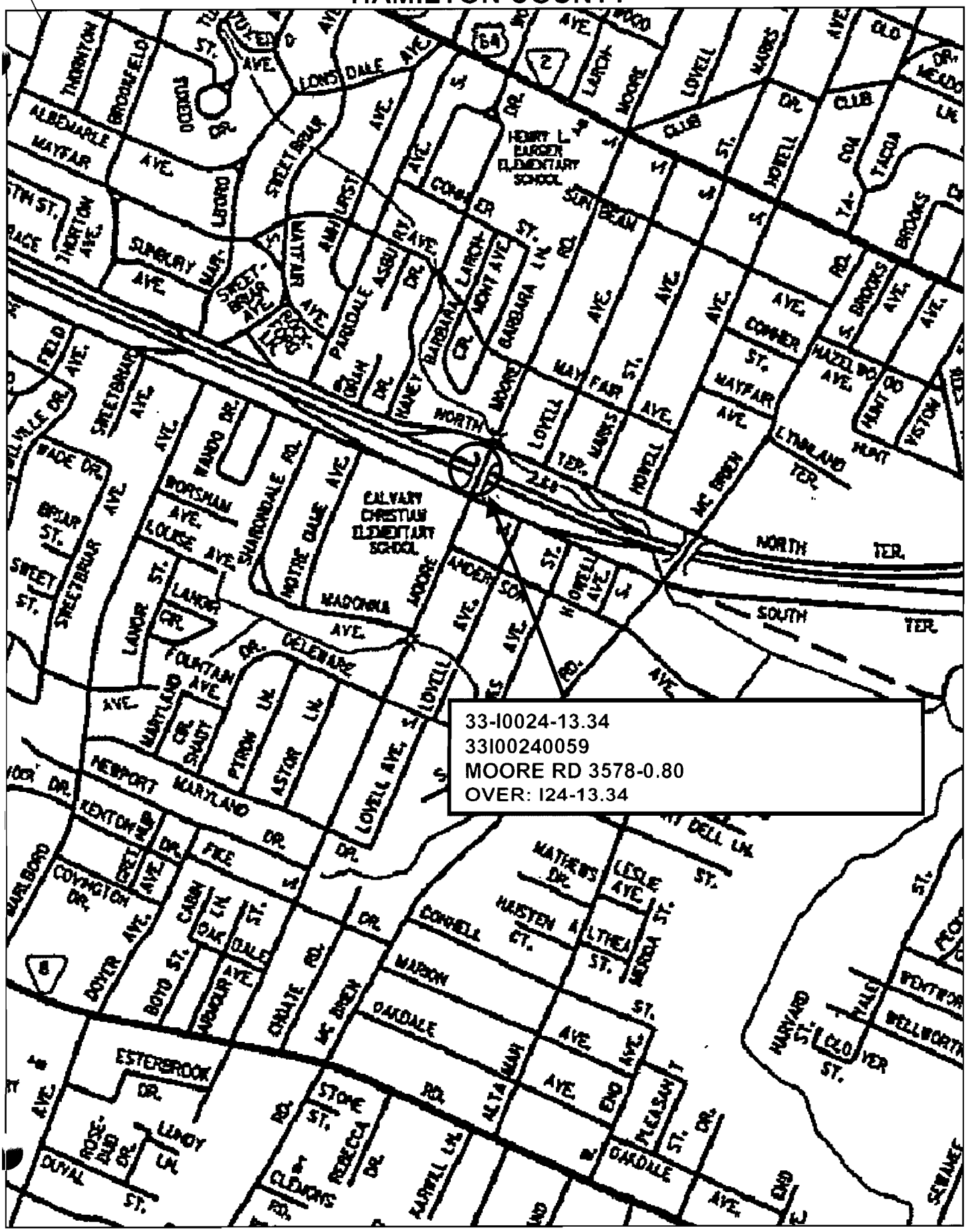
HAMILTON COUNTY



BRIDGE MAINTENANCE RECOMMENDATIONS

Tennessee Department of Transportation

COUNTY: HAMILTON
LOCATION: 33-03578-00.80-
CO. SEQ.: 1 SPEC. CASE: 0

CROSSING: S. MOORE RD / I-24
FED. BRIDGE NO.: 33I00240059
MAINT. DIST.: 21

REPAIR LIST NO.: N
DATE ADDED: 08/02/2002
REVISED: 08/02/2002

FACILITY CARRIED:	FAU 3578	NUMBER OF MAIN SPANS:	4
HIGHWAY SYSTEM:	18-STP URBAN, NON-STATE SYS.	NUMBER OF APPROACH SPANS:	0
BRIDGE WIDTH (CURB TO CURB):	63 FT 11 IN	BRIDGE LENGTH (FT):	175
BRIDGE WIDTH (OUT TO OUT):	76 FT 5 IN	MAXIMUM SPAN LENGTH (FT):	55
APPROACH ROADWAY (W/SHOULDERS):	58 FT 0 IN	SKEW ANGLE (DEGREES):	90

MAINTAINED BY:	STATE HIGHWAY AGENCY
MAIN SPAN MATERIAL:	PRESTRESSED CONCRETE
MAIN SPAN DESIGN TYPE:	BOX BEAM OR GIRDERS - MULTIPLE
APPROACH SPAN MATERIAL:	OTHER OR NOT APPLICABLE
APPROACH SPAN DESIGN TYPE:	OTHER OR NOT APPLICABLE

INSPECTION DATE:	08/02/2002	GENERAL CONDITION:	FAIR
EVALUATION DATE:	05/09/2001	STRUCTURALLY DEFICIENT:	NO
PROPOSED REPLACEMENT:			
H TRUCK RATING @ INV.:	20 TONS	SUFFICIENCY RATING:	92.3

No.	RECOMMENDATIONS	REPAIR DATE	REPAIRED BY
1.	PATCH COLUMNS & CAPS AT BENT NO.ALL		
2.	LEVEL THE WEARING SURFACE		
3.	CLEAN AND SEAL ROADWAY EXPANSION JOINTS.		
4.	BRIDGERAILS ARE SUBSTANDARD		
5.	APPROACH GUARDRAILS ARE NON-EXISTENT		

COMMENTS:

Bridge Maintenance Recommendations

Bridge Location No.: 33 - 03578 - 0.80
Co. Route Log Mile

Bridge Number: 33I00240059

Crossing: I 24

County: Hamilton
Region: 02
District: 21
Maint.Resp.: 01
Spec.Case: 0
Co.Seq: 01

Bridge Rating: FAIR

Inspection Cycle: 15

Inspection Date: 09/19/2000

Comments: CLEARANCE RTE 33-I24-13.34 RATED GOOD.

Maintenance Recommendations:

		Maintenance Completed By / Date
238	**BRIDGERAILS ARE SUBSTANDARD**	
229	**APPROACH GUARDRAILS ARE NON-EXISTENT**	
031	**CLEAN AND SEAL JOINTS IN SPAN NO. ALL**	
048	**REPAIR A/C SURFACE OVER JOINTS**	

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. LEONARD WILLIAMS
REGIONAL BRIDGE ENGINEER
D.O.T. BRIDGE INSPECTION
P.O. BOX 22368
CHATTANOOGA, TN 37422-2368
PHONE: 423-510-1151

STEVE HUTCHINGS
D.O.T. BRIDGE INSPECTION
P.O. BOX 22368
CHATTANOOGA, TN 37422-2368
PHONE: 423-892-3430

BRIDGE MAINTENANCE RECOMMENDATIONS

BRIDGE SEQ. NO. : 33I00240059 BRIDGE NO. : 33 - 03578 - 0080 - N
OVER : I24

DATE	: 09/04/98	BRIDGE RATING	: FAIR	COUNTY	: Hamilton
CO. SEQ.	: 01	INSPECTION CYCLE	: 14	MAINT DIST	: 21
SPEC. CASE	: 1	INSPECTION DATE	: 09/03/98	REGION	: 02

007	FACILITY CARRIED BY STRUCT	: FAU 3578
021	MAINTENANCE RESPONSIBILITY	: 01
022	OWNER	: 01
042	TYPE OF service	: 11
043	STRUCTURE TYPE, MAIN	: 505
044	STRUCTURE TYPE, APPROACH	: 000
045	SPANS, MAIN UNIT	: 004
046	SPANS, APPROACH	: 0000
049	STRUCTURE LENGTH	: 000175
032	APPROACH ROADWAY WIDTH	: 058
034	SKEW	: 90
051	BRDG RDWY WID, CRB-TO-CRB	: 0640
052	DECK WIDTH, OUT-TO-OUT	: 0765
500	HWY OF THE INVENTORY ROUTE	: 14

: MAINTENANCE & REPAIR RECOMMENDATIONS :		: MAINTENANCE COMPLETED :	
1	BRIDGERAILS ARE SUBSTANDARD	1	BY ____ DATE ____
2	CLEAN DRAINS IN SPAN NO. _ALL___	2	BY ____ DATE ____
3	APPROACH GUARDRAILS ARE NON-EXISTENT	3	BY ____ DATE ____
4	SEAL CONSTRUCTION JOINT AT CENTER OF BRIDGE IN SPAN NO. _1-4__ -	4	BY M.R DATE 2-1-99
5	CLEAN AND SEAL JOINTS IN SPAN NO. _1 AND 3_ -	5	BY M.R DATE 2-1-99

: COMMENTS FOR BRIDGE SEQ. NO. : 33I00240059 :

CLEARANCE RTE 33-I24-13.34 RATED GOOD.

COMPLETION NOTIFICATION : RETURN WITHIN 6 MONTHS OF INSPECTION DATE

MAINTENANCE ACTIVITIES ARE
--- COMPLETED (DATE) -2-1-99-
--- PARTIALLY COMPLETE (DATE) --------
--- INCOMPLETE SCHEDULED FOR (DATE) --------

EXPLANATIONS AND COMMENTS:

BRIDGE MAINTENANCE RECOMMENDATIONS

BRIDGE SEQ. NO.: 33I00240059 BRIDGE NO.: 33 - 03578 - 0080 - N
OVER : I24

DATE :09/04/98 BRIDGE RATING :FAIR COUNTY :Hamilton
CO. SEQ. :01 INSPECTION CYCLE:14 MAINT DIST:21
SPEC. CASE:1 INSPECTION DATE :09/03/98 REGION :02

: MAINTENANCE & REPAIR RECOMMENDATIONS :		: MAINTENANCE COMPLETED :
1	BRIDGERAILS ARE SUBSTANDARD	1 BY _____ DATE _____
2	CLEAN DRAINS IN SPAN NO. _ALL___	2 BY _____ DATE _____
3	APPROACH GUARDRAILS ARE NON-EXISTENT	3 BY _____ DATE _____
4	SEAL CONSTRUCTION JOINT AT CENTER OF BRIDGE IN SPAN NO. _1-4__	4 BY _____ DATE _____
5	CLEAN AND SEAL JOINTS IN SPAN NO. _1 AND 3_	5 BY _____ DATE _____

: COMMENTS FOR BRIDGE SEQ. NO. : 33I00240059 :

CLEARANCE RTE 33-I24-13.34 RATED GOOD.

COMPLETION NOTIFICATION : RETURN WITHIN 6 MONTHS OF INSPECTION DATE

MAINTENANCE ACTIVITIES ARE
--- COMPLETED (DATE) --------
--- PARTIALLY COMPLETE (DATE) --------
--- INCOMPLETE SCHEDULED FOR (DATE) --------

EXPLANATIONS AND COMMENTS :

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

Bridge Condition Coding Form

Revised 09/12/2001

County:	33
Route:	03578
Special Case:	0
County Sequence:	01
Log Mile:	0.80

Bridge Number: (Includes Item 5A) 33I002400591

Feature Intersected: S. MOORE RD / I-24

CODE ONLY THOSE VALUES WHICH HAVE CHANGED

ITEM #	DESCRIPTION	VALUE
90	INSPECTION DATE	09/19/2000 8/2/02
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 / Terminal / SPEED LIMIT	0 / 0 / 0 / 0 / UNKNOWN
41	STRC OPEN/CLOSED/POSTED A K P	A
58	DECK	7
59	SUPERSTRUCTURE	6
60	SUBSTRUCTURE	6
61	CHANL/CHANL PROTECTION	N
62	CULVERT AND RETAIN WALL	N
71	WATERWAY ADEQUACY	N
72	APPROACH RDWY ALIGNMENT (USE VALUES OF 3, 6, OR 8)	8
521	OVERALL CONDITION (Circle One)	GOOD (FAIR) POOR CRITICAL

TEAM LEADER SIGNATURE

8/2/02
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 Condition Coding Form

Revised 09/21/2001

County:	33
Route:	I0024
Special Case:	0
County Sequence:	02
Log Mile:	13.34

Bridge Number: (Includes Item 5A) 33I002400592

Feature Intersected: FAU 3578 (S. MOORE RD.)

