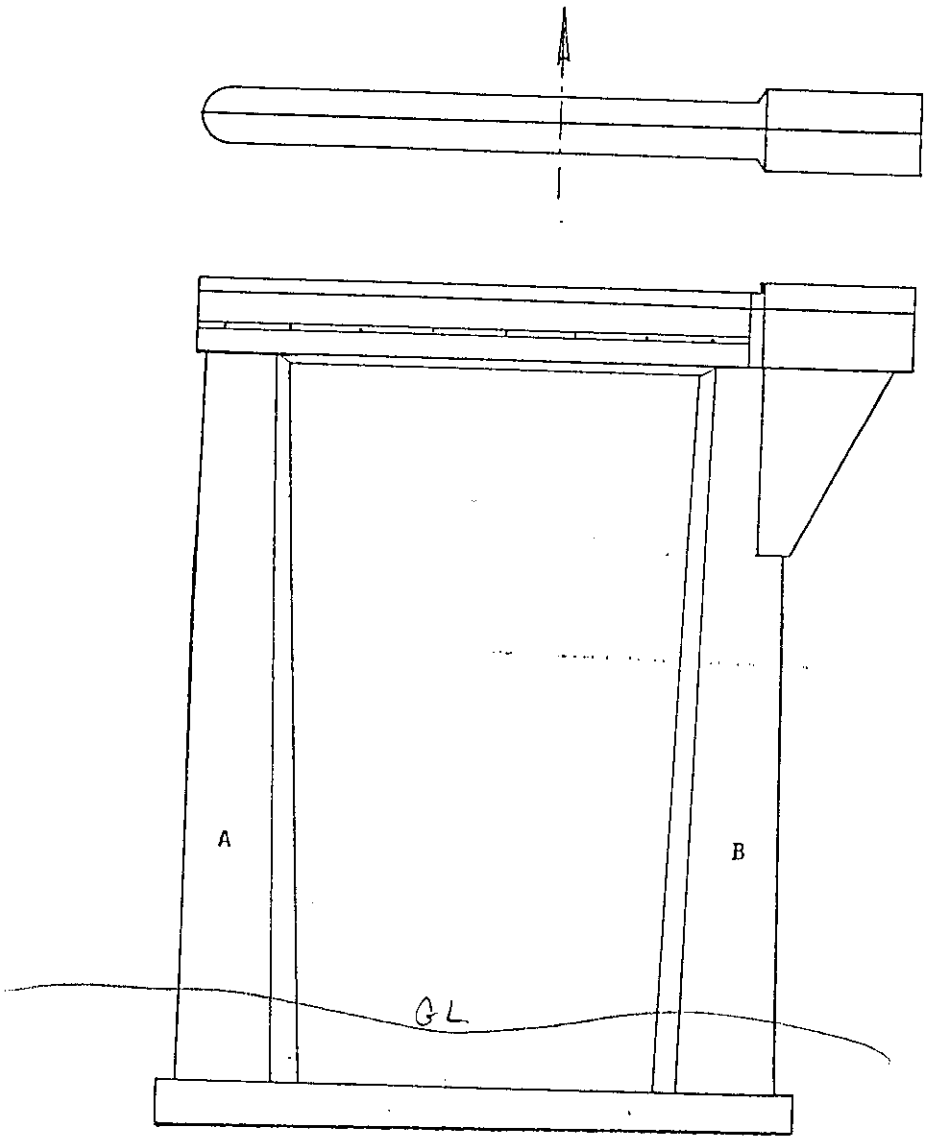


ABUT = 1 Br. = 80-I40-17.13 RT

Back wall	N/V
CAP	G
wings	G
Bearings	G

PIER NO.____ FRONT SIDE PAGE NO.___

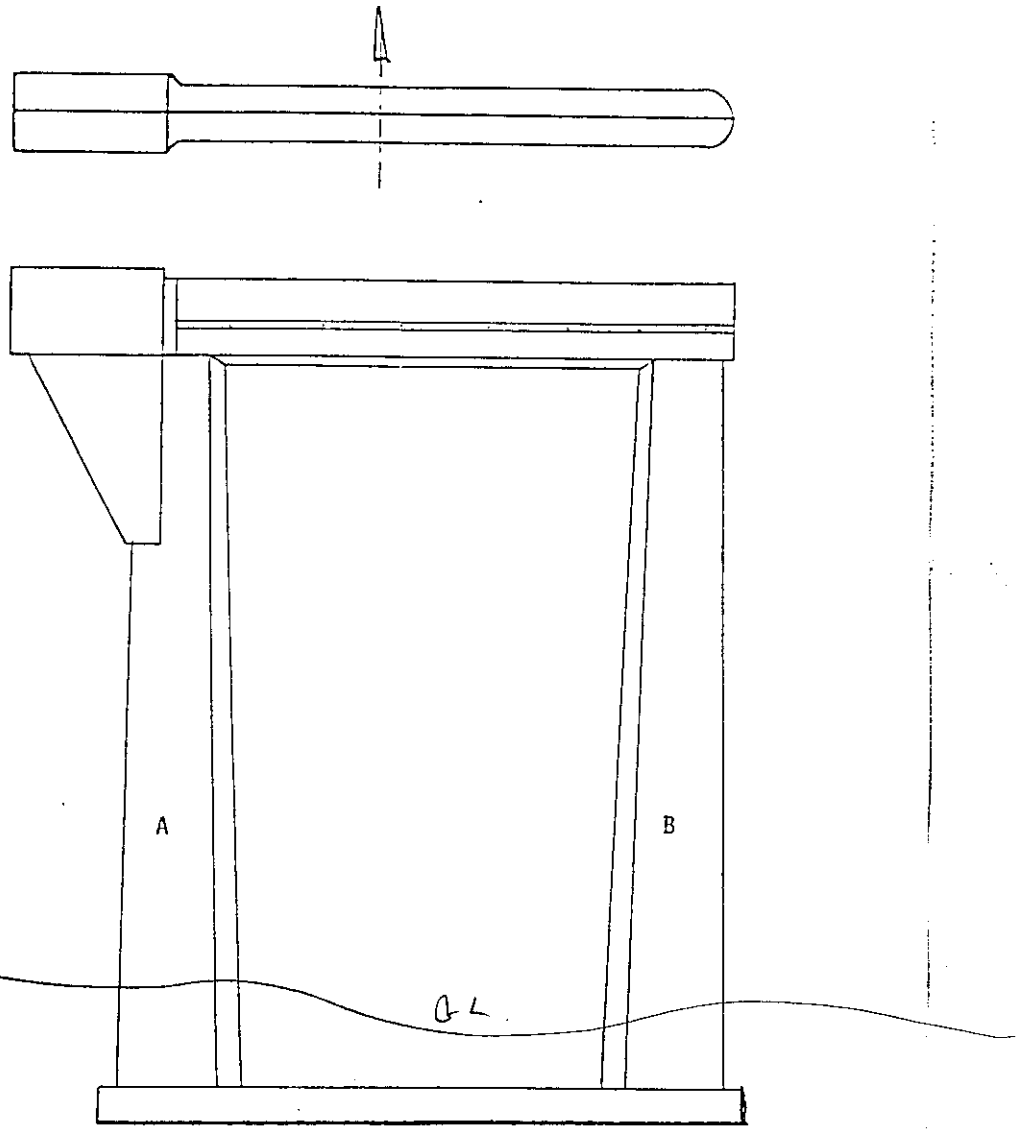
80 COUNTY 1-40 ROUTE 17.13R LOG MILE DATE 6-17-99 BJP



Bearing	✓	
E.R. Seat	N/V	
Cap	✓	LIGHT WATER STAINS
Pier Wall	✓	

PIER NO.____ PAGE NO.___

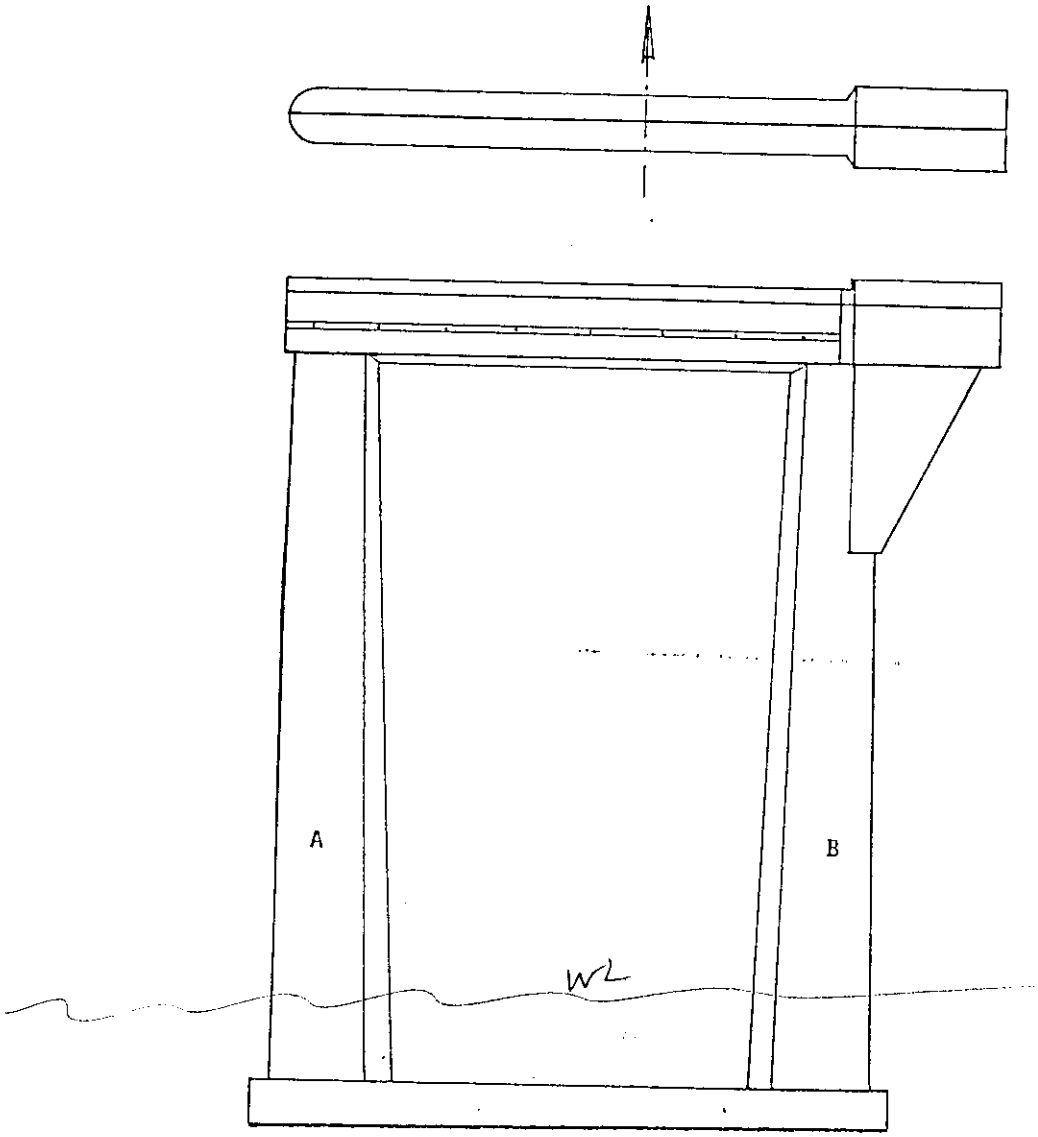
80 COUNTY 1-40 ROUTE 17.13 RT LOG MILE DATE 6-17-99 BL



BEARING	C
BR. SEAT	C N/A
CAP	C
PIER WALL	C

PIER NO.____ FRONT SIDE PAGE NO.___

80 COUNTY 1-40 ROUTE 17.13R LOG MILE DATE 6-17-99 BR

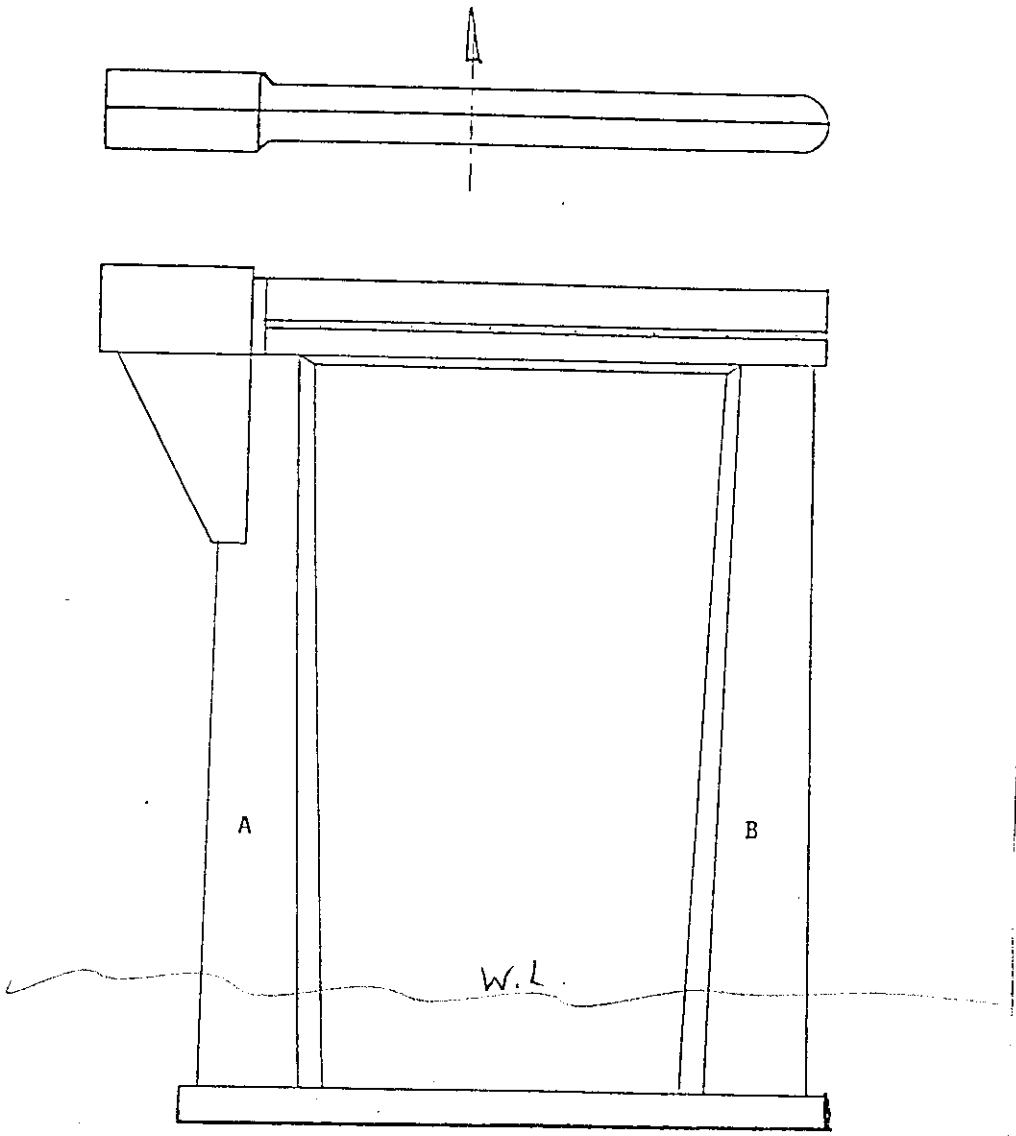


Bearing	C
E.R. Seat	N/V
Col	C
Pier Wall	C

BACK SIDE

PIER NO.____ PAGE NO.___

80 COUNTY 1-40 ROUTE 17.13R LOG MILE DATE 6-17-99 BR

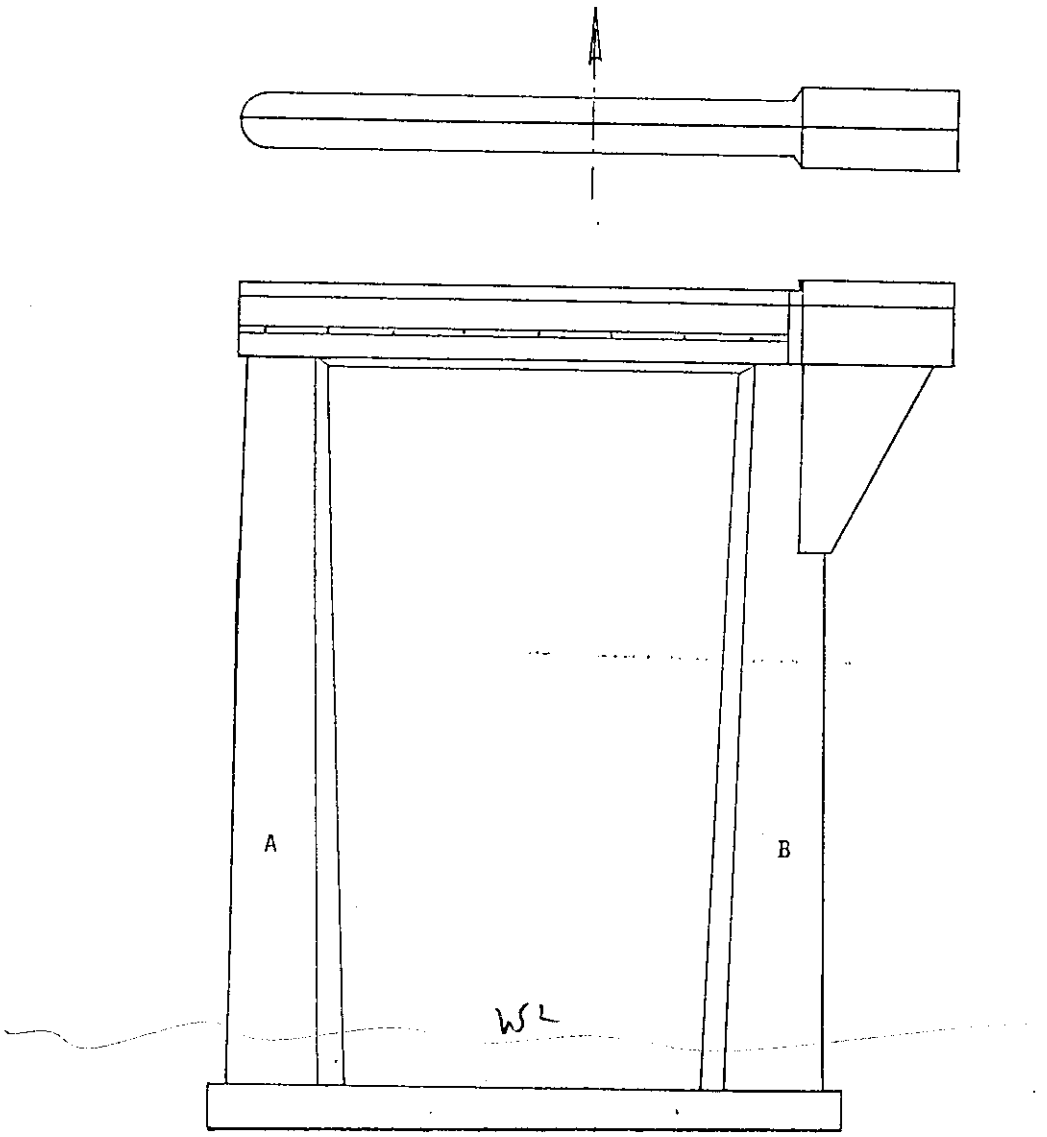


BEARING	G
BR. SEAT	N V
CAP	G
PIER WALL	G

PIER NO.____ FRONT SIDE PAGE NO.___

80 COUNTY | 1-40 ROUTE | 17.13R LOG MILE

DATE 6-17-99 BL

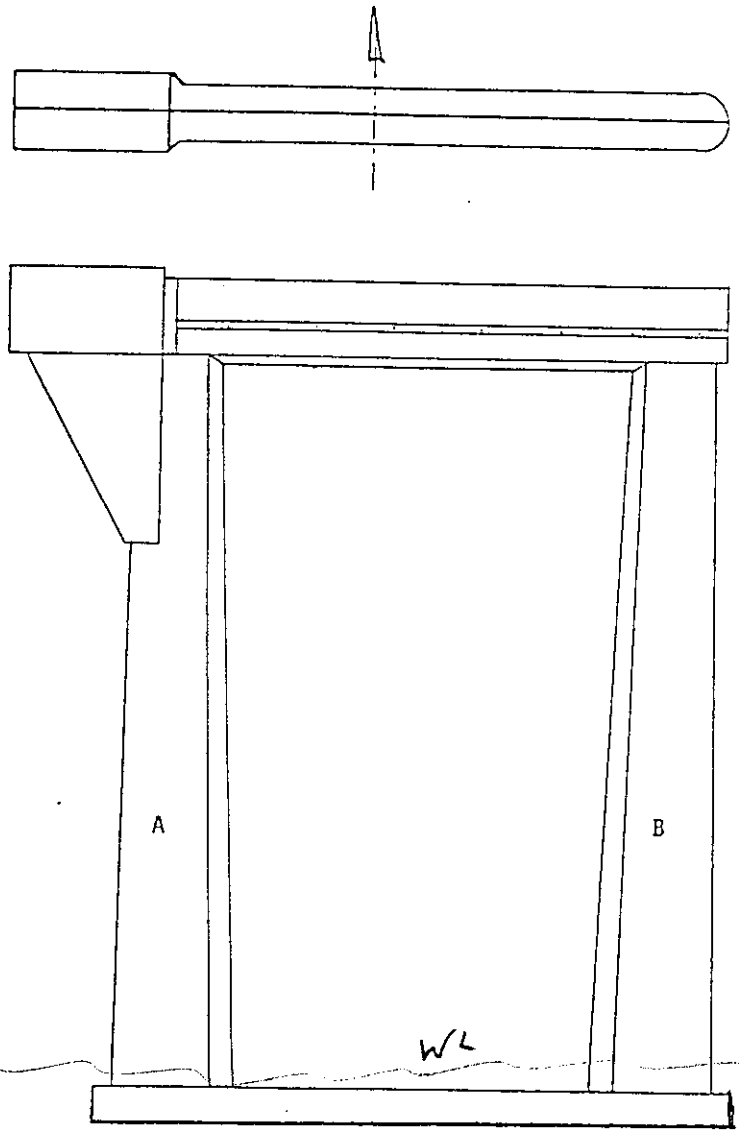


Bearing	C	
E.R. Seat	N/V	
Cap	C	
Pier Wall	C	

BACK SIDE

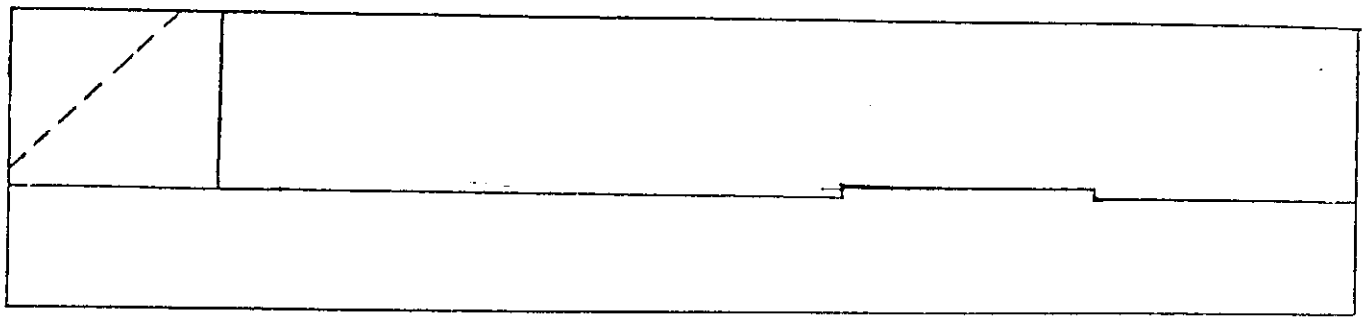
PIER NO._____ PAGE NO.___

80 COUNTY | 1-40 ROUTE | 17.13 RT LOG MILE | DATE 6-17-99 RF



BEARING	C
BR. SEAT	N/V
CAP	C
PIER WALL	C

6-17-99 BR



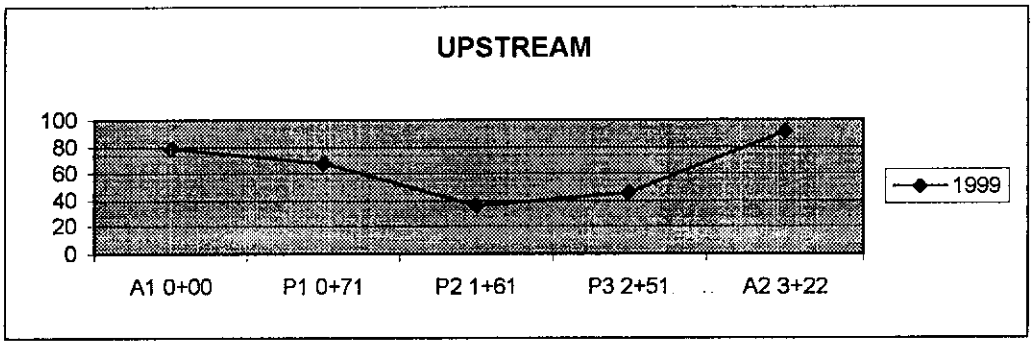
ABUT = 2 Br. = 80-I40-17.13 RT.

Back wall	N/V
CAP	G
wings	G
Bearings	G

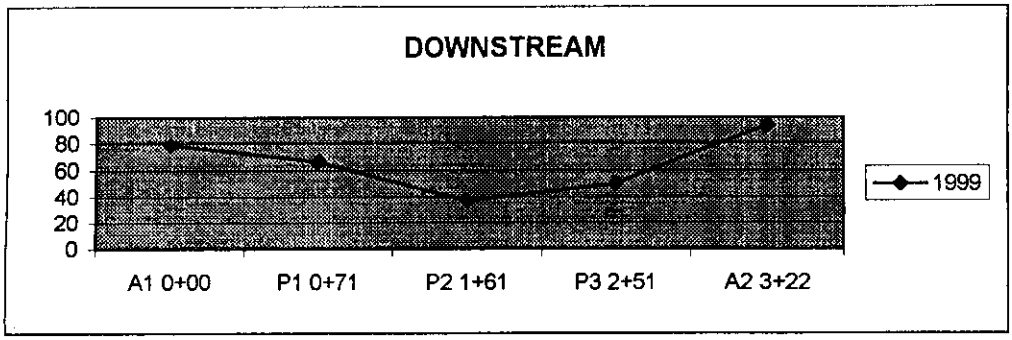
80-I40-17.13 Rt. 6/17/99

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

STATION	ELEV. 1999
A1 0+00	78.7
P1 0+71	67.8
P2 1+61	36.1
P3 2+51	45.7
A2 3+22	91.2



STATION	ELEV. 1999
A1 0+00	79.2
P1 0+71	66.4
P2 1+61	37.2
P3 2+51	50.2
A2 3+22	93.7



SMOO 13 COST ESTIMATE $_____

Station 518+49.00	Length 322'-0"	Designer Wilbur Smith

Description (Span Data) Precast Concrete Prestressed Box with cont'n composite concrete deck slab
2@71'-0" & 2@90'-0"

Roadway Description	Out-to Out 44'-0"	Width Between Curbs or Bridgerails 42'-0"	
Sidewalk Width N/A	Rail Type M-28-1	Median Description N/A	Slab Depth 8½"
X-Slope or S.E.= 0.0156 1/1		Min. Vert. Clearance 15.01'	
Horizontal Curve N/A Lt/Rt	Skew 90 Lt/Rt	Exp.Jts. Y (N)	
Hydraulic Drainage Area = 169 Sq.Mi.		Deck Area= EBL 14,168 WBL 14,168 Sq.Ft	
Beam Spacing 3'-0" (C.L. to C.L.)		Cantilever Distance 3'-6" (C.L. to E.O.S.)	
Beam Size Info.	Steel N/A	Other	
	Concrete: Type N/A I-Beam *OR* D 27/39 x W 39/36 Box Beam		
Abutment Type Stub & Concrete Pad.		Pier Type Solid Shaft.	
Footing Type Piles & Spread		Footing Type Spread	

LIST OF DRAWINGS

Items	Dwg. No.	Items	Dwg. No.
Layout	M-214-153		
General Notes	M-214-154		
Est. Quantities	M-214-155		
Repair Details	M-214-156		
Superstr. Details	M-214-159		
Prestressed Box Sm. Details	M-214-160		
" " " "	M-214-161		
Abut. Details	M-212-162		
" "	M-214-163		
" "	M-214-163A		
Pier No. 2	M-214-164		
Pier No. 1 2&3	M-214-164A		
Piers 1&3	M-214-164B		
Bill of Steel	M-214-165		
" " "	M-214-166		
" " "	M-214-167		

Remarks: (old layout no., widening info., route class, etc.)
Widening - Old Layout No - 0-15-127

Bridge I.D. No. EBL - 80100+000035 WBL - 80100+000036

Project Limits: From S.R. 153 (Gordonsville Intch) To the Putnam Co. Line

Project	County	Route	L.M.	Loading	Roadway	Location: Widening
IR-40-5(91)251	Smith	I-40		HS20-44	42'-0"	I-40 / Caney Fk River

CONSTR. NO. 80001-3152-44

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

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	6/12/89	WHP	ELIMINATED PREVIOUS NOTE, ADDED NEW NOTE
⚠2	9/29/89	DWT	Constr. Jt. Added

Notes:
For Roadway Data not shown, see Roadway Plans.

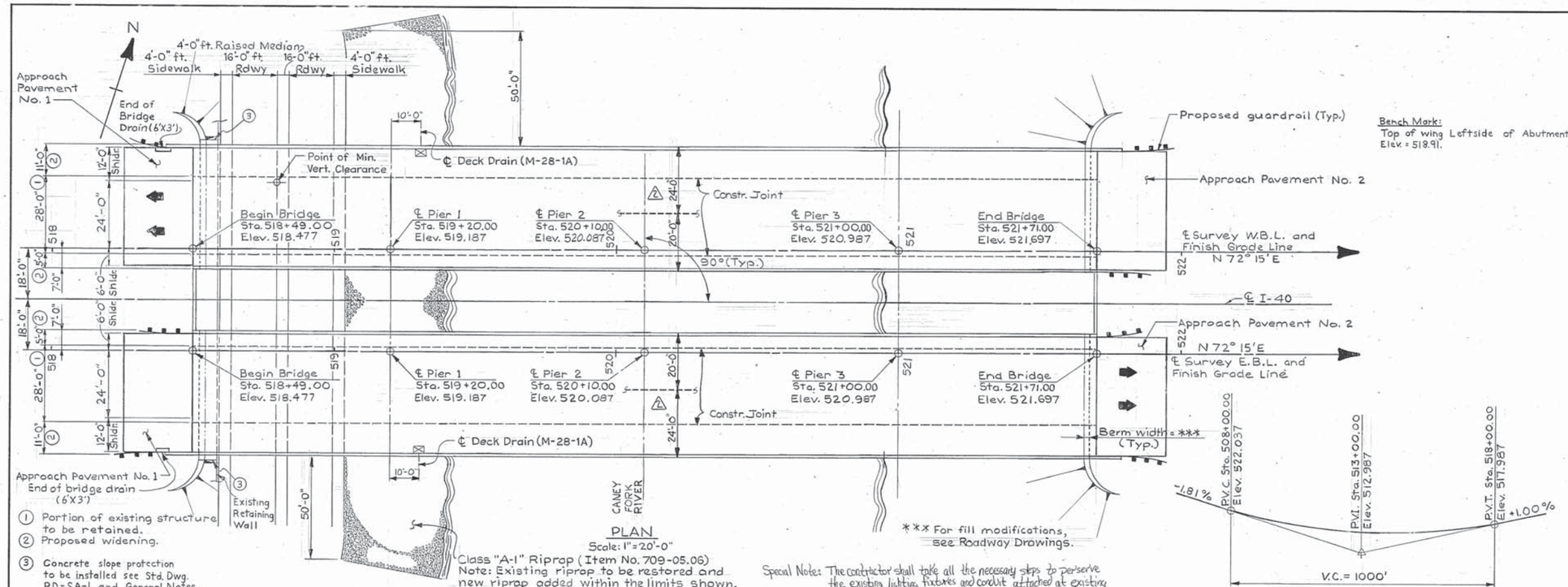
➡ Denotes direction of one lane of traffic.

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

2009 ADT = 30,000

Design Velocity = 65 mph

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

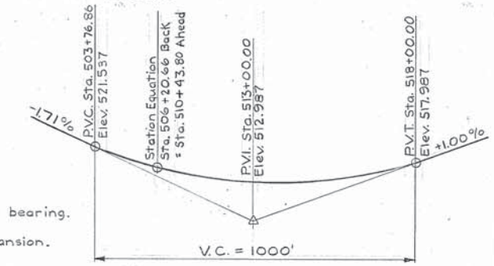


PLAN
Scale: 1"=20'-0"

Bench Mark:
Top of wing Leftside of Abutment No.1 - EBL
Elev. = 518.91.

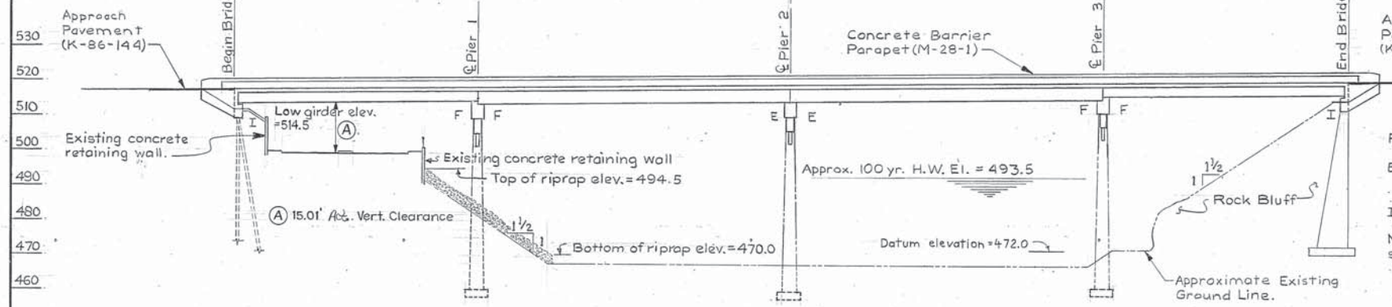
① Portion of existing structure to be retained.
② Proposed widening.
③ Concrete slope protection to be installed see Std. Dwg. RD-SA-1 and General Notes.

VERTICAL CURVE DATA E.B.L.
No Scale



VERTICAL CURVE DATA W.B.L.
No Scale

Note: The grades shown are based on existing Plans grade plus .417' and shall be used for bridge construction only.



ELEVATION
Scale: 1"=20'-0"

F-Indicates fixed bearing.

E-Indicates expansion bearing.

I-Indicates integral.

Note: Conditions of fixity are shown for new beams.

HYDRAULIC DESIGN DATA

Drainage Area	= 169.0 Sq. Miles
Design Discharge (100 yr.)	= 30,000 cfs
Area below 100 yr. Elevation	= 5,000 sq. ft.
Velocity (100 yr.)	= 6.0 fps
Roadway Overtopping Elev.	= 515.7

WILLIAM S. HUFFSTETLER REGISTERED ENGINEER COMMERCE No. 013918 STATE OF TENNESSEE
William S. Huffstetler
WILBUR SMITH ASSOCIATES

BRIDGE NO. 6

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

LAYOUT OF BRIDGE WIDENING

I-40 OVER
CANEY FORK RIVER
STA. 518+49.00 ℄ SURVEY E.B. & W.B. I-40
BRIDGE ID # E.B.L. 80I00400035
BRIDGE ID # W.B.L. 80I00400036
SMITH COUNTY
1989

DESIGNED BY	DWT	DATE	9-88
DRAWN BY	HJK	DATE	9-88
SUPERVISED BY	WSH	DATE	9-88
CHECKED BY	DWT	DATE	9-88

CORRECT _____ ENGINEER OF STRUCTURES

APPROVED _____ DIRECTOR OF HIGHWAYS

M-214-153

CLASS "A", GRADING "D" = 30 C.Y.

W.S.A. No.: DTNOXX024A

ZFH58,24:DTN0XX024.DGN
DTNOXX
6-MAR-1989 15:51

LIST OF DRAWINGS

	DRAWING NO.	LATEST REV. DATE
Layout of Bridge Widening	M-214-153	
General Notes	M-214-154	
Estimated Quantities	M-214-155	
Repair Details	M-214-156	
Superstructure Details	M-214-159	
Prestr. Conc. Box Beam spans A&D	M-214-160	
Prestr. Conc. Box Beam spans B&C	M-214-161	
Abutment Details (1)	M-214-162	
Abutment Details (2)	M-214-163	
Abutment Details (3	M-214-163A	
Pier 2 W.B.L. & E.B.L.	M-214-164	
Piers 1,2 & 3 W.B.L. & E.B.L.	M-214-164A	
Piers 1 & 3 W.B.L. & E.B.L.	M-214-164B	
Bill of Steel	M-214-165	
Bill of Steel	M-214-166, 166A ⚠	
Bar Bending Details	M-214-167	
⚠① CONSTRUCTION SEQUENCE	M-214-52A ① ⚠	
Existing Bridge Drawings	G-15-127 thru G-15-137, G-10-99	

Note: Drawing Nos. M-214-157 & M-214-158 not used.

* Note: Only Existing Dwg. G-15-127 to be printed with Plans

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
~~Guardrail Attachment to Bridges~~	~~M-131-143~~	
Slope Protection	RD-SA-1	01-31-84

* 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	~~03-30-85~~ 05-15-89	Regarding Section 602 Steel Structures
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
~~607D~~	~~02-20-85~~	~~Regarding Side Drains and Bridge Drains~~
709	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

DESIGNED BY HDL DATE 12/88
DRAWN BY TLK/EAB DATE 12/88
SUPERVISED BY WSH DATE 12/88
CHECKED BY HDL DATE 3/89

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 to be 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 overturning 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.

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 +/-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.

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 Grey, Federal Specification No. 36440, Federal Color Standard No. 595a, and a color sample shall be submitted to the Engineer for approval. No texture finish shall be applied prior to completion of paving and hauling operations at the bridge site. Payment for the Applied Texture Finish shall be under item 604-04.01 & 604-04.02.

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

RIP-RAP: Machined rip-rap shall be Class A-1 in accordance with Special Provision 709 and shall be paid for under item 709-05.06 - Ton.

REINFORCED CONCRETE SLOPE PAVING: Pave slopes and exposed earth under bridges with 4" thick cement concrete slab reinforced with No. 4 gage wire fabric @ 6' centers and 58 lb. per 100 s.f. The wire fabic reinforcement shall be placed at one-half the depth of the slab and extend to within 3" of its edge with a 12" lap required on all sheets. The cost of the wire fabric reinforcement to be included in the unit price bid for item 709-04, Reinforced Concrete Slope Pavement. One-half inch premoulded expansion joints without load transfer shall be formed about all structures and features projecting through, in or against the slab. The slab shall be grooved parallel with and at right angles to the under roadway center line at 6' centers. Depth of groove to be not less than 1". See Std. Drawing RD-SA-1 for limits of slope protection.

STRUCTURAL STEEL: See notes on Drawing No. M-214-164A.

WELDING: See Special Provisions No. 602 and notes on Drawing No. M-214-164A.

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

RADIOGRAPHIC, ULTRASONIC, AND MAGNETIC INSPECTION: See Special Provision No. 602. Notes on Drawing No. M-214-164A.

STEEL STRUCTURES: See Tennessee Standard Specifications Section 602 and notes on Drawing No. M-214-164A.

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 the 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 to 125% of the specified tension yield strength of the rebar prior to coupler approval.

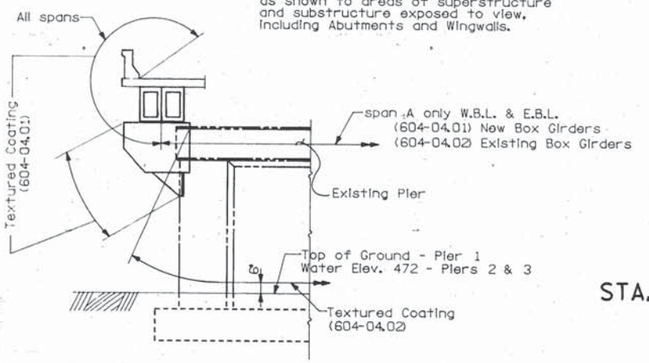
CONSTR. NO. 80001-3152-44

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

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	6/12/89	WHP	ADDED DWG. NO. M-214-59A
⚠	5/25/89	DWT	M-214-52A & M-214-166A Added

Note:
Textured Coating shall be applied as shown to areas of superstructure and substructure exposed to view, including Abutments and Wingwalls.



DETAIL SHOWING LIMITS OF TEXTURED COATING

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

GENERAL NOTES
I-40 OVER CANEY FORK RIVER
STA. 518+49.00 ℄ SURVEY
E.B. & W.B. I-40
SMITH COUNTY

CORRECT _____ ENGINEER OF STRUCTURES

APPROVED _____ DIRECTOR OF HIGHWAYS

M-214-154

U.S.A. No.: DTNOXX025A

ZFHD58_240DTNOXX025A.DGN
8-MAR-1989 13:42
DTNOXX

(1) 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 SP604 and any other incidentals necessary for complete installation.

(2) NOTE: Cost of 2 bridge deck drains to be included in the unit price bid for Class 'A' Concrete (Bridge Deck). For Drain Locations, see Dwg. No. M-214-153.

(3) NOTE: Cost of Elastomeric pads, rubber bonding cement, and dowel bars to be included in the cost of prestressed beam.

(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 202-04.06.

(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) NOTE: Cost of polyethylene sheeting and all miscellaneous items necessary for installation to be included in cost of perforated Pipe.

(9) Bridge ID# - E.B.L. 80I00400035(Sta. 518+49.00)
Bridge ID# - W.B.L. 80I00400036(Sta. 518+49.00)

(10) Support frames for Pier Extension.

(11) Note: Items 604-10.30, 604-10.42, 604-10.50, 622-01 and 709-05.06 shall be bid with the contingency that these items may be increased, decreased or eliminated by the Engineer.

(12) Excavation based on existing ground.

(13) For sketches and notes on Concrete Repair, see drawing No. M-214-156.

(14) The use of a ramhoe is prohibited for removal of concrete. See notes on Dwg. No. M-214-156.

(15) ~~Guardrail attachment to bridge rail post shall be prior to all traffic being detoured onto Westbound Bridge. All materials, labor, etc. for installation shall be included under Item 705-10.23.~~

(16) Includes quantities for Abutment Sub-beam, see Dwg. M-214-156.

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 Rebar

ESTIMATED QUANTITIES

	BID ITEM NO.	202-04.06	204-02.01	602-02.06	604-01.12	604-02.03	604-03.01	604-03.02	604-03.04	604-04.01	604-04.02	604-10.30	604-10.42	604-10.50	604-36	615-02.04	615-02.21	620-03	622-01	705-10.23	709-04	709-05.06	710-09.01	710-09.02		
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	~~705-10.23~~	---	---	---	---	---
	ITEM / STRUCTURE	REMOVAL OF STRUCTURES (5)(9)(14) L.S.	DRY EXCAVATION (BRIDGES) (12) C.Y.	STRUCTURAL STEEL (9)(10) LB.	CLASS 'A' CONCRETE (BRIDGE DECK) (2) ⚠ C.Y.	EPOXY COATED REINFORCING STEEL (16) LB. ⚠	CLASS 'A' CONCRETE (BRIDGES) (16) ⚠ C.Y.	STEEL BAR REINFORCEMENT (BRIDGES) LB. ⚠	PAVEMENT AT BRIDGE ENDS (1) S.Y.	APPLIED TEXTURE FINISH (NEW STRUCTURES) S.Y.	APPLIED TEXTURE FINISH (EXISTING STRUCTURES) S.Y.	BRIDGE DECK REPAIR (FULL DEPTH) (11)(13) S.Y.	CONCRETE REPAIRS (11)(13) C.F.	BRIDGE DECK REPAIR (PARTIAL DEPTH) (11)(13) S.Y.	SCARIFYING (7) S.Y.	PRESTRESSED CONCRETE BOX BEAM (27" X 36") (3) L.F.	PRESTRESSED CONCRETE BOX BEAM (39" X 36") (3) L.F.	CONCRETE PARAPET (M-28-1) (4)(6) L.F.	PNEUMATICALLY PLACED CONCRETE (11)(13) S.F.	~~GUARDRAIL ATTACHMENT TO BRIDGE RAIL POST (15) L.F.~~	REINFORCED CONCRETE SLOPE PAVEMENT C.Y.	MACHINED RIP-RAP (CLASS A-1) (11) TON	6" PERF. PIPE WITH VERTICAL DRAIN SYSTEM (8) L.F.	6" PIPE UNDERDRAIN (8) L.F.		
WEST BOUND LANE	Superstructure				311	49168				988	517		3			280	359						60	12		
	Abutment 1		59		14	1654	9	2342		6	23														
	Pier 1			3600			14	2660		29	312								80						
	Pier 2			3600			13	2583		29	313														
	Pier 3			3600			14	2660		29	325		1										60	12	
	Abutment 2		47		11	2254	7	5176		10	28														
	Subtotal	.5	106	10800	336	53076	57	15421	220	1091	1518	12	4	115	1145	280	359	658	80		17	70	120	24	
EAST BOUND LANE	Superstructure				311	49168				988	517		1			280	359						60	12	
	Abutment 1		59		14	1654	9	2342		6	23														
	Pier 1			3600			14	2660		29	312		5						20						
	Pier 2			3600			13	2583		29	313								160						
	Pier 3			3600			14	2660		29	325								80				60	12	
	Abutment 2		47		11	2254	7	5176		10	28														
	Subtotal	.5	106	10800	336	53076	57	15421	220	1091	1518	11	6	115	1145	280	359	658	260		17	70	120	24	
	Totals	1.0	212	21600	672	106152	114	30842	440	2182	3036	23	10	230	2290	560	718	1316	340		34	140	240	48	

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

ESTIMATED QUANTITIES
I-40 OVER
CANEY FORK RIVER
STA. 518+49.00
℄ SURVEY E.B. & W.B. I-40
SMITH COUNTY

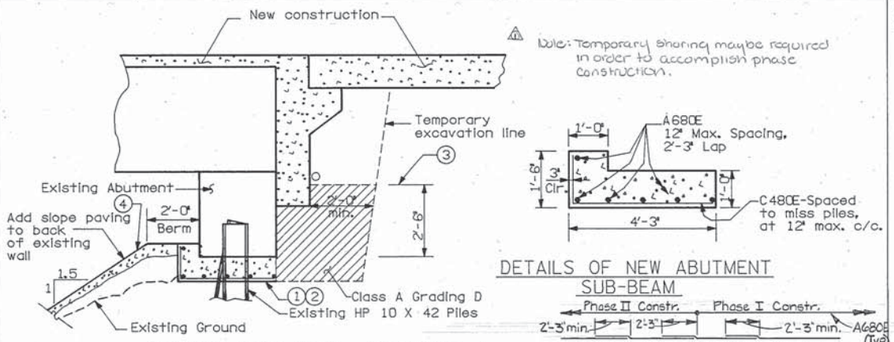
DESIGNED BY HDL DATE 12/88
DRAWN BY TLK/EAB DATE 12/88
SUPERVISED BY WSH DATE 12/88
CHECKED BY HDL DATE 3/89

CORRECT _____ ENGINEER OF STRUCTURES
APPROVED _____ DIRECTOR OF HIGHWAYS

M-214-155

W.S.A. No. DTNOXX703A

ZFHSB243DTNOXX703.DGN1
DTNOXX
9-MAR-1989 09:07



SECTION THRU W.B.L. ABUTMENT 1
SECTION THRU E.B.L. ABUTMENT 1

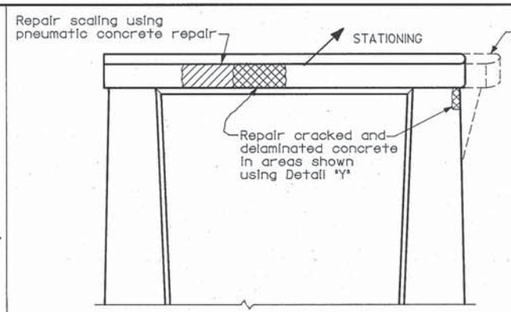
⚠ Note: Temporary shoring maybe required in order to accomplish phase construction.

DETAILS OF NEW ABUTMENT SUB-BEAM

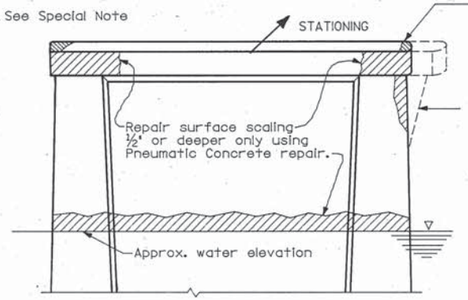
⚠ REBAR REPLACEMENT SKETCH

NOTES:

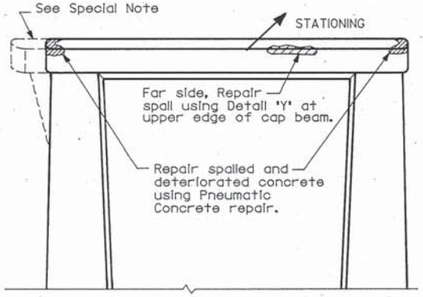
1. Before addition of new approach pavement, backfill shall be excavated sufficient to expose front and back of all piles. Vehicular and construction loads will not be permitted on the ⚠ bridge during this operation. Corroded areas shall be wire brushed or blast cleaned and repainted per Specification Section 606.19. No separate payment will be made for painting or cleaning.
2. Construct abutment sub-beam using Class 'A', f'c=3,000 psi concrete. Sub-beam shall be cast full length of exisiting 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.
3. Backfill to limit shown with Class A Grading D Material. Install backfill and underdrain in compliance with Std. Drawing K-85-150.
4. Reestablish fill slope to lines shown. Add concrete slope paving per Std. Drawing RD-SA-1. Construction of slope paving to be in accordance with General Notes.



E.B.L. PIER 1 REPAIR
(Looking in Direction of Stationing)



E.B.L. PIER 2 REPAIR
(Looking in Direction of Stationing)



W.B.L. PIER 3 REPAIR
(Looking in Direction of Stationing)

PNEUMATIC CONCRETE REPAIR

Denotes: Areas for pneumatic concrete repair. The areas to be repaired will be sufficiently larger than the spalled 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.

See Tennessee Standard Specifications Section 622 Pneumatically Placed Concrete and Standard Drawing K-86-4.

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.

CONSTR. NO. 80001-3152-44

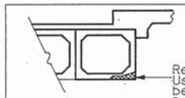
PROJECT NO.	YEAR	SHEET NO.
IR-40-5(91)257	1989	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	6/16/89	WHP	Added and Revised Notes
⚠	5/25/89	DWT	Sketch Added

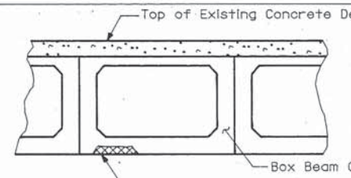
SPECIAL NOTE

Necessary concrete repairs at piers of this bridge 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 of 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.



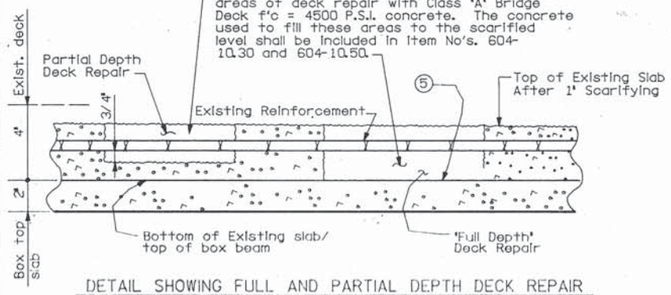
Repair beam breakout using Detail 'Y'. Use extreme care to avoid damaging beam strand beyond present corrosion. See existing plans for beam details.

SECTION THRU E.B.L. SPAN 1
EXISTING BM "H" (OUTSIDE BEAM)



Where cracking and staining indicate strand corrosion is evident, remove concrete to expose strand and repair using Detail 'Y'. Caution shall be used to insure only minimal concrete removal sufficient to expose strand(s) and permit replacement of concrete patch material. Construction or traffic loads will not be permitted over ⚠ the repair area during the operation. See existing plans for beam details.

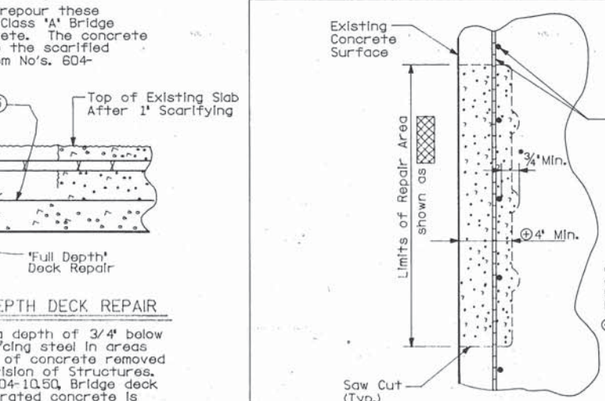
W.B.L. SPAN D BEAM SURFACE REPAIR



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. 604-10.50, 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, Brige 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, and within 1" of top of box beam.

⑤ The Contractor is advised to use extreme care during any attempted full-depth removal, to avoid damaging existing box beam surfaces. Max. depth of box slab chipping shall not exceed ½ inch.



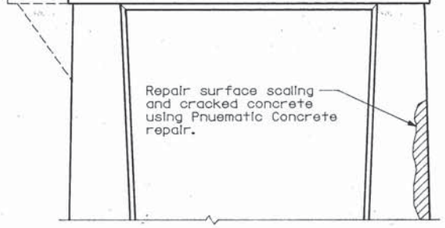
DETAIL "Y"
DETAIL SHOWING EXISTING CONCRETE SURFACE TO BE REPAIRED

NOTES FOR DETAIL Y:

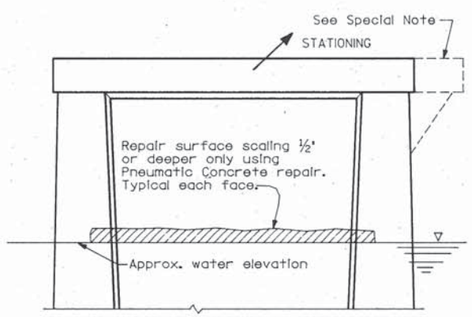
Care shall be taken when removing existing deteriorated concrete in designated repair areas so as not to damage the existing reinforcing steel. All existing reinforcing steel shall be blast cleaned to remove all rust before pouring new concrete.

Concrete for the repaired areas shall be high early strength, f'c = 3,000 p.s.i.; Type III cement shall be used in lieu of Type I cement. ⚠ No traffic or other loading will be allowed on the repaired areas until 10 calender days have elapsed and representative test specimens have attained a compressive strength of not less than 3,000 p.s.i..

Cost of removing deteriorated concrete, all blast cleaning, forming, high early strength concrete, labor and all additional materials necessary to complete the repairs as shown in detail shall be included under Item No. 604-10.42, Concrete Repairs, C.F..



W.B.L. PIER 1 REPAIR
(Looking in Direction of Stationing)



E.B.L. PIER 3 REPAIR
(Looking in Direction of Stationing)

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

REPAIR DETAILS
I-40 OVER CANEY FORK RIVER
STA. 518+49.00 ℄ SURVEY
E.B. & W.B. I-40
SMITH COUNTY
1989

DESIGNED BY	WSH	DATE	1/89
DRAWN BY	TLK	DATE	1/89
SUPERVISED BY	WSH	DATE	1/89
CHECKED BY	WSH	DATE	3/89

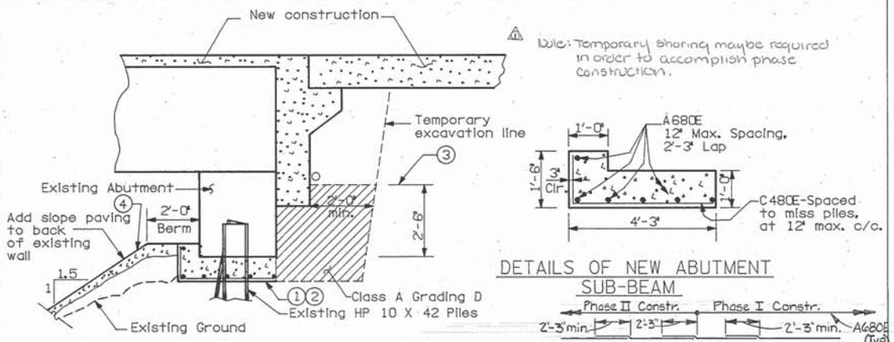
CORRECT _____ ENGINEER OF STRUCTURES

APPROVED _____ DIRECTOR OF HIGHWAYS

M-214-156

W.S.A. No. DTNOXX703A

ZFHSB243DTNOXX703.DGN1
DTNOXX
9-MAR-1989 09:07



SECTION THRU W.B.L. ABUTMENT 1
SECTION THRU E.B.L. ABUTMENT 1

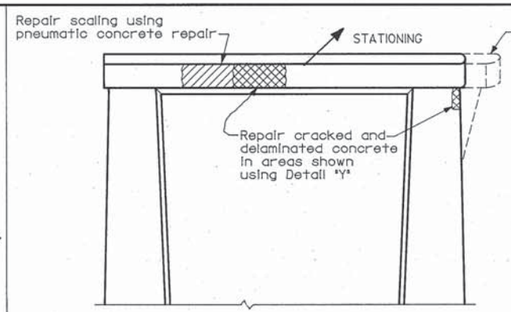
⚠ Note: Temporary shoring maybe required in order to accomplish phase construction.

DETAILS OF NEW ABUTMENT SUB-BEAM

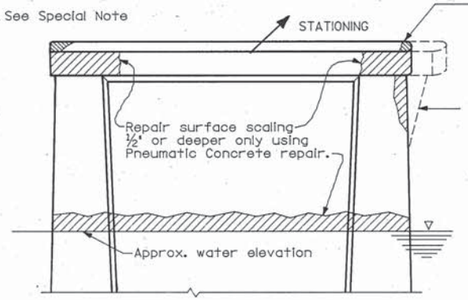
⚠ REBAR REPLACEMENT SKETCH

NOTES:

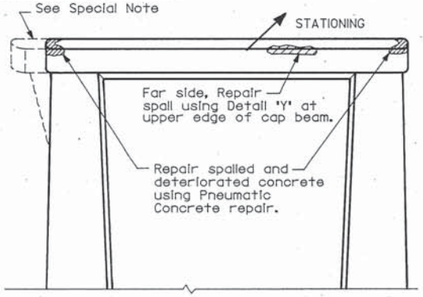
1. Before addition of new approach pavement, backfill shall be excavated sufficient to expose front and back of all piles. Vehicular and construction loads will not be permitted on the ⚠ bridge during this operation. Corroded areas shall be wire brushed or blast cleaned and repainted per Specification Section 606.19. No separate payment will be made for painting or cleaning.
2. Construct abutment sub-beam using Class 'A', f'c=3,000 psi concrete. Sub-beam shall be cast full length of exisiting 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.
3. Backfill to limit shown with Class A Grading D Material. Install backfill and underdrain in compliance with Std. Drawing K-85-150.
4. Reestablish fill slope to lines shown. Add concrete slope paving per Std. Drawing RD-SA-1. Construction of slope paving to be in accordance with General Notes.



E.B.L. PIER 1 REPAIR
(Looking in Direction of Stationing)



E.B.L. PIER 2 REPAIR
(Looking in Direction of Stationing)



W.B.L. PIER 3 REPAIR
(Looking in Direction of Stationing)

PNEUMATIC CONCRETE REPAIR

Denotes: Areas for pneumatic concrete repair. The areas to be repaired will be sufficiently larger than the spalled 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.

See Tennessee Standard Specifications Section 622 Pneumatically Placed Concrete and Standard Drawing K-86-4.

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.

CONSTR. NO. 80001-3152-44

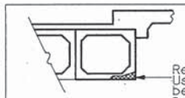
PROJECT NO.	YEAR	SHEET NO.
IR-40-5(91)257	1989	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	6/16/89	WHP	Added and Revised Notes
⚠	5/25/89	DWT	Sketch Added

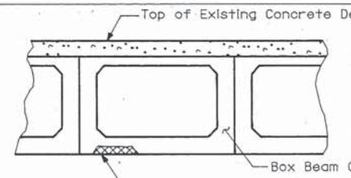
SPECIAL NOTE

Necessary concrete repairs at piers of this bridge 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 of 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.



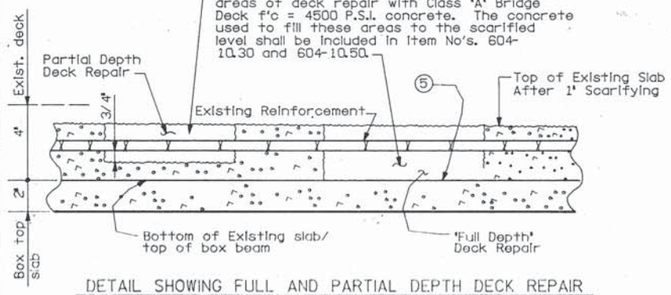
Repair beam breakout using Detail 'Y'. Use extreme care to avoid damaging beam strand beyond present corrosion. See existing plans for beam details.

SECTION THRU E.B.L. SPAN 1
EXISTING BM "H" (OUTSIDE BEAM)



Where cracking and staining indicate strand corrosion is evident, remove concrete to expose strand and repair using Detail 'Y'. Caution shall be used to insure only minimal concrete removal sufficient to expose strand(s) and permit replacement of concrete patch material. Construction or traffic loads will not be permitted over ⚠ the repair area during the operation. See existing plans for beam details.

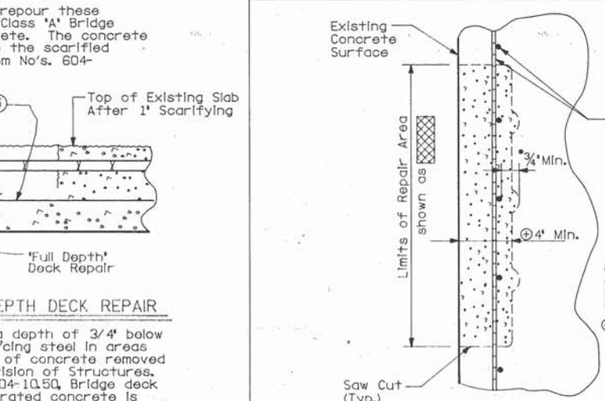
W.B.L. SPAN D BEAM SURFACE REPAIR



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. 604-10.50, 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, Brige 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, and within 1" of top of box beam.

⑤ The Contractor is advised to use extreme care during any attempted full-depth removal, to avoid damaging existing box beam surfaces. Max. depth of box slab chipping shall not exceed ½ inch.



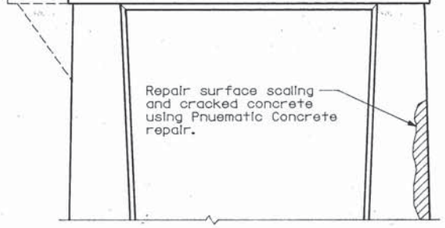
DETAIL "Y"
DETAIL SHOWING EXISTING CONCRETE SURFACE TO BE REPAIRED

NOTES FOR DETAIL Y:

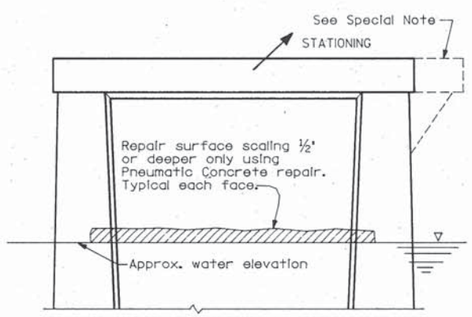
Care shall be taken when removing existing deteriorated concrete in designated repair areas so as not to damage the existing reinforcing steel. All existing reinforcing steel shall be blast cleaned to remove all rust before pouring new concrete.

Concrete for the repaired areas shall be high early strength, f'c = 3,000 p.s.i.; Type III cement shall be used in lieu of Type I cement. ⚠ No traffic or other loading will be allowed on the repaired areas until 10 calender days have elapsed and representative test specimens have attained a compressive strength of not less than 3,000 p.s.i..

Cost of removing deteriorated concrete, all blast cleaning, forming, high early strength concrete, labor and all additional materials necessary to complete the repairs as shown in detail shall be included under Item No. 604-10.42, Concrete Repairs, C.F..



W.B.L. PIER 1 REPAIR
(Looking in Direction of Stationing)



E.B.L. PIER 3 REPAIR
(Looking in Direction of Stationing)

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

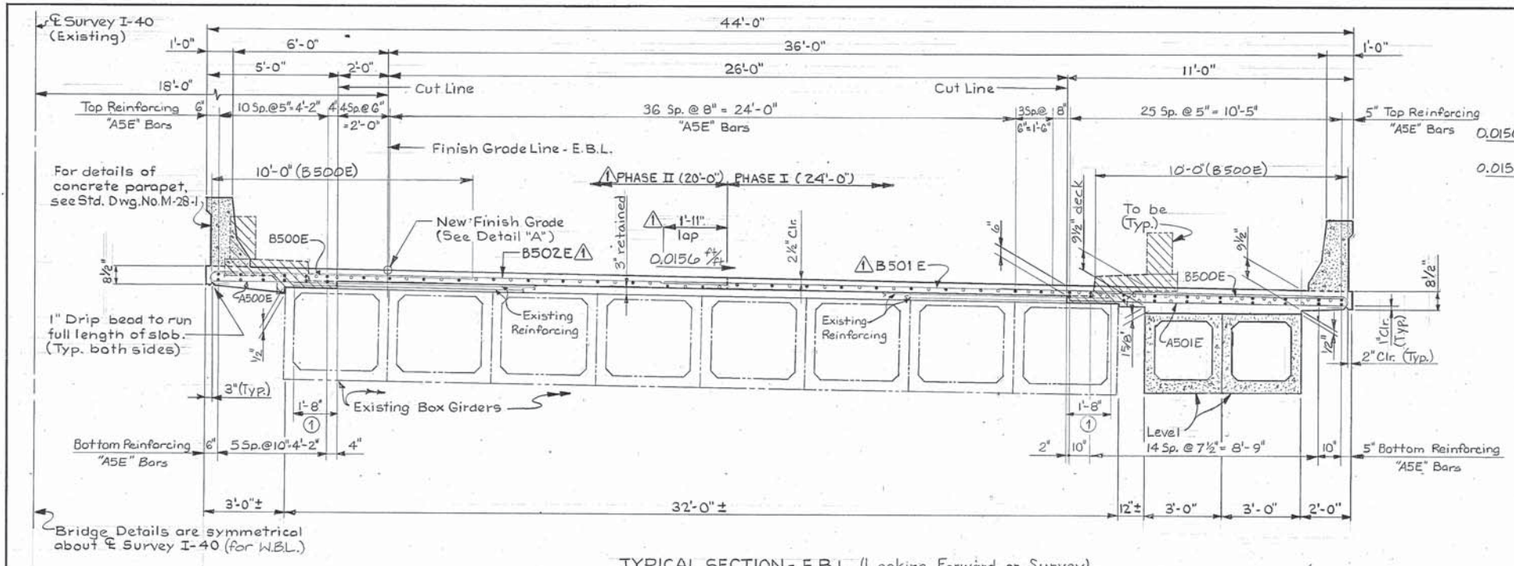
REPAIR DETAILS
I-40 OVER CANEY FORK RIVER
STA. 518+49.00 ℄ SURVEY
E.B. & W.B. I-40
SMITH COUNTY
1989

DESIGNED BY	WSH	DATE	1/89
DRAWN BY	TLK	DATE	1/89
SUPERVISED BY	WSH	DATE	1/89
CHECKED BY	WSH	DATE	3/89

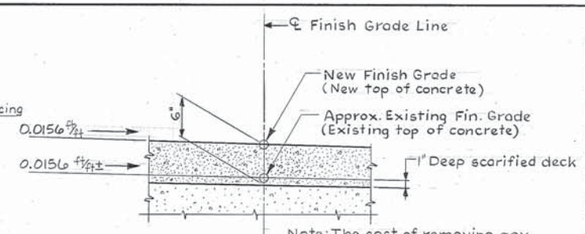
CORRECT _____ ENGINEER OF STRUCTURES

APPROVED _____ DIRECTOR OF HIGHWAYS

M-214-156



TYPICAL SECTION - E.B.L. (Looking Forward on Survey)
(W.B.L. opposite hand)
Scale: 3/8" = 1'-0"



Note: The cost of removing any existing asphalt overlay shall be included in the unit price bid for scarifying.

DETAIL "A"
No Scale

ESTIMATE QUANTITIES - E.B.L. or W.B.L.	
Class "A" Concrete (Bridge Deck) C.Y.	Epoxy Coated Reinforcing Steel Lb.
311	⚠ 49168

Note:
• - Continuous longitudinal reinforcement.
o - Non-Continuous longitudinal reinforcement.

① Retain 1'-8" extension of transverse existing deck reinforcing into new concrete. Any existing deck bar which cannot be preserved shall be replace at the same location by drilling and grouting a 2'-8" length #4 dowel bar, embedded 12" in existing concrete, at no additional cost to the Department. Do not use precast deck panels.

⚠ See Drw. No. M-214-59A for Construction Joint and phase Construction Details.