CODE ONLY THOSE VALUES WHICH HAVE CHANGED

ITEM #	DESCRIPTION	VALUE
90	INSPECTION DATE	09/19/2000 8/2/02
10	MINIMUM V.C. OVER ROADWAY (ROADWAY + SHOULDERS)	16 FT. ~~7~~ IN. ___ FT. 8 IN.
520	MINIMUM V.C. OVER ROADWAY (EXCLUDES SHOULDERS)	16 FT. ~~7~~ IN. ___ FT. 8 IN.
47	TOTAL HORIZONTAL UNDERCLEARANCE	52 FT. ~~9~~ IN. ___ FT. 6 IN.
54	MINIMUM VERTICAL UNDERCLEARANCE (EXCLUDES SHOULDERS) Circle One: H R	16 FT. 8 IN.
55	MINIMUM LATERAL UNDERCLEARANCE ON RIGHT SIDE Circle One: H R	10 FT. 0 IN.
56	MINIMUM LATERAL UNDERCLEARANCE ON LEFT SIDE	6 FT. 6 IN.

UNDERPASS SAFETY FEATURES

515 (A) TYPE UNDERPASS BARRIER
Mixed Metal/Conc. Rail

Revised Barrier Type

(B) ADEQUACY OF BARRIER OR RAIL 1

(C) ADEQUACY OF TRANSITIONS 1

(D) ADEQUACY OF TERMINALS 1

554 VERTICAL CLEARANCE LISTED ON HEIGHT POSTING
99 FT. 99 IN.
___ FT. ___ IN.

521 OVERALL CONDITION (Circle One)
GOOD FAIR POOR CRITICAL

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

555 COMMENTS

TEAM LEADER SIGNATURE

8/2/02
REVIEW DATE

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

Bridge Condition Coding Form

County:	33
Route:	03578
Special Case:	0
County Sequence:	1
Log Mile:	0.8

Bridge Number: (Includes Item 5A) [illegible]

Feature Intersected: I24

CODE ONLY THOSE NUMBERS WHICH HAVE CHANGED

ITEM #	DESCRIPTION	VALUE
90	INSPECTION DATE	9/3/98 9/19/00
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) Circle One: H R N	H 16 FT. 7 IN. ____ FT. 8 IN.
36	TRAFFIC SAFETY FEATURES	Br. Rail / Trans. / Appr. Rail / Appr. Rail Ends
		0 / 0 / 0 / 0
		___ / ___ / ___ / ___
41	STRC OPEN/CLOSED/POSTED A K P	A
58	DECK	7
59	SUPERSTRUCTURE	6
60	SUBSTRUCTURE	6
61	CHANL/CHANL PROTECTION	N
62	CULVERT AND RETAIN WALL	N
72	APPROACH RDWY ALIGNMENT (USE VALUES OF 3, 6, OR 8)	6

OVERALL CONDITION (Circle One)

GOOD FAIR POOR CRITICAL

[signature] 9/19/00

SIGNATURE 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 [illegible]

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 [illegible]

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 Condition Coding Form

County: 33
Route: I0024
Special Case: 0
County Sequence: 2
Log Mile: 13.34

Bridge Number: (Includes Item 5A) 53I0024006592
Feature Intersected: FAU 3578

CODE ONLY THOSE NUMBERS WHICH HAVE CHANGED

ITEM #	DESCRIPTION	VALUE
90	INSPECTION DATE	9/3/98 9 / 19 / 00
10	MINIMUM V.C. OVER DECK (ROADWAY + SHOULDERS)	16 FT. ~~7~~ IN. ____ FT. 8 IN.
520	MINIMUM V.C. OVER DECK (EXCLUDES SHOULDERS)	16 FT. ~~7~~ IN. ____ FT. 8 IN.
47	TOTAL HORIZONTAL UNDERCLEARANCE	~~52~~ FT. ~~9~~ IN. 53 FT. 0 IN.
55	MINIMUM LATERAL UNDERCLEARANCE ON RIGHT SIDE [H]	~~9~~ FT. ~~10~~ IN. Circle One: H R N 10 FT. 00 IN.
56	MINIMUM LATERAL UNDERCLEARANCE ON LEFT SIDE	6 FT. ~~10~~ IN. ____ FT. 6 IN.

UNDERPASS SAFETY FEATURES

(A) TYPE UNDERPASS BARRIER
Mixed Metal/Conc. Rail

Revised Barrier Type

(B) ADEQUACY OF BARRIER OR RAIL 1

(C) ADEQUACY OF TRANSITIONS 1

(D) ADEQUACY OF TERMINALS 1

VERTICAL CLEARANCE LISTED ON HEIGHT POSTING SIGNS
99 FT. 99 IN.
____ FT. ____ IN.

OVERALL CONDITION (Circle One)
(GOOD) FAIR POOR CRITICAL

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

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

COMMENTS

SIGNATURE

9/19/00
DATE

000002

BRIDGE CONDITION CODING SHEET
DATA ENTRY JOB NO. 5043, P4

CULP5023
TRIMS KEY

BRIDGE NO. CO: 33
ROUTE: I00240
SEQ. NO: 059

LOCATION NO. CO. NO: 33
ROUTE: 03578
SC/CSQ: 0 01
LOG MILE: 0080
BR-SEQ: 059

FEATURE INTERSECTED: I24

CODE ONLY THOSE NUMBERS WHICH HAVE CHANGED

ITEM #	DESCRIPTION	VALUE	COMMENTS
90	INSPECTION DATE	10 / / 96 9/03/98	RATINGS FOR CODING ITEMS 58 THRU 62
10	MINIMUM V. C. OVER DECK (PAVEMENT + SHOULDERS)	99 FT. 99 IN. ___FT. ___IN.	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-PRIMARY STRUCTURAL DEFECTS, SOUND BUT SHOW MINOR SECTION LOSS, SCOUR, CRACKING, SPALLING 4 POOR CONDITION-ADVANCED SECTION LOSS, DETERIORATION, SCOUR, SPALLING 3 SERIOUS CONDITION-LOSS OF SECTION, DETERIORATION, SPALLING, SCOUR SERIOUSLY EFFECT PRIMARY MEMBERS, FAILURES POSSIBLE, FATIGUE OR SHEAR CRACKS POSSIBLE 2 CRITICAL CONDITION-ADVANCED DETERIORATION OF PRIMARY ELEMENTS OR FATIGUE OR SHEAR CRACKS OR SEVERE SCOUR CONDITION, MAY REQUIRE CLOSURE FOR REPAIRS 1 IMMINENT FAILURE CONDITION-MAJOR SECTION LOSS OR CRITICAL CONDITION OF STRUCTURAL COMPONENT OR UNSTABLE OR CLOSED BUT REPAIRABLE FOR LIGHT TRAFFIC 0 FAILED CONDITION-OUT OF SERVICE AND BEYOND CORRECTIVE ACTION
14	MINIMUM V. C. OVER DECK (EXCLUDES SHOULDERS)*	99 FT. 99 IN. ___FT. ___IN.	
54	MINIMUM VERTICAL UNDERCLEARANCE H R N	16 FT. 08 IN. ___FT. ___IN.	
36	TRAFFIC SAFETY FEATURE	0 0 0 0 ___ ___ ___ ___	
41	STRC OPEN/CLOSED/POSTED A K P	A ___	
58	DECK	7 ___	
59	SUPERSTRUCTURE	7 6	
60	SUBSTRUCTURE	6 ___	
61	CHANL/CHANL PROTECTION	N ___	
62	CULV & RETAIN WALL	N ___	
72	APPROACH RDWY ALIGNMENT (CODE 3, 6, OR 8 UNLESS NECESSARY)	6 ___	

OVERALL CONDITION

GOOD ____ POOR ____

FAIR X CRIT ____

Gary Selen
SIGNATURE

9/3/98
DATE

2A

BRIDGE CONDITION CODING SHEET
DATA ENTRY JOB NO. 5043, P5

CULP5028
TRIMS KEY

BRIDGE NO. CO: 33
ROUTE: I00240
SEQ. NO: 059

LOCATION NO. CO. NO: 33
ROUTE: I0024
SC/CSQ: 0 02
LOG MILE: 1334
BR-SEQ: 059

FEATURE INTERSECTED: FAU 3578

CODE ONLY THOSE NUMBERS WHICH HAVE CHANGED

ITEM #	DESCRIPTION				VALUE
90	INSPECTION DATE				10 / / 96 9 / 3 / 98
10	MINIMUM V. C. OVER DECK UNDERPASS ROADWAY (PAVEMENT + SHOULDERS				16 FT. 08 IN. ___FT. ___IN.
14	MINIMUM V. C. OVER UNDERPASS ROADWAY (EXCLUDES SHOULDERS)				16 FT. 08 IN. ___FT. ___IN.
47	TOTAL HORIZONTAL UNDERCLEARANCE				530 FT. _____FT.
55	MINIMUM LATERAL UNDER-CLEARANCE ON RIGHT	H __	R __	N __	FT. 010.0 FT.
56	MINIMUM LATERAL UNDER-CLEARANCE ON LEFT				FT. 065 FT.

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.

OVERALL CONDITION		COMMENTS
GOOD	X	GUARDRAIL AND APPROACHES UPGRADED
FAIR	____	
POOR	____	
CRITICAL	____	

Barry Lebow
SIGNATURE

9, 3, 98
DATE

Christopher McDonald

From: Seth Davis
Sent: Monday, May 10, 2021 2:25 PM
To: Christopher McDonald
Subject: Fwd: Moore Rd Sign

FYI

Seth Davis, P.E. | TPS Supervisor
Region 2 Bridge Inspection - Chattanooga
7508 Volkswagen Drive
Chattanooga, TN 37416
p. 423-634-2431 c. 423-438-8014

Begin forwarded message:

> **From:** Steve Hutchings <Steve.Hutchings@tn.gov>
> **Date:** May 4, 2021 at 11:36:52 AM EDT
> **To:** Seth Davis <Seth.Davis@tn.gov>
> **Subject: RE: Moore Rd Sign**
>
> Yes, that's correct.
>
> -----Original Message-----
> From: Seth Davis <Seth.Davis@tn.gov>
> Sent: Tuesday, May 4, 2021 11:36 AM
> To: Steve Hutchings <Steve.Hutchings@tn.gov>
> Subject: RE: Moore Rd Sign
>
> That's odd. So Carson is saying they intentionally did not tighten the nuts?
>
> Seth Davis, P.E. | TPS Supervisor
> Region 2 Bridge Inspection - Chattanooga
> 7508 Volkswagen Drive
> Chattanooga, TN 37416
> p. 423-634-2431 c. 423-438-8014
> Seth.Davis@tn.gov
> tn.gov/tdot
>
> -----Original Message-----
> From: Steve Hutchings <Steve.Hutchings@tn.gov>
> Sent: Tuesday, May 4, 2021 11:32 AM
> To: Seth Davis <Seth.Davis@tn.gov>
> Subject: FW: Moore Rd Sign
>
> FYI
>
> -----Original Message-----
> From: Carson Voiles <Carson.Voiles@tn.gov>
> Sent: Tuesday, May 4, 2021 11:22 AM

To: Steve Hutchings <Steve.Hutchings@tn.gov>
Subject: RE: Moore Rd Sign

Steve,

After discussions with Superior, they installed the sign this way. I am looking into getting this rectified. I don't believe that there is a need to keep inspecting it.

Carson Voiles | District Operations Supervisor 1 TDOT Construction / Dunlap - Unit 2822 P.O. Box 603
Dunlap, TN 37343 p. 423-949-2195 c. 423-309-8978 Carson.Voiles@tn.gov

-----Original Message-----
From: Steve Hutchings <Steve.Hutchings@tn.gov>
Sent: Monday, April 26, 2021 1:23 PM
To: Carson Voiles <Carson.Voiles@tn.gov>
Subject: FW: Moore Rd Sign

Carson,
We inspecting these signs again and we did find a little bit of change. I checked the temps for both days and they were very similar, so I don't think this is necessarily an expansion and contraction issue.

We'll keep checking them every 2 weeks.

Steve

-----Original Message-----
From: Seth Davis <Seth.Davis@tn.gov>
Sent: Monday, April 26, 2021 12:16 PM
To: Steve Hutchings <Steve.Hutchings@tn.gov>
Subject: Moore Rd Sign

Steve,

Please find attached pictures for the Moore Rd Sign, one taken today, the 26th, and the other taken the 13th.

Thanks,

Seth Davis, P.E. | TPS Supervisor
Region 2 Bridge Inspection - Chattanooga
7508 Volkswagen Drive
Chattanooga, TN 37416
p. 423-634-2431 c. 423-438-8014
Seth.Davis@tn.gov
tn.gov/tdot

Christopher McDonald

From: Christopher McDonald
Sent: Monday, May 10, 2021 10:58 AM
To: 'anthony.wallace@tn.gov'
Cc: Joshua Gentry; 'william.rose@tn.gov'; Tony Halwani; Seth Davis
Subject: Hamilton County Interstate Bridge Signs with Loose Bolts - BID: 33I00240059, Moore Road over I-24, 33-3578-0.80

Anthony,

The subject bridge has a couple of signs over the interstate with mounting bolts where the nuts have backed off approximately 2 inches since the last inspection in October 2020.

It looks like the inspection team at the Chattanooga office has communicated this to you guys already through the usual means (or is in the process of doing that), and I apologize for the redundancy. Our team at HQ thought it probably wouldn't hurt anything to send an additional email pointing it out, though, considering the progression since last October and the heavy traffic below the signs.

Also, just so it doesn't catch you off guard when you get to looking at it, this is the bridge that was hit in January 2020 hard enough to warrant removal of the damaged beam, and the signs were reinstalled onto the remaining portion of the bridge curb/sidewalk near the removed beam.

Let me know if you have any questions or concerns, or if there's anything we can help with on our end. Thanks,

TN TDOT Department of Transportation

Chris McDonald, PE | TPS Sr
Structures Division / Bridge Inspection HQ
James K Polk Building, 12th Floor
505 Deaderick St, Nashville, TN 37243-0338
p. 615-741-0965
Christopher.McDonald@tn.gov

From:	Rebecca Hayworth
To:	Steve Hutchings
Cc:	Tom Quinn; Bryan Liner
Subject:	RE: Moore road bridge over I-24
Date:	Tuesday, January 21, 2020 5:18:44 PM
Attachments:	image002.png image003.png

Hello Steve,

After reading your email this afternoon, we decided to take another approach to this model using the Load and Resistance Factor Spec, and the results were much more favorable. So, we are fine with not posting the bridge, if we monitor the remaining beams on a 6-month cursory inspection cycle.

Please let me know if you have any other questions.

Becky

TN TDOT Department of Transportation

Rebecca Hayworth, P.E. | C.E. Manager 1
Structures Division / Bridge Inspection Office
James K. Polk Building, Suite 1200
505 Deaderick Street
Nashville, TN 37243-0338
p. 615-253-2448
Rebecca.Hayworth@tn.gov

From: Steve Hutchings <Steve.Hutchings@tn.gov>
Sent: Tuesday, January 21, 2020 1:51 PM
To: Tom Quinn <Tom.Quinn@tn.gov>
Cc: Bryan Liner <Bryan.Liner@tn.gov>; Rebecca Hayworth <Rebecca.Hayworth@tn.gov>
Subject: Moore road bridge over I-24

Tom,
We removed the tie rods from the bridge last night. They came out easily and did not appear to be attached to anything. The ends of the rods were threaded and doesn't appear to be sheared or broken. It looks like the total length of the rod was about 40'. The rods definitely did not go all the way through the structure. I am assuming the other side of the bridge is still tied.
What should our plans be going forward. Do we still need to post it?
Steve

TN TDOT Department of Transportation

Steven Hutchings P.E. | Regional Bridge Manager
Region 2 Bridge Inspection and Repair
TDOT Region 2 Complex, Building C
7508 Volkswagen Drive, Chattanooga, TN 37416

p. 423-510-1151 c. 423-290-7467
steve.hutchings@tn.gov

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STRUCTURES DIVISION
BRIDGE INSPECTION AND REPAIR OFFICE
SUITE 1200, JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TN 37243-1403
(615) 741-0776

CLAY BRIGHT
COMMISIONER

BILL LEE
GOVERNOR

January 8, 2020

To: Steve Hutchings
Tennessee Department Of Transportation
Regional Bridge Engineer

Subject: New Weight Limit Posting Requirements
Bridge Federal ID No. 33I00240059
Bridge Location No. 33 - 03578 - 0.80
S. Moore Rd. over I-24
Hamilton County - City Of East Ridge

The subject bridge suffered collision damage on January 7, 2019. We have completed our evaluation of the bridge and have determined that the bridge is now required to be posted for a weight limit of 13 tons for two axle vehicles and 23 tons for vehicles with three or more axles.

The new weight limit posting signs shall be installed by February 7, 2020. Compliance with the weight limit posting requirements can be confirmed taking photographs of each sign at both approaches to the bridge and submitting these photographs to the HQ Bridge Inspection Office in Nashville. This can be done by replying to the email that distributed this letter and attaching the photographs as digital files.

Each photograph must show the face of the sign clearly so that the weight limit values can be confirmed. Photographs shall be taken at both approaches to the bridge even if it was only required to replace one sign.

If any additional work is done on the bridge, the TDOT Regional office should be notified so that they can perform an inspection.

Please scan and email any Repair Plans in case of any repairs; or As-Built Drawings or Design Plans in case of a structure replacement to the email address that distributed this letter.

Should you have any questions, please advise.

Sincerely,

Ted A Kniazewycz

Ted Kniazewycz, PE
Director of Structures

TENNESSEE BRIDGE INSPECTION PROGRAM
SUMMARY OF EVALUATION

REV. 03-05-2003

BRIDGE ID NO: 33I00240059 LOCATION NO: 33 - 03578 - 0.80

(6A) CROSSING: I-24

(505) METHOD OF ANALYSIS: LOAD RESISTANCE FACTOR METHOD - RF

(548) RATING BASED ON: AASHTOWare Bridge Rating (3" Asphalt)

LOAD RATINGS IN TONS

INVENTORY (503)	H	29	(518B) HS	29
OPERATING (504)	H	37	(519) HS	37

REQ. POSTING:

(549) EVALUATOR: KBL

(522) EVAL. DATE: 10/18/2018

LAST UPDATED BY: LINER

(29) ADT: 11,270 (30) ADT YR: 2018

(100) STRAHNET ROUTE: NO

(19) DETOUR LENGTH: 5 KM

(520) VC OVER RDWY: 99.99 METERS

CONDITION RATINGS

(58) DECK RATING:	7
(59) SUPERSTRUCTURE RATING:	4
(60) SUBSTRUCTURE RATING:	5
(61) CHANNEL PROTECTION:	N
(62) CULVERT RATING:	N
(113A) NBIS SCOUR CODE:	N
(113B) TDOT SCOUR CODE:	

APPRAISAL RATINGS

(67) STRUCTURAL EVALUATION:	4
(68) DECK GEOMETRY:	7
(69) UNDER CLEARANCE:	4
(70) BRIDGE POSTING:	5
(71) WATERWAY ADEQUACY:	N
(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:	P
(513) TEXTURE COAT RATING:	N
(514) PAINT CONDITION RATING:	N
(41) WEIGHT POSTING CODE:	B

(36) TRAFFIC SAFETY FEATURES: 0 N N N

(525) REPAIR LIST NO: 2

COMMENTS

A LOAD RATING ANALYSIS HAS BEEN PERFORMED ON THIS BRIDGE FOLLOWING COLLISION DAMAGE THAT OCCURRED ON 01/07/2020. THE LEFT EXTERIOR BEAM IN SPAN 2 WAS DAMAGED SO SEVERELY THAT IT WAS REMOVED SINCE IT HAD THE POTENTIAL TO FALL ON TRAFFIC BELOW THE STRUCTURE. DURING THE PROCESS, LONGITUDINAL TIE RODS WERE REMOVED. THE CURRENT LOAD RATING CONSIDERS THE BEAMS TO ACT INDEPENDENTLY.

(502) SUFF. RATING: 61.4

(528) STR. DEFICIENT: YES

(529) FUNC. OBSOLETE: NO

Bridge Name: S Moore Rd / I-24
NBI Structure ID: 33I00240059
Bridge ID: 33I00240059

Analyzed By: bridgeware
Analyze Date: Wednesday, January 22, 2020 08:39:54
Analysis Engine: AASHTO LRFR Engine Version 6.8.1.3001
Analysis Preference Setting: None

Report By: bridgeware
Report Date: Wednesday, January 22, 2020 08:41:02

Structure Definition Name: Spans 2 and 3
Member Name: Interior
Member Alternative Name: 27" Deep, 54' Clear Span

Load and Resistance Factor Rating Summary

Girder Summary

		Rating		Capacity		Location			
Live Load		**Factor**	**Controls**	**(Ton)**	**Span**	**(ft)**	**Percent**	**Impact**	**Lane**
H 15-44	Inventory	1.910	STRENGTH-I Concrete Flexure	28.65	1	27.00	50.0	As Requested	As Requested
H 15-44	Operating	2.476	STRENGTH-I Concrete Flexure	37.14	1	27.00	50.0	As Requested	As Requested
HL-93 (US)	Inventory	0.799	STRENGTH-I Concrete Flexure	28.77	1	27.00	50.0	As Requested	As Requested
HL-93 (US)	Operating	1.036	STRENGTH-I Concrete Flexure	37.30	1	27.00	50.0	As Requested	As Requested
HS 20-44	Inventory	1.002	STRENGTH-I Concrete Flexure	36.07	1	27.00	50.0	As Requested	As Requested
HS 20-44	Operating	1.299	STRENGTH-I Concrete Flexure	46.75	1	27.00	50.0	As Requested	As Requested
SU7	Legal	1.195	STRENGTH-I Concrete Flexure	46.32	1	27.00	50.0	As Requested	As Requested
Type 3S2	Legal	1.854	STRENGTH-I Concrete Flexure	66.73	1	21.60	40.0	As Requested	As Requested
Annual Permit 1	Permit	1.474	STRENGTH-II Concrete Flexure	121.57	1	21.60	40.0	As Requested	As Requested
Annual Permit 2	Permit	1.293	STRENGTH-II Concrete Flexure	106.68	1	27.00	50.0	As Requested	As Requested
Gravel Truck	Legal	1.200	STRENGTH-I Concrete Flexure	44.41	1	27.00	50.0	As Requested	As Requested
Overweight Permit	Permit	1.131	STRENGTH-II Concrete Flexure	144.23	1	27.00	50.0	As Requested	As Requested
EV2	Legal	1.565	STRENGTH-I Concrete Flexure	45.00	1	27.00	50.0	As Requested	As Requested
EV3	Legal	0.990	STRENGTH-I Concrete Flexure	42.55	1	27.00	50.0	As Requested	As Requested

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

PHOTOGRAPHS

Bridge No.: 33 – 03578 – 0080
Crossing:: I24
Federal No.: 33I00240059 Date: July 30, 2002

PIC1

SIDE VIEW LOOKING AHEAD

PIC2

SIDE VIEW LOOKING BACK

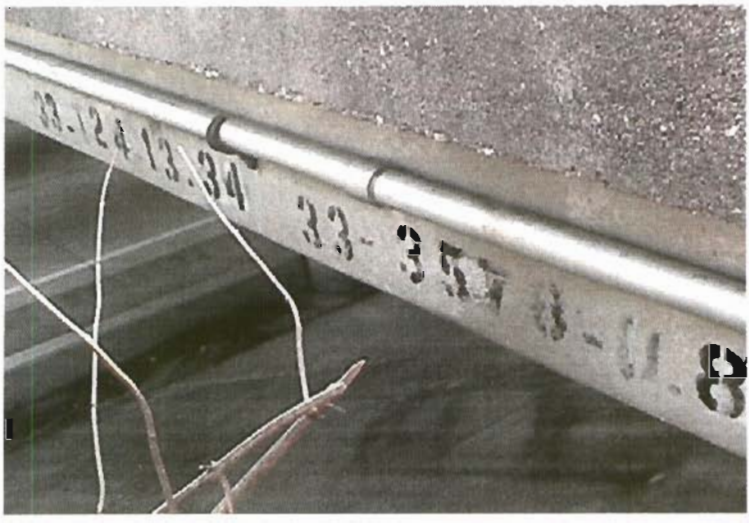
PHOTOGRAPHS

Bridge No.: 33 – 03578 – 0080
Crossing:: I24
Federal No.: 33I00240059 Date: July 30, 2002

PIC3

ACROSS TOP

PIC4



BRIDGE NUMBER

PHOTOGRAPHS

Bridge No.: 33 – 03578 – 0080
Crossing:: I24
Federal No.: 33I00240059 Date: July 30, 2002