Const. No. 80001-3152-44

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

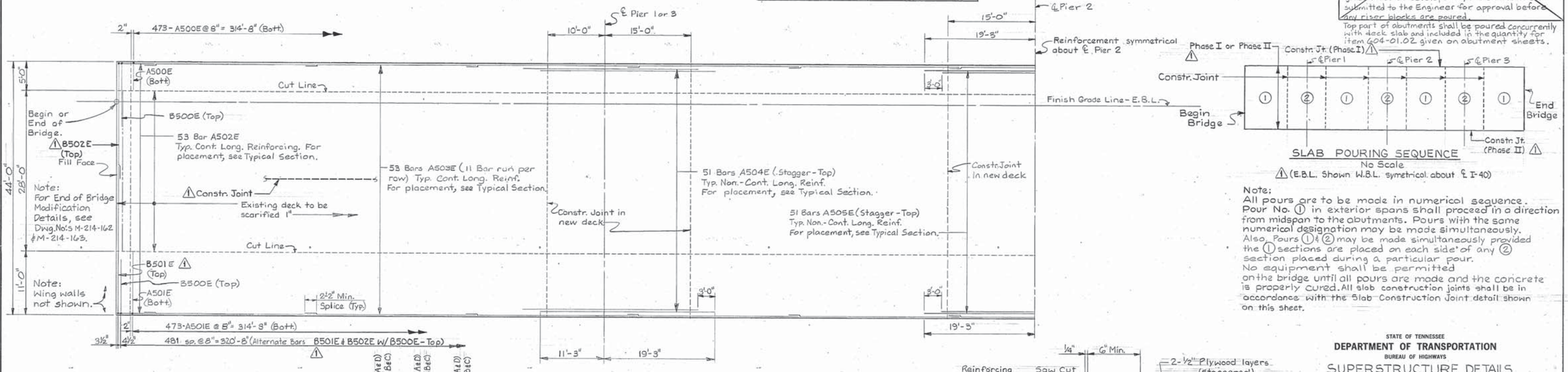
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	9/29/89	DWT	REVISIONS FOR CONSTR. JT.

Notes:
When pouring wingwalls, provisions shall be made for setting reinforcing steel for wingpost and parapet. For details of wingpost and parapet, see Std. Dwg. No. M-28-1.
When pouring deck, provisions shall be made for setting reinforcing steel for parapet. The parapet shall not be poured until the slab is poured and cured.

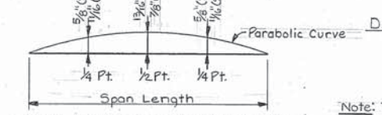
Immediately before substructure riser blocks are poured, the Contractor shall measure the actual camber of the fabricated prestressed beams and submit these measurements to the Engineer. The anticipated values for the mid-point of the beams at erection, including vertical curve correction, are as follows:
SPANS A & D - 2 15/16"
SPANS B & C - 3 1/4"
Note: A positive value indicates an upward camber.
If the measured camber exceeds these anticipated values by 1" or more, corrective measures such as changes in riser block elevations and/or roadway grade must be developed by the Contractor and submitted to the Engineer for approval before any riser blocks are poured.

Top part of abutments shall be poured concurrently with deck slab and included in the quantity for item 604-01.02 given on abutment sheets.



SLAB POURING SEQUENCE
No Scale
⚠ (E.B.L. Shown W.B.L. symetrical about ℄ I-40)

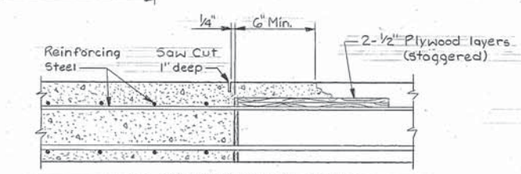
Note:
All pours are to be made in numerical sequence. Pour No. ① in exterior spans shall proceed in a direction from midspan to the abutments. Pours with the same numerical designation may be made simultaneously. Also, Pours ① & ② may be made simultaneously provided the ① sections are placed on each side of any ② section placed during a particular pour.
No equipment shall be permitted on the bridge until all pours are made and the concrete is properly cured. All slab construction joints shall be in accordance with the Slab Construction Joint detail shown on this sheet.



DEAD LOAD CORRECTION CURVE
EXISTING BEAMS

DECK PLAN - E.B.L.
(W.B.L. Similar)
No Scale

Note: This curve includes deflection of existing bridge under load of new deck overlay and new rails. Contractor shall use this information to make necessary screed adjustment.



SLAB CONSTRUCTION JOINT
No Scale

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

SUPERSTRUCTURE DETAILS
I-40 OVER
CANEY FORK RIVER
STA. 518+49.00 ℄ SURVEY E.B.L. & W.B.L. I-40
SMITH COUNTY
1989

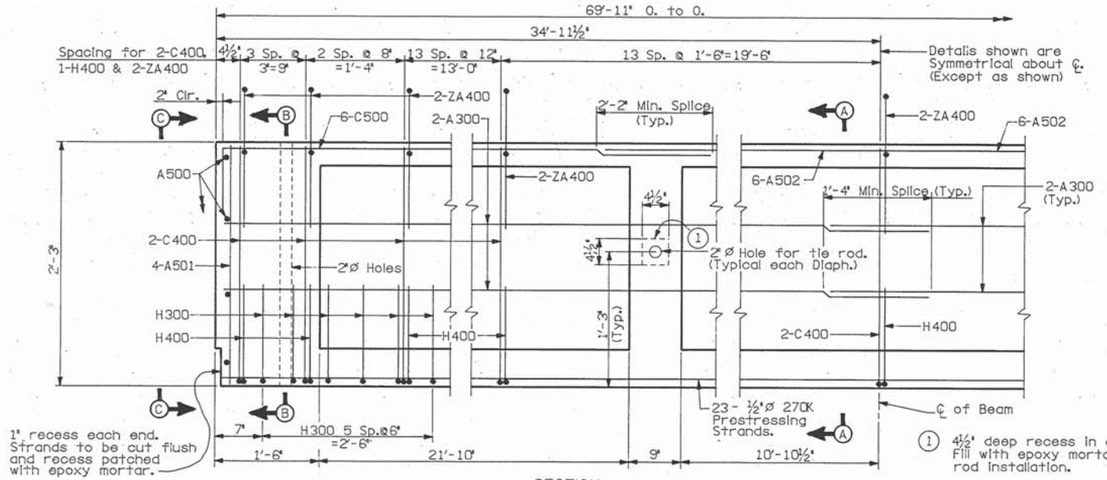
DESIGNED BY	DKR	DATE	10-88
DRAWN BY	HJK	DATE	10-88
SUPERVISED BY	WSH	DATE	10-88
CHECKED BY	DKR	DATE	2-89

CORRECT _____ ENGINEER OF STRUCTURES
APPROVED _____ DIRECTOR OF HIGHWAYS

M-214-159

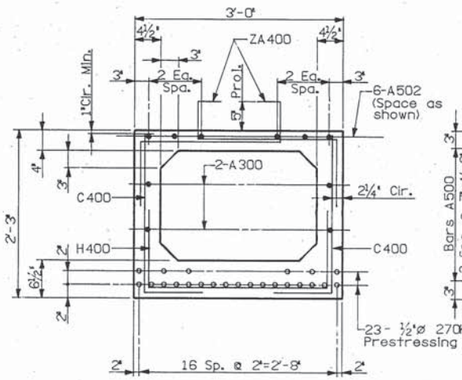
U.S.A. No. DTNOXX702B

ZFHS5R242DTNOXX702B2R01
DTNBXX
4-FEB-1999 07:12

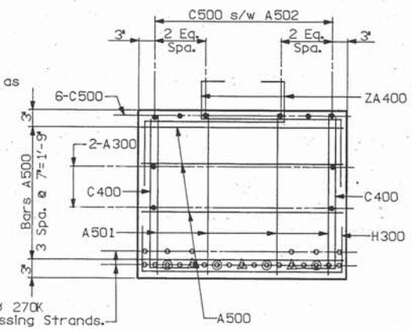


SECTION
No Scale

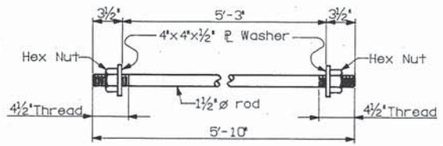
① 4½" deep recess in exposed face. Fill with epoxy mortar after tie rod installation.



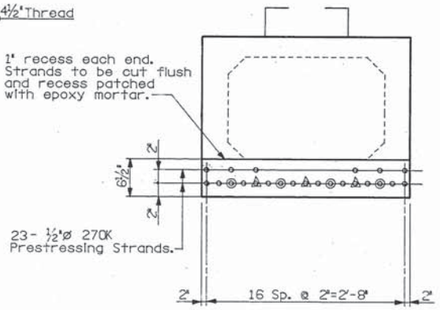
SECTION A-A
Scale: 1"= 1'-0"



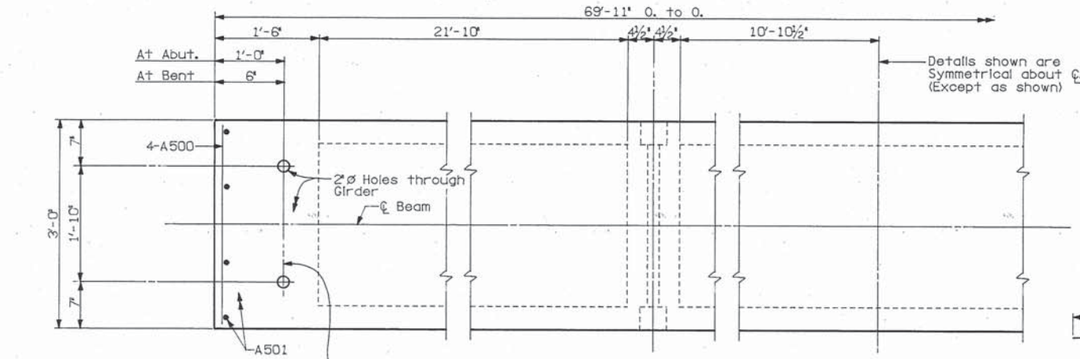
SECTION B-B
Scale: 1"= 1'-0"



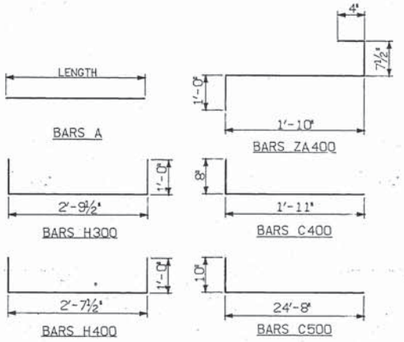
TIE ROD DETAIL

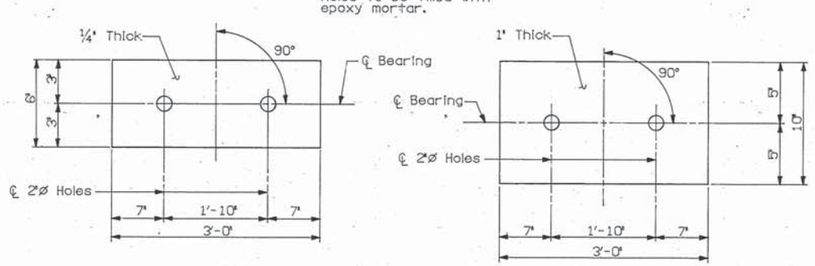


ELEVATION C-C
Scale: 1"= 1'-0"



PLAN
No Scale

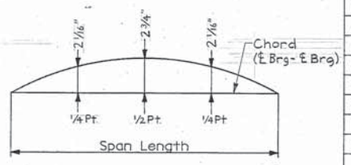




AT ABUTMENTS
(4 Req'd)

AT PIERS
(4 Req'd)

60 DURO.
DETAILS OF ELASTOMERIC BEARING PADS
No Scale



DEAD LOAD CORRECTION CURVE
(For use in field) ⚠1

BILL OF STEEL - ONE BEAM

		SPAN A		SPAN D			
BARS	SIZE	NO. REQ'D	LENGTH	NO. REQ'D	LENGTH		
A300	3	8	35'-6"	8	35'-6"		
A500	5	8	2'-8"	8	2'-8"		
A501	5	8	1'-11"	8	1'-11"		
A502	5	6	24'-8"	6	24'-8"		
C400	4	128	2'-7"	128	2'-7"		
C500	5	12	25'-6"	12	25'-6"		
H300	3	12	4'-10"	12	4'-10"		
H400	4	64	4'-8"	64	4'-8"		
ZA400	4	128	3'-10"	128	3'-10"		

ESTIMATED QUANTITIES - ONE BEAM

ITEM	UNIT	SPAN A	SPAN D	
CLASS 'A' CONCRETE	C.Y.	10.3	10.3	
REINFORCING STEEL	LB.	1,390	1,390	
PRESTRESSING STRANDS	LB.	842	842	

DESIGNED BY HIZ DATE 11-88
DRAWN BY EAB DATE 11-88
SUPERVISED BY WSH DATE 11-88
CHECKED BY HIZ DATE 1-89

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

PRESTRESSED BEAM 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 course 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.

Anchorage at the expansion end of beams accomplished by dowels 1' ø x 1'-6". Fixed end dowels to be 1'ø x 1'-6".

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.

1' recess shall be formed at each end of Beam and fill with epoxy mortar as shown. The prestressing strands shall be cut off flush with base of recess.

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.

1' ø weep holes shall be provided at the low point of each cell. Vent holes shall be provided in the top of each cell during fabrication to relieve gas pressures that occur during curing. The vent holes shall be plugged after curing is completed.

NOTE: Cost of elastomeric pads, tie rods, dowels 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.

Note:
⚠ - Denotes De-bonded Strand 10'-0" from each end.
◎ - Denotes De-bonded Strand 3'-0" from each end.
∘ - Denotes Prestressing strand.
• - Denotes Grade 60 Reinf.Steel.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

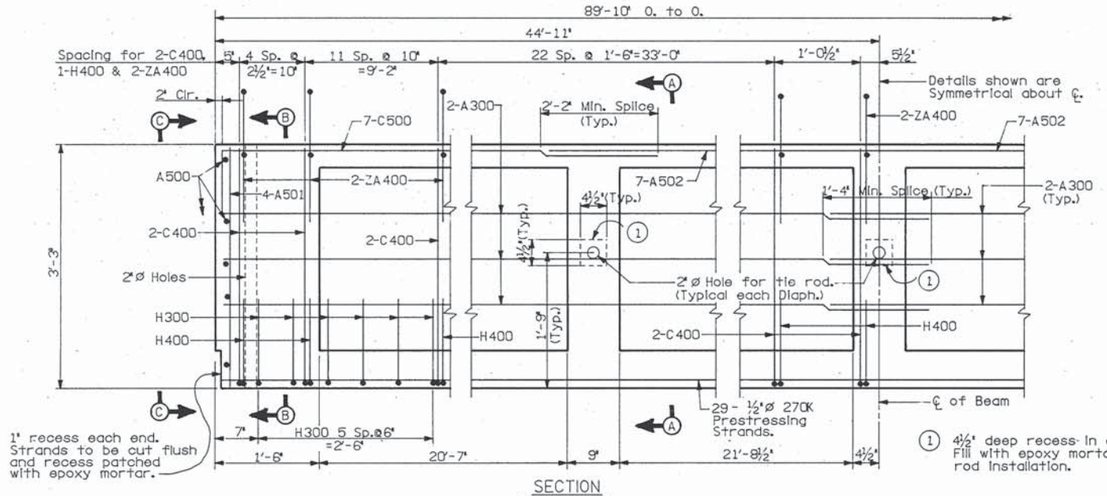
PRESTRESSED BOX BEAM DETAILS
SPANS A & D (E.B.L. & W.B.L.)
I-40 OVER CANEY FORK RIVER
STA. 518+49.00 ℄ SURVEY E.B & W.B. I-40
SMITH COUNTY
1989

CORRECT _____ ENGINEER OF STRUCTURES
APPROVED _____ DIRECTOR OF HIGHWAYS

M-214-160

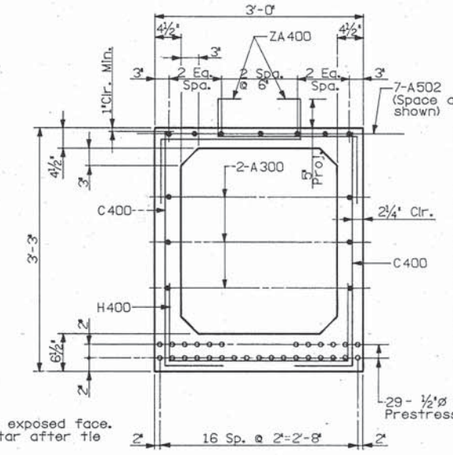
T.S.A. No. DTNOXX702A

ZP1508,2430TNOXX702.DGN
DTNOXX
9-FEB-1989 09:44

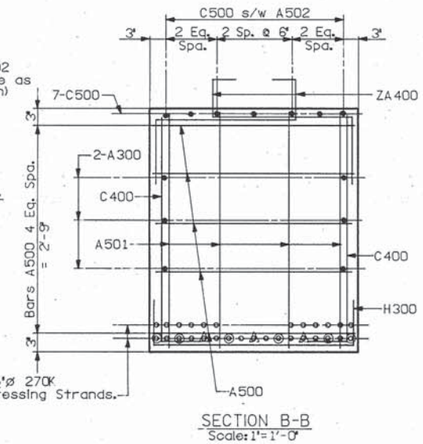


SECTION
Scale: 1"=1'-0"

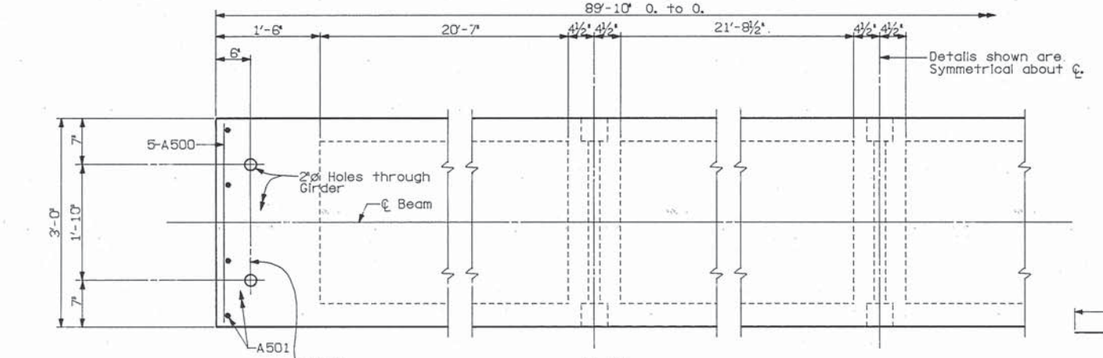
① 4½" deep recess in exposed face. Fill with epoxy mortar after tie rod installation.



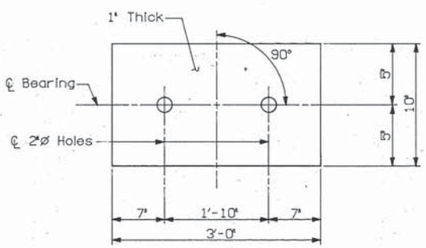
SECTION A-A
Scale: 1"=1'-0"



SECTION B-B
Scale: 1"=1'-0"



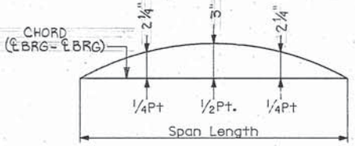
PLAN
Scale: 1"=1'-0"



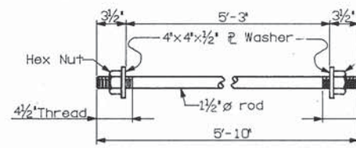
AT PIERS
(8 Req'd)

60 DURO.

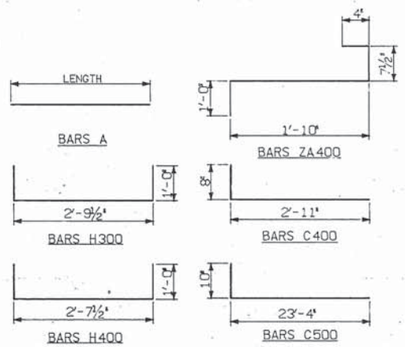
DETAILS OF ELASTOMERIC BEARING PADS
No Scale

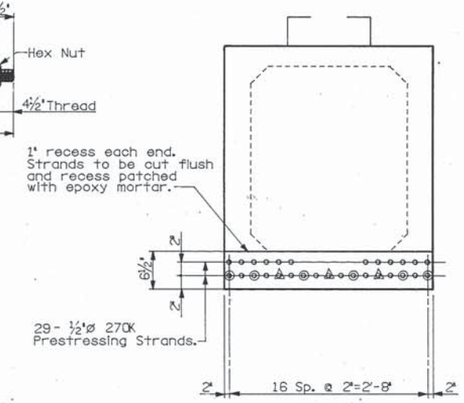


DEAD LOAD CORRECTIONS CURVE
(For Use In Field) ⚠1



TIE ROD DETAIL





ELEVATION C-C
Scale: 1"=1'-0"

Note:
▲ - Denotes De-bonded Strand 15'-0" from each end.
◉ - Denotes De-bonded Strand 6'-0" from each end.
○ - Denotes Prestressing strand.
● - Denotes Grade 60 Reinf. Steel.

BILL OF STEEL - ONE BEAM

		SPAN B		SPAN C			
BARS	SIZE	NO. REQ'D	LENGTH	NO. REQ'D	LENGTH		
A300	3	12	45'-5"	12	45'-5"		
A500	5	10	2'-8"	10	2'-8"		
A501	5	8	2'-11"	8	2'-11"		
A502	5	14	24'-8"	14	24'-8"		
C400	4	156	3'-7"	156	3'-7"		
C500	5	14	24'-2"	14	24'-2"		
H300	3	12	4'-10"	12	4'-10"		
H400	4	78	4'-8"	78	4'-8"		
ZA400	4	156	3'-10"	156	3'-10"		

ESTIMATED QUANTITIES - ONE BEAM

ITEM	UNIT	SPAN B	SPAN C	
CLASS 'A' CONCRETE	C.Y.	16.4	16.4	
REINFORCING STEEL	LB.	1,991	1,991	
PRESTRESSING STRANDS	LB.	1,365	1,365	

CONSTR. NO. 80001-3152-44

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

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	9/25/89	DWT	Dead Load Correction Values Revised

PRESTRESSED BEAM 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 course 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.

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

PRESTRESSED BOX BEAM DETAILS
SPANS B & C (E.B.L. & W.B.L.)
I-40 OVER CANEY FORK RIVER
STA. 518+49.00 ℄ SURVEY E.B & W.B. I-40
SMITH COUNTY
1989

DESIGNED BY HIZ DATE 11-88
DRAWN BY EAB DATE 11-88
SUPERVISED BY WSH DATE 11-88
CHECKED BY HIZ DATE 1-89

CORRECT _____ ENGINEER OF STRUCTURES
APPROVED _____ DIRECTOR OF HIGHWAYS

M-214-161

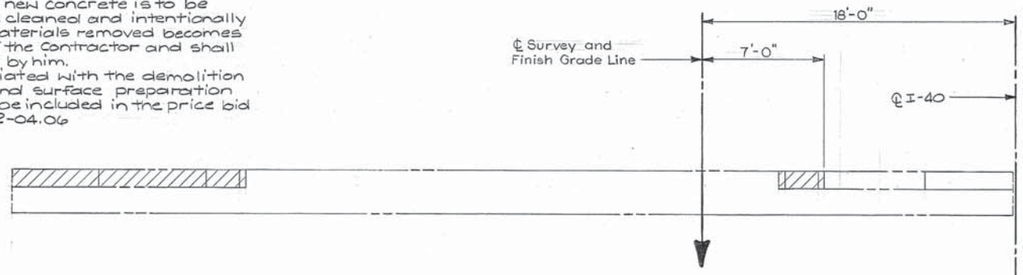
CONSTR. NO. 80001-3152-44

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

REVISIONS

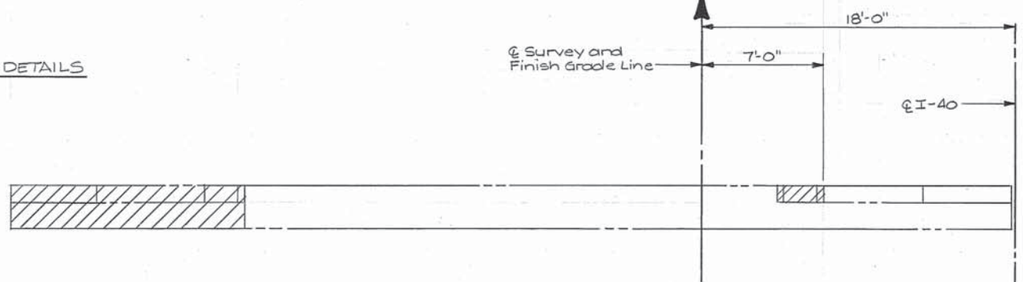
NO.	DATE	BY	BRIEF DESCRIPTION
1	9/25/89	DWT	Quantities Revised

Notes: All surfaces of the existing abutment against which new concrete is to be placed shall be cleaned and intentionally roughened. All materials removed becomes the property of the Contractor and shall be disposed of by him.
All costs associated with the demolition and disposal and surface preparation required shall be included in the price bid for item No. 202-04.06

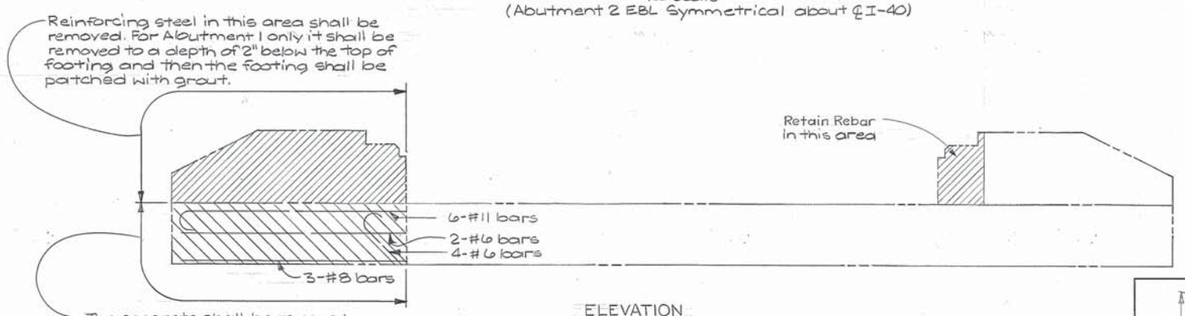


PLAN-EXISTING ABUTMENT 1 EBL
No Scale
(Abutment 1 WBL Symmetrical about ℄ I-40)

DEMOLITION DETAILS

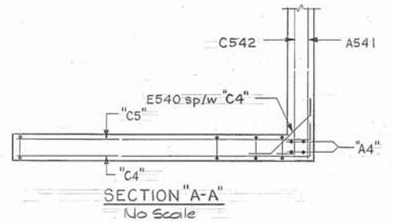


PLAN-EXISTING ABUTMENT 2 WBL
No Scale
(Abutment 2 EBL Symmetrical about ℄ I-40)

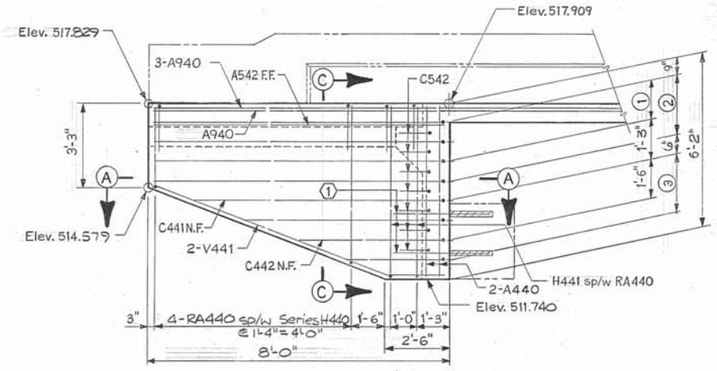


ELEVATION
No Scale
(Abutment 1 E.B.L. looking back on Stationing or Abutment 2 W.B.L. looking in direction of Stationing)

ESTIMATED QUANTITIES ⚠				
ITEM	CONCRETE f'c=4500 psi CY	CONCRETE f'c=3000 psi CY	REINFORCING STEEL LBS	EPOXY COATED REINFORCING STEEL (LBS)
ABUTMENT 1 EBL	14	9	2342	1654
ABUTMENT 2 EBL	11	7	5176	2254
ABUTMENT 1 WBL	14	9	2342	1654
ABUTMENT 2 WBL	11	7	5176	2254

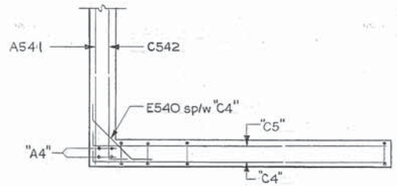


SECTION "A-A"
No Scale



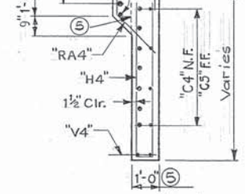
ELEVATION-WINGWALL 1
No Scale

⑤ At Wingwall 1 (EBL & WBL) reduce 1'-9" dimension to 1'-0" in vicinity of bridge end drain only. Form at constant 1'-0" for full height at these locations. Omit Bars "RA4" and field cut Bars "A9" and A545 at drains. Adjust placement of remaining reinforcing to fit while maintaining clearances. See Std. Dwg D-BE-3 for limits of bridge end drain.

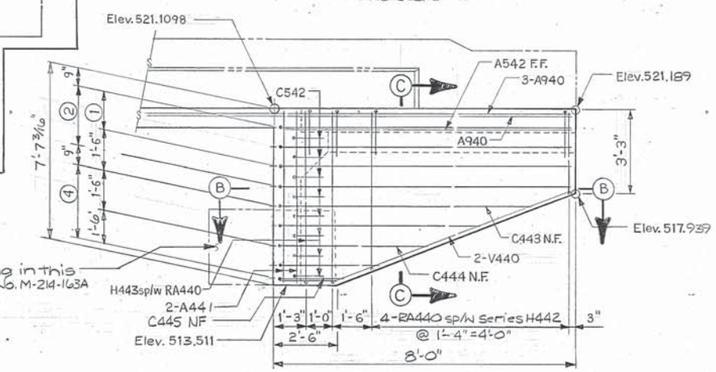


SECTION "B-B"
No Scale

① - Do not field bend doweled "A5" bars at Wing location



SECTION "C-C"
No Scale



For reinforcing in this area see Dwg. No. M-214-163A

ELEVATION-WINGWALL 2
No Scale

① - 2-C440 @ 18" N.F.
② - 4-C544 @ 9"=2'-3" F.F.
③ - Series C541 @ 9"=3'-0" F.F.
④ - Series C543 @ 9"=3'-0" F.F.

N.F. - Near Face
F.F. - Far Face

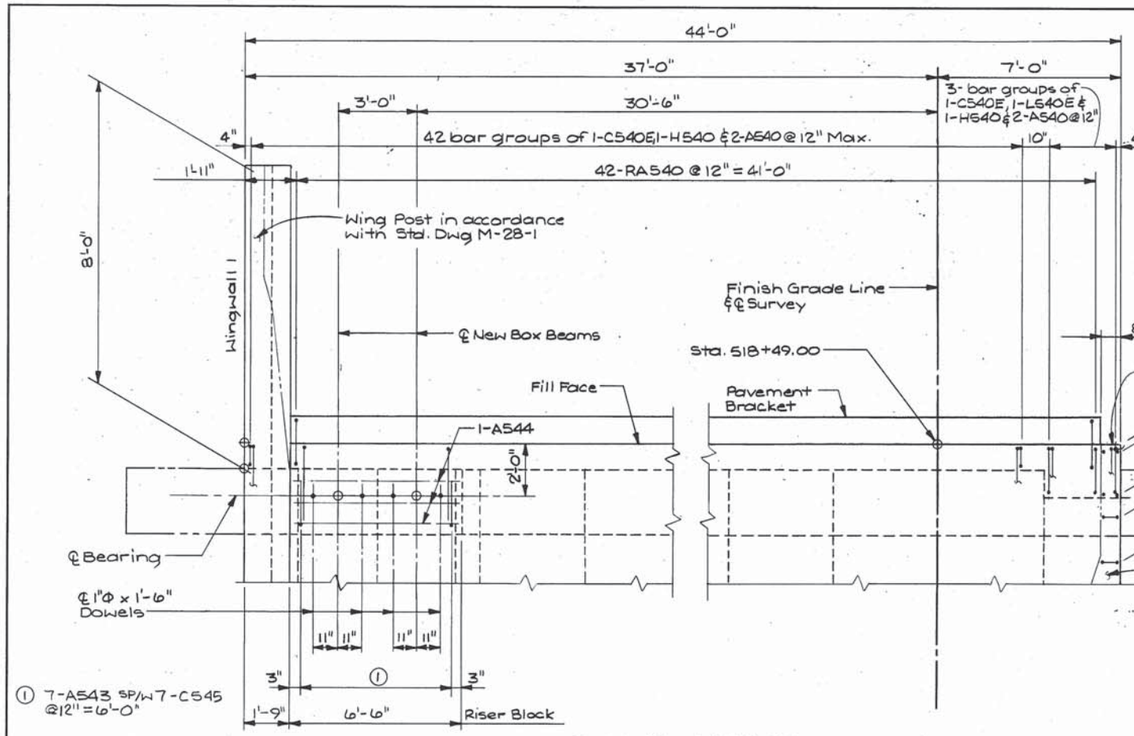
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

ABUTMENT DETAILS (1)
I-40 OVER CANEY FORK RIVER
STA. 518+49 ℄ SURVEY E.B. & W.B. I-40
SMITH COUNTY
1989

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

CORRECT _____ ENGINEER OF STRUCTURES
APPROVED _____ DIRECTOR OF HIGHWAYS

M-214-162



PLAN-ABUTMENT 1 EBL
No Scale
(Abutment 1 (WBL) symmetrical about ℄ I-40)

Notes: Revised Wing Post

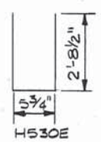
Wing Post in accordance with Std. Dwg M-28-1 except as noted below.

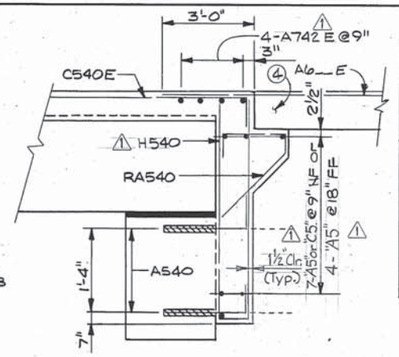
② 6-Bars H530E @ 4½" = 1'-10½"

③ 5-Bars A700E @ 4½" = 1'-6" EF

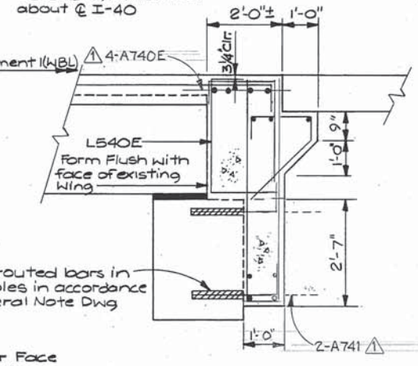
Delete 12-A700E and Substitute 6-H530E, and re-space remaining bars as shown. Revise 1'-4" dimension on GA500E to 1'-0½"

All cost associated with shown revision to M-28-1 shall be included in the price bid for item #620-03 (Including bars H530E)





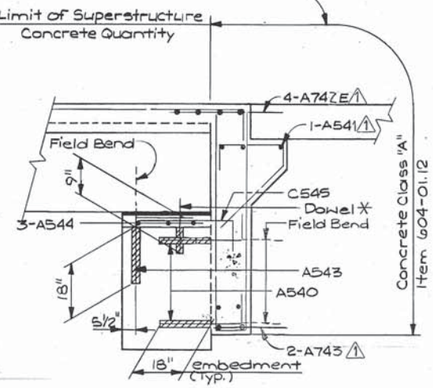
SECTION B-B
No Scale



Note: Install grouted bars in drilled holes in accordance with General Note Dwg (Typ.)