PIC5

LOOKING BACK ON UNDERPASS ROUTE

PIC6

LOOKING AHEAD ON UNDERPASS ROUTE

PHOTOGRAPHS

Bridge No.: 33 – 03578 – 0080
Crossing:: I24
Federal No.: 33I00240059 Date: July 30, 2002

PIC1

VEG. IN DRAINS

PIC2

SM. CRACK AT APPROACH #2

PHOTOGRAPHS

Bridge No.: 33 – 03578 – 0080
Crossing:: I24
Federal No.: 33I00240059 Date: July 30, 2002

PIC3

SM. CRACK AT APPROACH #1

PIC4

SPALL W/ REBAR EXP. #1 ABUT

PHOTOGRAPHS

Bridge No.: 33 – 03578 – 0080
Crossing:: I24
Federal No.: 33I00240059 Date: July 30, 2002

PIC5

SPALL W/ REBAR EXP. BENT #1 COL

PIC6

0

ROUTINE BRIDGE INSPECTION REPORT

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

Field Report No. 16 Date 8/2/2002
Previous Report No. 15 Date 9/19/2000
Plans: DESIGN

Bridge No. 33I00240059 (Eleven Digit No.)
Bridge Location No. 33 - 03578 - 0.80 (Co. Route Log Mile)
MOORE ROAD(3578-0.80) (Road Name) over I 24 (Crossing)
Indepth Insp. Req'd: NO (If yes itemize limits under comments)
Structure Type PCBB
FRACTURE CRITICAL: NO

FEATURE CHANGES:
Wearing Surface NO Type ASPHALT Depth 3.0 (in.)
Bridge Rail NO Describe changes:
Approach Rail NO

CLEARANCE CHANGES: NO (If yes make changes below)

Vertical Clearance over deck	99-99	(ft.-in.)
Vertical Under Clearance	16'-08"	(ft.-in.)
Lateral Under Clearance	53.0	(*.* ft.)
Deck Width Curb/Curb	64.0	(*.* ft.)
Deck Width Rail/Rail	73.0	(*.* ft.)
Sidewalk Width	Rt. 4.5	Lt. 4.5

INSPECTORS
BDERAMUS

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

		Comments
Approaches	FAIR	*UNEVEN, SETTLED, CRACKED. POTHOLED OVER JOINT.*
Deck Condition (Item 58)	7	*JOINT AT CENTERLINE IS MOSTLY SEALED.*
Superstructure (Item 59)	6	
a. Beams	G-F	*SEVERAL CRACKED, MINOR SPALLS*
b. Bearings	GOOD	
c. Diaphragms	NA	
Substructure (Item 60)	6	
a. Caps/Bridge Seats	G-F	*DELAMS, CRACKS, SCALE*
b. Columns/Piles	G-F	*DELAMS, REBAR SPALLS, REBAR MAT EXPOSED, REBAR POPOUT*
c. Footings	NV	
d. Wing W./Breast W.	G-F	*HR.LINE-SMALL CRACKS, DELAMS, SPALL, POPOUTS*
Scour/Erosion	GOOD	
Channel (Item 61)	N	

UNDERWATER INSPECTION
To Be Performed By: NONEREQUIRED
Date Underwater Insp.____
BRIDGE is: OPEN

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

COMMENTS:
COMMENTS: Bent caps have cracks & delams. Columns have rebar spalls w/ mat exposed and delams. Abutments have small cracks and delams. Few PCBBs have minor spalls & cracks. Asphalt wearing surface is uneven. Longitudinal cracks have been sealed. Overlay is breaking-up over the joints. Pothole in overlay at #2 end. The approach pavement is settled and uneven. There are no approach guard rails.

Supervising Bridge Inspector: W.LLOYD
BRIDGE RATING: **FAIR**

Inspection Team's Summary
Bridge Location No. 33 - 03578 - 0.80
Inspection Date 8/2/2002
Bridge Rating FAIR

TYPE SERVICE: SOUTH MOORE ROAD
OVER: I 24 (L.M. 13.34)

□On August 2, 2002, a Region Two Bridge Inspection Team inspected this structure and found it to be in FAIR condition.

□The abutment breastwalls have hairline to small cracks, delams and a rebar spall. The bent caps have delaminated areas, cracks and scale. The bent columns have rebar spalls, rebar mat exposed, delams, cracks and popouts. The bearing pads are good.

□PCBBs have some spalls, exposed cable, cracks and scrape marks.

□The asphalt wearing surface is uneven. The longitudinal crack along the centerline paving joint has been sealed but there is some sealer loss. The overlay is breaking-up and potholed over the joints. The approach pavement is settled, cracked and uneven. The bridge rail is substandard. There are no approach guardrails.

INSPECTION REPORT FOR UNDERPASS ROUTE

Form BIR 3.0A
(Rev. 9-22-98)
DT-1443

Field Report No. 16 Date 8/2/2002
Previous Report No. 15 Date 9/19/2000

Bridge No. 33I00240059 (Eleven Digit No.)

Underpass Location No. 33 (Co.) - I0024 (Route) - 13.34 (Log Mile)

_____ (Railroad/Walkway) or 33 (Co.) - 03578 (Route) - 0080 (Log Mile) over 33 (Co.) - I0024 (Route) - 13.34 (Log Mile)

County HAMILTON Structure Name (If Named) SOUTH MOORE ROAD

Year Constructed 1964 ACTUAL

Year Widened NA NA Year Rehabilitated NA NA

GEOMETRIC FEATURES UNDER BRIDGE *(*.* ft. unless otherwise noted)*

Divided Highway LEFT ROADWAY Type of Wearing Surface CONCRETE

Width of Approach Traveled Roadway 36.0 ft. (Does Not Include Shoulders)

Width of Median if Divided Highway 16.0 ft.

Approach Shoulder Width 6.5 ft. Right 10 ft. Left

*Horizontal Clearance Under Bridge 53.5 ft.

*Distance Between Pier Protection Guardrail and Substructure 0 ft. Right 0 ft. Left

*Width of Sidewalk Under Bridge NA ft. Right NA ft. Left

*Minimum Vertical Clearance: 16 ft. 08 in. (ft.-in.)

*Show on Sketch

TRAFFIC SAFETY FEATURES

	Rating	Standard/ SubStandard Non Exist
Pier Protection Railing or Parapet	GOOD	STANDARD
Approach Guardrail Terminals	GOOD	STANDARD
Approach Guardrail	GOOD	STANDARD
Approach Guardrail Terminal	GOOD	STANDARD

SIGNING

	Yes/ No/ Needed
Paddleboards	NO
Vertical Clearance (<14'-6")	NO
Narrow Passage	NO
One Lane Passage	NO

Other Underpass Signs Needed

INSPECTORS

1. WATKINS
2. DERAMUS
3. _____
4. _____
5. _____
6. _____

Page No.___

Form BIR 3.0A (Continued)
(Rev. 9-22-98)
DT-1443

Date 8/2/2002

Underpass Location No. 33 - I0024 - 13.34
Co. Route Log Mile

Other Signs or Plaques:

Comments Regarding any
Problems with Signing:

BRIDGE FEATURES *(*.* ft.)*

Bridge Skew 90 °

Number of Lanes/Tracks on Bridge 5

Structure Type (Main Span) PCBB

No. Main Spans 4

Structure Type (Appr.Spans) NA

No. Appr. Spans NA

Maximum Span Length 55.2 (ft.)

Total Length 174.5 (ft.)

Width of Bridge Out-to-Out 79.5 (ft.)

Right Angle to Centerline of Bridge)

Width of Bridge Along Skew NA (ft.)

(If Unable to Measure at Right Angle to Centerline of Bridge)

BRIDGE CONDITION: **FAIR**

Does Potential Exist for Elements from Bridge Falling on Roadway Beneath? NO

Does Potential Exist Because of Deteriorated Condition or Failure of Major Members? NO

Comment on any Conditions of Bridge that would Effect Roadway Beneat

Note: If Underpass Route is Divided Highway, Use Two 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

INSPECTION REPORT FOR UNDERPASS ROUTE

Form BIR 3.0A
(Rev. 9-22-98)
DT-1443

Field Report No. 16 Date 8/2/2002
Previous Report No. 15 Date 9/19/2000

Bridge No. 33I00240059 (Eleven Digit No.)

Underpass Location No. 33 (Co.) - I0024 (Route) - 13.34 (Log Mile)

_____ (Railroad/Walkway) or 33 (Co.) - 03578 (Route) - 0080 (Log Mile) over 33 (Co.) - I0024 (Route) - 13.34 (Log Mile)

County HAMILTON Structure Name (If Named) SOUTH MOORE ROAD

Year Constructed 1964 ACTUAL

Year Widened NA NA Year Rehabilitated NA NA

GEOMETRIC FEATURES UNDER BRIDGE *(*.* ft. unless otherwise noted)*

Divided Highway RIGHT ROADWAY Type of Wearing Surface CONCRETE

Width of Approach Traveled Roadway 36.0 ft. (Does Not Include Shoulders)

Width of Median if Divided Highway 16.0 ft.

Approach Shoulder Width 10.0 ft. Right 6.5 ft. Left

*Horizontal Clearance Under Bridge 52.5 ft.

*Distance Between Pier Protection Guardrail and Substructure 0 ft. Right 0 ft. Left

*Width of Sidewalk Under Bridge NA ft. Right NA ft. Left

*Minimum Vertical Clearance: 16 ft. 8 in. (ft.-in.)

*Show on Sketch

INSPECTORS

1. WATKINS
2. DERAMUS
3. _____
4. _____
5. _____
6. _____

TRAFFIC SAFETY FEATURES

	Rating	Standard/ SubStandard Non Exist
Pier Protection Railing or Parapet	GOOD	STANDARD
Approach Guardrail Terminals	GOOD	STANDARD
Approach Guardrail	GOOD	STANDARD
Approach Guardrail Terminal	GOOD	STANDARD

SIGNING

	Yes/ No/ Needed
Paddleboards	NO
Vertical Clearance (<14'-6")	NO
Narrow Passage	NO
One Lane Passage	NO

Other Underpass Signs Needed

Page No.___

Form BIR 3.0A (Continued)
(Rev. 9-22-98)
DT-1443

Date 8/2/2002

Underpass Location No. 33 - I0024 - 13.34
Co. Route Log Mile

Other Signs or Plaques:

Comments Regarding any
Problems with Signing:

BRIDGE FEATURES *(*.* ft.)*

Bridge Skew 90 °

Number of Lanes/Tracks on Bridge 5

Structure Type (Main Span) PCBB

No. Main Spans 4

Structure Type (Appr.Spans) NA

No. Appr. Spans NA

Maximum Span Length 55.2 (ft.) Total Length 174.5 (ft.)

Width of Bridge Out-to-Out 79.5 (ft.) Right Angle to Centerline of Bridge)

Width of Bridge Along Skew NA (ft.) (If Unable to Measure at Right Angle to Centerline of Bridge)

BRIDGE CONDITION: **FAIR**

Does Potential Exist for Elements from Bridge Falling on Roadway Beneath? NO

Does Potential Exist Because of Deteriorated Condition or Failure of Major Members? NO

Comment on any Conditions of Bridge that would Effect Roadway Beneat

Note: If Underpass Route is Divided Highway, Use Two of These Forms, One for Each Roadway.