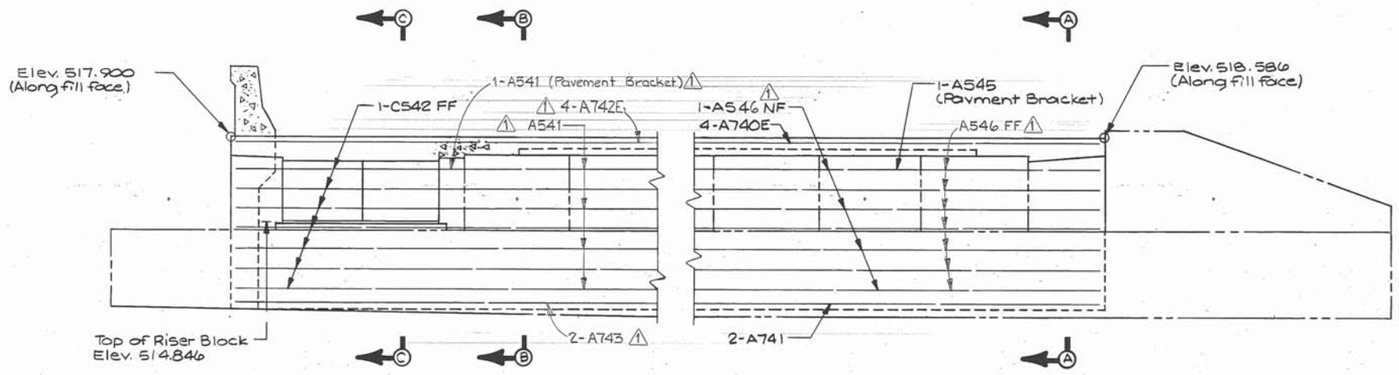
Note: NF = Near Face
FF = Far Face
EF = Each Face

SECTION A-A
No Scale



SECTION C-C
No Scale

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



ELEVATION
No Scale
(Looking back on Stationing)

④ Approach pavement in accordance with Std. Drawing K-86-144 except delete Bars F9__ and A6__ shown on K-86-144 and substitute Bars A6__E (6'-0" long) as shown @ 12" spacing. (41 req'd per approach Slab) All costs associated with revision shown shall be included in the price bid for Item No. 604-03.04

✳ Drill and grout into existing abutment as necessary to satisfy embedment requirements.

Note: When pouring riser block provisions shall be made for setting dowels. All costs associated with furnishing and installing dowels shall be included in the price bid for prestressed beams. Cost of bridge rail and post is to be included in the cost of bridge rail system. All costs associated with field bending reinforcing steel shall be included in the price bid for Item No. 604-03.02

CONSTR. NO. 80001-3152-44

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

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	5/29/89	DWT	Revised for Constr. Jt.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

ABUTMENT DETAILS (2)

I-40 OVER CANEY FORK RIVER
STA. 518+49 ℄ SURVEY EBL & WBL I-40
SMITH COUNTY
1989

DESIGNED BY	DWT	DATE	1-89
DRAWN BY	TEE	DATE	1-89
SUPERVISED BY	WSB	DATE	1-89
CHECKED BY	DWT	DATE	2-89

CORRECT _____ ENGINEER OF STRUCTURES

APPROVED _____ DIRECTOR OF HIGHWAYS

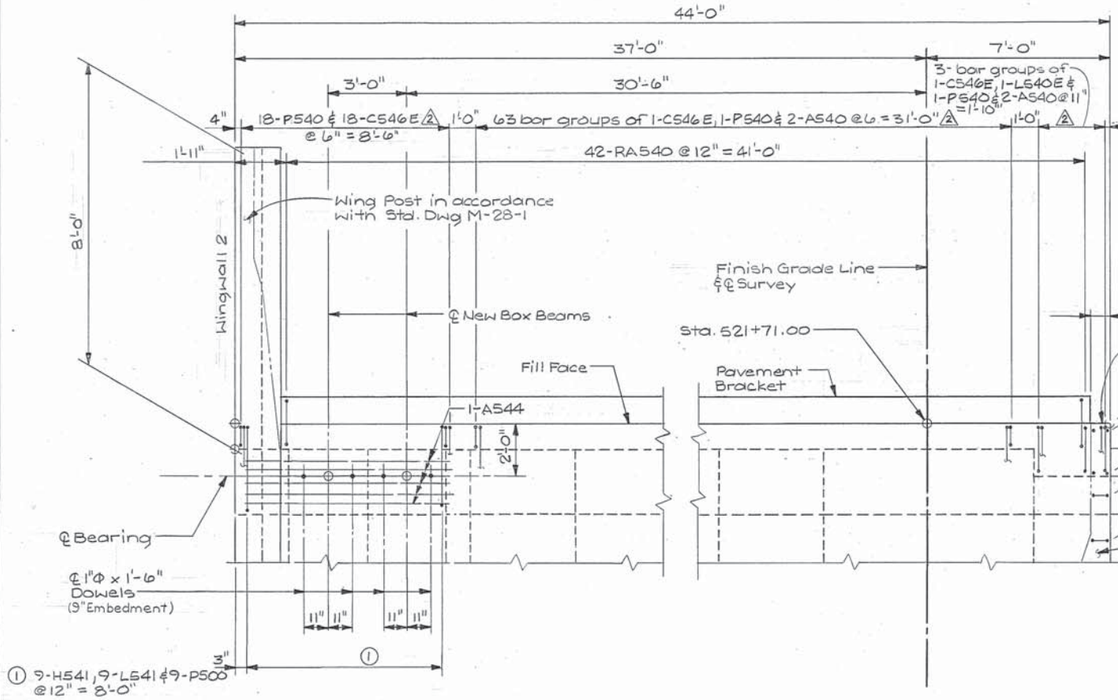
M-214-163

CONSTR. NO. 80001-3152-44

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

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	9/7/89	DWT	Rebar designation corrected
2	9/29/89	DWT	Revised for Constr. Jt.



PLAN - ABUTMENT 2WBL
No Scale
(Abutment 2(EBL) symmetrical about ℄ I-40)

Notes: Revised Wing Post

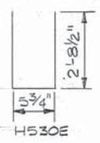
Wing Post in accordance with Std. Dwg M-28-1 except as noted below.

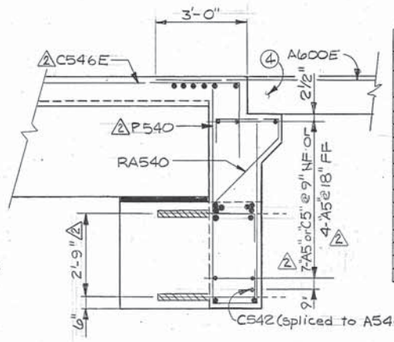
② 6-Bars H530E @ 4½" = 1'-10½"

③ 5-Bars A700E @ 4½" = 1'-6" EF

Delete 12-A700E and Substitute 6-H530E, and re-space remaining bars as shown. Revise 1'-4" dimension on GA500E to 1'-0½"

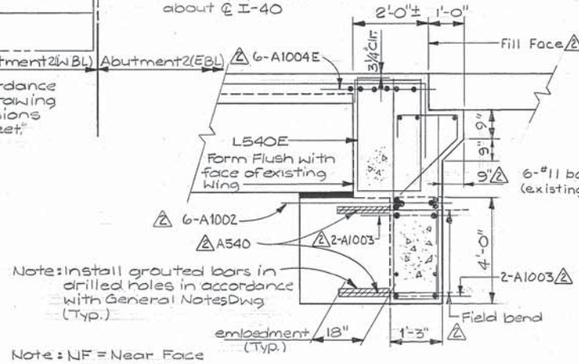
All cost associated with shown revision to M-28-1 shall be included in the price bid for item #620-03 (Including bars H530E)





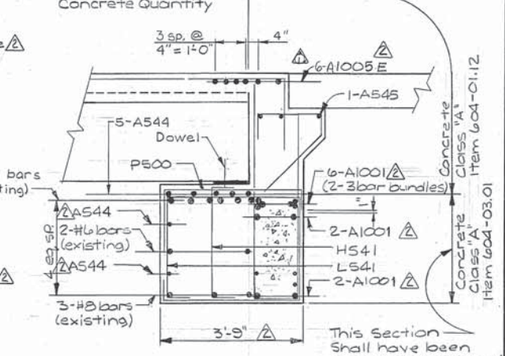
SECTION B-B
No Scale

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



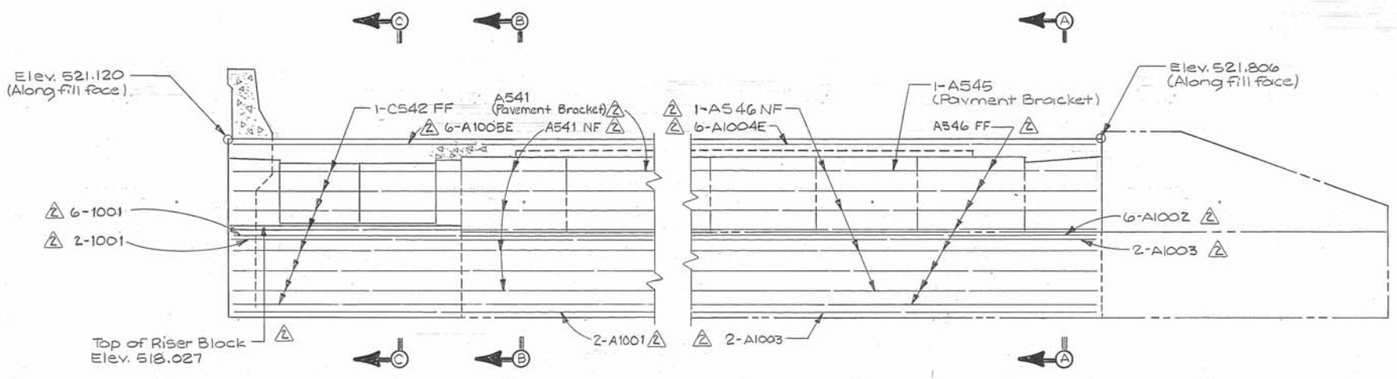
Note: NF = Near Face
FF = Far Face
EF = Each Face

SECTION A-A
No Scale



This Section shall have been poured and obtained full strength before any beam is set in place.

SECTION C-C
No Scale



ELEVATION
No Scale
(Looking in direction of stationing)

④ Approach pavement in accordance with Std. Drawing K-86-144 except delete Bars F9__ and A6__ shown on K-86-144 and substitute Bars A6__E (6'-0" long) as shown @ 12" spacing. (41 req'd per approach Slab) All costs associated with revision shown shall be included in the price bid for Item No. 604-03.04

Note:
For additional notes see Dwg. No. M-214-163.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

ABUTMENT DETAILS (3)

I-40 OVER CANEY FORK RIVER
STA. 518+49 ℄ SURVEY EBL & WBL I-40
SMITH COUNTY
1989

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

CORRECT _____ ENGINEER OF STRUCTURES

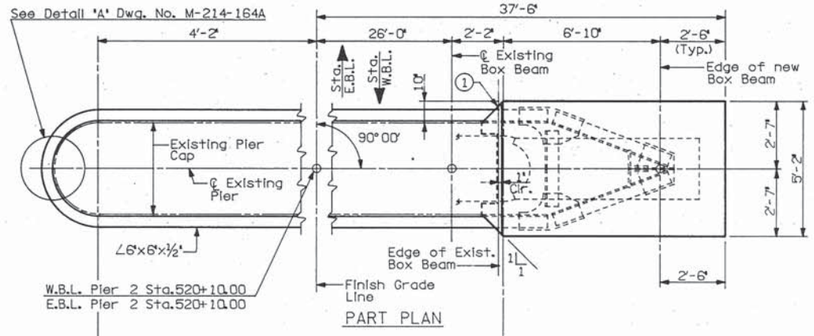
APPROVED _____ DIRECTOR OF HIGHWAYS

M-214-163A

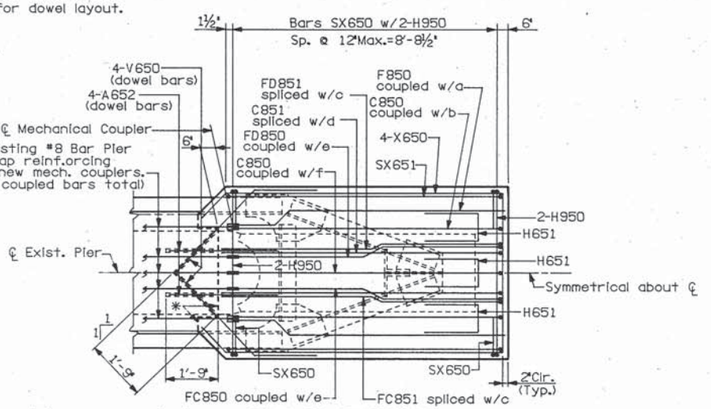
T.S.A. No. DTNOXX7068

25LH09.24XNTNBXX7B6.DGN01
DTNBXX 11-MAR-1989 09:24

Note:
See Detail 'G' for dowel layout.

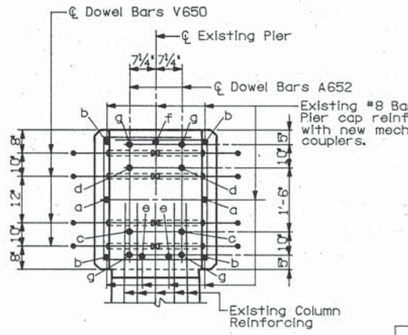


PART PLAN



* Remove concrete to this line.

PLAN OF CANTILEVER CAP REINFORCING



SECTION A-A

g - Denotes A652 dowel bars only.

CONSTR. NO. 80001-3152-44

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

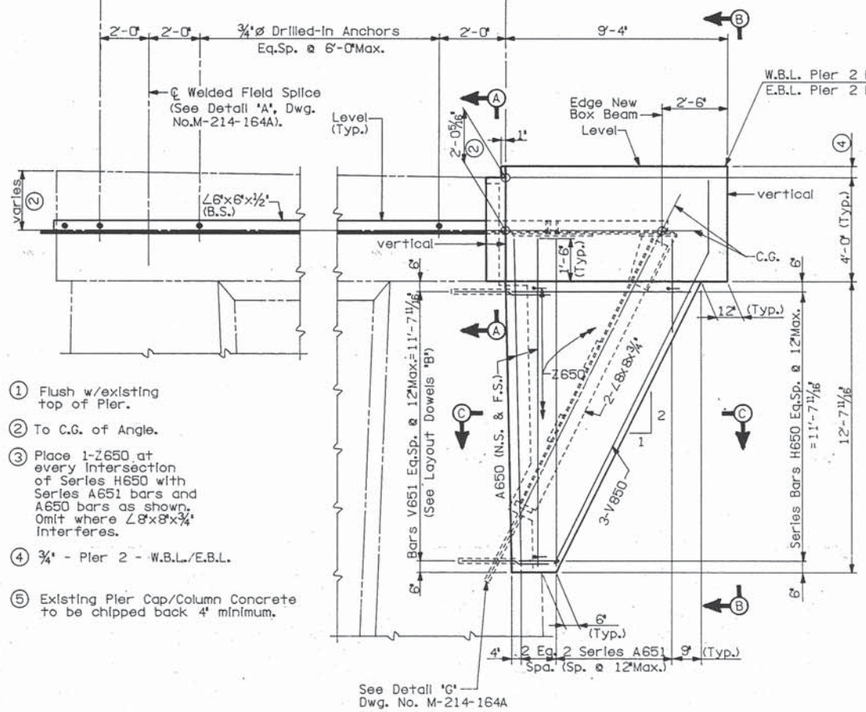
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

Note:
For notes, see Dwg. No. M-214-164A.

ESTIMATED QUANTITIES

Item / Pier No.	Class 'A' Concrete (Bridges) C.Y.	Structural Steel Lb.	Steel Bar Reinforcement (Bridges) Lb.
W.B.L. - 2	13	3400	2583
E.B.L. - 2	13	3400	2583



① Flush w/existing top of Pier.

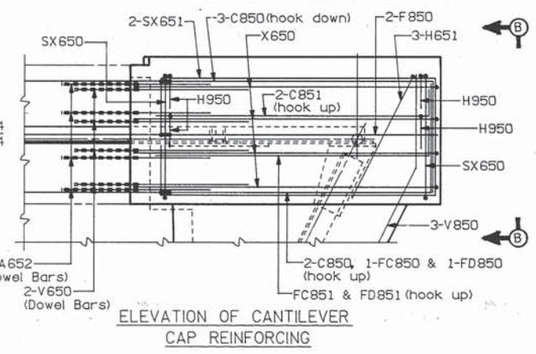
② To C.G. of Angle.

③ Place 1-Z650 at every intersection of Series H650 with Series A651 bars and A650 bars as shown. Omit where ∠8"x8"x¾" interferes.

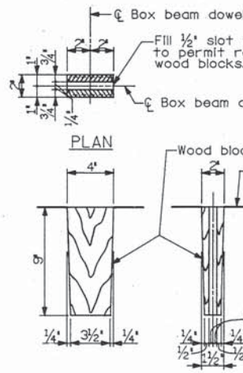
④ ¾" - Pier 2 - W.B.L./E.B.L.

⑤ Existing Pier Cap/Column Concrete to be chipped back 4" minimum.

PART ELEVATION
(Showing Cantilever Column Reinforcing)

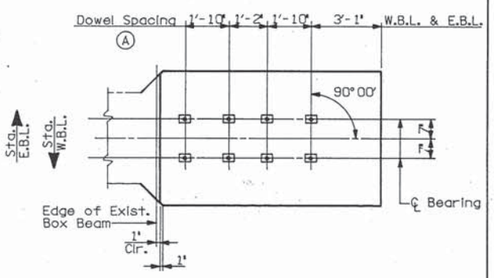


ELEVATION OF CANTILEVER CAP REINFORCING



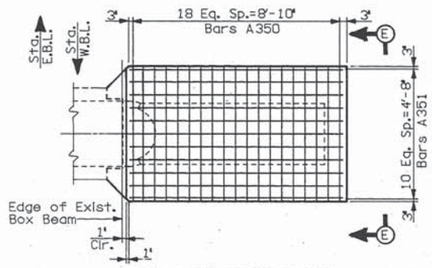
TYPICAL DOWEL SLOT

Ⓐ Dowels 1"ø x 1'-6" embedded 9" in cap.

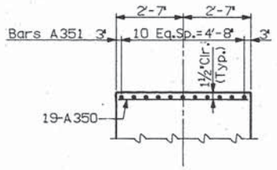


DETAIL 'G' DOWEL LAYOUT

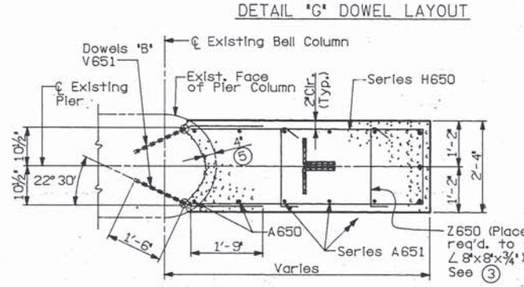
ELEVATION B-B



PLAN OF RISER BLOCK
PIER 2 W.B.L. & E.B.L.



ELEVATION E-E



SECTION C-C
(Layout Dowels 'B')

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

PIER 2
I-40 W.B.L. & E.B.L. OVER CANEY FORK RIVER
STA. 518+49.00 ℄ SURVEY E.B. & W.B. I-40
SMITH COUNTY
1989

DESIGNED BY	WGA	DATE 2-89
DRAWN BY	EAB	DATE 2-89
SUPERVISED BY	WSH	DATE 2-89
CHECKED BY	WGA	DATE 3-89

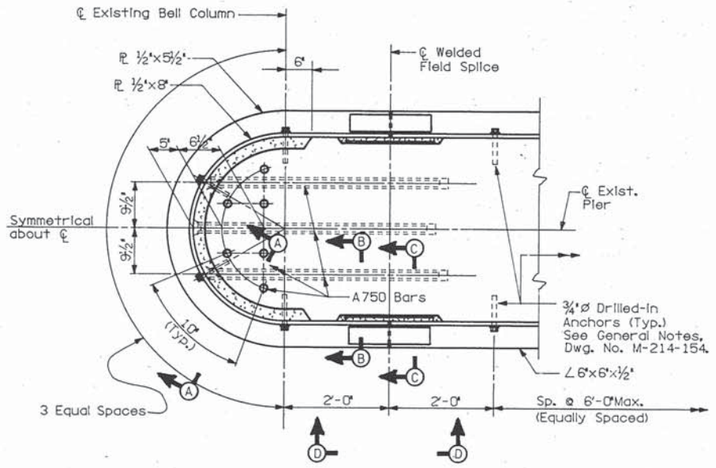
CORRECT _____ ENGINEER OF STRUCTURES

APPROVED _____ DIRECTOR OF HIGHWAYS

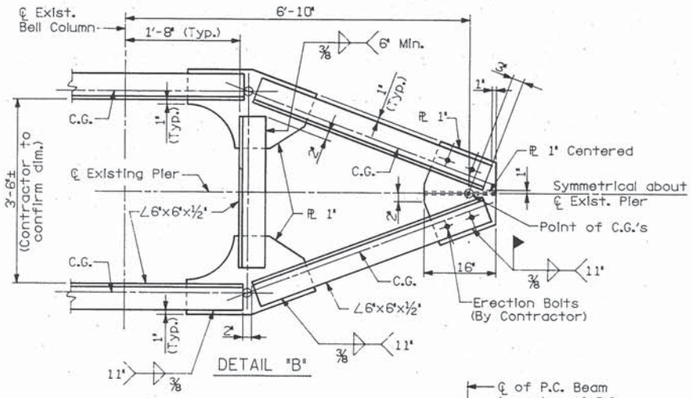
Scale: None

M-214-164

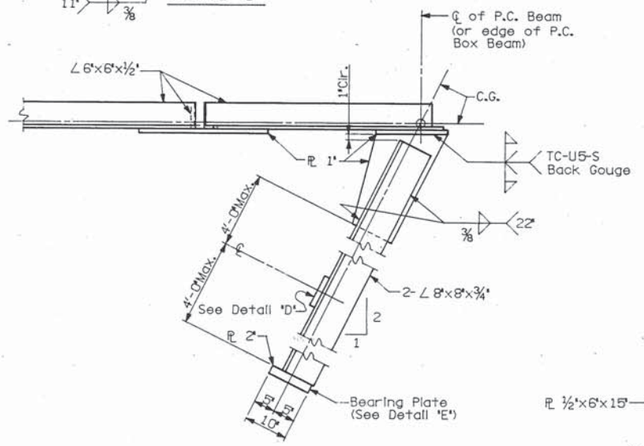
ZFile%24DTN0XX706-DGN1
DTN0XX
11-MAR-1989 15:39



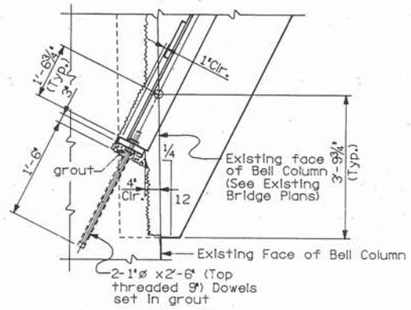
DETAIL "A"



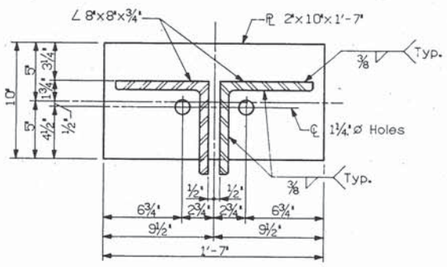
DETAIL "B"



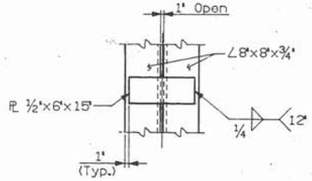
DETAIL "C"



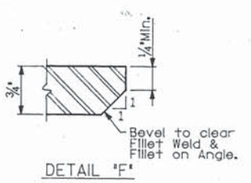
DETAIL "G"



DETAIL "E"
PLAN OF BEARING PLATE

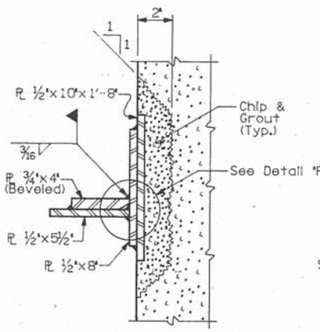


DETAIL "D"

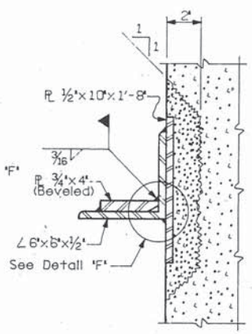


DETAIL "F"

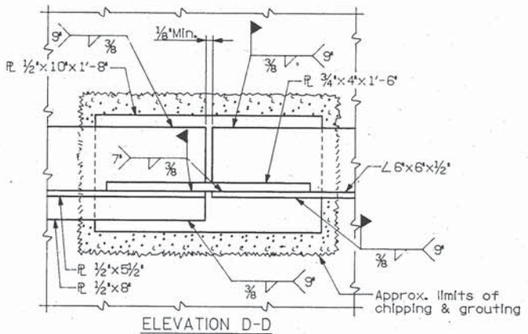
SECTION A-A



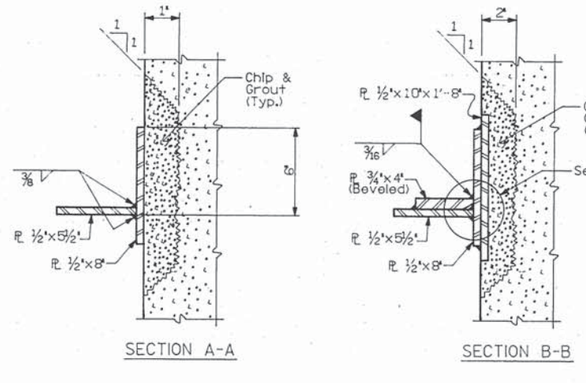
SECTION B-B



SECTION C-C



ELEVATION D-D



DETAIL "H"

Notes Con't:

Drilled-in anchors shall be in accordance with General Notes.

Riser blocks to be poured monolithically with Cantilever cap beam.

Elastomeric pads shall be in place a minimum of one day before being disturbed by setting beams. Place rubber bonding cement in such a way that column surfaces will not be stained.

Riser block bearing pad surface to conform to bottom of beam grade.

Anchor bolts shall be in place when Cantilever cap is poured.

Reinforcement shall be adjusted as needed to prevent interference with anchor bolt placement. Drilled and grouted anchor bolts shall not be allowed.

CONSTR. NO. 80001-3152-44

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

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

Notes:

For General Notes, see Dwg No. M-214-154.

Dimensions shown on this drawing are necessarily approximate. Contractor shall field verify dimensions of existing structure before proceeding with work, which includes but is not limited to the fabrication of structural steel, reinforcement, girders and formwork.

All welds and weld inspections to be in accordance with ANSI/AASHTO/AWS D1.5-88 and Special Provision No. 602. All welds, including fillet welds, to be inspected. All structural steel shall be considered main members for the purpose of determining frequency of inspection of fillet welds.

All structural steel not completely encased in concrete shall conform to AASHTO M 222 (ASTM A588), FY=50 ksi minimum. All structural steel completely encased in concrete shall conform to AASHTO M 183 (ASTM A36), FY=36 ksi.

All structural steel exposed to the atmosphere shall be finished with paint in accordance with General Notes for painting structural steel. In addition, surfaces not accessible after erection shall recieve an additional shop primer coat of inorganic zinc paint.

Chipping portions of existing structure necessary for bracket addition and drilling and grouting of dowels shall be considered incidental to the work and shall not be paid for separately.

The 4 inch chipping of concrete may not be sufficient to insure the removal of all unsound concrete. If more concrete removal is required to reach sound material, care shall be taken not to cut or otherwise damage existing reinforcement.

Concrete shall obtain 90 per cent of the specified 28 day strength prior to placement of the girders.

Grout shall be non-shrink, F'c=5,000 psi. Grout shall be allowed to achieve a strength of 3,000 psi before being loaded.

Care shall be taken during placement of concrete to insure that concrete completely fills space under structural steel gusset plates and that no pockets or voids exist adjacent to gusset plates.

Mechanical couplers shall be Cold Forged Mechanical Splices applied by octagonal dies and be capable of developing 125% of the specified yield strength of the reinforcement, in accordance with Provisions of AASHTO Art.8.32. Certification of AASHTO compliance will be required prior to approval. All costs associated with installing mechanical couplers, labor, equipment and incidentals shall be included in the cost for Item 604-03.02.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

PIERS 1, 2 & 3
I-40 W.B.L. & E.B.L. OVER CANEY FORK RIVER
STA. 518+49.00 ℄ SURVEY E.B. & W.B. I-40
SMITH COUNTY
1989

DESIGNED BY	WGA	DATE	2-89
DRAWN BY	EAB	DATE	2-89
SUPERVISED BY	WSH	DATE	2-89
CHECKED BY	WGA	DATE	3-89

CORRECT _____ ENGINEER OF STRUCTURES

APPROVED _____ DIRECTOR OF HIGHWAYS

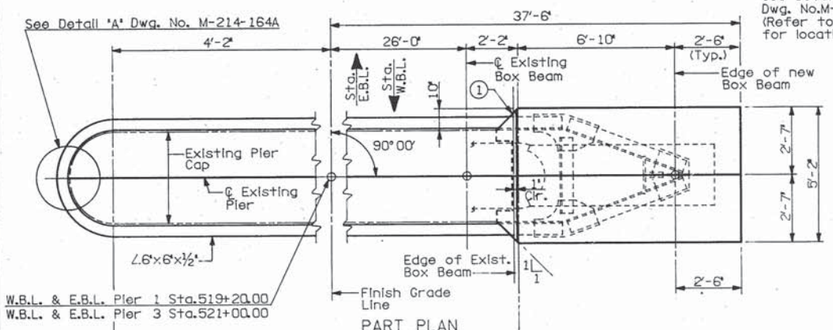
Scale: None

M-214-164A

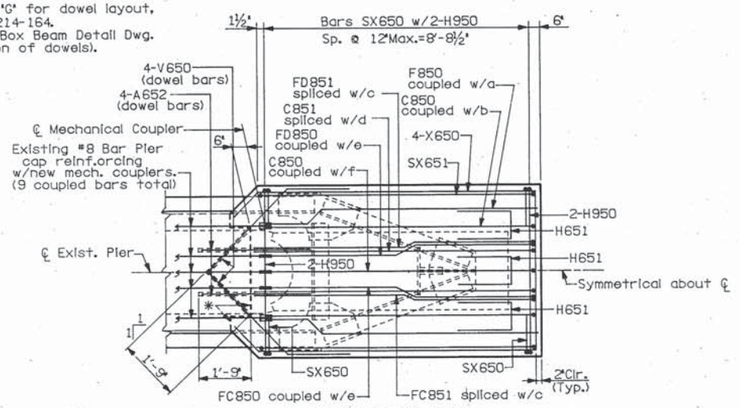
B.S.A. No. DTNOXX706A

ZF:(458,243)TNDOT\706\DGN\
DTNDOT
11-MAY-1989 08:14

Note:
See Detail 'G' for dowel layout, Dwg. No.M-214-164.
(Refer to Box Beam Detail Dwg. for location of dowels).

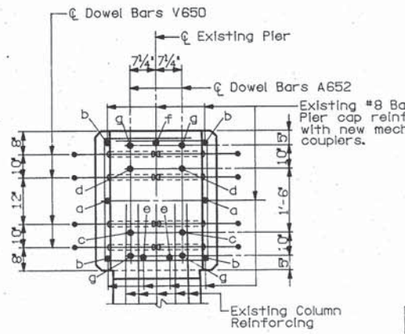


PART PLAN



* Remove concrete to this line.

PLAN OF CANTILEVER CAP REINFORCING



SECTION A-A

g - Denotes A652 dowel bars only.

CONSTR. NO. 80001-3152-44

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

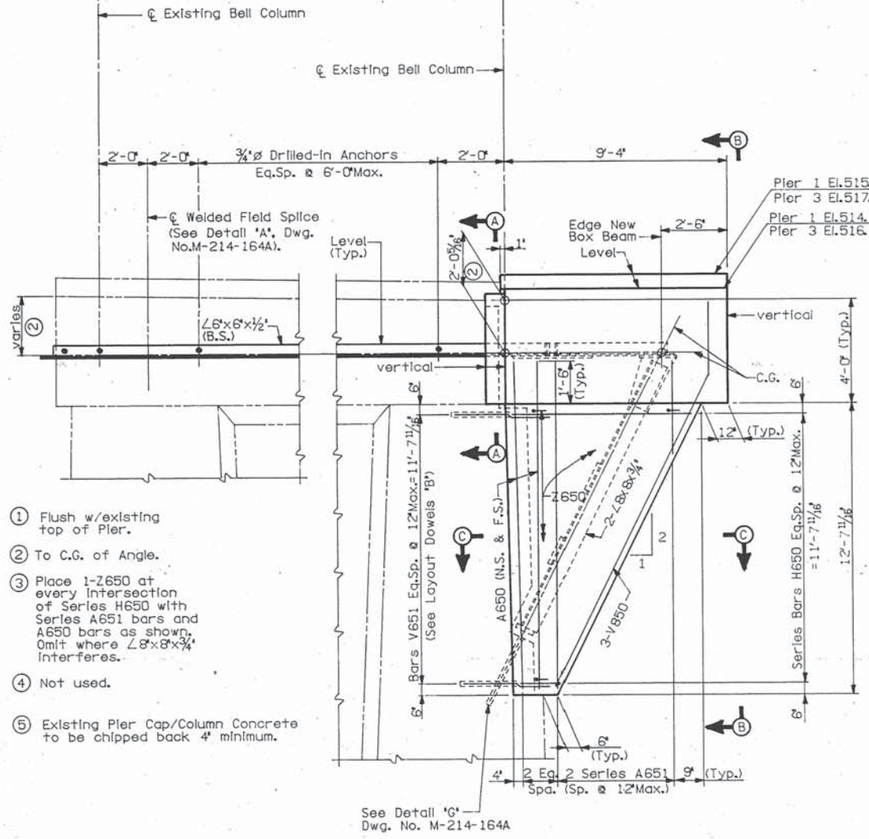
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

Note:
For notes, see Dwg. No. M-214-164A.

ESTIMATED QUANTITIES

Item / Pier No.	Class 'A' Concrete (Bridges) C.Y.	Structural Steel Lb.	Steel Bar Reinforcement (Bridges) Lb.
W.B.L. - 1	14	3,600	2660
W.B.L. - 3	14	3,600	2660
E.B.L. - 1	14	3,600	2660
E.B.L. - 3	14	3,600	2660



① Flush w/existing top of Pier.

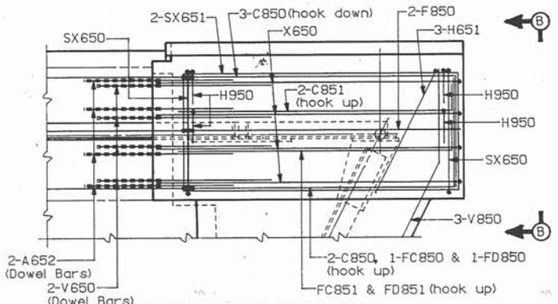
② To C.G. of Angle.

③ Place 1-Z650 at every intersection of Series H650 with Series A651 bars and A650 bars as shown. Omit where ∠8"x8"x¾" interferes.

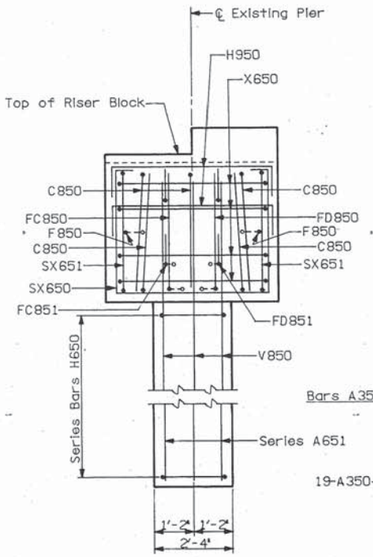
④ Not used.

⑤ Existing Pier Cap/Column Concrete to be chipped back 4" minimum.

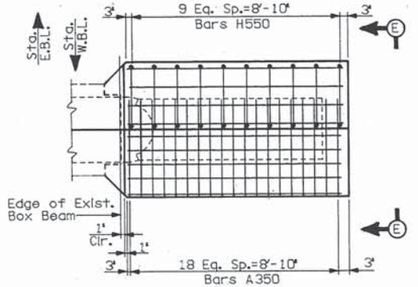
PART ELEVATION
(Showing Cantilever Column Reinforcing)



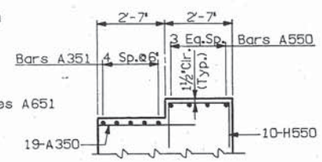
ELEVATION OF CANTILEVER CAP REINFORCING



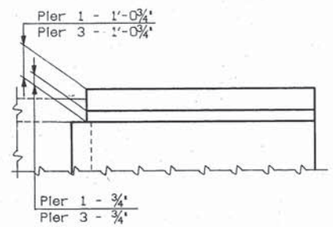
ELEVATION B-B



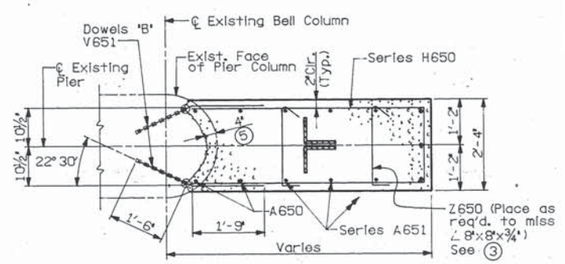
PLAN OF RISER BLOCK - W.B.L. & E.B.L.



ELEVATION E-E



ELEVATION OF RISER BLOCK



SECTION C-C
(Layout Dowels 'B')

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

PIERS 1 & 3
I-40 W.B.L. & E.B.L. OVER CANEY FORK RIVER
STA. 518+49.00 ℄ SURVEY E.B. & W.B. I-40
SMITH COUNTY
1989

DESIGNED BY	WGA	DATE	2-89
DRAWN BY	EAB	DATE	3-89
SUPERVISED BY	WSH	DATE	3-89
CHECKED BY	WGA	DATE	3-89

CORRECT _____ ENGINEER OF STRUCTURES

APPROVED _____ DIRECTOR OF HIGHWAYS

Scale: None

M-214-164B

F.S.A. No. DTNOXX704A

ZF1458,243DTN8XX704.DGN
13-JAN-1989 11:54
DTN8XX

SPAN A THRU D - W.B.L.

MARK	T	LOCATION	SZ	NO. RQ'D	DIMENSIONS FT-IN a	b	c	d	e	LENGTH FT-IN	WEIGHT LBS
A500	E	DECK	5	473	4- 9					4- 9	2343
A501	E	"	5	473	10- 9					10- 9	5303
⚠ A502	E	"	5	106	8-10					8-10	977
A503	E	"	5	583	30- 0					30- 0	18242
A504	E	"	5	102	30- 6					30- 6	3245
A505	E	"	5	51	35- 6					35- 6	1888
⚠ B500	E	"	5	482	10- 0	0- 7				10- 7	5321
⚠ B501	E	"	5	243	25- 9	0- 7				26- 4	6674
⚠ B502	E	"	5	243	19-10	0- 7				20- 5	5175
									***TOTAL WEIGHT (LBS)		⚠ 49168

⚠ ***TOTAL INCLUDES 49168 LBS OF EPOXY COATED BARS

ABUTMENT 1 W.B.L.

MARK	T	LOCATION	SZ	NO. RQ'D	DIMENSIONS FT-IN a	b	c	d	e	LENGTH FT-IN	WEIGHT LBS
A440		WINGWALL 1	4	4	5- 9					5- 9	15
A540		ABUTMENT	5	90	3- 8					3- 8	344
⚠ A541		ABUTMENT	5	5	24-4					24-4	127
A542		WINGWALL 1	5	1	7- 8					7- 8	8
A543		ABUTMENT	5	7	3- 6					3- 6	26
A544		"	5	3	6- 2					6- 2	19
⚠ A545		ABUTMENT	5	1	18-7					18-7	19
⚠ A740	E	"	7	4	19-4					19-4	158
⚠ A741		"	7	2	19-4					19-4	80
A940		WINGWALL 1	9	4	14- 6					14- 6	197
C440		"	4	2	7- 8	0- 8				8- 4	11
C441		"	4	1	7- 0	0- 8				7- 8	5
C442		"	4	1	4- 2	0- 8				4-10	3
C540	E	ABUTMENT	5	45	10- 0	0-10				10-10	508
C541		WINGWALL	5	1	7- 0	0-10				7-10	24
		@ 4 BAR SERIES		EACH	TO					TO	
					2- 9					3- 7	
⚠ C542		ABUTMENT	5	7	24-4	0-10				25-2	184
C544		WINGWALL 1	5	4	7- 8	0-10				8- 6	35
C545		ABUTMENT	5	7	3- 2	0-10				4- 0	29
E540		WINGWALL 1	5	4	2- 1½	0-10	0- 7⅛	0- 7⅛		3-10	16
H440		"	4	1	0- 9	3- 0				6- 9	24
		@ 4 BAR SERIES		EACH		TO				TO	
						5- 1				10-11	
H441		"	4	2	0- 9	5- 8				12- 1	16
H540		ABUTMENT	5	45	0- 9	5- 8				12- 1	567
L540	E	"	5	3	1- 9	3- 2	0- 6			10-10	34
RA440		WINGWALL 1	4	6	0- 8	1- 6	0- 9½	2- 1½	1- 6	5- 1	20
RA540		ABUTMENT	5	42	0-10	1- 9	0- 6	2- 5	1- 8½	5- 6	241
V441		WINGWALL 1	4	2	2- 4	6- 0	5- 4	2- 9		8- 4	11

⚠ FOR CONTINUATION SEE DRAWING NO. M-214-166A

***TOTAL WEIGHT (LBS) 3241

***TOTAL INCLUDES 899 LBS OF EPOXY COATED BARS

***TOTAL INCLUDES 2342 LBS OF NON EPOXY COATED BARS

PIER 1 - W.B.L.

MARK	T	LOCATION	SZ	NO. RQ'D	DIMENSIONS FT-IN a	b	c	d	e	LENGTH FT-IN	WEIGHT LBS
A350		RISER BLOCK	3	19	3- 5					3- 5	24
A351		"	3	5	9- 1					9- 1	17
A550		"	5	4	9- 1					9- 1	38
A650		CANT.COLUMN	6	4	13-11¾					14- 0	84
A651		"	6	2	13-11¾					14- 0	175
		@ 7 BAR SERIES		EACH	TO					TO	
					2- 7½					2- 8	
A652		CANT.CAP	6	8	3- 6					3- 6	42
C850		"	8	5	8-11	3- 5½				12- 5	166
C851		"	8	2	9- 2½	1- 0				10- 3	55
F850		"	8	2	1- 4¼	0- 9	7- 0	0- 6¼	0- 6¼	9- 1	49
FC850		"	8	1	4- 5½	0-10⅜	3- 8	0- 9	3- 5½	12- 5	33
FC851		"	8	1	5- 1	0- 2	3- 8	0- 1¾	1- 0	9-11	26
FD850		"	8	1	4- 5¾	0-10⅜	3- 8	0- 9	3- 5½	12- 6	33
FD851		"	8	1	5- 1	0- 2	3- 8	0- 1¾	1- 0	9-11	26
H550		RISER BLOCK	5	10	2- 4	2- 2				6- 8	70
H650		CANT.COLUMN	6	1	2- 0	7- 4				16- 8	207
		@ 13 BAR SERIES		EACH		TO				TO	
						1- 3				4- 6	
H651		CANT.CAP	6	3	1- 0	4- 0				9- 0	41
H950		"	9	20	4-10	1- 0				6-10	465

PIER 1 - W.B.L.

MARK	T	LOCATION	SZ	NO. RQ'D	DIMENSIONS FT-IN a	b	c	d	e	LENGTH FT-IN	WEIGHT LBS
SX650		"	6	10	4- 9½	3- 7½	1- 0			14- 1	212
SX651		"	6	2	3- 5¾	9- 2⅛	1- 9			25- 4	76
V650		"	6	8	3- 3	1- 9	1- 2⅞	1- 2⅞		5- 0	60
V651		CANT.COLUMN	6	26	1- 9	1- 9	1- 7⅜	0- 8		3- 6	137
V850		"	8	3	15- 6½	2- 4½	2- 1½	1- 0¾		17-11	144
X650		CANT.CAP	6	4	4- 7¾	9- 1½	1- 0	0- 8½		24-11	150
Z650		CANT.COLUMN	6	60	1- 0	2- 0	0- 8			3- 8	330
									***TOTAL WEIGHT (LBS)		2660

PIER 2 - W.B.L.

MARK	T	LOCATION	SZ	NO. RQ'D	DIMENSIONS FT-IN a	b	c	d	e	LENGTH FT-IN	WEIGHT LBS
A350		RISER BLOCK	3	19	4-10					4-10	35
A351		"	3	11	9- 0					9- 0	37
A650		CANT.COLUMN	6	4	13-11¾					14- 0	84
A651		"	6	2	13-11¾					14- 0	175
		@ 7 BAR SERIES		EACH	TO					TO	
					2- 7½					2- 8	
A652		CANT.CAP	6	8	3- 6					3- 6	42
C850		"	8	5	8-11	3- 5½				12- 5	166
C851		"	8	2	9- 2½	1- 0				10- 3	55
F850		"	8	2	1- 4¼	0- 9	7- 0	0- 6¼	0- 6¼	9- 1	49
FC850		"	8	1	4- 5½	0-10⅜	3- 8	0- 9	3- 5½	12- 5	33
FC851		"	8	1	5- 1	0- 2	3- 8	0- 1¾	1- 0	9-11	26
FD850		"	8	1	4- 5¾	0-10⅜	3- 8	0- 9	3- 5½	12- 6	33
FD851		"	8	1	5- 1	0- 2	3- 8	0- 1¾	1- 0	9-11	26
H550		RISER BLOCK	5	10	2- 4	2- 2				6- 8	70
H650		CANT.COLUMN	6	1	2- 0	7- 4				16- 8	207
		@ 13 BAR SERIES		EACH		TO				TO	
						1- 3				4- 6	
H651		CANT.CAP	6	3	1- 0	4- 0				9- 0	41
H950		"	9	20	4-10	1- 0				6-10	465
SX650		"	6	10	4- 9½	3- 7½	1- 0			14- 1	212
SX651		"	6	2	3- 5¾	9- 2⅛	1- 9			25- 4	76
V650		"	6	8	3- 3	1- 9	1- 2⅞	1- 2⅞		5- 0	60
V651		CANT.COLUMN	6	26	1- 9	1- 9	1- 7⅜	0- 8		3- 6	137
V850		"	8	3	15- 6½	2- 4½	2- 1½	1- 0¾		17-11	144
X650		CANT.CAP	6	4	4- 7¾	9- 1½	1- 0	0- 8½		24-11	150
Z650		CANT.COLUMN	6	60	1- 0	2- 0	0- 8			3- 8	330
									***TOTAL WEIGHT (LBS)		2660

ABUTMENT 2 W.B.L.

MARK	T	LOCATION	SZ	NO. RQ'D	DIMENSIONS FT-IN a	b	c	d	e	LENGTH FT-IN	WEIGHT LBS
A441		WINGWALL 2	4	4	7- 2					7- 2	19
A540		ABUTMENT	5	132	3-11					3-11	540
⚠ A541		"	5	5	24-4					24-4	127
A542		WINGWALL 2	5	1	7- 8					7- 8	8
A544		ABUTMENT	5	7	8- 8					8- 8	63
A545		ABUTMENT	5	1	18-7					18-7	19
A940		WINGWALL 2	9	4	14- 6					14- 6	197
~~A1000~~		~~ABUTMENT~~	~~10~~	~~10~~	~~43- 8~~					~~43- 8~~	~~1879~~
⚠ A1001		ABUTMENT	10	10	24-4					24-4	1047
C440		WINGWALL 2	4	2	7- 8	0- 8				8- 4	11
C443		"	4	1	6-10	0- 8				7- 6	5
C444		"	4	1	5- 0	0- 8				5- 8	4
C445		WINGWALL 2	4	1	3- 2	0- 8				3-10	3
C546	E	ABUTMENT	5	84	10- 0	2-6				12-6	1095
C542		"	5	8	24-4	0-10				25-2	210
C543		WINGWALL 2	5	1	6-10	0-10				7- 8	30
		@ 5 BAR SERIES		EACH	TO					TO	
					3- 2					4- 0	
C544		"	5	4	7- 8	0-10				8- 6	35
E540		"	5	5	2- 1½	0-10	0- 7⅛	0- 7⅛		3-10	20
H442		WINGWALL 2	4	1	0- 9	6- 0				12- 9	26
		@ 4 BAR SERIES		EACH		TO				TO	
						3- 0				6- 9	
H443		"	4	2	0- 9	7- 2				15- 1	20
P540		ABUTMENT	5	84	7- 2	0- 5	6- 2			14- 1	1234
H541		ABUTMENT	5	9	4- 2	0- 6				5- 2	48
L540	E	"	5	3	1- 9	3- 2	0- 6			10-10	34
L541		ABUTMENT	5	9	3- 8	3- 3	0- 6			14-10	139
P500		ABUTMENT	5	9	2- 8	3- 3	0-10			6- 9	63
RA440		WINGWALL 2	4	6	0- 8	1- 6	0- 9½	2- 1½	1- 6	5- 1	20
RA540		ABUTMENT	5	42	0-10	1- 9	0- 6	2- 5	1- 8½	5- 6	241
V440		WINGWALL 2	4	2	2- 4	6-10	5- 4	4- 3½		9- 2	12

FOR CONTINUATION SEE DRAWING M-214-166A ***TOTAL WEIGHT (LBS) 7430 ⚠

***TOTAL INCLUDES ⚠ 2254 LBS OF EPOXY COATED BARS

***TOTAL INCLUDES ⚠ 5176 LBS OF NON EPOXY COATED BARS

ABUTMENT 1 W.B.L. FOUNDATION REPAIR

MARK	T	LOCATION	SZ	NO. RQ'D	DIMENSIONS FT-IN a	b	c	d	e	LENGTH FT-IN	WEIGHT LBS
A680	E	FDN REPAIR	6	24	16-6					16-6	595 ⚠
C480	E	"	4	60	1-0	3-0				4-0	160
									***TOTAL WEIGHT (LBS)		755 ⚠

***TOTAL INCLUDES ⚠ 755 LBS OF EPOXY COATED BARS

CONSTR. NO. 80001-3152-44

PROJECT NO.	YEAR	SHEET NO.
IR-40-5(81)257	1989	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
⚠ 1	5/29/89	DWT	REVISED REINF.

REINFORCING STEEL CODE

TYPE	SIZE	SERIES
A	5	06*

Note: Dimensions shown on this sheet are outside to outside of bar. Standard C.R.S.I. Hook Details shall apply, except as noted.

*LOCATION	SERIES
SUPERSTRUCTURE	00
ABUTMENT	40
PIER	50
RETAINING WALL	70
APPROACH SLAB	90

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

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

BILL OF STEEL

I-40 OVER
CANEY FORK RIVER
STA. 518+50
℄ SURVEY E.B. & W.B. I-40
SMITH COUNTY
1989

DESIGNED BY _____ DATE 1-89
DRAWN BY _____ DATE 1-89
SUPERVISED BY W. S. HUFFSTETLER DATE 1-89
CHECKED BY _____ DATE _____

CORRECT _____ ENGINEER OF STRUCTURES
APPROVED _____ DIRECTOR OF HIGHWAYS

M-214-165

B.S.I. No. DTNOXX704A

ZFH598.24 DTNBOXX704A.DGN 13-JAN-1989 11:54

MARK	T	LOCATION	SZ	NO. RQ'D	DIMENSIONS FT-IN a	b	c	d	e	LENGTH FT-IN	WEIGHT LBS
SPAN A THRU D - EBL											
A500	E	DECK	5	473	4- 9					4- 9	2343
A501	E	"	5	473	10- 9					10- 9	5303
⚠ A502	E	"	5	106	8-10					8-10	977
A503	E	"	5	583	30- 0					30- 0	18242
A504	E	"	5	102	30- 6					30- 6	3245
A505	E	"	5	51	35- 6					35- 6	1888
⚠ B500	E	"	5	482	10- 0	0- 7				10- 7	5321
⚠ B501	E	"	5	243	25- 9	0- 7				26-4	6674
⚠ B502	E	"	5	243	19-10	0-7				20-5	5175
									***TOTAL WEIGHT (LBS) ⚠		49168
⚠ ***TOTAL INCLUDES 45168 LBS OF EPOXY COATED BARS											
ABUTMENT 1 E.B.L.											
A440		WINGWALL 1	4	4	5- 9					5- 9	15
A540		ABUTMENT	5	90	3- 8					3- 8	344
⚠ A541		ABUTMENT	5	5	24-4					24-4	127
A542		WINGWALL 1	5	1	7- 8					7- 8	8
A543		ABUTMENT	5	7	3- 6					3- 6	26
A544		"	5	3	6- 2					6- 2	19
⚠ A545		ABUTMENT	5	1	18-7					18-7	19
⚠ A740	E	"	7	4	19-4					19-4	158
⚠ A741		"	7	2	19-4					19-4	80
A940		WINGWALL 1	9	4	14- 6					14- 6	197
C440		"	4	2	7- 8	0- 8				8- 4	11
C441		"	4	1	7- 0	0- 8				7- 8	5
C442		"	4	1	4- 2	0- 8				4-10	3
C540	E	ABUTMENT	5	45	10- 0	0-10				10-10	508
C541		WINGWALL	5	1	7- 0	0-10				7-10	24
		@ 4 BAR SERIES		EACH	TO					TO	
					2- 9					3- 7	
⚠ C542		ABUTMENT	5	7	24-4	0-10				25-2	184
C544		WINGWALL 1	5	4	7- 8	0-10				8- 6	35
C545		ABUTMENT	5	7	3- 2	0-10				4- 0	29
E540		WINGWALL 1	5	4	2- 1½	0-10	0- 7⅛	0- 7⅛		3-10	16
H440		"	4	1	0- 9	3- 0				6- 9	24
		@ 4 BAR SERIES		EACH		TO				TO	
						5- 1				10-11	
H441		"	4	2	0- 9	5- 8				12- 1	16
H540		ABUTMENT	5	45	0- 9	5- 8				12- 1	567
L540	E	"	5	3	1- 9	3- 2	0- 6			10-10	34
RA440		WINGWALL 1	4	6	0- 8	1- 6	0- 9½	2- 1½	1- 6	5- 1	20
RA540		ABUTMENT	5	42	0-10	1- 9	0- 6	2- 5	1- 8½	5- 6	241
V441		WINGWALL 1	4	2	2- 4	6- 0	5- 4	2- 9		8- 4	11
⚠ FOR CONTINUATION SEE DRAWING NO. M-214-166A											
									***TOTAL WEIGHT (LBS)		3241
***TOTAL INCLUDES 899 LBS OF EPOXY COATED BARS											
***TOTAL INCLUDES 2342 LBS OF NON EPOXY COATED BARS											
PIER 1 - E.B.L.											
A350		RISER BLOCK	3	19	3- 5					3- 5	24
A351		"	3	5	9- 1					9- 1	17
A550		"	5	4	9- 1					9- 1	38
A650		CANT.COLUMN	6	4	13-11¾					14- 0	84
A651		"	6	2	13-11¾					14- 0	175
		@ 7 BAR SERIES		EACH	TO					TO	
					2- 7½					2- 8	
A652		CANT.CAP	6	8	3- 6					3- 6	42
C850		"	8	5	8-11	3- 5½				12- 5	166
C851		"	8	2	9- 2½	1- 0				10- 3	55
F850		"	8	2	1- 4¼	0- 9	7- 0	0- 6¼	0- 6¼	9- 1	49
FC850		"	8	1	4- 5½	0-10⅜	3- 8	0- 9	3- 5½	12- 5	33
FC851		"	8	1	5- 1	0- 2	3- 8	0- 1¾	1- 0	9-11	26
FD850		"	8	1	4- 5¾	0-10⅜	3- 8	0- 9	3- 5½	12- 6	33
FD851		"	8	1	5- 1	0- 2	3- 8	0- 1¾	1- 0	9-11	26
H550		RISER BLOCK	5	10	2- 2					6- 8	70
H650		CANT.COLUMN	6	1	2- 0	7- 4				16- 8	207
		@ 13 BAR SERIES		EACH		TO				TO	
						1- 3				4- 6	
H651		CANT.CAP	6	3	1- 0	4- 0				9- 0	41
H950		"	9	20	4-10	1- 0				6-10	465

MARK	T	LOCATION	SZ	NO. RQ'D	DIMENSIONS FT-IN a	b	c	d	e	LENGTH FT-IN	WEIGHT LBS
PIER 1 - E.B.L.											
SX650		"	6	10	4- 9½	3- 7½	1- 0			14- 1	212
SX651		"	6	2	3- 5¾	9- 2⅛	1- 9			25- 4	76
V650		"	6	8	3- 3	1- 9	1- 2⅞	1- 2⅞		5- 0	60
V651		CANT.COLUMN	6	26	1- 9	1- 9	1- 7⅜	0- 8		3- 6	137
V850		"	8	3	15- 6½	2- 4½	2- 1½	1- 0¾		17-11	144
X650		CANT.CAP	6	4	4- 7¾	9- 1½	1- 0	0- 8½		24-11	150
Z650		CANT.COLUMN	6	60	1- 0	2- 0	0- 8			3- 8	330
									***TOTAL WEIGHT (LBS)		2660
PIER 2 - E.B.L.											
A350		RISER BLOCK	3	19	4-10					4-10	35
A351		"	3	11	9- 0					9- 0	37
A650		CANT.COLUMN	6	4	13-11¾					14- 0	84
A651		"	6	2	13-11¾					14- 0	175
		@ 7 BAR SERIES		EACH	TO					TO	
					2- 7½					2- 8	
A652		CANT.CAP	6	8	3- 6					3- 6	42
C850		"	8	5	8-11	3- 5½				12- 5	166
C851		"	8	2	9- 2½	1- 0				10- 3	55
F850		"	8	2	1- 4¼	0- 9	7- 0	0- 6¼	0- 6¼	9- 1	49
FC850		"	8	1	4- 5½	0-10⅜	3- 8	0- 9	3- 5½	12- 5	33
FC851		"	8	1	5- 1	0- 2	3- 8	0- 1¾	1- 0	9-11	26
FD850		"	8	1	4- 5¾	0-10⅜	3- 8	0- 9	3- 5½	12- 6	33
FD851		"	8	1	5- 1	0- 2	3- 8	0- 1¾	1- 0	9-11	26
H650		CANT.COLUMN	6	1	2- 0	7- 4				16- 8	207
		@ 13 BAR SERIES		EACH		TO				TO	
						1- 3				4- 6	
H651		CANT.CAP	6	3	1- 0	4- 0				9- 0	41
H950		"	9	20	4-10	1- 0				6-10	465
SX650		"	6	10	4- 9½	3- 7½	1- 0			14- 1	212
SX651		"	6	2	3- 5¾	9- 2⅛	1- 9			25- 4	76
V650		"	6	8	3- 3	1- 9	1- 2⅞	1- 2⅞		5- 0	60
V651		CANT.COLUMN	6	26	1- 9	1- 9	1- 7⅜	0- 8		3- 6	137
V850		"	8	3	15- 6½	2- 4½	2- 1½	1- 0¾		17-11	144
X650		CANT.CAP	6	4	4- 7¾	9- 1½	1- 0	0- 8½		24-11	150
Z650		CANT.COLUMN	6	60	1- 0	2- 0	0- 8			3- 8	330
									***TOTAL WEIGHT (LBS)		2583
PIER 3 - E.B.L.											
A350		RISER BLOCK	3	19	3- 5					3- 5	24
A351		"	3	5	9- 1					9- 1	17
A550		"	5	4	9- 1					9- 1	38
A650		CANT.COLUMN	6	4	13-11¾					14- 0	84
A651		"	6	2	13-11¾					14- 0	175
		@ 7 BAR SERIES		EACH	TO					TO	
					2- 7½					2- 8	
A652		CANT.CAP	6	8	3- 6					3- 6	42
C850		"	8	5	8-11	3- 5½				12- 5	166
C851		"	8	2	9- 2½	1- 0				10- 3	55
F850		"	8	2	1- 4¼	0- 9	7- 0	0- 6¼	0- 6¼	9- 1	49
FC850		"	8	1	4- 5½	0-10⅜	3- 8	0- 9	3- 5½	12- 5	33
FC851		"	8	1	5- 1	0- 2	3- 8	0- 1¾	1- 0	9-11	26
FD850		"	8	1	4- 5¾	0-10⅜	3- 8	0- 9	3- 5½	12- 6	33
FD851		"	8	1	5- 1	0- 2	3- 8	0- 1¾	1- 0	9-11	26
H550		RISER BLOCK	5	10	2- 4	2- 2				6- 8	70
H650		CANT.COLUMN	6	1	2- 0	7- 4				16- 8	207
		@ 13 BAR SERIES		EACH		TO				TO	
						1- 3				4- 6	
H651		CANT.CAP	6	3	1- 0	4- 0				9- 0	41
H950		"	9	20	4-10	1- 0				6-10	465
SX650		"	6	10	4- 9½	3- 7½	1- 0			14- 1	212
SX651		"	6	2	3- 5¾	9- 2⅛	1- 9			25- 4	76
V650		"	6	8	3- 3	1- 9	1- 2⅞	1- 2⅞		5- 0	60
V651		CANT.COLUMN	6	26	1- 9	1- 9	1- 7⅜	0- 8		3- 6	137
V850		"	8	3	15- 6½	2- 4½	2- 1½	1- 0¾		17-11	144
X650		CANT.CAP	6	4	4- 7¾	9- 1½	1- 0	0- 8½		24-11	150
Z650		CANT.COLUMN	6	60	1- 0	2- 0	0- 8			3- 8	330
									***TOTAL WEIGHT (LBS)		2660

MARK	T	LOCATION	SZ	NO. RQ'D	DIMENSIONS FT-IN a	b	c	d	e	LENGTH FT-IN	WEIGHT LBS
ABUTMENT 2 E.B.L.											
A441		WINGWALL 2	4	4	7- 2					7- 2	19
A540		ABUTMENT	5	132	3-11					3-11	540
A541		"	5	5	24-4					24-4	127
A542		WINGWALL 2	5	1	7- 8					7- 8	8
A544		ABUTMENT	5	7	8- 8					8- 8	63
A545		ABUTMENT	5	1	18-7					18-7	19
A940		WINGWALL 2	9	4	14- 6					14- 6	197
~~A1000~~		~~ABUTMENT~~	~~10~~	~~10~~	~~43- 8~~					~~43- 8~~	~~1879~~
A1001		ABUTMENT	10	10	24-4					24-4	1047
C440		WINGWALL 2	4	2	7- 8	0- 8				8- 4	11
C443		"	4	1	6-10	0- 8				7- 6	5
C444		"	4	1	5- 0	0- 8				5- 8	4
C445		WINGWALL 2	4	1	3- 2	0- 8				3-10	3
C546	E	ABUTMENT	5	84	10- 0	2- 6				12- 6	1095
C542		"	5	8	24-4	0-10				25- 2	210
C543		WINGWALL 2	5	1	6-10	0-10				7- 8	30
		@ 5 BAR SERIES		EACH	TO					TO	
					3- 2					4- 0	
C544		"	5	4	7- 8	0-10				8- 6	35
E540		"	5	5	2- 1½	0-10	0- 7⅛	0- 7⅛		3-10	20
H442		WINGWALL 2	4	1	0- 9	6- 0				12- 9	26
		@ 4 BAR SERIES		EACH		TO				TO	
						3- 0				6- 9	
H443		"	4	2	0- 9	7- 2				15- 1	20
P540	E	ABUTMENT	5	84	7- 2	0- 5	6- 2			14- 1	1234
H541		ABUTMENT	5	9	4- 2	0- 6				5- 2	48
L540	E	"	5	3	1- 9	3- 2	0- 6			10-10	34
L541		ABUTMENT	5	9	3- 8	3- 3	0- 6			14-10	139
P500		ABUTMENT	5	9	2- 8	3- 3	0-10			6- 9	63
RA440		WINGWALL 2	4	6	0- 8	1- 6	0- 9½	2- 1½	1- 6	5- 1	20
RA540		ABUTMENT	5	42	0-10	1- 9	0- 6	2- 5	1- 8½	5- 6	241
V440		WINGWALL 2	4	2	2- 4	6-10	5- 4	4- 3½		9- 2	12
FOR CONTINUATION SEE SHEET M-Z14-166A											
									***TOTAL WEIGHT (LBS)		7430
***TOTAL INCLUDES ⚠ 2254 LBS OF EPOXY COATED BARS											
***TOTAL INCLUDES ⚠ 5176 LBS OF NON EPOXY COATED BARS											
ABUTMENT 1 E.B.L. FOUNDATION REPAIR											
A680	E	FD'N REPAIR	6	24	16-6					16-6	595
C480	E	"	4	60	1-0	3-0				4-0	160
									***TOTAL WEIGHT (LBS)		755
*** TOTAL INCLUDES ⚠ 755 LBS OF EPOXY COATED BARS											

CONSTR. NO. 80001-3152-44

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

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
⚠ 1	9/25/89	DWT	REVISED REINF.

REINFORCING STEEL CODE

TYPE	SIZE	SERIES
A	5	06*

Note: Dimensions shown on this sheet are outside to outside of bar. Standard C.R.S.I. Hook Details shall apply, except as noted.