MINIMUM PICTURES REQUIRED

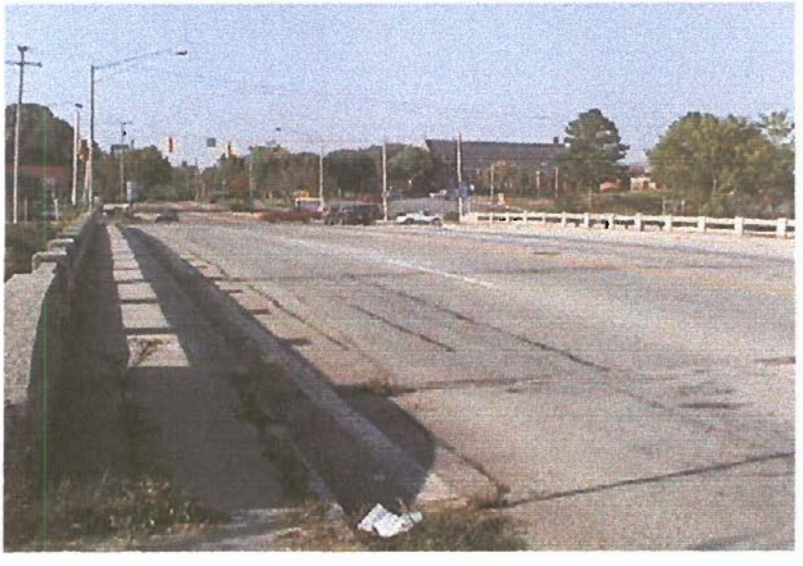
1. Elevation View of Bridge on Both Sides Showing Underpass
2. View Showing Both Approaches to Bridge
3. View Showing Safety Features
4. View Showing Any Problems

Bridge No.: 33 —03578 — 0080
Crossing : I24
Federal No 33I00240059 Date: June 20, 2000

PIC2

SIDE VIEW

PIC3



ACROSS TOP

Bridge No.: 33 — 03578 — 0080
Crossing:: 124
Federal No.: 33I00240059 Date: June 20, 2000

PIC4

BRIDGE NUMBER

PIC5

VOID IN SEAL IN EXPANSION JOINT AT #2 END

Bridge No.: 33 — 03578 — 0080
Crossing:: I24
Federal No.: 33I00240059 Date: June 20, 2000

PIC6

SPAN #3 BEAM A, LARGE SPALL W/ STRANS EXPOSED

PIC7

SPAN #3 BEAM A, SPALL W/ STRANS EXPOSED

Bridge No.: 33 —03578 — 0080
Crossing:: I24
Federal No.: 33I00240059 Date: June 20, 2000

PIC8

ABUTMENT #1, LEFT SIDE, LARGE DELAM AREA

PIC9

ABUTMENT #1, LEFT SIDE, LARGE DELAM AREA

Bridge No.: 33 — 03578 — 0080
Crossing:: I24
Federal No.: 33100240059 Date: June 20, 2000

PIC10

BENT #1, COLUMN C, LARGE DELAM WITH REBAR EXPOSED

PIC11

BENT #1, COLUMN F, LARGE DELAM WITH REBAR EXPOSED

ROUTINE BRIDGE INSPECTION REPORT

Page No.___

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

Field Report No. 15 Date 09/19/2000
Previous Report No. 14 Date 09/03/1998
Plans: DESIGN

Bridge No. 33I00240059 (Eleven Digit No.)
Bridge Location No. 33 - 03578 - 0.80 (Co. Route Log Mile)
MOORE ROAD(3578-0.80) (Road Name) over I 24 (Crossing)
Indepth Insp. Req'd: NO (If yes itemize limits under comment)
Structure Type PCBB
FRACTURE CRITICAL: NO

FEATURE CHANGES:
Wearing Surface NO Type ASPHALT Depth 3.0 (in.)
Bridge Rail NO Describe changes:
Approach Rail NO

CLEARANCE CHANGES: NO (If yes make changes below)

Vertical Clearance over deck	99-99	(ft.-in.)
Vertical Under Clearance	16'-08"	(ft.-in.)
Lateral Under Clearance	53.0	(*.* ft.)
Deck Width Curb/Curb	64.0	(*.* ft.)
Deck Width Rail/Rail	73.0	(*.* ft.)
Sidewalk Width Rt.	4.5	Lt. 4.5

INSPECTORS
F.WATKINS
BDERAMUS

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

		Comments
Approaches	FAIR	*UNEVEN, SETTLED, CRACKED*
Deck Condition (Item 58)	7	*JOINT AT CENTERLINE IS MOSTLY SEALED.*
Superstructure (Item 59)	6	
a. Beams	G-F	*SEVERAL CRACKED, MINOR SPALLS*
b. Bearings	GOOD	
c. Diaphragms	NA	
Substructure (Item 60)	6	
a. Caps/Bridge Seats	G-F	*DELAMS, CRACKS, SCALE*
b. Columns/Piles	G-F	*DELAMS, REBAR SPALLS, REBAR MAT EXPOSED, TIE WIRE POPOUTS, REB*
c. Footings	NV	
d. Wing W./Breast W.	G-F	*HR.LINE-SMALL CRACKS, DELAMS, REBAR POPOUTS*
Scour/Erosion	GOOD	
Channel (Item 61)	N	

UNDERWATER INSPECTION
To Be Performed By: DOT FIELD TEAM
Date Underwater Insp.___
BRIDGE is: OPEN

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

COMMENTS: . .B

COMMENTS: Bent caps have cracks & delams. Colbmns have re ar spalls w/ mat exposed and delams. Breastwalls have small cracks and delams. Few PCBBs have minor spalls & cracks. Asphalt wearing surface is uneven. Longitudinal cracks have been sealed. Overlay is breaking-up over the joints. Pothole in overlay at #2 end. The approach pavement is settled and uneven. There are no approach guard rails.

Supervising Bridge Inspector: W.LLOYD
BRIDGE RATING: **FAIR**

Inspection Team's Summary
Bridge Location No. 33 - 03578 - 0.80
Inspection Date 09/19/2000
Bridge Rating FAIR

TYPE SERVICE: SOUTH MOORE ROAD
OVER: I 24 (L.M. 13.34)

On September 19, 2000, a Region Two Bridge Inspection Team inspected this structure and found it to be in FAIR condition.

The abutment breastwalls have hairline to small cracks, minor delaminated areas and a few rebar popouts. The bent caps have delaminated areas, cracks and scale. The bent columns have rebar spalls, rebar mat exposed, delams, cracks and popouts. The bearing pads are good.

Some spalls, exposed cable, cracks and scrape marks on PCBBs.

The asphalt wearing surface is uneven. The longitudinal crack along the centerline paving joint has been sealed but there is some sealer loss. The overlay is breaking-up over the joints. The approach pavement is settled, cracked and uneven. The bridge rail is substandard and has some rebar spalls. There are no approach guardrails. The underpass raodway (I-24) has been upgraded to standard guardrail and parapets.

INSPECTION REPORT FOR UNDERPASS ROUTE

Form BIR 3.0A
(Rev. 9-22-98)
DT-1443

Field Report No. 15 Date 09/19/2000
Previous Report No. 14 Date 09/03/1998

Bridge No. 33I00240059 (Eleven Digit No.)

Underpass Location No. 33 (Co.) - 03578 (Route) - 0.80 (Log Mile)

_____ (Railroad/Walkway) or 33 (Co.) - I0024 (Route) - 1334 (Log Mile) over 33 (Co.) - 03578 (Route) - 0.80 (Log Mile)

County Hamilton Structure Name (If Named) SOUTH MOORE ROAD

Year Constructed 1964 ACTUAL

Year Widened NA Year Rehabilitated NA

GEOMETRIC FEATURES UNDER BRIDGE

(.* ft. unless otherwise noted)*

Divided Highway LEFT ROADWAY Type of Wearing Surface CONCRETE

Width of Approach Traveled Roadway 36.0 ft. (Does Not Include Shoulders)

Width of Median if Divided Highway 16.0 ft.

Approach Shoulder Width 6.0 ft. Right 10 ft. Left

*Horizontal Clearance Under Bridge 53.0 ft.

*Distance Between Pier Protection Guardrail and Substructure NA ft. Right NA ft. Left

*Width of Sidewalk Under Bridge NA ft. Right NA ft. Left

*Minimum Vertical Clearance: 16 ft. 08 in. (ft.-in.)

*Show on Sketch

INSPECTORS

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

TRAFFIC SAFETY FEATURES

	Rating	Standard/ SubStandard Non Exist
Pier Protection Railing or Parapet	GOOD	STANDARD
Approach Guardrail Terminals	GOOD	STANDARD
Approach Guardrail	GOOD	STANDARD
Approach Guardrail Terminal	GOOD	STANDARD

SIGNING

	Yes/ No/ Needed
Paddleboards	NO
Vertical Clearance (<14'-6")	NO
Narrow Passage	NO
One Lane Passage	NO

Other Underpass Signs Needed

Page No.____

Form BIR 3.0A (Continued)
(Rev. 9-22-98)
DT-1443

Date 09/19/2000

Underpass Location No. 33 - 03578 - 0.80
Co. Route Log Mile

Other Signs or Plaques:

Comments Regarding any
Problems with Signing:

BRIDGE FEATURES *(*.* ft.)*

Bridge Skew 90 °

Number of Lanes/Tracks on Bridge 5

Structure Type (Main Span) PCBB

No. Main Spans 4

Structure Type (Appr.Spans) NA

No. Appr. Spans NA

Maximum Span Length 55.2 (ft.) Total Length 174.5 (ft.)

Width of Bridge Out-to-Out 79.5 (ft.) Right Angle to Centerline of Bridge)

Width of Bridge Along Skew NA (ft.) (If Unable to Measure at Right Angle to Centerline of Bridge)

BRIDGE CONDITION: FAIR

Does Potential Exist for Elements from Bridge Falling on Roadway Beneath? NO

Does Potential Exist Because of Deteriorated Condition or Failure of Major Members? NO

Comment on any Conditions of Bridge that would Effect Roadway Beneath

Note: If Underpass Route is Divided Highway, Use Two 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

FORM BIR 3.10
Rev. 3-1-97
DT-1510

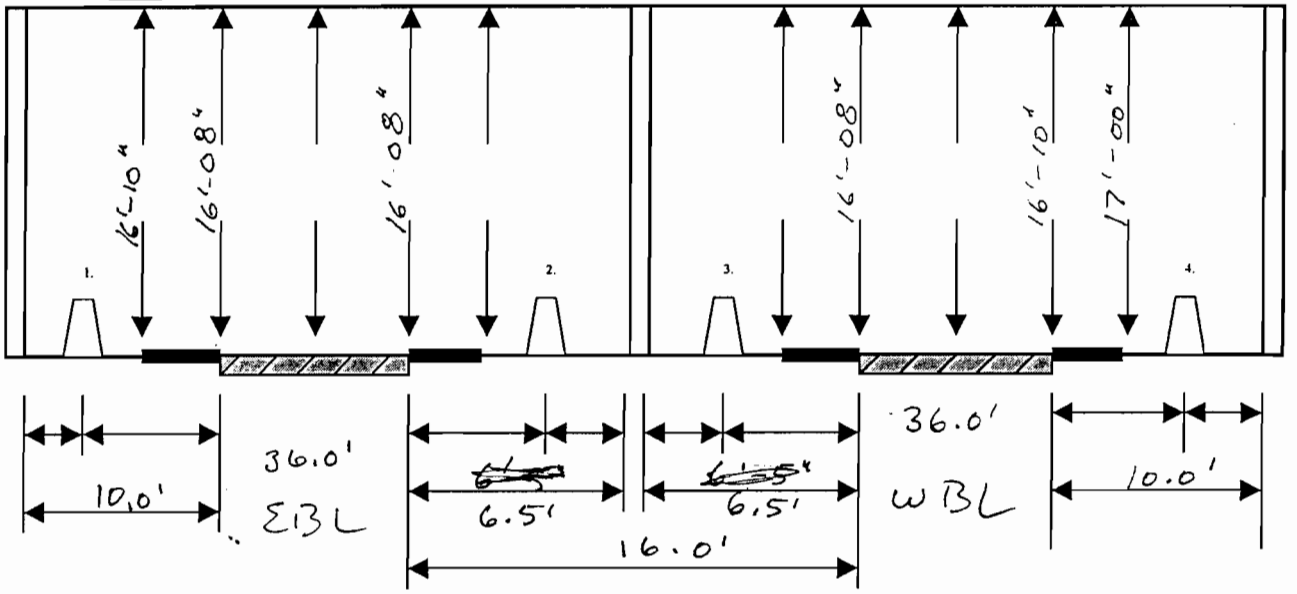
BRIDGE LOC.NO. 33 - I24 - 13.34 (3578 - 0.80) (LOG km)
CO ROUTE L.M.