*LOCATION	SERIES
SUPERSTRUCTURE	00
ABUTMENT	40
PIER	50
RETAINING WALL	70
APPROACH SLAB	90

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

DESIGNED BY _____ DATE 1-89
DRAWN BY _____ DATE 1-89
SUPERVISED BY W. S. HUFFSTETLER DATE 1-89
CHECKED BY _____ DATE _____

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

BILL OF STEEL

I-40 OVER
CANEY FORK RIVER
STA. 518+50
℄ SURVEY E.B. & W.B. I-40
SMITH COUNTY
1989

CORRECT _____ ENGINEER OF STRUCTURES
APPROVED _____ DIRECTOR OF HIGHWAYS

M-214-166

BRIDGE 1 SUPERSTRUCTURE-SPANS A THRU C (EBL) (CONTINUED)

MARK	T	LOCATION	SZ	NO. RQ'D	DIMENSIONS FT-IN a	b	c	d	e	LENGTH FT-IN	WEIGHT LBS
A511	E	DECK	5	1	25- 7					25- 7	692
		@ 46 BAR SERIES		EACH	TO					TO	
					3- 3					3- 3	
A512	E	"	5	1	19- 8					19- 8	406
		@ 34 BAR SERIES		EACH	TO					TO	
					3- 3					3- 3	
B504	E	"	5	1	25- 8	0- 7				26- 3	720
		@ 45 BAR SERIES		EACH	TO					TO	
					3-10					4- 5	

BRIDGE 3 SUPERSTRUCTURE-SPANS A THRU E (WBL) (CONTINUED)

MARK	T	LOCATION	SZ	NO. RQ'D	DIMENSIONS FT-IN a	b	c	d	e	LENGTH FT-IN	WEIGHT LBS
A515	E	DECK	5	1	19- 2					19- 2	362
		@ 31 BAR SERIES		EACH	TO					TO	
					3- 3					3- 3	
A516	E	"	5	1	25- 1					25- 1	615
		@ 41 BAR SERIES		EACH	TO					TO	
					3- 8					3- 8	
A517	E	"	5	1	17- 8					17- 8	305
		@ 28 BAR SERIES		EACH	TO					TO	
					3- 3					3- 3	
A518	E	"	5	1	23- 7					23- 7	543
		@ 38 BAR SERIES		EACH	TO					TO	
					3-10					3-10	
A519	E	DROP BEAM	5	4	22- 8					22- 8	95
A702	E	"	7	2	24- 8					24- 8	101
A703	E	"	7	2	30- 9					30- 9	126
A801	E	"	8	3	22- 1					22- 1	177
A802	E	"	8	3	24- 8					24- 8	198
A803	E	"	8	3	30- 9					30- 9	246
B502	E	DECK	5	977	25- 9	0- 7				26- 4	26834
B503	E	"	5	999	19-10	0- 7				20- 5	21273
B504	E	"	5	1	19- 8	0- 7				20- 3	391
		@ 30 BAR SERIES		EACH	TO					TO	
					4- 2					4- 9	
B505	E	"	5	1	19- 8	0- 7				20- 3	380
		@ 28 BAR SERIES		EACH	TO					TO	
					5- 2					5- 9	

BRIDGE 3 SUPERSTRUCTURE-SPANS A THRU E (EBL) (CONTINUED)

MARK	T	LOCATION	SZ	NO. RQ'D	DIMENSIONS FT-IN a	b	c	d	e	LENGTH FT-IN	WEIGHT LBS
A515	E	DECK	5	1	19- 2					19- 2	362
		@ 31 BAR SERIES		EACH	TO					TO	
					3- 3					3- 3	
A516	E	"	5	1	25- 1					25- 1	615
		@ 41 BAR SERIES		EACH	TO					TO	
					3- 8					3- 8	
A517	E	"	5	1	17- 8					17- 8	305
		@ 28 BAR SERIES		EACH	TO					TO	
					3- 3					3- 3	
A518	E	"	5	1	23- 7					23- 7	543
		@ 38 BAR SERIES		EACH	TO					TO	
					3-10					3-10	
A519	E	DROP BEAM	5	4	22- 8					22- 8	95
A702	E	"	7	2	24- 8					24- 8	101
A703	E	"	7	2	30- 9					30- 9	126
A801	E	"	8	3	22- 1					22- 1	177
A802	E	"	8	3	24- 8					24- 8	198
A803	E	"	8	3	30- 9					30- 9	246
B502	E	DECK	5	973	25- 9	0- 7				26- 4	26724
B503	E	"	5	995	19-10	0- 7				20- 5	21188
B504	E	"	5	1	19- 8	0- 7				20- 3	391
		@ 30 BAR SERIES		EACH	TO					TO	
					4- 2					4- 9	

BRIDGE 3 SUPERSTRUCTURE-SPANS A THRU E (EBL) (CONTINUED)

MARK	T	LOCATION	SZ	NO. RQ'D	DIMENSIONS FT-IN a	b	c	d	e	LENGTH FT-IN	WEIGHT LBS
B505	E	"	5	1	19- 8	0- 7				20- 3	380
		@ 28 BAR SERIES		EACH	TO					TO	
					5- 2					5- 9	

BRIDGE 3-ABUTMENT 1 (WBL) (CONTINUED)

MARK	T	LOCATION	SZ	NO. RQ'D	DIMENSIONS FT-IN a	b	c	d	e	LENGTH FT-IN	WEIGHT LBS
A558		ABUTMENT	5	3	24- 8					24- 8	77
A942		"	9	3	23- 8					23- 8	241
A1002	E	"	10	6	24- 8					24- 8	637
A1003		"	10	8	30- 8					30- 8	1056
A1004		"	10	6	23- 2					23- 2	598

BRIDGE 3-ABUTMENT 2 (WBL) (CONTINUED)

MARK	T	LOCATION	SZ	NO. RQ'D	DIMENSIONS FT-IN a	b	c	d	e	LENGTH FT-IN	WEIGHT LBS
A558		ABUTMENT	5	3	24- 8					24- 8	77
A942		"	9	3	23- 8					23- 8	241
A1002	E	"	10	6	24- 8					24- 8	637
A1003		"	10	8	30- 8					30- 8	1056
A1004		"	10	6	23- 2					23- 2	598

BRIDGE 3-ABUTMENT 1 (EBL) (CONTINUED)

MARK	T	LOCATION	SZ	NO. RQ'D	DIMENSIONS FT-IN a	b	c	d	e	LENGTH FT-IN	WEIGHT LBS
A558		ABUTMENT	5	3	24- 8					24- 8	77
A942		"	9	3	23- 8					23- 8	241
A1002	E	"	10	6	24- 8					24- 8	637
A1003		"	10	8	30- 8					30- 8	1056
A1004		"	10	6	23- 2					23- 2	598

BRIDGE 3-ABUTMENT 2 (EBL) (CONTINUED)

MARK	T	LOCATION	SZ	NO. RQ'D	DIMENSIONS FT-IN a	b	c	d	e	LENGTH FT-IN	WEIGHT LBS
A558		ABUTMENT	5	3	24- 8					24- 8	77
A942		"	9	3	23- 8					23- 8	241
A1002	E	"	10	6	24- 8					24- 8	637
A1003		"	10	8	30- 8					30- 8	1056
A1004		"	10	6	23- 2					23- 2	598

BRIDGE 6-ABUTMENT 1 (WBL) (CONTINUED)

MARK	T	LOCATION	SZ	NO. RQ'D	DIMENSIONS FT-IN a	b	c	d	e	LENGTH FT-IN	WEIGHT LBS
A546		ABUTMENT	5	11	19- 4					19- 4	222
A742	E	"	7	4	24- 4					24- 4	199
A743		"	7	2	24- 4					24- 4	99

BRIDGE 6-ABUTMENT 2 (WBL) (CONTINUED)

MARK	T	LOCATION	SZ	NO. RQ'D	DIMENSIONS FT-IN a	b	c	d	e	LENGTH FT-IN	WEIGHT LBS
A546		ABUTMENT	5	12	19- 4					19- 4	242
A1002		"	10	6	17-10					17-10	460
A1003		"	10	4	19- 4					19- 4	333
A1004	E	"	10	6	19- 4					19- 4	499
A1005	E	"	10	6	24- 3					24- 3	626

BRIDGE 6-ABUTMENT 1 (EBL) (CONTINUED)

MARK	T	LOCATION	SZ	NO. RQ'D	DIMENSIONS FT-IN a	b	c	d	e	LENGTH FT-IN	WEIGHT LBS
A546		ABUTMENT	5	11	19- 4					19- 4	222
A742	E	"	7	4	24- 4					24- 4	199
A743		"	7	2	24- 4					24- 4	99

BRIDGE 6-ABUTMENT 2 (EBL) (CONTINUED)

MARK	T	LOCATION	SZ	NO. RQ'D	DIMENSIONS FT-IN a	b	c	d	e	LENGTH FT-IN	WEIGHT LBS
A546		"	5	12	19- 4					19- 4	242
A1002		"	10	6	17-10					17-10	460
A1003		"	10	4	19- 4					19- 4	333
A1004	E	"	10	6	19- 4					19- 4	499
A1005	E	"	10	6	24- 3					24- 3	626

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	THIS SHEET ADDED

REINFORCING STEEL CODE

TYPE	SIZE	SERIES
A	5	06*

Note: Dimensions shown on this sheet are outside to outside of bar. Standard C.R.S.I. Hook Details shall apply, except as noted.

*LOCATION	SERIES
SUPERSTRUCTURE	00
ABUTMENT	40, 60-80
PIER	50

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

DESIGNED BY DWT DATE 9/89
DRAWN BY EAB DATE 9/89
SUPERVISED BY WSH DATE 9/89
CHECKED BY DWT DATE 9/89

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

BILL OF STEEL
BRIDGE NO. 1, 3 & 6
I-40 OVER CANEY FORK RIVER
℄ I-40 OVER HICKMAN CREEK
SMITH COUNTY
1989

CORRECT _____
ENGINEER OF STRUCTURES
APPROVED _____
DIRECTOR OF HIGHWAYS

M-214-166A

R.S.A. No. DTNOXX705A

ZF:#50,243DTNOXX705A.DGN1
DTNOXX
17-FEB-1989 13:06

CONSTR. NO. 80001-3152-44

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

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

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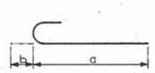
BARS B



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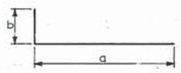

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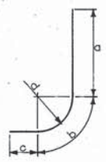

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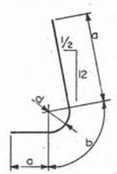

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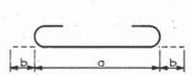

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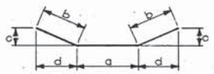

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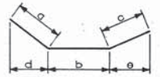

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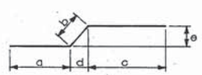

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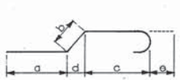

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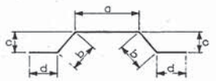

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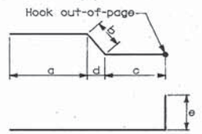

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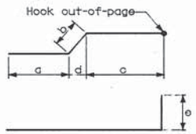

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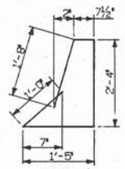

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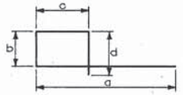

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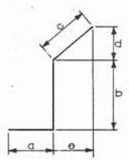

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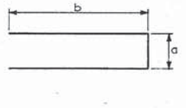

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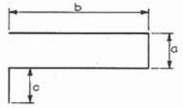

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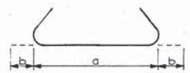

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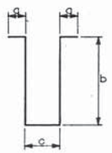

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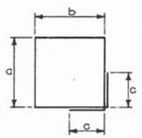

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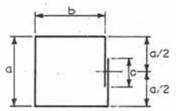

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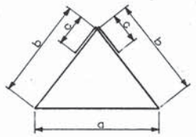

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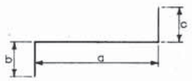

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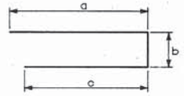

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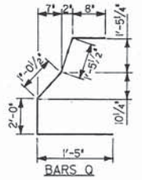

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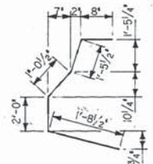

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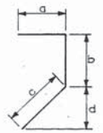

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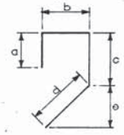

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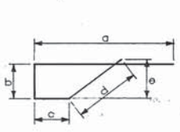

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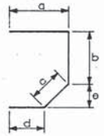

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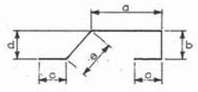

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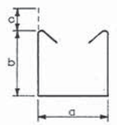

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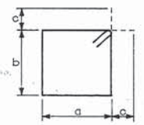

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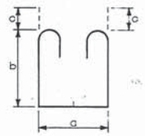

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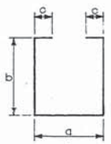

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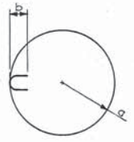

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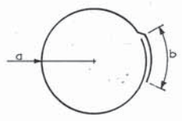

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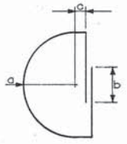

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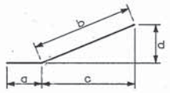

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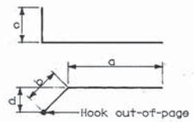

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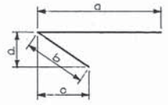

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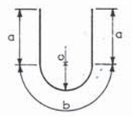

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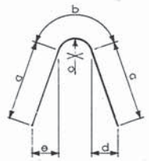

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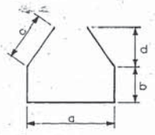

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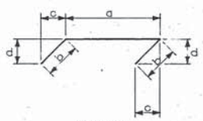

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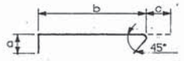

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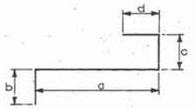


DESIGNED BY W. S. HUFFSTETLER DATE 1-89
DRAWN BY EAB DATE 1-89
SUPERVISED BY W. S. HUFFSTETLER DATE 1-89
CHECKED BY DWT DATE 2-89

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

REINFORCING STEEL BAR BENDING DETAILS

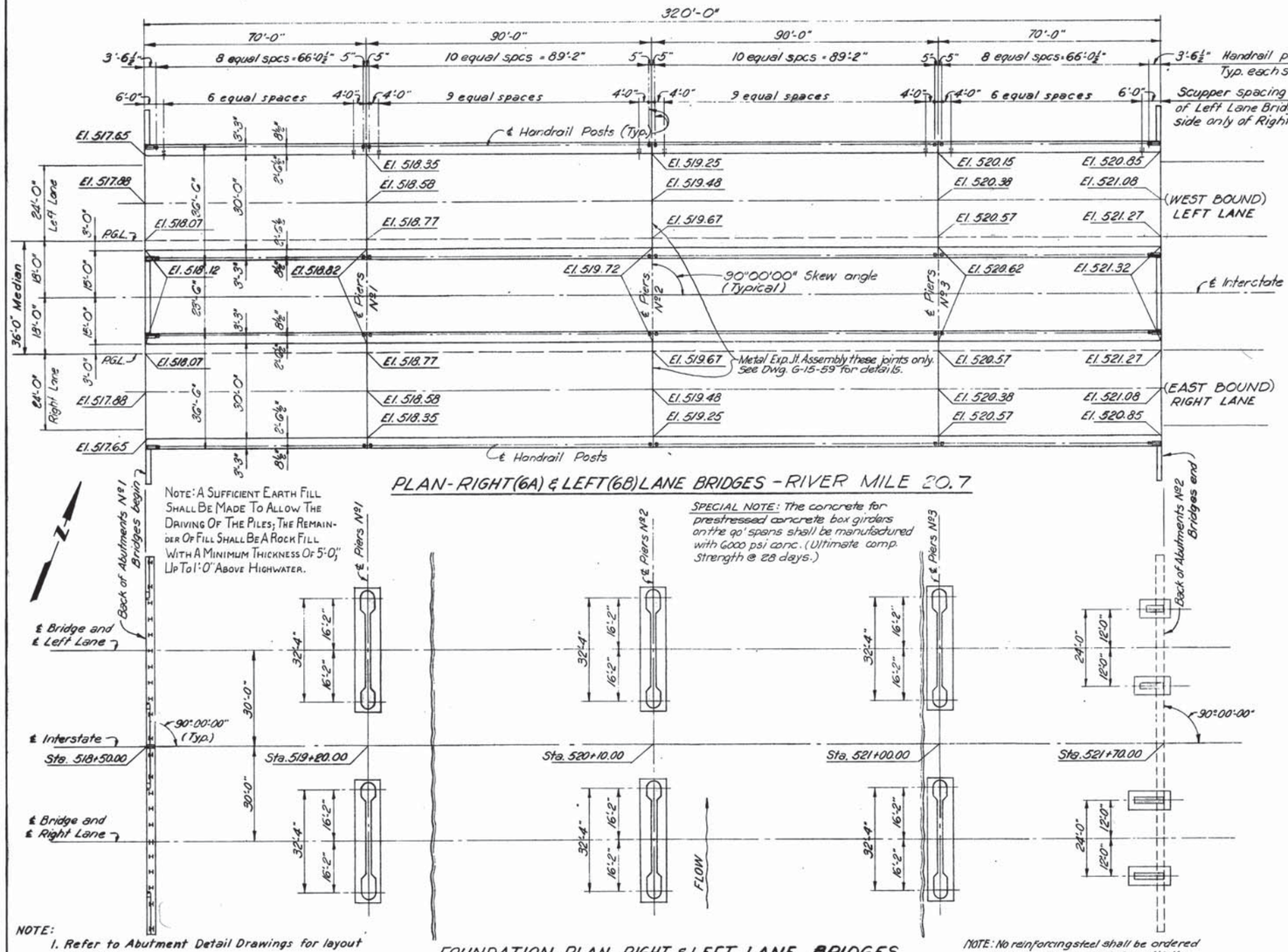
I-40 OVER
CANEY FORK RIVER
STA. 518+49.00
℄ SURVEY E.B. & W.B. I-40
SMITH COUNTY
1989

CORRECT _____
ENGINEER OF STRUCTURES

APPROVED _____
DIRECTOR OF HIGHWAYS

M-214-167

FED. ROAD DIST. No.		FEDERAL AID PROJECT No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
3	TENN	I-40-5(5)264		53	372



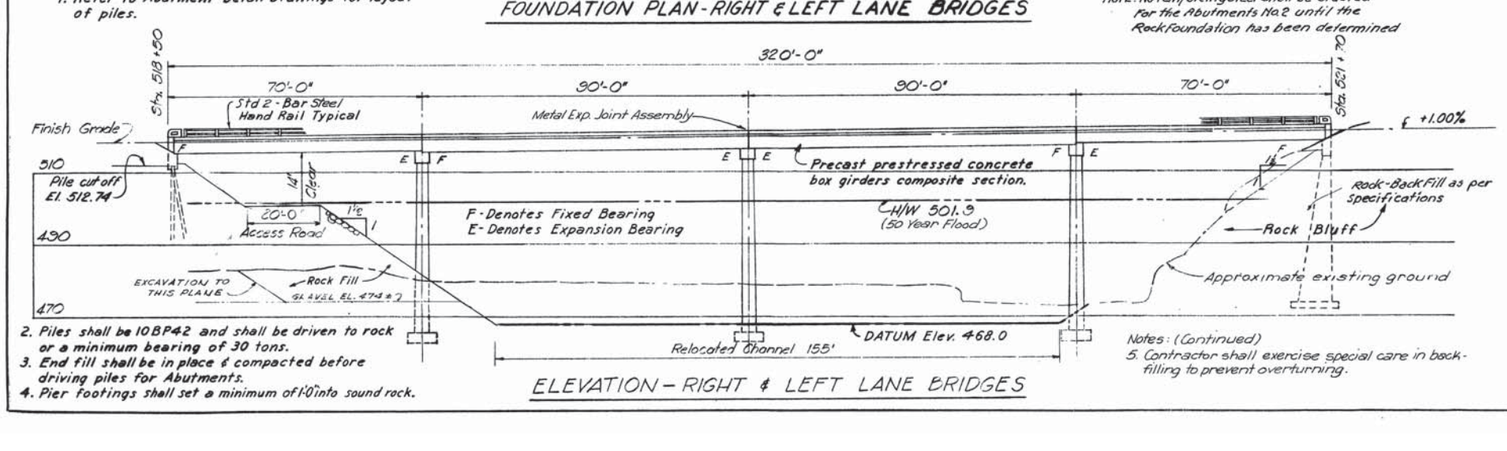
PLAN - RIGHT (6A) & LEFT (6B) LANE BRIDGES - RIVER MILE 20.7

NOTE: A SUFFICIENT EARTH FILL SHALL BE MADE TO ALLOW THE DRIVING OF THE PILES; THE REMAINDER OF FILL SHALL BE A ROCK FILL WITH A MINIMUM THICKNESS OF 5'-0" UP TO 1'-0" ABOVE HIGHWATER.

SPECIAL NOTE: The concrete for prestressed concrete box girders on the 90' spans shall be manufactured with 6000 psi conc. (Ultimate comp. Strength @ 28 days.)

NOTE:
1. Refer to Abutment Detail Drawings for layout of piles.

FOUNDATION PLAN - RIGHT & LEFT LANE BRIDGES

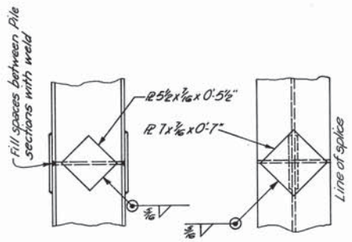


2. Piles shall be 10BP42 and shall be driven to rock or a minimum bearing of 30 tons.
3. End fill shall be in place & compacted before driving piles for Abutments.
4. Pier footings shall set a minimum of 1'0" into sound rock.

ELEVATION - RIGHT & LEFT LANE BRIDGES

NOTE: No reinforcing steel shall be ordered for the Abutments No 2 until the Rock foundation has been determined

Notes: (Continued)
5. Contractor shall exercise special care in back-filling to prevent overturning.



DETAIL OF PILE SPLICE

GENERAL NOTES:

GENERAL SPECIFICATIONS: Standard Road and Bridge Specification of the Tennessee Department of Highways and Public Works.
DESIGN SPECIFICATIONS: Standard Specifications for Highway Bridges AASHO 1957 and tentative AASHO Specifications covering prestressed concrete design and construction (with subsequent revisions.)
DESIGN LOADING: H20-S16-44 and for alternate loading as per Section 4C of PPM 20-4.
CONCRETE: All concrete shall be Class A and shall be air entrained.
REINFORCING STEEL: See Specifications.
FORMS and FINISH: See Specifications.
HAND RAILS: Standard 2-bar Steel Hand-railing, Tennessee Highway Department Standard.
PRECAST PRESTRESSED CONCRETE GIRDERS: See special provisions.
BEARING PADS: See special provisions.

ESTIMATED QUANTITIES

ITEM NO.	17-3	17-2	17-4	135-4	135-12	702	137-3	154-1H	154-1J	132-1	
ITEMS	EXCAVATION			CONC. CLASS A	REINF. STEEL	2-BAR STEEL HANDRAIL	10BP42 BEARING PILES	PRECAST PRESTRESSED BOX GIRDERS 48" WIDE 44'-3⅜" L=89'-11⅝"	44'-4⅜" L=89'-10½"	STRUCT. STEEL	
	WET	DRY	ROCK								
RIGHT LANE BRIDGE 6A	Cu. Yds.			Cu. Yds.	Lbs.	Lin. Ft.	Lin. Ft.	Each	Each	Lbs.	
SUPERSTRUCTURE				193.1	31,495	626				1470	
GIRDERS				-				16	16		
ABUTMENT #1				19.5	2672		570				
ABUTMENT #2		126	299	72.0	16,246						
PIER NO. 1	114	200	23	173.1	14,303						
PIER NO. 2	129		16	174.8	14,308						
PIER NO. 3	93		31	174.8	14,399						
TOTALS	336	326	369	807.3	99,423	626	570	16	16	1470	

LEFT LANE BRIDGE 6B											
SUPERSTRUCTURE				193.1	31,495	626				1470	
GIRDERS				-				16	16		
ABUTMENT #1				19.5	2672		570				
ABUTMENT #2		75	198	50.3	11,058						
PIER NO. 1	114	200	23	173.1	14,303						
PIER NO. 2	129		16	174.8	14,308						
PIER NO. 3	93		31	174.8	14,399						
TOTALS	336	275	268	785.6	94,235	626	570	16	16	1470	

All expansion joint material shall be included in the unit price bid for Class "A" conc.

HYDRAULIC DESIGN DATA

High Water Elevation	501.9
Design Discharge	Q = 39,200 cfs
Design Velocity	V = 6 fps
Opening Required	Ar = 6550 sq. ft.
Opening Furnished	Ar = 7000 sq. ft.

LIST OF DRAWINGS

	DWG. No.
LAYOUT OF BRIDGES	G-15-127
LAYOUT AND LOG OF CORE BORINGS	G-15-128
ABUTMENT No 1 RIGHT & LEFT LANES	G-15-129
ABUTMENT No 2 RIGHT LANE	G-15-130
ABUTMENT No 2 LEFT LANE	G-15-131
PIERS No 1 & 3	G-15-132
PIER No 2	G-15-133
BOX GIRDER LAYOUT & DETAIL	G-15-134
SLAB AND SAFETY CURBS	G-15-135
REINFORCING STEEL SCHEDULE No 1	G-15-136
REINFORCING STEEL SCHEDULE No 2	G-15-137
STEEL HANDRAILING	G-10-99

2-30' Roadways with Safety curbs
SMITH COUNTY

Scale: 1" = 20'

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

BRIDGES OVER CANEY FORK RIVER - RIVER MILE 20.7
STA 518+50 RIGHT (6A) AND LEFT (6B) LANES

LAYOUT OF BRIDGES

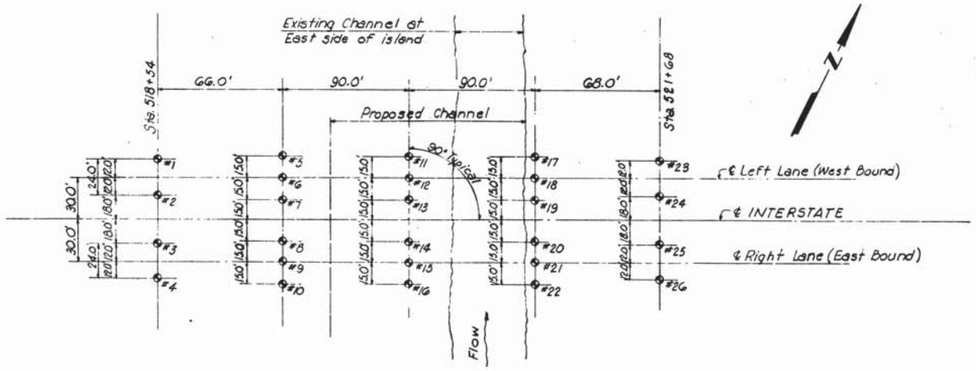
STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
NASHVILLE

DR.: K.G.
CHK'D W.R.
APP'D W.R.
DATE 11-16-59

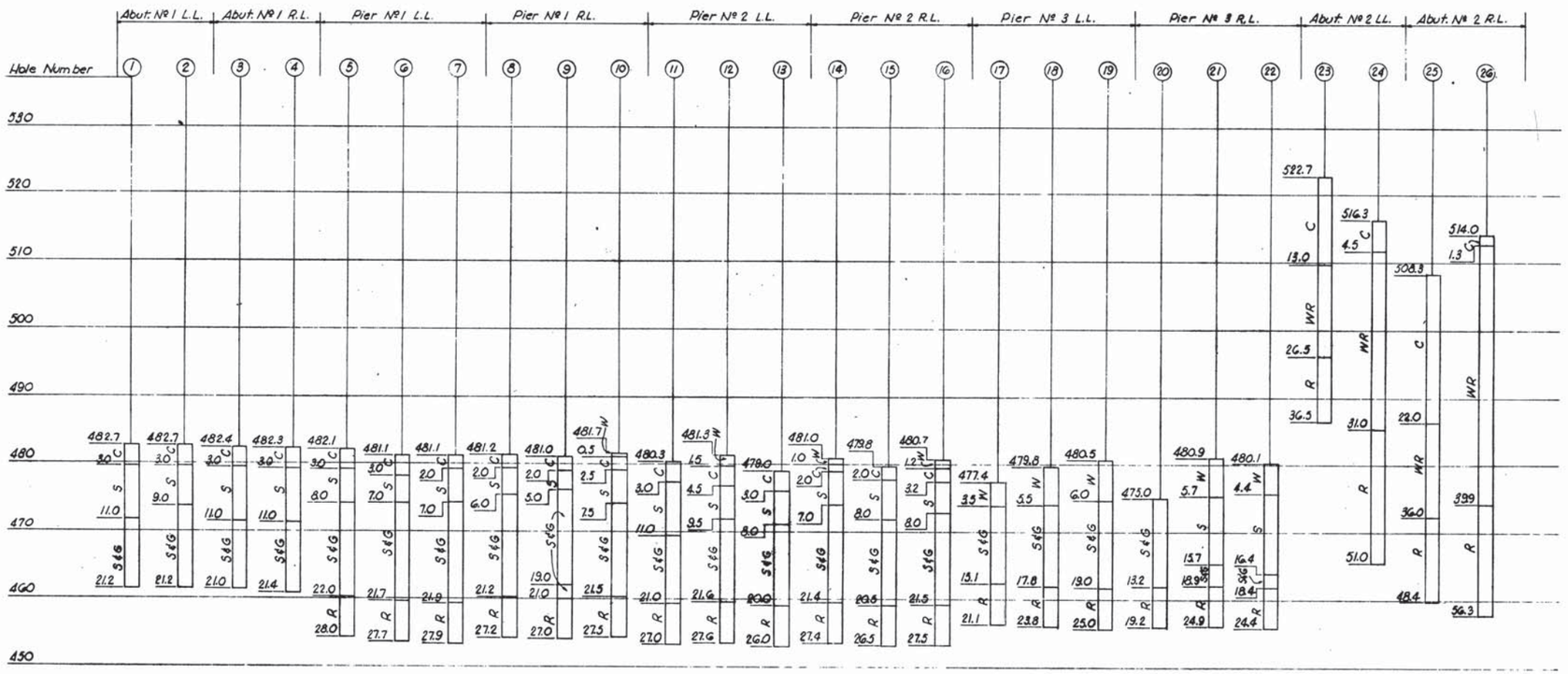
G-15-127

REV. 4-26-60
REV. 4-18-60

FED. ROAD DIST. No.	T E N N	FEDERAL AID PROJECT No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
3		I-40-5(9)264		136	372



PLAN - CORE DRILLING LAYOUT
(RIVER MILE 20.7)



LOG OF CORE BORINGS

LEGEND

W____Water
C____Clay and Silt
S____Sand
S&G__Sand and Gravel
WR__Weathered Rock
R____Rock (Limestone)
B____Boulders

NOTE: Water elevation in Caney Fork River fluctuates depending on discharge at Center Hill Dam.

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

BRIDGES OVER CANEY FORK RIVER - RIVER MILE 20.7
STA 518+50 RIGHT (6A) AND LEFT (6B) LANES

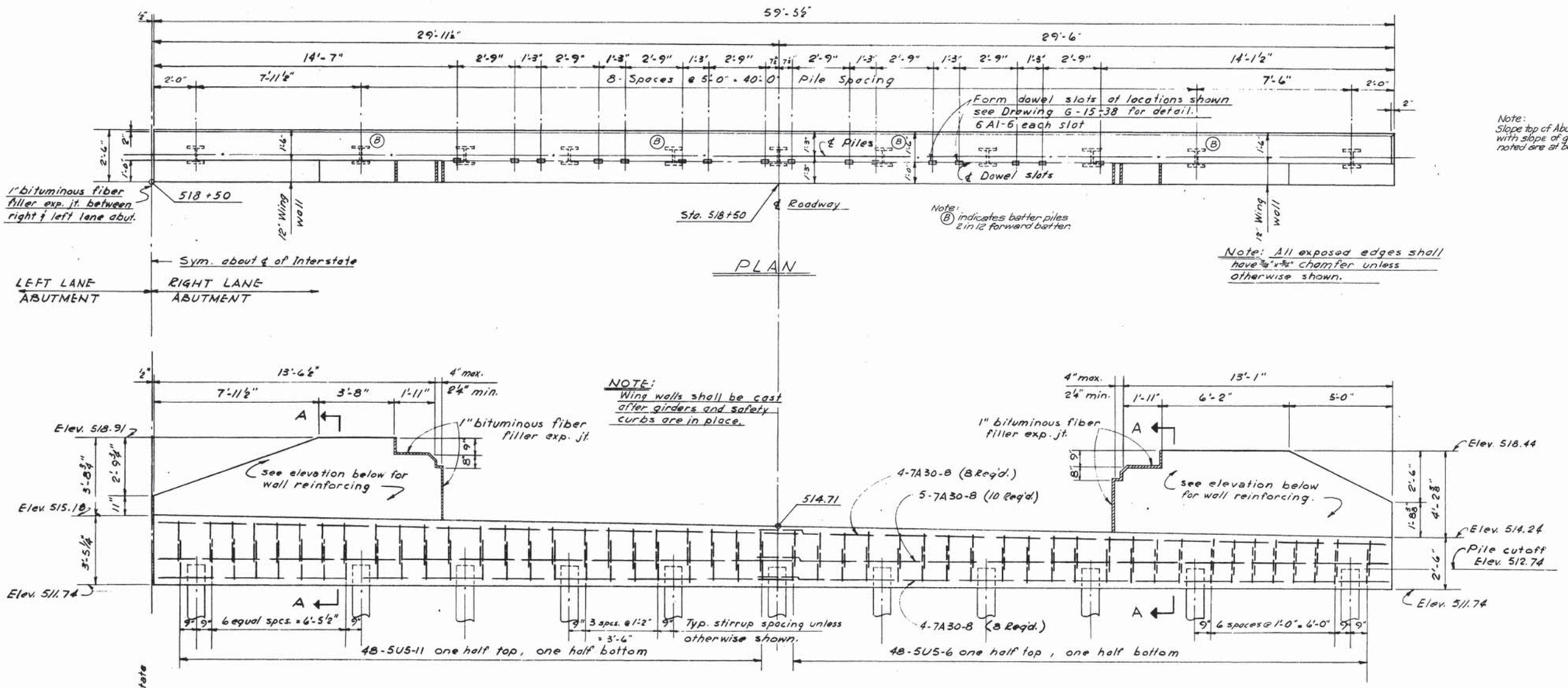
LAYOUT ℄ LOG OF CORE BORINGS

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
AND PUBLIC WORKS
NASHVILLE

DR. W.R.S.
CH'K'D. W.R.
APP'D. W.R.
DATE 11-16-59

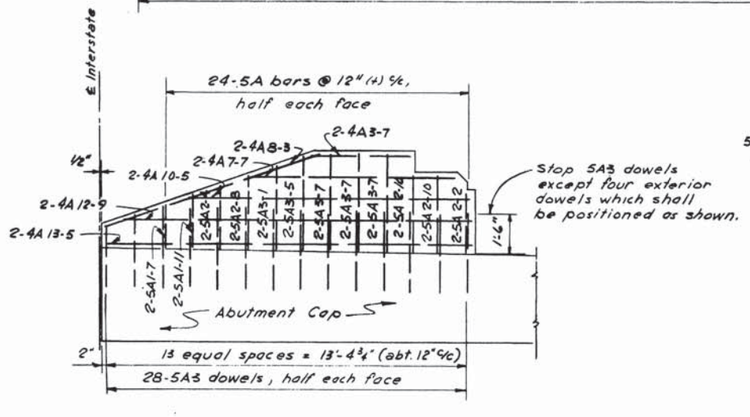
G-15-128

FED. ROAD DIST. No.		FEDERAL AID PROJECT No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
3	TENN	I-40-5(9)264		137	372

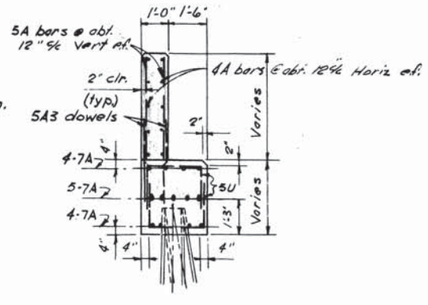


ELEVATION

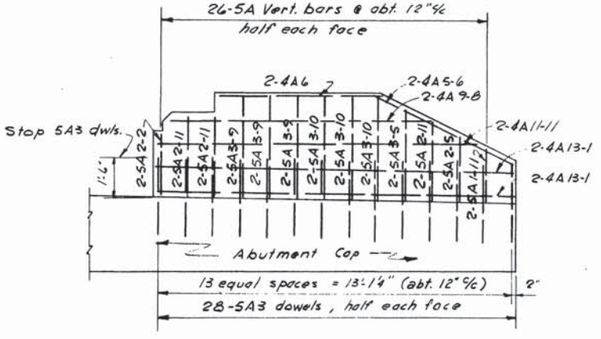
Looking Forward on survey



ELEVATION - INTERIOR WING WALLS



SECTION A-A



ELEVATION - EXTERIOR WING WALLS

ESTIMATED QUANTITIES

	ABUT. No 1 RIGHT LANE	ABUT. No 1 LEFT LANE
Class "A" Concrete Cu. Yds.	19.5	19.5
Reinforcing Steel Lbs.	2672	2672

Scale ⅜" = 1'-0"

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

BRIDGES OVER CANEY FORK RIVER - RIVER MILE 20.7
STA. 518+50 RIGHT (6A) & LEFT (6B) LANES

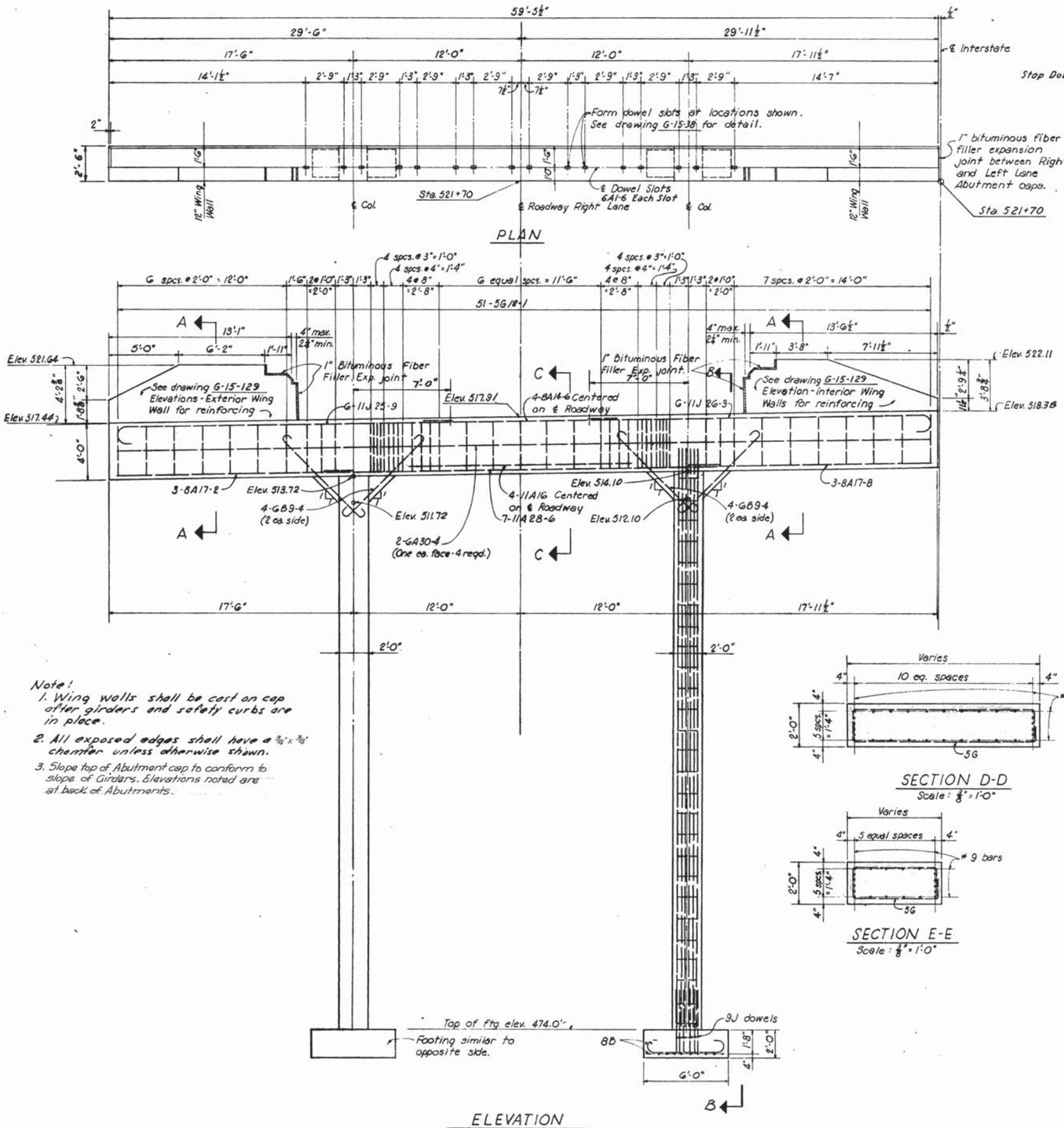
ABUTMENT NO. 1
RIGHT & LEFT LANE

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
NASHVILLE

DR. L.E.S.
CHK'D. R.A.H.
APP'D. W.R.
DATE 11-16-59

G-15-129

FED. ROAD DIST. No.	T E N N	FEDERAL AID PROJECT No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
3		I-40-5(9)264		138	372



Note!
1. Wing walls shall be cast on cap after girders and safety curbs are in place.
2. All exposed edges shall have a ¾" x ¾" chamfer unless otherwise shown.
3. Slope top of Abutment cap to conform to slope of Girders. Elevations noted are at back of Abutments.