DATE: 8-5-02

South Moore

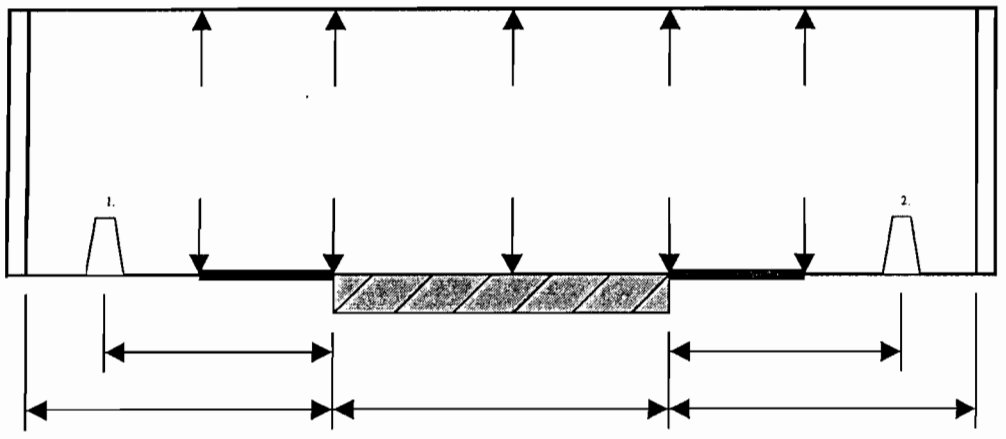
LATERAL AND VERTICAL CLEARANCES

BENT/~~ABUT~~ 1 BENT 2 BENT/~~ABUT~~ 3

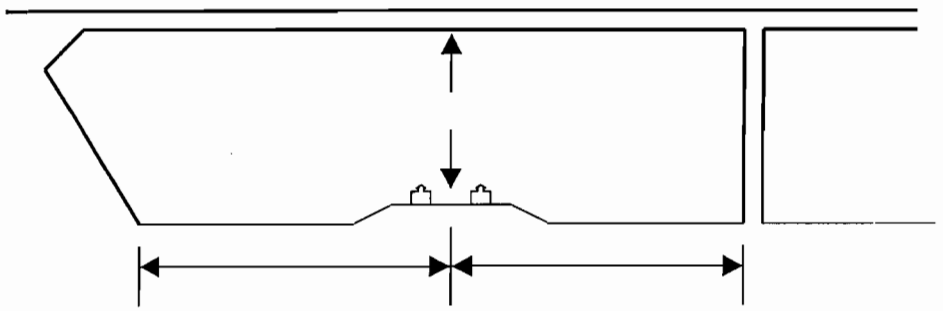


1.	RAIL/BARRIER TYPE:	W-SHAPE [✓]	CONC. BARRIER [✓]	NONE [ ]
2.	RAIL/BARRIER TYPE:	W-SHAPE [ ]	CONC. BARRIER [✓]	NONE [ ]
3.	RAIL/BARRIER TYPE:	W-SHAPE [ ]	CONC. BARRIER [✓]	NONE [ ]
4.	RAIL/BARRIER TYPE:	W-SHAPE [✓]	CONC. BARRIER [✓]	NONE [ ]

BENT/ABUT.____ BENT/ABUT.



BENT/ABUT.____

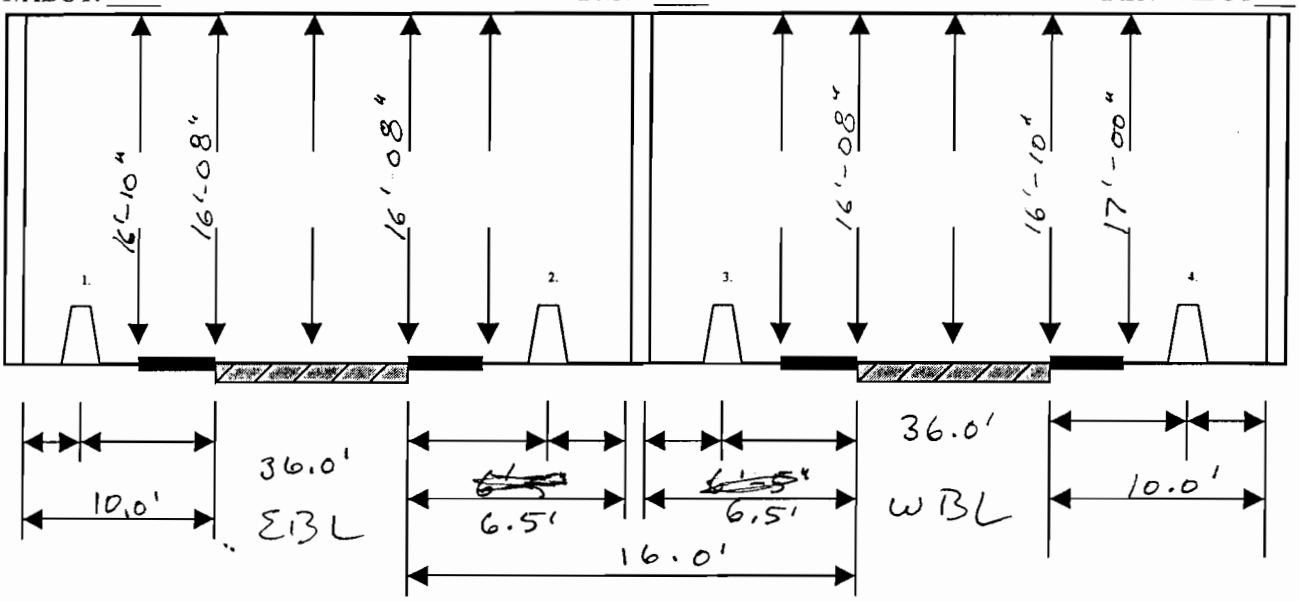


FORM BIR 3.10
Rev. 3-1-97
DT-1510

BRIDGE LOC.NO. 33 (CO) - I24 (ROUTE) - 13.34 (L.M.) (3578 - 0.80) (LOG km) DATE:_____

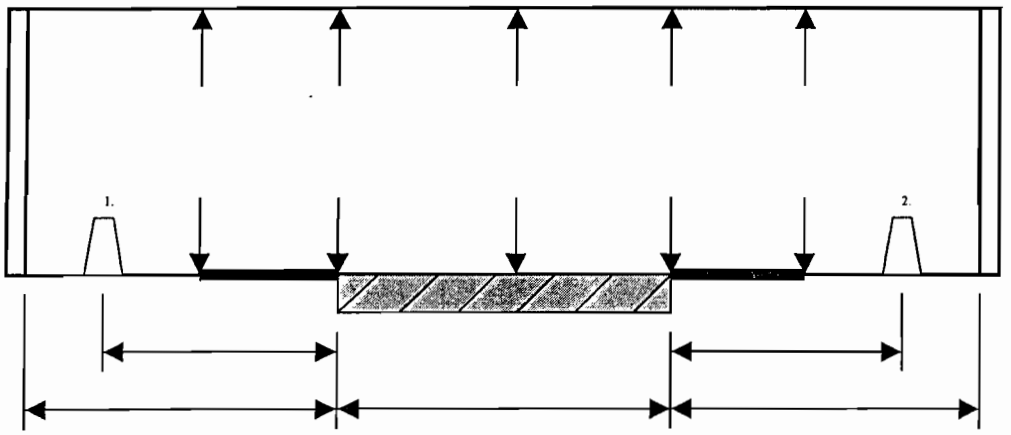
LATERAL AND VERTICAL CLEARANCES

BENT/~~ABUT.~~ 1 BENT 2 BENT/~~ABUT~~ 3

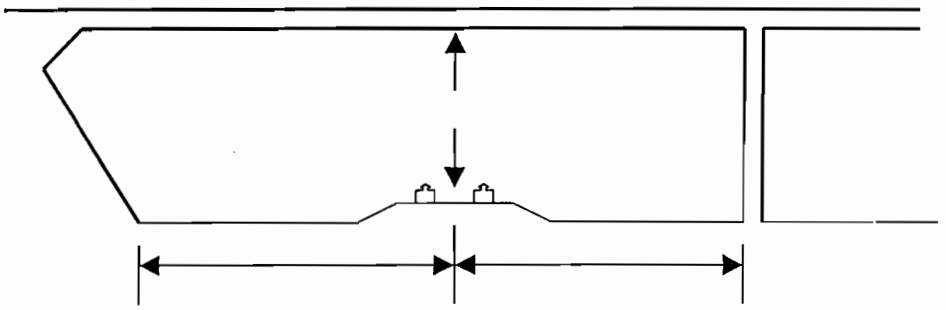


1.	RAIL/BARRIER TYPE:	W-SHAPE [ ]	CONC. BARRIER [✓]	NONE [ ]
2.	RAIL/BARRIER TYPE:	W-SHAPE [ ]	CONC. BARRIER [✓]	NONE [ ]
3.	RAIL/BARRIER TYPE:	W-SHAPE [ ]	CONC. BARRIER [✓]	NONE [ ]
4.	RAIL/BARRIER TYPE:	W-SHAPE [ ]	CONC. BARRIER [✓]	NONE [ ]

BENT/ABUT._____ BENT/ABUT.



BENT/ABUT._____



ELEVATIONS OF DECK PAGE NO. 000013

BRIDGE LOCATION NO. 33 (COUNTY) 3578 (ROUTE) 0.80 (LOG MILE) (1.29) (LOG km) DATE:

[redacted]TATION/ LOCATION	TOP OF LT. CURB/RAIL	GUTTER/ EDGE DECK	CENTERLINE	GUTTER/ EDGE DECK	TOP OF RT. CURB/RAIL
ABUT # 1	700.84	700.18	700.61	700.19	700.82
BENT # 1	701.14	700.45	700.01	700.42	701.14
BENT # 2	701.21	700.58	701.09	700.59	701.19
BENT # 3	700.80	700.04	700.61	700.04	700.82
ABUT # 2	700.39	699.63	700.07	699.64	700.37

BENCH MARK LOCATION BRIDGE SEAT, ABUT. # 2, RT. SIDE.

BENCH MARK ELEVATION 698.36

N[redacted]: ELEVATIONS TAKEN FROM PREVIOUS REPORT DATED 10-15-96

BIR 3.10
Rev. 6-9-92
DT-1510

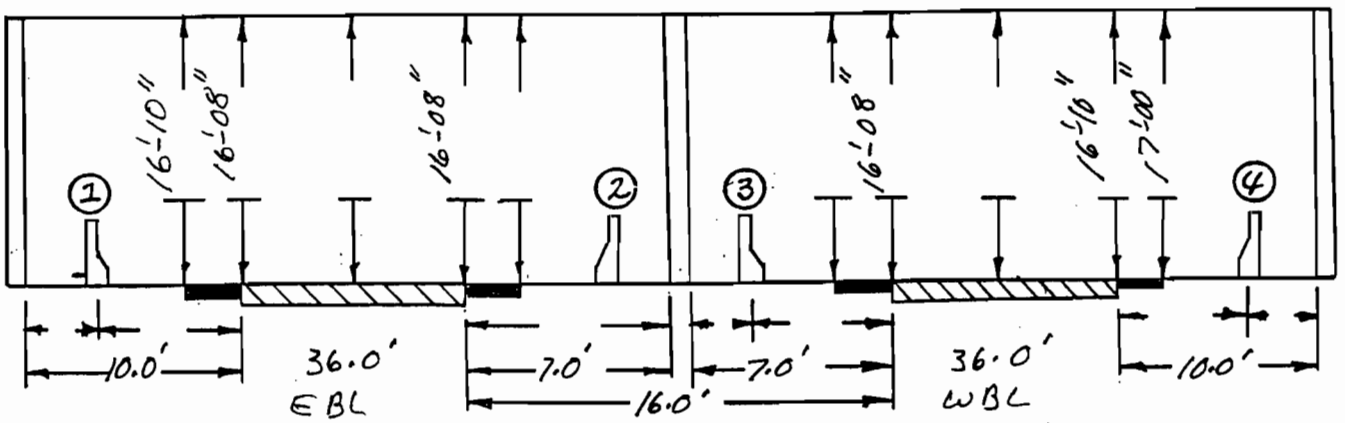
BRIDGE LOC. NO. 33 - 3578 - 0.80
CO. RTE. L.M.

000013

DATE 12-7-92

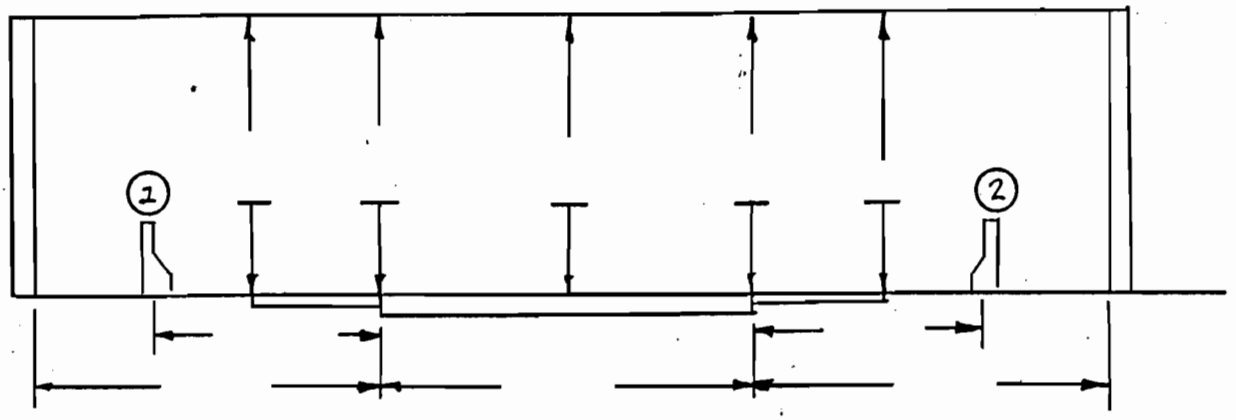
LATERAL AND VERTICAL CLEARANCES

BENT/~~ABUT~~. #1 BENT #2 BENT/~~ABUT~~ #3

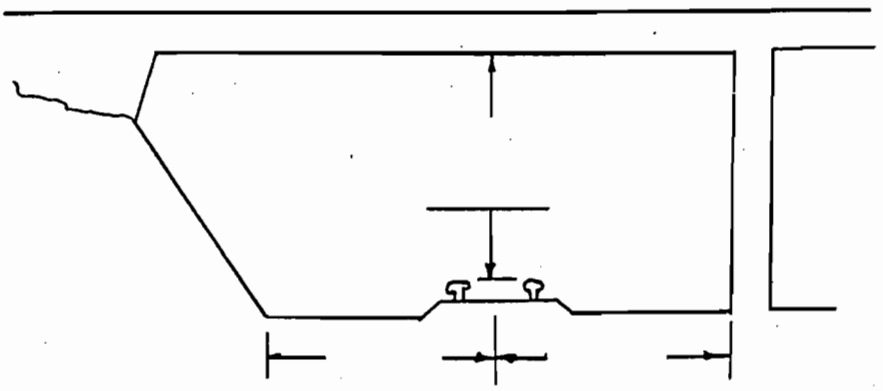


1.	RAIL/BARRIER TYPE:	W-SHAPE	[ ]	CONC. BARRIER	[ ]	NONE	[X]
2.	RAIL/BARRIER TYPE:	W-SHAPE	[ ]	CONC. BARRIER	[ ]	NONE	[X]
3.	RAIL/BARRIER TYPE:	W-SHAPE	[ ]	CONC. BARRIER	[ ]	NONE	[X]
4.	RAIL/BARRIER TYPE:	W-SHAPE	[ ]	CONC. BARRIER	[ ]	NONE	[X]

BENT/ABUT._____ BENT/ABUT._____



BENT/ABUT._____



ELEVATIONS OF DECK

BRIDGE LOCATION NO. 33 (COUNTY) 3578 (ROUTE) ~~0.80~~ (LOG MILE)

DATE 10-7-92

STATION/ LOCATION	TOP OF LT. CURB/RAIL	GUTTER/ EDGE DECK	CENTERLINE	GUTTER/ EDGE DECK	TOP OF RT. CURB/RAIL
ABUT. #1	700.84	700.18	700.61	700.19	700.82
BENT #1	701.14	700.45	700.01	700.42	701.14
BENT #2	701.21	700.58	701.09	700.59	701.19
BENT #3	700.80	700.04	700.61	700.04	700.82
ABUT. #2	700.39	699.63	700.07	699.64	700.37

BENCH MARK LOCATION Bridge seat, Abut. #2, Rt. side

BENCH MARK ELEVATION 698.36

NOTE: Elevations taken from previous report dated 11-15-90

000014

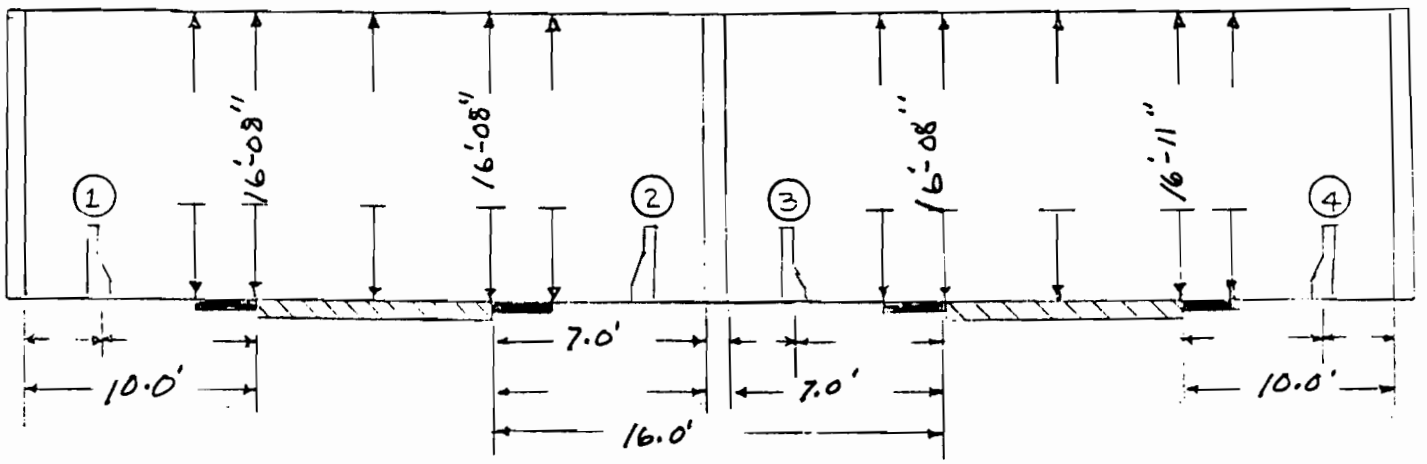
BIR 3.10
Rev. 4/20/90
DT-1510

BRIDGE NO. 33 – 3578 – 0.80

DATE: 11/15/90

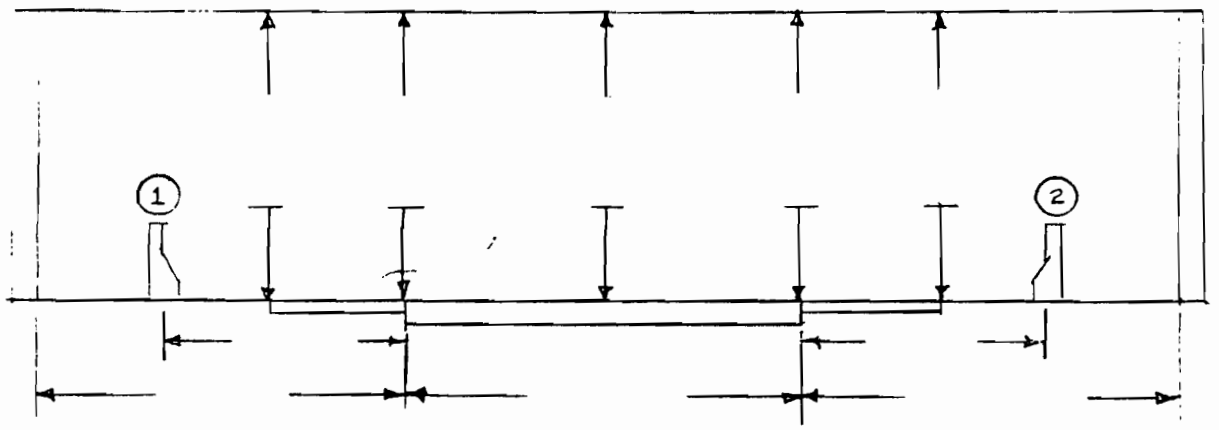
LATERAL AND VERTICAL CLEARANCES

BENT/~~ABUT~~. 1 BENT 2 BENT/~~ABUT~~. 3

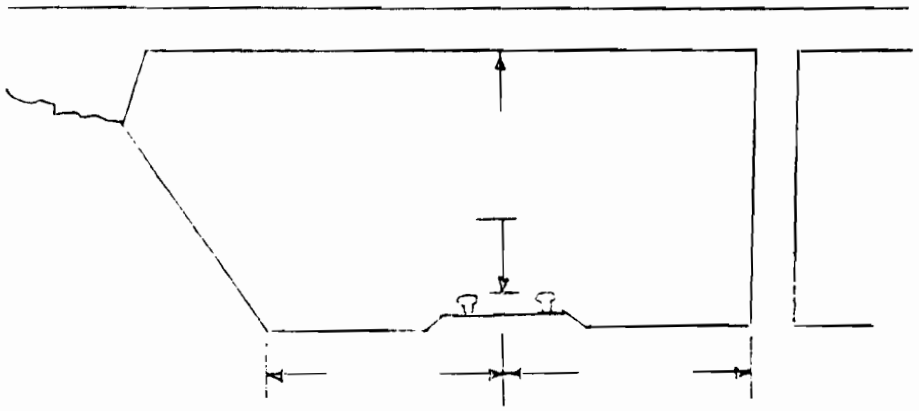


① RAIL/BARRIER TYPE: W-Shape ☐ Conc. barrier ☐ None ☐
② RAIL/BARRIER TYPE: W-Shape ☐ Conc. barrier ☐ None ☐
③ RAIL/BARRIER TYPE: W-Shape ☐ Conc. barrier ☐ None ☐
④ RAIL/BARRIER TYPE: W-Shape ☐ Conc. barrier ☐ None ☐

BENT/ABUT. ____ BENT/ABUT. ____



BENT/ABUT. ____



000010

ELEVATIONS OF DECK

PAGE NO

DT0905

33 COUNTY | 3578 ROUTE | 0.80 LOG MILE | 11-15-80 DATE

STATION	TOP OF CURB	GUTTER	CENTER LINE	GUTTER	TOP OF CURB
ABUT. #1	700.84	700.18	700.61	700.19	700.82
BENT #1	701.14	700.45	700.01	700.42	701.14
BENT #2	701.21	700.58	701.09	700.59	701.19 ~~700.82~~
BENT #3	700.80	700.04	700.61	700.04	700.82
ABUT. #2	700.39	699.63	700.07	699.64	700.37

BENCH MARK Top Bridge seat, ABUT. #2 Rt. side

LOCATION

698.36

Previous Report 12-6-78

ELEVATIONS OF DECK

PAGE NO

DT0905

33	FAU 3578	0.80	12-6-88
COUNTY	ROUTE	LOG MILE	DATE

STATION	TOP OF CURB	GUTTER	CENTER LINE	GUTTER	TOP OF CURB
ABUT. #1	700.84	700.18	700.61	700.19	700.82
BENT #1	701.14	700.45	700.01	700.42	701.14
BENT #2	701.21	700.58	701.09	700.59	701.19
BENT #3	700.80	700.04	700.61	700.04	700.82
ABUT #2	700.39	699.63	700.07	699.64	700.37

NOTE: ELEVATIONS TAKEN FROM PREVIOUS REPORT DATED 10-20-86.