ESTIMATED QUANTITIES

Class "A" Concrete - Cu. Yds.	72.0
Reinforcing Steel - Lbs.	16,246

Scale: ½" = 1'-0" Unless otherwise shown

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

BRIDGES OVER CANEY FORK RIVER-RIVER MILE 20.7
STA. 518+50 RIGHT (GA) AND LEFT (GB) LANES

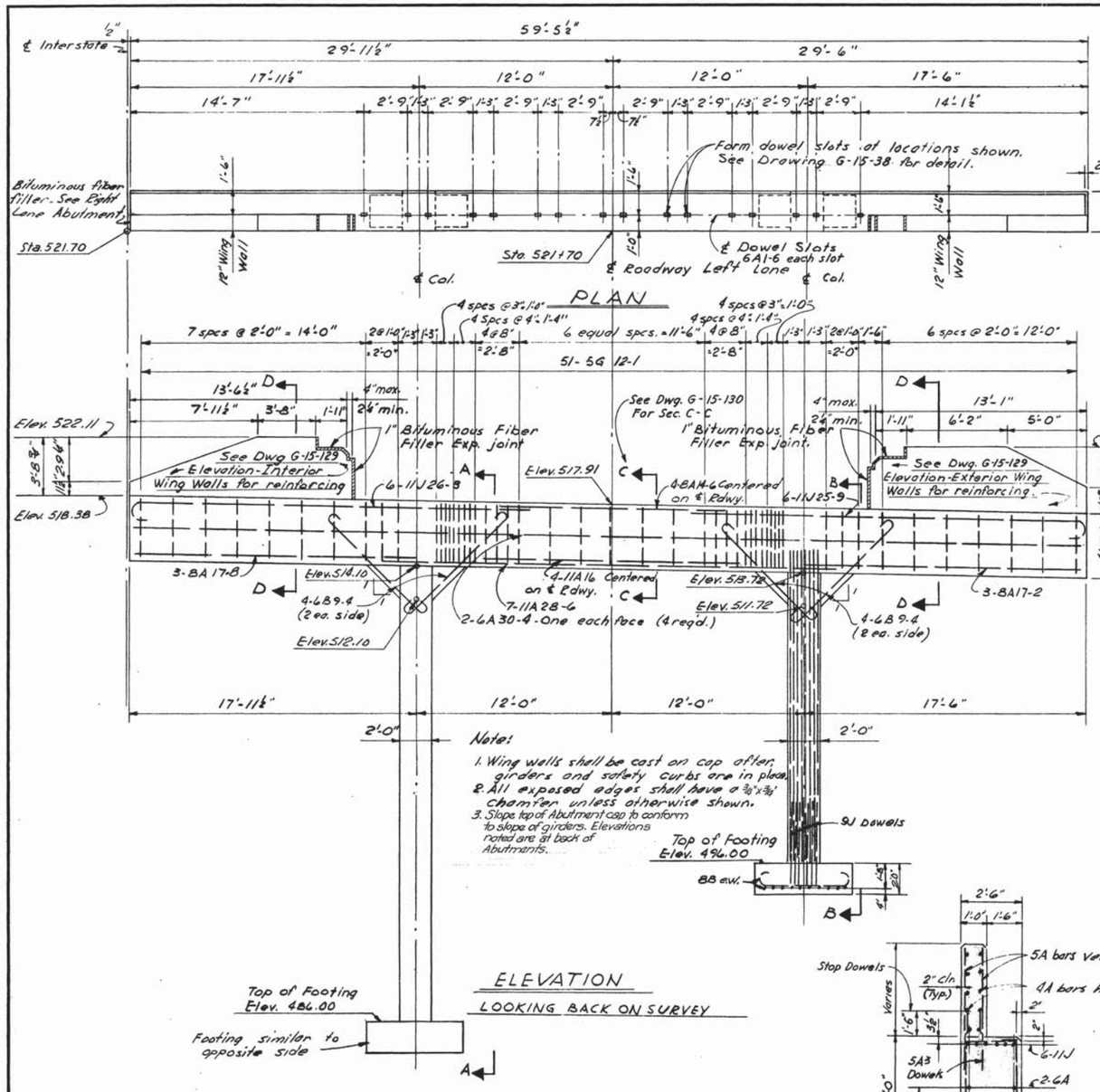
ABUTMENT NO. 2
RIGHT LANE

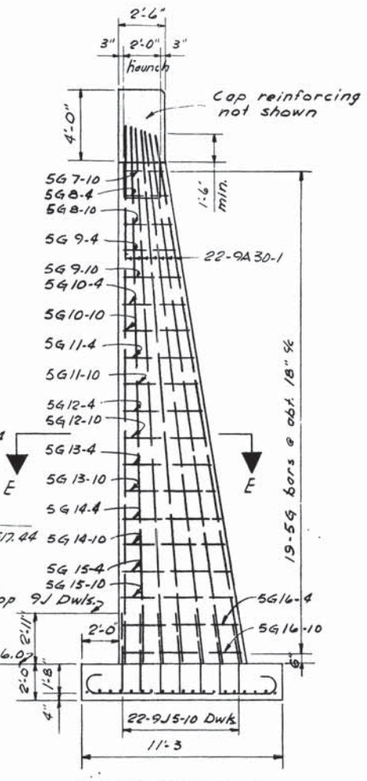
STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
NASHVILLE

DR. W.R.S.
CHK'D. R.A.H.
APP'D. W.R.
DATE 11-16-59

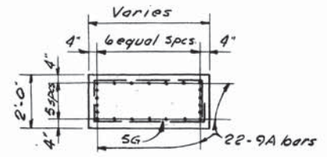
G-15-130

FED. ROAD DIST. No.		FEDERAL AID PROJECT No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
3	TENN	I-40-5(9)264		139	[redacted] 378

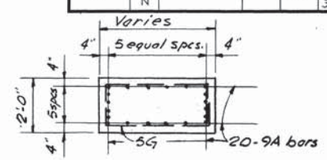




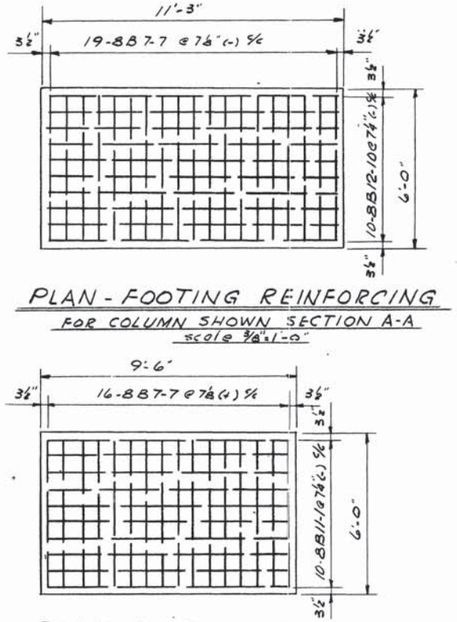
SECTION A-A



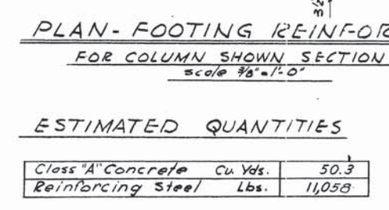
SECTION E-E
scale ⅜"=1'-0"



SECTION F-F
scale ⅜"=1'-0"



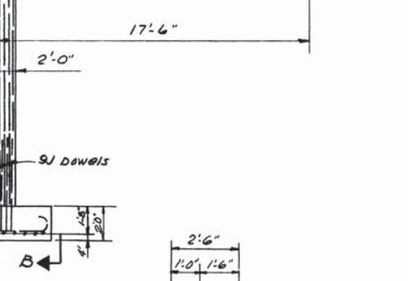
PLAN - FOOTING REINFORCING
FOR COLUMN SHOWN SECTION A-A
scale ⅜"=1'-0"



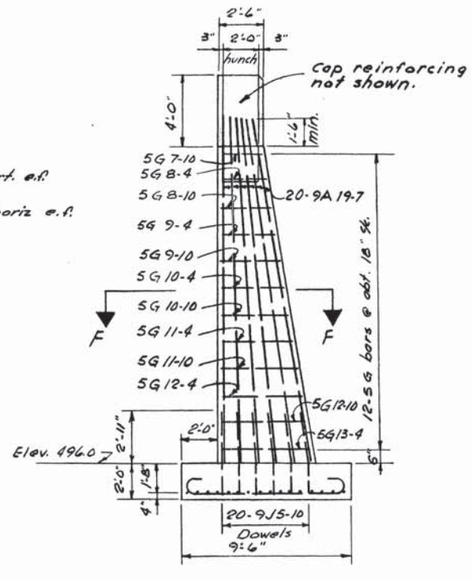
PLAN - FOOTING REINFORCING
FOR COLUMN SHOWN SECTION B-B
scale ⅜"=1'-0"

ESTIMATED QUANTITIES

Class "A" Concrete	Cu. Yds.	50.3
Reinforcing Steel	Lbs.	11,058



SECTION D-D
Scale ⅜"=1'-0"



SECTION B-B

Scale: 4"=1'-0" Unless otherwise shown.

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

BRIDGES OVER CANEY FORK RIVER-RIVER MILE 20.7
STA. 518+50 RIGHT (GA) LEFT (GB) LANES

ABUTMENT NO. 2 LEFT LANE

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
NASHVILLE

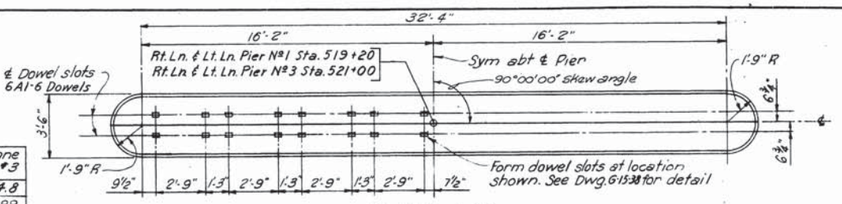
DR. L.E.S.	DATE	G-15-131
CHK'D. R.A.H.	11-16-59	
APP'D. W.R.		

FED. ROAD DIST. No.	STATE	FEDERAL AID PROJECT No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
3	TENN	I-40-5(8)264		140	372

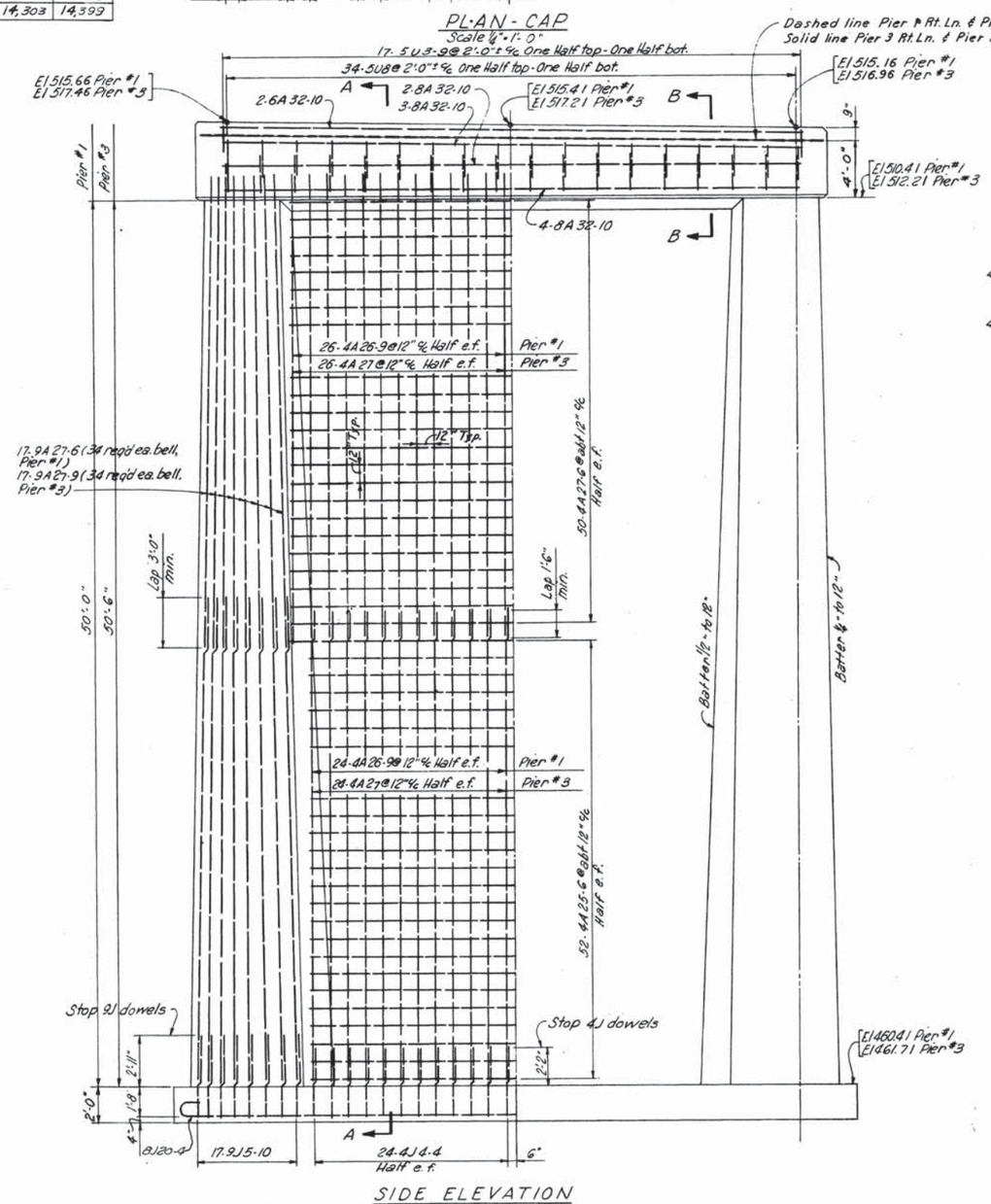
Note: Top of Piers shall slope to conform to slope of girders. Elevations noted are at ℄ of piers.

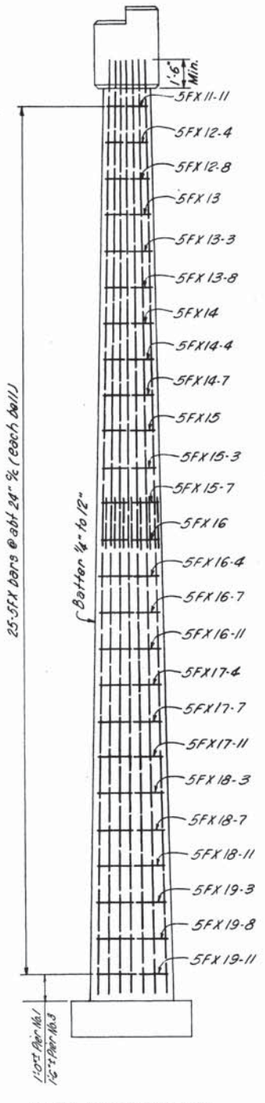
ESTIMATED QUANTITIES

	Rt. Lane Pier #1	Rt. Lane Pier #3	Lt. Lane Pier #1	Lt. Lane Pier #3
Class "A" Conc. - Cu. Yds.	173.1	174.8	173.1	174.8
Reinf. Steel - Lbs.	14,303	14,399	14,303	14,399



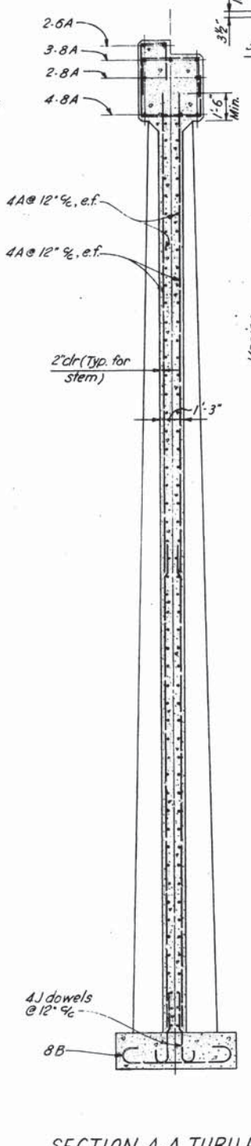
PLAN - CAP
Scale ¼" = 1'-0"



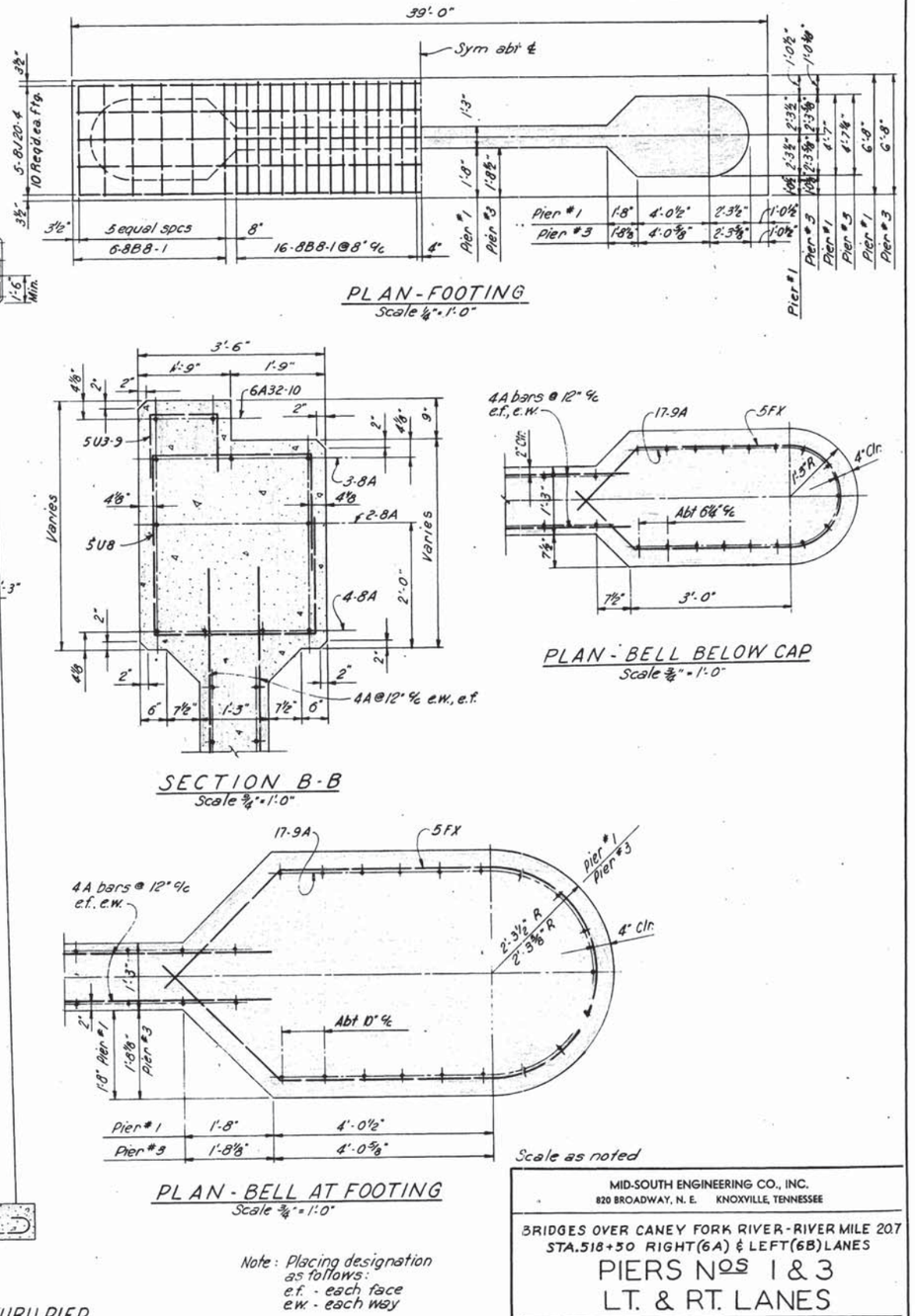


END ELEVATION
Scale ¼" = 1'-0"

SIDE ELEVATION
RT. LN. PIER # 1 AND PIER # 3 - AS SHOWN - LOOKING FORWARD ON SURVEY
LT. LN. PIER # 3 AND PIER # 1 - LOOKING BACK ON SURVEY
Scale ¼" = 1'-0"



SECTION A-A THRU PIER
Scale ¼" = 1'-0"



PLAN - FOOTING
Scale ⅛" = 1'-0"

SECTION B-B
Scale ¾" = 1'-0"

PLAN - BELL BELOW CAP
Scale ¾" = 1'-0"

PLAN - BELL AT FOOTING
Scale ¾" = 1'-0"

Note: Placing designation as follows:
e.f. - each face
e.w. - each way

Scale as noted

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

BRIDGES OVER CANEY FORK RIVER - RIVER MILE 20.7
STA. 518+50 RIGHT (6A) & LEFT (6B) LANES

PIERS NOS 1 & 3
LT. & RT. LANES

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
NASHVILLE

DR. R.W.P.	DATE
CHK'D R.A.H.	
APP'D W.R.	11-16-59

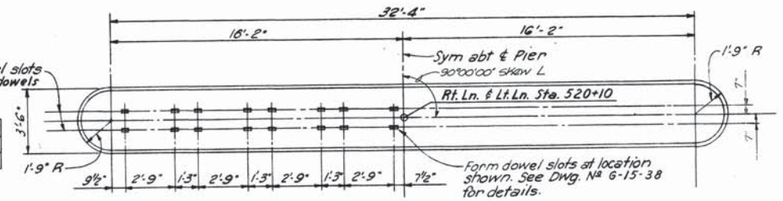
G-15-132

Rev. 8-22-60

FED. ROAD DIST. No.	STATE	FEDERAL AID PROJECT No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
3	TENN	I-40-5(9)264		141	372

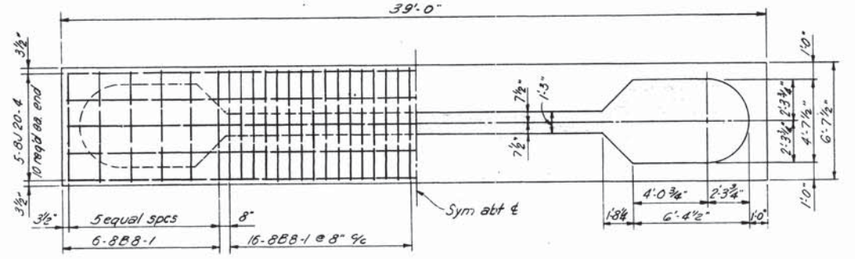
ESTIMATED QUANTITIES

	Lt. Lane	Rt. Lane
Class "A" concrete Cu. Yds.	174.8	174.8
Reinforcing Steel Lbs.	14,308	14,308

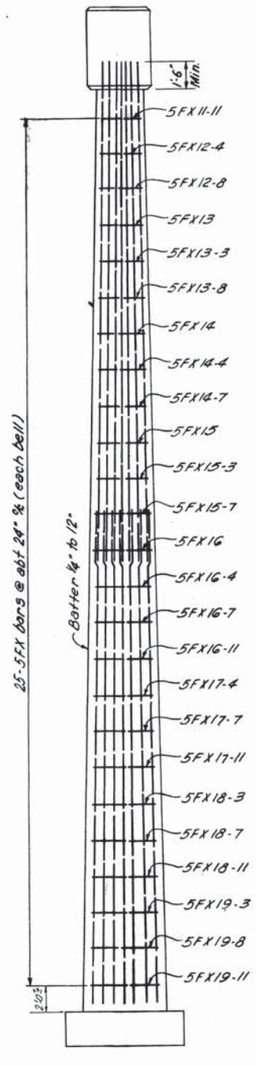


PLAN - CAP
Scale ⅛" = 1'-0"

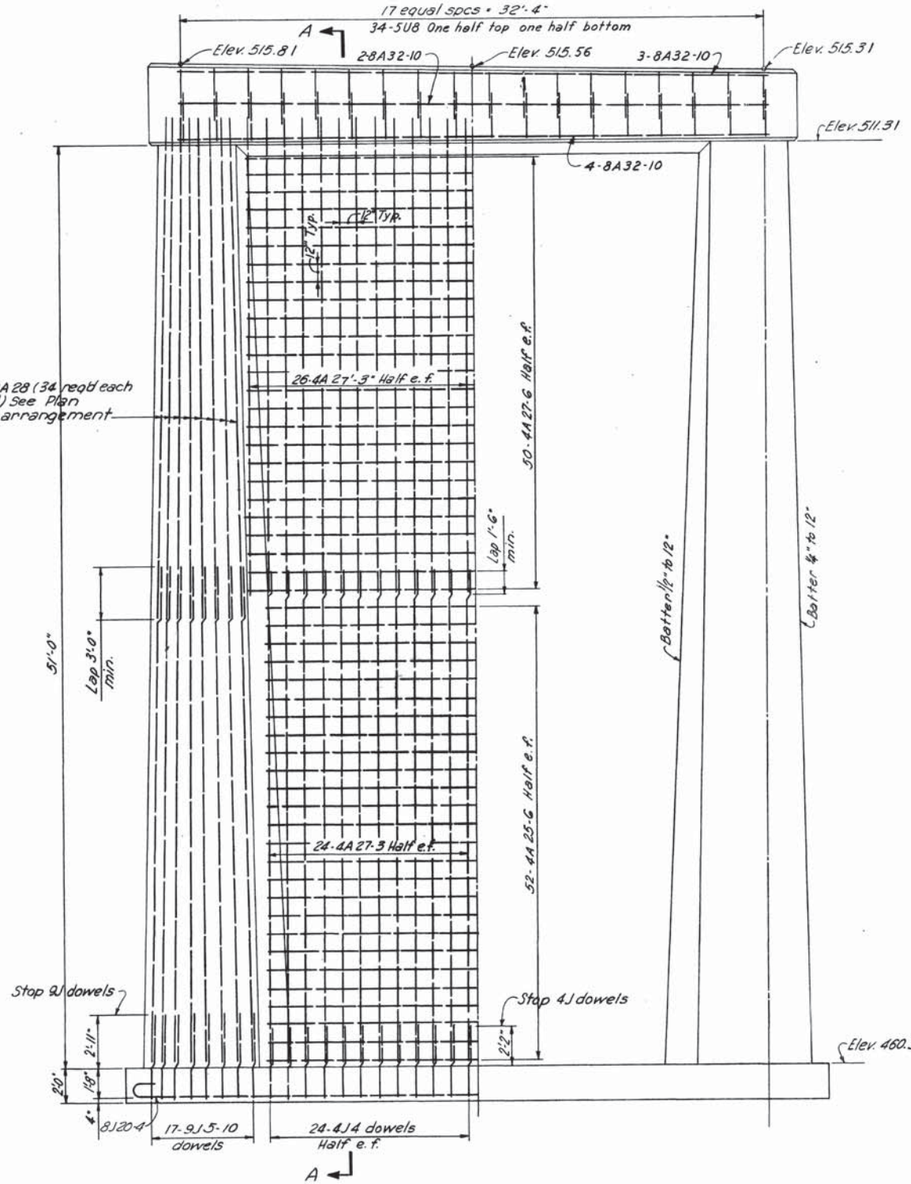
Note: Top of piers shall slope to conform to slope of girders. Elevations noted are at ℄ of piers.



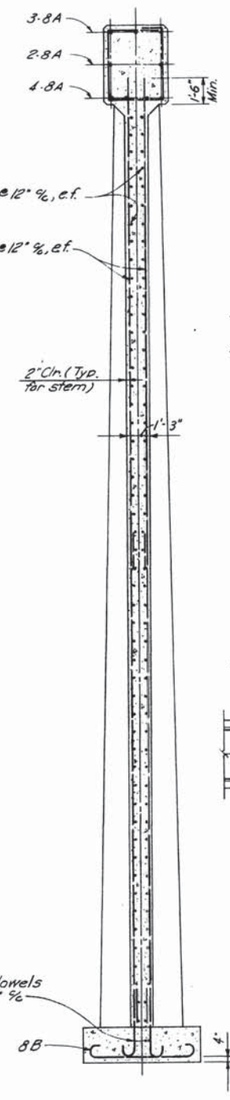
PLAN - FOOTING
Scale ⅛" = 1'-0"



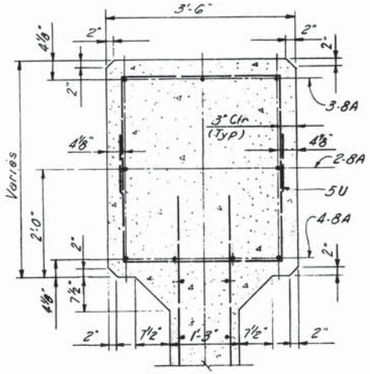
END ELEVATION
Scale ¼" = 1'-0"

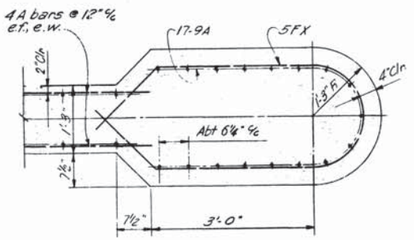


SIDE ELEVATION
PIER No 2 - RT. LANE - LOOKING FORWARD ON SURVEY
PIER No 2 - LT. LANE - LOOKING BACK ON SURVEY
Scale ¼" = 1'-0"



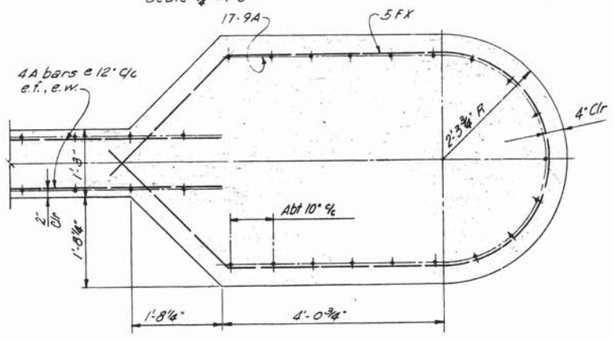
SECTION A-A THRU PIER
Scale ¼" = 1'-0"





PLAN - BELL BELOW CAP
Scale ⅜" = 1'-0"

SECTION THRU CAP
Scale ⅜" = 1'-0"



PLAN - BELL AT FOOTING
Scale ⅜" = 1'-0"

Note: Placing designation as follows:
e.f. - each face
e.w. - each way

Scale as noted

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

BRIDGES OVER CANEY FORK RIVER - RIVER MILE 207
STA. 518+50 RIGHT (6A) & LEFT (6B) LANES

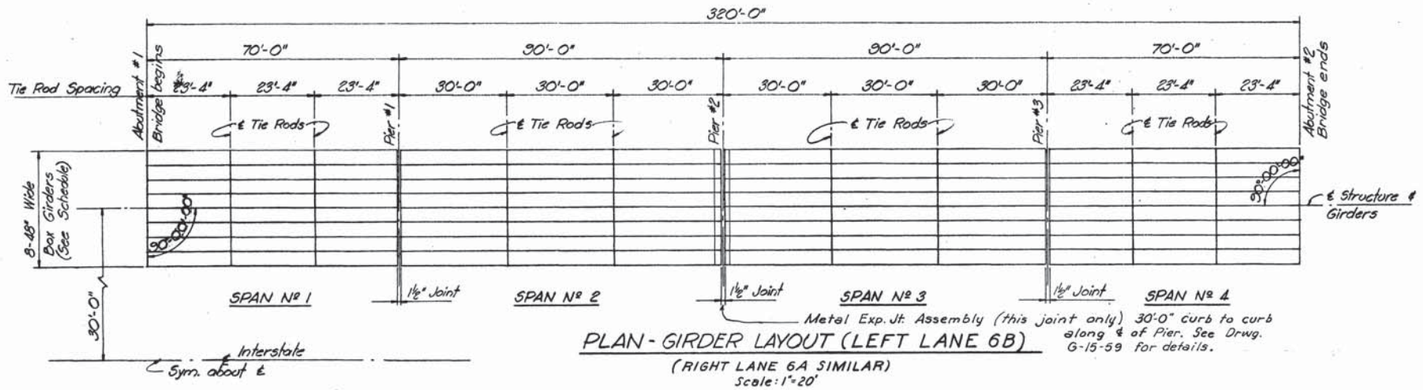
PIER No 2
LT. & RT. LANES

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
NASHVILLE

DR. R.W.P.		DATE	G-15-133
CHK'D. R.A.H.			
APP'D. W.R.		11-16-59	

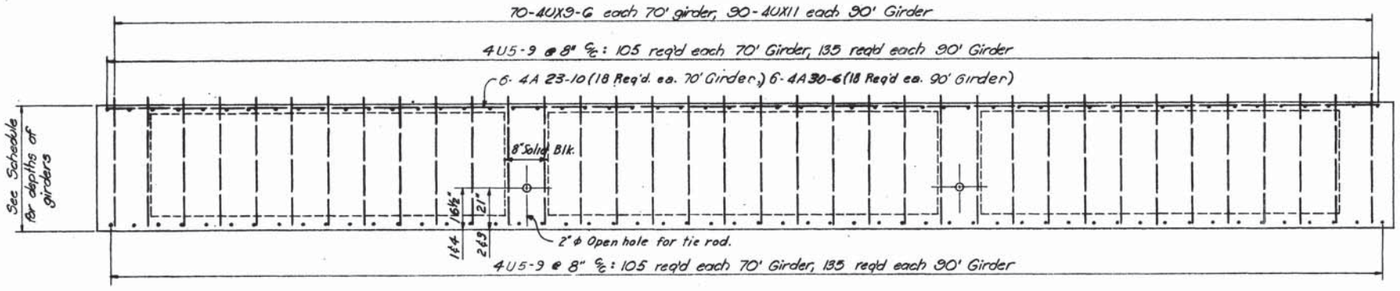
Rev. 8-27-60
Revised 4-19-60 - D.B.M.

FED. ROAD DIST. No.		FEDERAL AID PROJECT No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
3	TENN	I-40-5(9)264		142	372



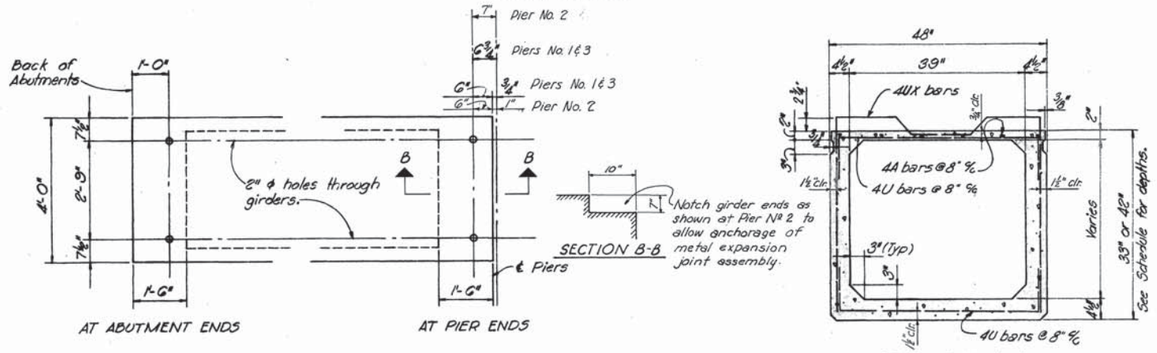
PLAN - GIRDER LAYOUT (LEFT LANE 6B)

(RIGHT LANE 6A SIMILAR)
Scale: 1"=20'



ELEVATION - BOX GIRDERS

SHOWING MILD STEEL REINFORCING: SEE SCHEDULE AND SECTIONS THIS DRAWING FOR NUMBER, SIZE, AND LOCATION OF HIGH TENSILE PRESTRESSING STEEL CABLES.

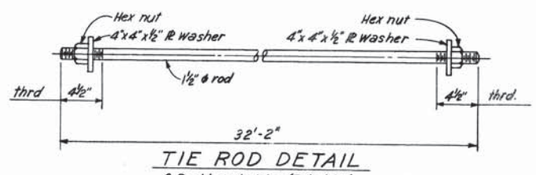


PART PLAN - BOX GIRDERS

Scale ½"=1'-0"

SECTION A-A

Scale: 3/8"=1'-0"



TIE ROD DETAIL

8 Req'd ea. bridge (Total 16)
Scale ½"=1'-0"

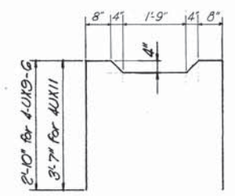
GIRDER SCHEDULE

	SPAN NO.	BOX SIZE	OUT TO OUT LENGTH	PRESTRESSING STEEL AREA	PRESTRESSING STEEL Nº STRANDS	Nº ⅜" STRANDS PER ROW 1	2	3	4	5	6	7	"O"	"C"	WEIGHT (LBS) EACH GIRDER
	Nº 1 & 4	48"x 39"	69'-11¼"	3.6754 □"	46	14	26	6					2.99"	11.28"	46,742
*	Nº 2 & 3	48"x 42"	89'-10½"	4.9538 □"	62	18	22	6	4	4	4	4	4.34"	14.06"	68,008

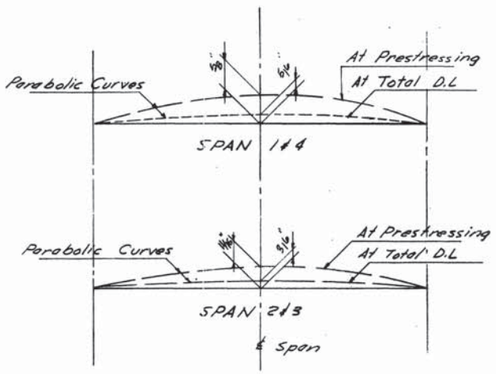
* Concrete for girders for spans Nºs 2 & 3 (90') shall have f'c = 6000 psi, f'ci = 4800 psi } minimum

Pretensioning Steel: An initial force of 14000 Lbs shall be applied to each strand in all girders.

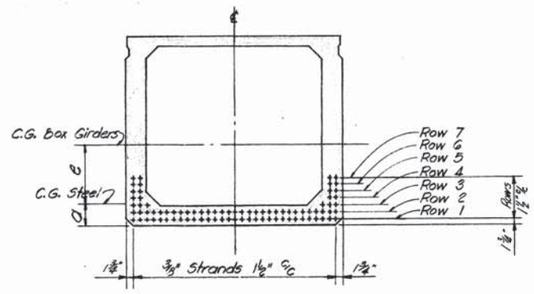
Totals: 32 - 69'-11¼" Girders
32 - 89'-10½" Girders



DETAIL 4UX9-G & 4UX11 BARS



DEFLECTION DIAGRAMS



CABLE PATTERN

NOTE: Locate strands symmetrically about vertical ℄.

ESTIMATED QUANTITIES
BOX GIRDERS

5000 psi Concrete	Cu. Yds.	369.3
6000 psi Concrete	Cu. Yds.	537.3
Hi tensile reinforcing strands	Lbs.	79,043
Reinforcing Steel	Lbs.	115,856

Quantities for both bridges (6A) & (6B)

Scale: As Noted.

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

BRIDGES OVER CANEY FORK RIVER - RIVER MILE 20.7
STA. 518+50 RIGHT (6A) & LEFT (6B) LANES

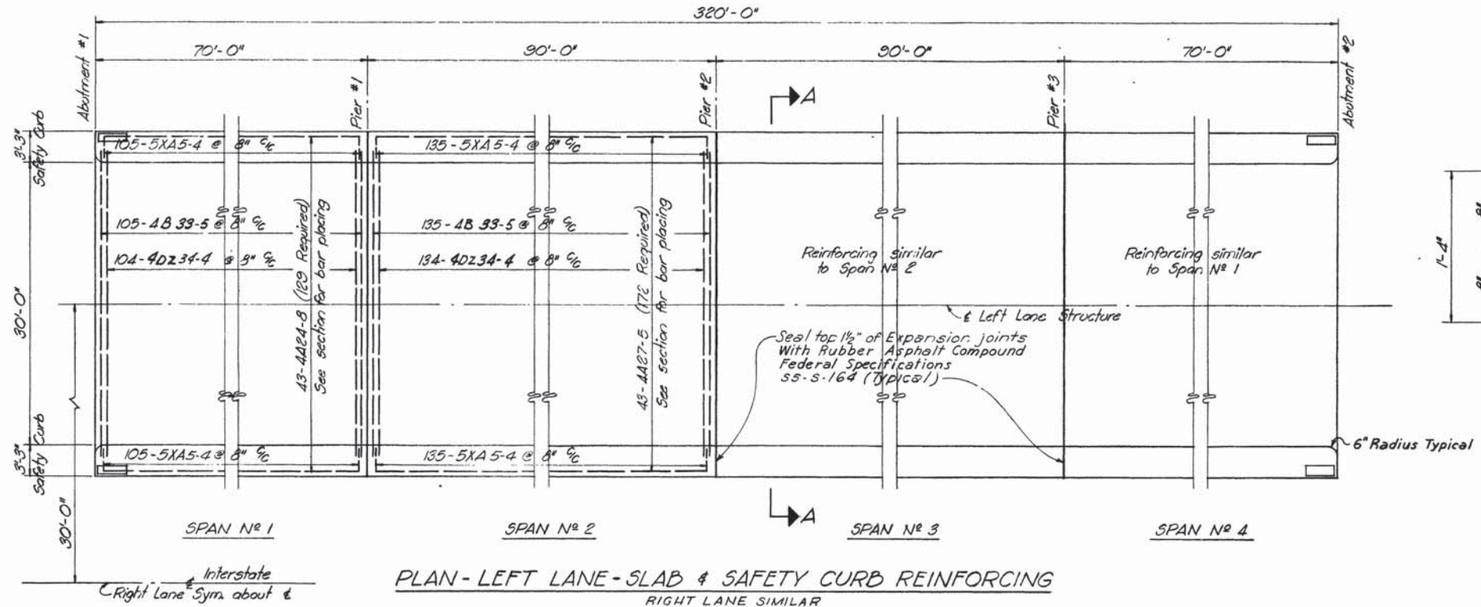
BOX GIRDERS LAYOUT AND DETAILS

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
NASHVILLE

	DATE	
DR. I.K.G.		G-15-134
CH'K'D R.A.H.		
APP'D W.R.	11-16-59	

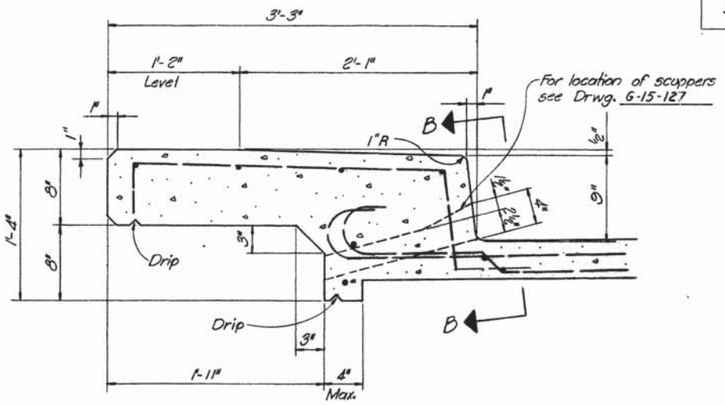
REVISED 4-19-60 - G.B.M.

FED. ROAD DIST No.	STATE	FEDERAL AID PROJECT No.	FY. YEAR	
3	TENN	I-40-5(9)264	143	37



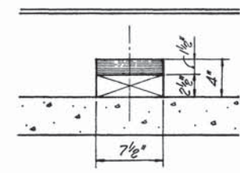
PLAN - LEFT LANE - SLAB & SAFETY CURB REINFORCING

RIGHT LANE SIMILAR
Scale ⅛" = 1'-0"



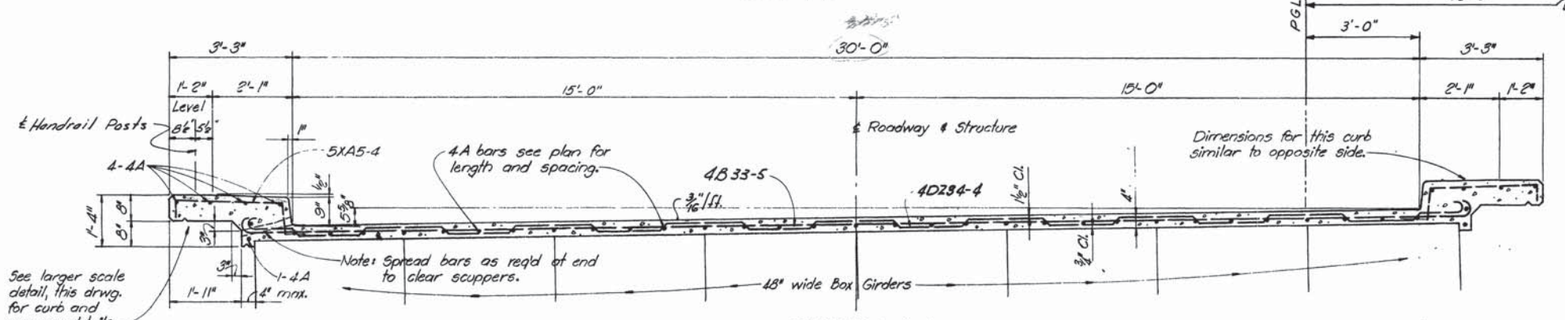
DETAIL OF SAFETY CURB & SCUPPER

Scale: 1½" = 1'-0"



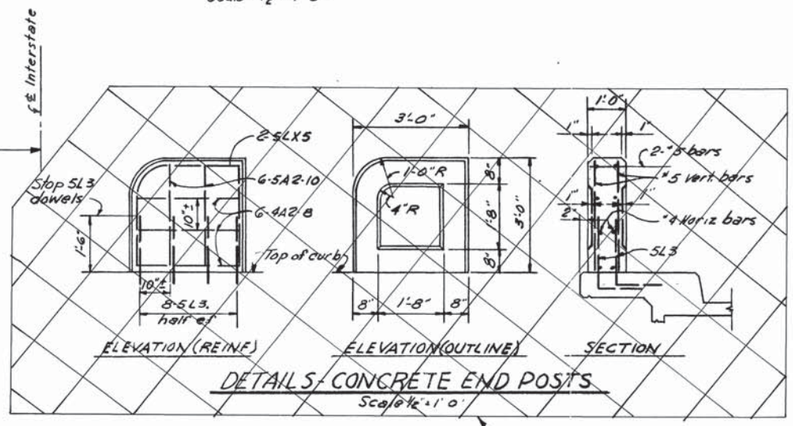
SECTION B-B

Showing scupper inlet opening
Scale 1½" = 1'-0"



SECTION A-A

Scale: ½" = 1'-0"

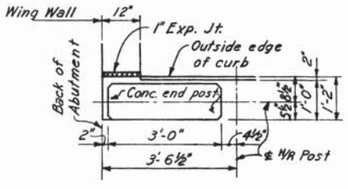


DETAILS - CONCRETE END POSTS

Scale ½" = 1'-0"

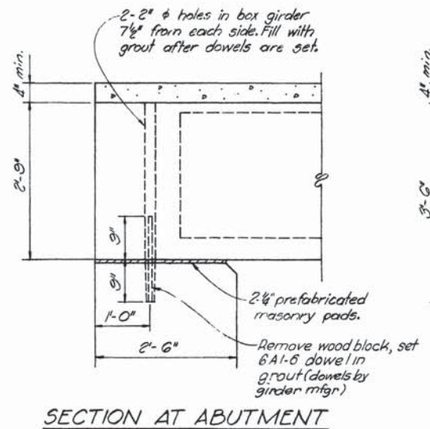
"VOID"

See Dwg. G 15-42 for new detail



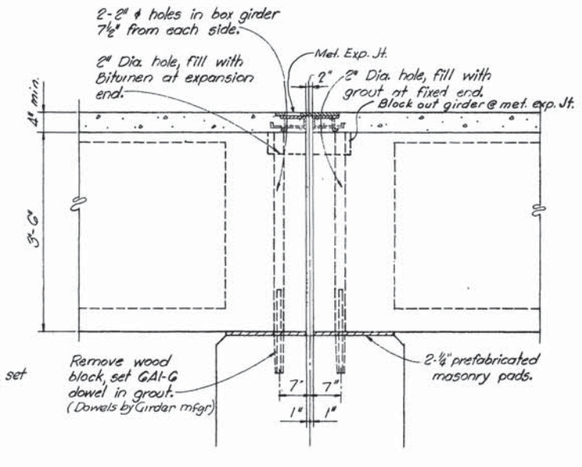
LOCATION PLAN
CONCRETE END POST

Scale ½" = 1'-0"



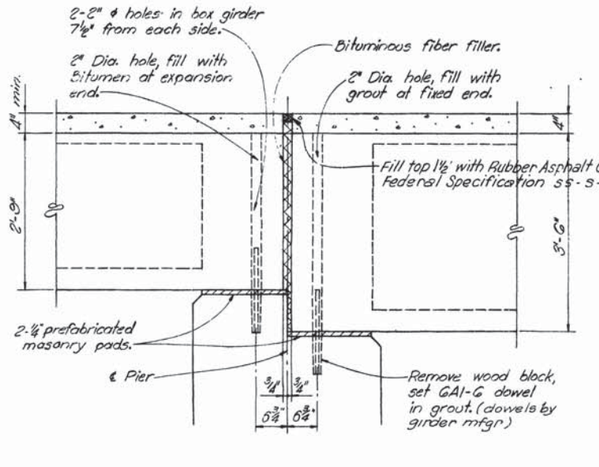
SECTION AT ABUTMENT

Scale: ¾" = 1'-0"



SECTION AT PIER #2

Scale: ¾" = 1'-0"



SECTION AT PIER #1 - AS SHOWN
SECTION AT PIER #3 - OPPOSITE

Scale: ¾" = 1'-0"

ESTIMATED QUANTITIES

		6A	6
Class 'A' Concrete	Cu Yds	193.1	15
Reinforcing Steel	Lbs.	37,495	37,4

Scale: As Noted.

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

BRIDGES OVER CANEY FORK RIVER - RIVER MIL
STA. 518+50 - RIGHT (GA) & LEFT (GB) LANE

SLAB & SAFETY CU
LAYOUT AND DETAI

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
NASHVILLE

	DATE	
DR. K.S.		G-15-13
CHK'D. R.A.H		
APP'D. W.R.	11-16-59	

REV. 4-19-60

ITEM: PROJECT: PAGE OF

LOCATION	BAR MARK	NO. REQD	BENDING DIMENSIONS - FEET & INCHES a	b	c	e	f	g	h	o	r	WEIGHT
	ABUTMENTS Nº1 RIGHT & LEFT LANES.											
	(8 bars for each abutment)											
	7A30-B	52										3260
	5A3-10	12										98
	5A3-9	12										87
	5A3-7	12										95
	5A3-5	8										89
	5A3-1	4										13
	5A3	112										350
	5A2-11	12										37
	5A2-10	8										24
	5A2-8	4										11
	5A2-5	4										10
	5A2-4	4										10
	5A2-2	8										18
	5A1-11	8										16
	5A1-7	4										7
	5U5-11	96	2-0	1-11½								593
	5U5-6	96	2-0	1-9								551
	4A13-5	4										36
	4A13-1	6										35
	4A12-9	4										34
	4A11-11	4										32
	4A10-5	4										26
	4A 9-8	4										26
	4A 8-3	4										22
	4A7-7	4										20
	4A6	4										16
	4A5-6	4										15
	4A3-7	4										10
											Total Abut.#1 Rt. Ln.	2672
											Total Abut.#1 Lt. Ln.	2672
	ABUTMENT Nº2 RIGHT LANE											
	11A28-6	7										1060
	11A16	4										340
	11J26-3	6									24-8	837
	11J25-9	6									24-2	821
	9A23	60										6692
	9A21-9	40										2958
	9J5-10	60									4-7	1193
	BA17-B	3										102
	BA17-2	3										138
	BA16-6	4										155
	BB12-10	20									12-8	792
	BB7-7	44									5-5	890
	6A30-4	4										182
	6B9-4	8									8-0	112
Girders Ties	5G12-1	51	2-½	3-7½								693
	5G20-10	2	1-6	8-10½								43
	5G20-4	2	1-6	8-4½								43
	5G19-10	2	1-6	8-1½								42
	5G19-4	2	1-6	7-10½								40
	5G18-10	2	1-6	7-7½								39
	5G18-4	2	1-6	7-4½								38
	5G17-10	2	1-6	7-1½								37
	5G17-4	2	1-6	6-10½								36
	5G16-10	2	1-6	6-7½								35
	5G16-4	2	1-6	6-4½								34
	5G15-10	2	1-6	6-1½								33
	5G15-4	2	1-6	5-10½								32
	5G14-10	2	1-6	5-7½								31
	5G14-4	2	1-6	5-4½								30
	5G13-10	2	1-6	5-1½								29
	5G13-4	2	1-6	4-10½								28
	5G12-10	2	1-6	4-7½								27
			Cont. in next Column.									

ITEM: PROJECT: PAGE OF

LOCATION	BAR MARK	NO. REQD	BENDING DIMENSIONS - FEET & INCHES a	b	c	e	f	g	h	o	r	WEIGHT
Abutment	5G12-4	2	1-6	4-4½								26
#2 Rt. Ln. Cont.	5G11-10	2	1-6	4-1½								25
	5G11-4	2	1-6	3-10½								24
	5G10-10	2	1-6	3-7½								23
	5G10-4	2	1-6	3-4½								22
	5G9-10	2	1-6	3-1½								21
	5G9-4	2	1-6	2-10½								20
	5G8-10	2	1-6	2-7½								18
	5G8-4	2	1-6	2-4½								17
	5G7-10	2	1-6	2-1½								16
Wing Walls	5A3-10	6										24
	5A3-9	6										24
	5A3-7	6										23
	5A3-5	4										14
	5A3-1	2										6
	5A3	56										175
	5A2-11	6										18
	5A2-10	4										23
	5A2-8	2										6
	5A2-5	2										5
	5A2-4	2										5
	5A2-2	4										9
	5A1-11	4										8
	5A1-7	2										3
	4A13-5	2										18
	4A13-1	4										35
	4A12-9	2										17
	4A11-11	2										16
	4A10-5	2										14
	4A9-8	2										13
	4A8-3	2										11
	4A7-7	2										10
	4A6	2										8
	4A5-6	2										7
	4A3-7	2										5
											Total-Abut. Nº2 Rt. Ln.	16,216
	ABUTMENT Nº2 LEFT LANE											
	11A28-6	7										
	11A16	4										
	11J26-3	6									24-8	837
	11J25-9	6									24-2	821
	9A30-1	22										2250
	9A19-7	20										1331
	9J5-10	42									4-7	833
	BA17-B	3										102
	BA17-2	3										138
	BA16-6	4										155
	BB12-10	10									12-8	283
	BB11-1	10									8-11	296
	BB7-7	35									5-5	708
	6A30-4	4										182
	6B9-4	8									8-0	112
Girders Ties	5G12-1	51	2-½	3-7½								693
	5G16-10	1	1-6	6-7½								18
	5G16-4	1	1-6	6-4½								17
	5G15-10	1	1-6	6-1½								17
	5G15-4	1	1-6	5-10½								16
	5G14-10	1	1-6	5-7½								16
	5G14-4	1	1-6	5-4½								15
	5G13-10	1	1-6	5-1½								15
	5G13-4	2	1-6	4-10½								28
	5G12-10	2	1-6	4-7½								27
	5G12-4	2	1-6	4-4½								26
	5G11-10	2	1-6	4-1½								25
	5G11-4	2	1-6	3-10½								24
	5G10-10	2	1-6	3-7½								23
	5G10-4	2	1-6	3-4½								22
Cont.	on next Column.											

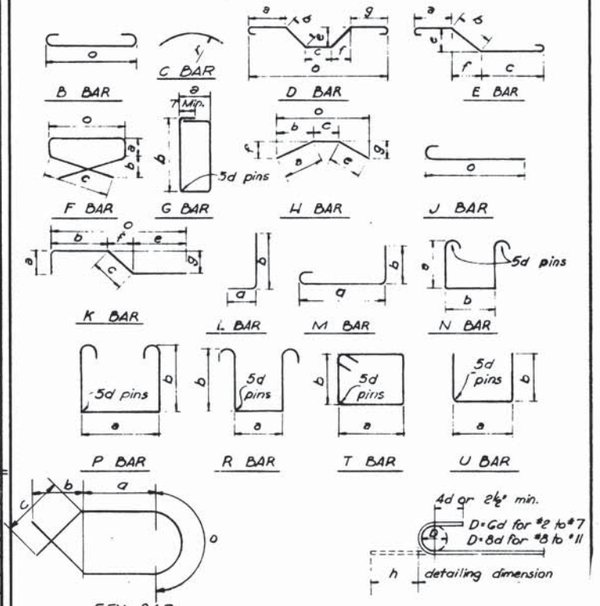
ITEM: PROJECT: PAGE OF

LOCATION	BAR MARK	NO. REQD	BENDING DIMENSIONS - FEET & INCHES a	b	c	e	f	g	h	o	r	WEIGHT
Abutment Nº2	5G9-10	2	1-6	3-1½								21
Left Lane	5G9-4	2	1-6	2-10½								20
Cont.	5G8-10	2	1-6	2-7½								18
	5G8-4	2	1-6	2-4½								17
	5G7-10	2	1-6	2-1½								16
Wing Walls	5A3-10	6										24
	5A3-9	6										24
	5A3-7	6										23
	5A3-5	4										14
	5A3-1	2										6
	5A3	56										175
	5A2-11	6										18
	5A2-10	4										12
	5A2-8	2										6
	5A2-5	2										5
	5A2-4	2										5
	5A2-2	4										9
	5A1-11	4										8
	5A1-7	2										3
	4A13-5	2										18
	4A13-1	4										35
	4A12-9	2										17
	4A11-11	2										16
	4A10-5	2										14
	4A9-8	2										13
	4A8-3	2										11
	4A7-7	2										10
	4A6	2										8
	4A5-6	2										7
	4A3-7	2										5
											Total Abut. LEFT LANE	11,058
	PIERS Nos. 1, 2, & 3 RIGHT & LEFT LANES (One Sixth ⅙ each pier except as noted.)											
Pier #2 Rt. Ln.	9A28	68										
Pier #2 Lt. Ln.	9A28	68										
Pier #3 Rt. Ln.	9A27-9	68										
Pier #3 Lt. Ln.	9A27-9	68										
Pier #1 Rt. Ln	9A27-6	68										
Pier #1 Lt. Ln.	9A27-6	68										
	9J5-10	204										
	BA32-10	54										
	8B8-1	264										
	8J20-4	60										
Pier #1 Rt. Ln.	6A32-10	2										99
Pier #1 Lt. Ln.	6A32-10	2										99
Pier #3 Rt. Ln.	6A32-10	2										99
Pier #3 Lt. Ln	6A32-10	2										99
	5FX19-11	12	3-10⅜	2-1⅜	3-0⅜						6-0½	1-11	299
	5FX19-8	12	3-10½	2-1⅜	3-0⅜						5-10½	1-10½	286
	5FX19-3	12	3-9⅜	2-0⅞	2-11⅜						5-9	1-10	281
	5FX18-11	12	3-9⅜	2-0⅜	2-10½						5-7½	1-9½	237
	5FX18-7	12	3-8⅜	1-11⅜	2-9⅜						5-6	1-9	233
	5FX18-3	12	3-8	1-11⅜	2-9						5-5½	1-8½	228
	5FX17-11	12	3-7⅜	1-10⅜	2-8⅜						5-2⅜	1-8	224
	5FX17-7	12	3-7	1-10⅜	2-7⅜						5-1⅛	1-7½	220
	5FX17-4	12	3-6⅜	1-10⅛	2-7⅜						4-11⅛	1-7	217
	5FX16-11	12	3-6⅛	1-9⅜	2-6⅛						4-10	1-6½	212
	5FX16-7	12	3-5⅜	1-8⅜	2-5⅛						4-8½	1-6	208
	5FX16-4	12	3-5	1-8⅛	2-5						4-7	1-5½	204
	5FX16	12	3-4⅜	1-8⅛	2-4⅛						4-5½	1-5	200
	5FX15-7	12	3-4	1-7⅜	2-3⅜						4-3½	1-4½	195
	5FX15-3	12	3-3⅜	1-6⅞	2-2⅝						4-2¼	1-4	191
	5FX15	12	3-3	1-6⅜	2-2⅛						4-0⅞	1-3½	188
	5FX14-7	12	3-2⅜	1-5⅞	2-1⅞						3-11	1-3	183
	5FX14-4	12	3-2⅛	1-5⅜	2-1						3-9½	1-2½	179
	5FX14	12	3-1⅞	1-5⅛	2-0⅝						3-8	1-2	175
	5FX13-8	12	3-1⅛	1-4⅞	1-11⅜						3-6½	1-1½	171
Cont. on Reinf. Steel Schedule Nº2												

ITEM: BENDING DIAGRAMS

PRO. ROAD DIST.	T E N N	FEDERAL AID PROJECT No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
3		I-40-5(9)264		144	322

Bending diagrams shown with symbols for variable dimensions are standard types of bars. Some types shown may not be billed in the attached lists. All bars "Mark A" are straight.



Notes:

1. The figures to the left of the letter, or letters, represents the bar size number -- 4 = ½"; 5 = ⅝"; 6 = ¾" etc.
2. The letter represents the type of bar - A, H, J, etc. Special type bars are designated by letters "XA", etc. Bars of same type and same length, but different bends are marked La, Lb, Ka, Kb, etc.
3. The figures to the right of the letter, or letters, represent the length in feet and inches, 10-3, 12-6, etc. Thus a bar, Mark GE21-3, represents a No. 6 bar, type E, 21'-3" long. For bar lengths in even feet, the dash and zero (-0 and 0) are omitted.
4. Dimensions are out-out.

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

BRIDGE OVER CANEY FORK RIVER-RIVER MILE 207
STA. 518+50 RIGHT (6A) LEFT (6B) LANES

REINFORCING STEEL · SCHEDULE NO.1

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
NASHVILLE

DR. L.E.S.	DATE
CHK'D R.A.H.	—
APP'D W.R.	11-16-59

G-15-136

ITEM: PROJECT: PAGE ____ OF ____

LOCATION	BAR MARK	NO. REQ'D	BENDING DIMENSIONS - FEET & INCHES a	b	c	e	f	g	h	o	r	WEIGHT
	CONT		PIERS 1, 2, & 3 RIGHT & LEFT LANES									
	5FX13-3	12	3-0 3/8	1-6 3/16	1-10 5/8					3-9 7/8	1-1	166
	5FX13	12	3-0 5/8	1-3 5/8	1-10 5/8					3-3 1/8	1-0 5/8	163
	5FX12-8	12	2-11 3/8	1-2 15/16	1-9 5/8					3-1 3/8	1-0	159
	5FX12-4	12	2-11 1/8	1-2 11/16	1-8 5/8					3-0	0-11 5/8	154
	5FX11-11	12	2-10 3/8	1-2 6	1-8					2-10 5/8	0-11	149
Pier #1 Rt. Ln.	5U8	209	3-0	2-6								1702
Pier #1 Lt. Ln.	5U3 9	17	1-3	1-3								66
Pier #3 Rt. Ln	5U3 9	17	1-3	1-3								66
Pier #3 Lt. Ln.	5U3-9	17	1-3	1-3								66
	5U3-9	17	1-3	1-3								66
	4A27-6	300										5511
Pier #2 Rt. Ln.	4A27-3	100										1820
Pier #2 Lt. Ln	4A27-3	100										1820
Pier #3 Rt. Ln.	4A27	100										1804
Pier #3 Rt. Ln.	4A27	100										1804
Pier #1 Rt. Ln.	4A26-9	100										1787
Pier #1 Lt. Ln.	4A26-9	100										1787
	4A25-6	312										5515
	4J4-4	288								3-10		833
						Total Pier #1 Right Lane						14,303
						Total Pier #1 Left Lane						14,303
						Total Pier #2 Right Lane						14,308
						Total Pier #2 Left Lane						14,308
						Total Pier #3 Right Lane						14,399
						Total Pier #3 Right Lane						14,399
										Total		86,020
	SUPPER STRUCTURE (2 of bars for each Bridge (GA & GB))											
	5A2-10	68										192
	5L3-4	68	1-8	1-8								222
	5XA5-4	1920	"	"		"	"					10,672
	4A27-5	688										12608
	4A26-8	516										8503
	4A2-8	32										57
	4A2-5	16										26
	4B33-5	960										21,432
	4DZ34A	952	See Bending Diagram									21332
						Total Bridge GA Rt. Ln						
						Total Bridge GB Lt. Ln.						
	48" PRESTRESSED BOX GIRDERS (Reinf. furnish by girder supplier.)											
dowels	GA1-6	129										577
	4A30-6	576										11,735
	4A29-10	576										9,169
	4U5-9	15,420	3-9	1-0								58,998
	4UX11	2880	See Bending Diagram Drw. G-15-139									21,162
	4UX96	2240										16,218
						Total Rt. Ln. & Lt. Ln.						115,856

ITEM: PROJECT: PAGE ____ OF ____

LOCATION	BAR MARK	NO. REQ'D	BENDING DIMENSIONS - FEET & INCHES a	b	c	e	f	g	h	o	r	WEIGHT

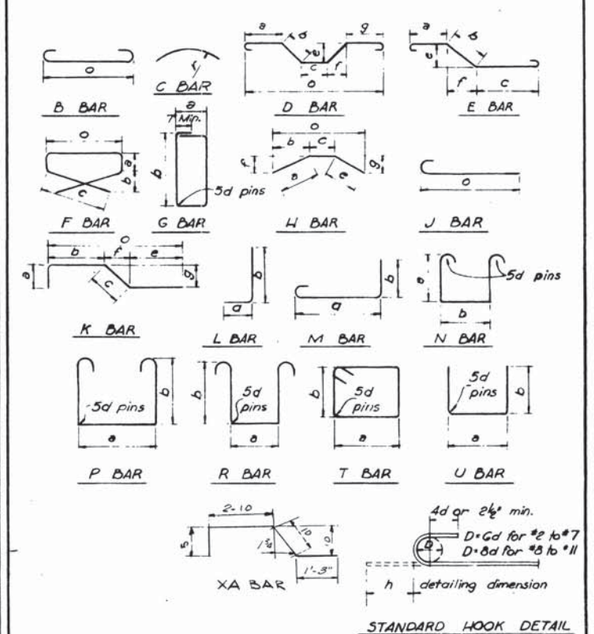
ITEM: PROJECT: PAGE ____ OF ____

LOCATION	BAR MARK	NO. REQ'D	BENDING DIMENSIONS - FEET & INCHES a	b	c	e	f	g	h	o	r	WEIGHT

ITEM: BENDING DIAGRAMS

FED. ROAD DIST.	STATE	FEDERAL AID PROJECT No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
3	TENN	I-40-5(9)264		145	372

Bending diagrams shown with symbols for variable dimensions are standard types of bars. Some types shown may not be billed in the attached lists. All bars "Mark A" are straight.

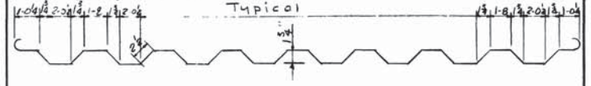


STANDARD HOOK DETAIL

Use 5d pins for all other bars as indicated

Notes:

1. The figures to the left of the letter, or letters, represents the bar size number -- 4 = ½"; 5 = ⅝"; 6 = ¾" etc.
2. The letter represents the type of bar - A, H, J, etc. Special type bars are designated by letters "XA", etc. Bars of same type and same length, but different bends are marked La, Lb, Ka, Kb, etc.
3. The figures to the right of the letter, or letters, represent the length in feet and inches, 10-3, 12-6, etc. Thus a bar, Mark GE21-3, represents a No. 6 bar, type E, 21'-3" long. For bar lengths in even feet, the dash and zero (- and 0) are omitted.
4. Dimensions are out-out.



DZ BAR

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

BRIDGE OVER CANEY FORK RIVER - RIVER MILE 207
STA. 518+50 RIGHT (GA) LEFT (GB) LANES

REINFORCING STEEL SCHEDULE NO. 2

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
NASHVILLE

DR. L.E.S.	DATE
CHK'D R.A.H.	11-16-59
APP'D W.R.	

G-15-137