BENCH MARK: TOP OF BRIDGE SEAT, ABUTMENT #2 (NORTH) RIGHT SIDE

LOCATION

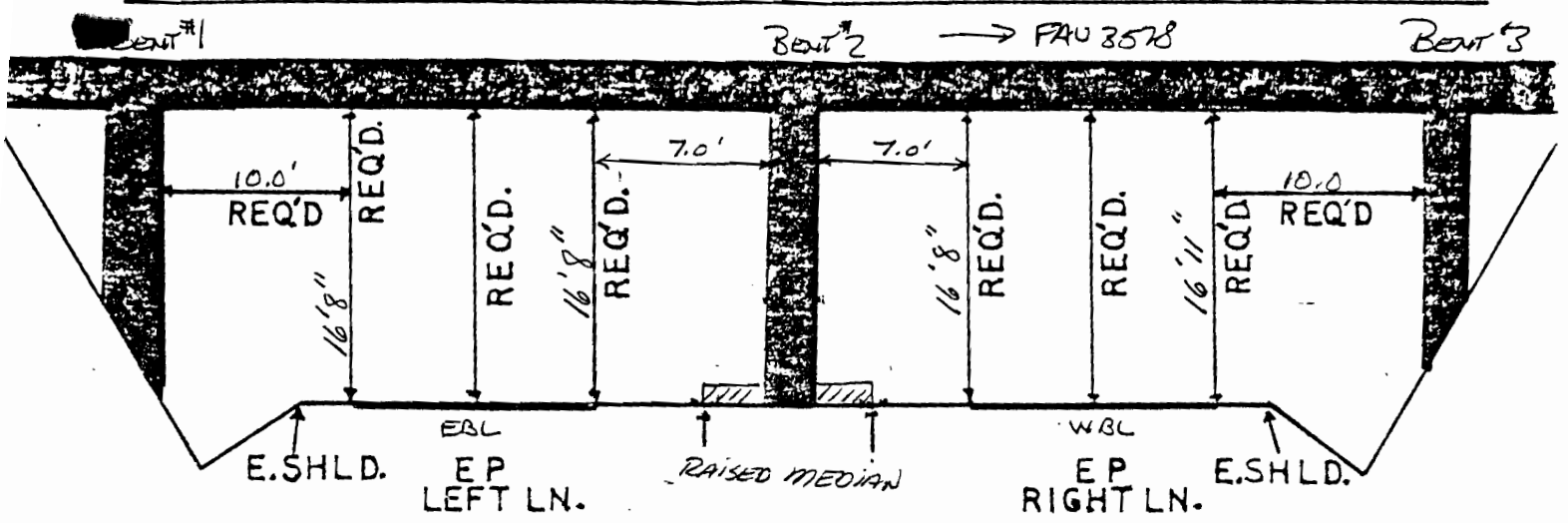
698.36

ELEVATION

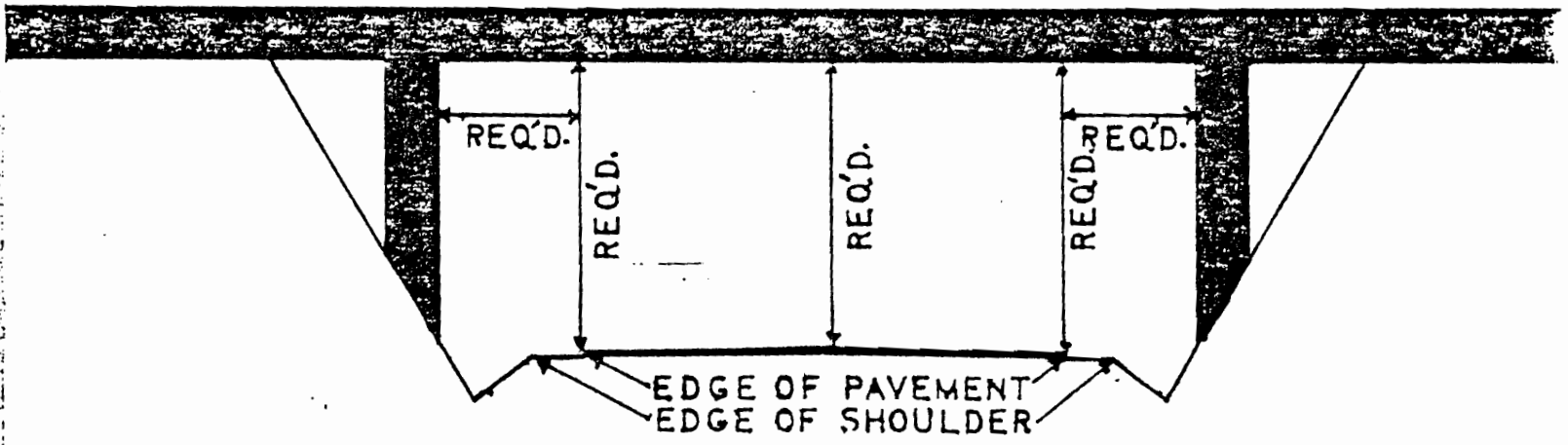
33 | FAU 3578 | [redacted] 0.80 | 12-6-08 | PAGE N

COUNTY | ROUTE | LOG MILE | DATE

REQUIRED VERTICAL AND HORIZONTAL CLEARANCES ON INTERSECTING ROUTES



DIVIDED HIGHWAY



TWO LANE HIGHWAY

NOTE: ALL CLEARANCES ARE MINIMUM

DT-0771

ELEVATIONS OF DECK

PAGE NO 000013

DT0905

33	FAU 3578	0.80	10-20-86
COUNTY	ROUTE	LOG MILE	DATE

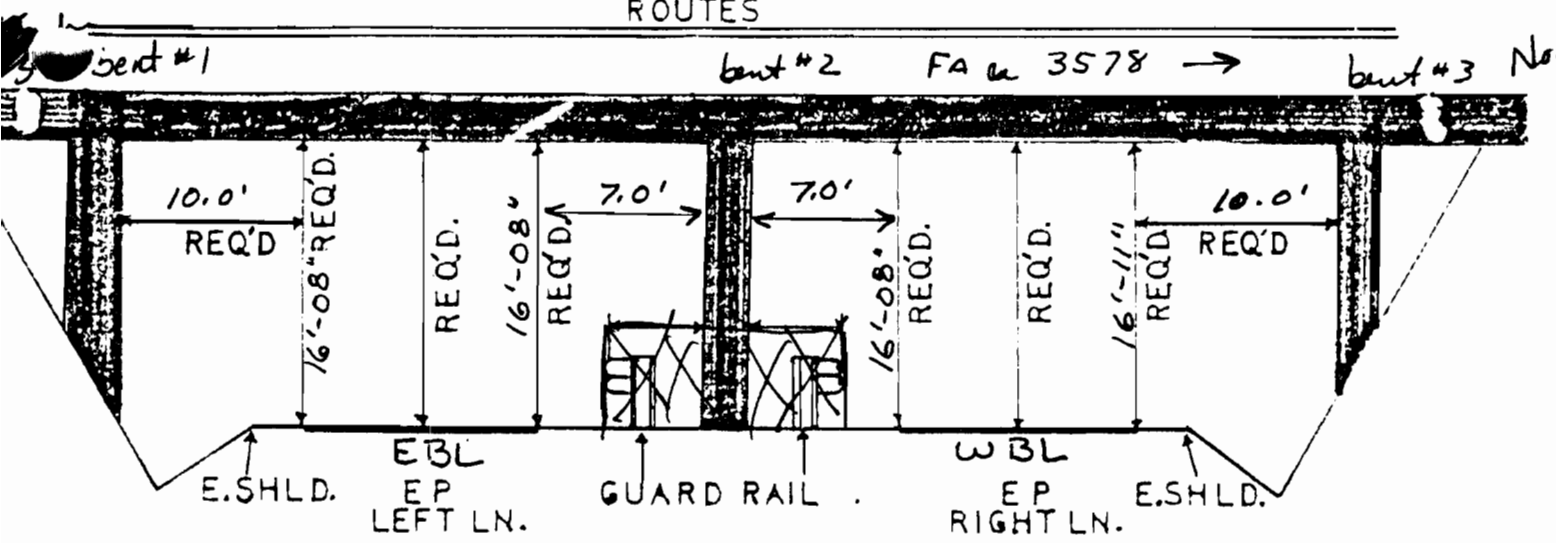
STATION	TOP OF CURB	GUTTER	CENTER LINE	GUTTER	TOP OF CURB
Abut #1	700.84	700.18	700.61	700.19	700.82
bent #1	701.14	700.45	700.01	700.42	701.14
bent #2	701.21	700.58	701.09	700.59	701.19
bent #3	700.80	700.04	700.61	700.04	700.82
Abut #2	700.39	699.63	700.07	699.64	700.37

BENCH MARK Top bridge seat, Abut #2 (North) Rt. side
LOCATION

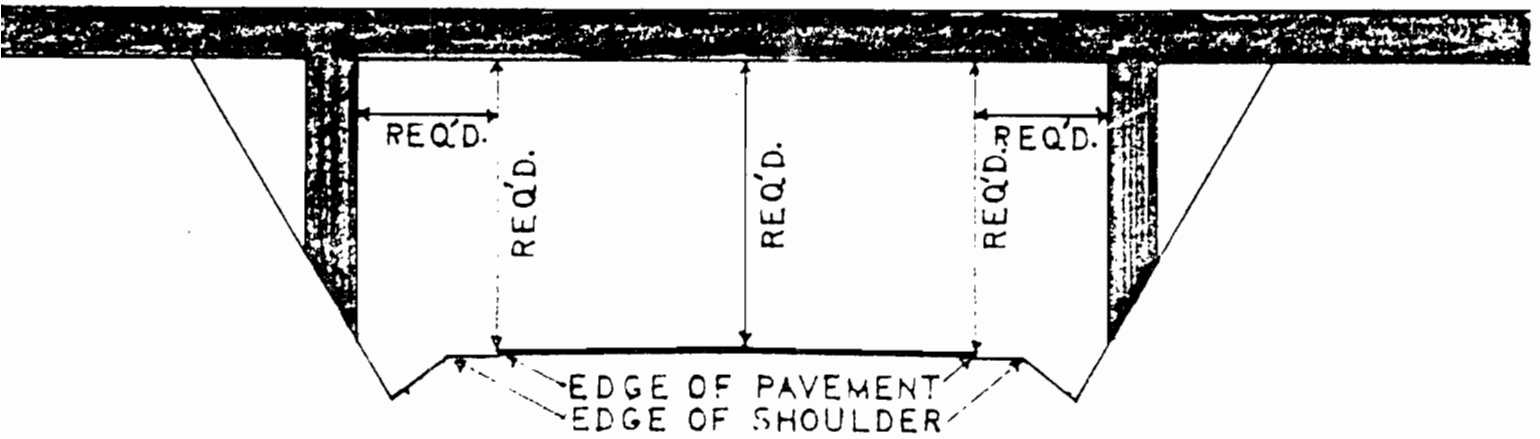
698.36
ELEVATION TAKEN from previous Report 11-20-84

33 FAU 3578 [redacted] 0.80 10-20-86 00211
COUNTY ROUTE LOG MILE DATE PAGE NO.

REQUIRED VERTICAL AND HORIZONTAL CLEARANCES ON INTERSECTING ROUTES



DIVIDED HIGHWAY



TWO LANE HIGHWAY

NOTE: ALL CLEARANCES ARE MINIMUM

DT-0771

33	1 24	13.34	8/21/98	[illegible]
COUNTY	ROUTE	LOG MILE	DATE	LOG #

ACROSS TOP

JOINT @ ABUTMENT #2

3A

33 1 24 13.34 8/21/98

COUNTY ROUTE LOG MILE DATE LOG #

OPEN CRACK ALONG CENTER LINE

BRIDG ENUMBER

3B

COUNTY	ROUTE	LOG MILE	DATE	LOG #
33	I 24	13.34	8/21/98	

SIDE VIEW

BRIDGE INSPECTION REPORT

000000004

FORM BIR 3.0
Rev. 3-1-97
DT-0069

FIELD REPORT NO. 14 DATE 09-03-98
PREVIOUS REPORT NO. 13 DATE 10-15-96
PLANS ---- YES [X] NO [ ] DESIGN

BRIDGE NO. 33I00240059 (ELEVEN DIGIT NO.)
BRIDGE LOC. NO. 33 - 3578- 0.80 (1.29) (CO. ROUTE LOG MILE (LOG km))

33-3578- 0.80 (1.29) (ROAD NAME)
OVER 33- I24 -13.34 (FEATURE INTERSECTED)
MOORE ROAD (STRUCTURE NAME (IF NAMED))

YEAR CONSTRUCTED 1964 (ESTIMATED OR ACTUAL) [ ] [X]
COUNTY HAMILTON
MAINTENANCE DISTRICT NO. 21

YEAR WIDENED NA (ESTIMATED OR ACTUAL) [ ] [ ]
YEAR REHABILITATED NA (ESTIMATED OR ACTUAL) [ ] [ ]

FEATURES

WEARING SURFACE-- CONCRETE [ ] TIMBER [ ] ASPHALT [X] (DEPTH= 76.20mm)
FLARED WIDTH --------- YES [ ] NO [X]
NAVIGATIONAL CONTROL-- YES [ ] NO [X]
MEDIAN WIDTH -------- OPEN [ ] NONE [ ] CLOSED [X]

BRIDGE SKEW 90° LT [ ] RT [ ]

STRUCTURE TYPE PCBB (Main Span) NO. SPANS 4 (Main Span)

STRUCTURE TYPE N/A (Approach Spans) NO. SPANS N/A (Approach Spans)

MAXIMUM SPAN LENGTH 16.84 m TOTAL LENGTH 53.19 m

WIDTHS (*.**m)		CLEARANCES (*.**m)	
DECK OUT-TO-OUT	24.23	MIN. VERTICAL OVER DECK	NA
ROADWAY CURB/CURB	19.51	MIN. VERTICAL UNDER CL.	5.08
SIDEWALK	1.75RT 1.75LT	MIN. LATERAL UNDER CLEARANCE:	
*APPROACH ROADWAY	17.68		3.05 RT
APPROACH SHLD.	NA m RT		2.13 LT
	NA m LT		

*DOES NOT INCLUDE SHOULDER

INSPECTORS
1. B.DERAMUS
2. F.WATKINS
3. G.SWAFFORD
4. G.SELCER
5.
6.
7.
8.
9.

UNDERWATER INSPECTION

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

(< 7.62 m)
NBIS BRIDGE LENGTH (*.**m)

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: Substructure units have cracks, Delams, rebar popouts, & scale. Some beams have minor spalls & a few are cracked. Surface has longitudinal cracks along the center line, 1" wide. The approach pavement is uneven. The bridge rail is substandard. There are no approach guard rails. The joints over abut. #2 and bent #1 breaking up at the center of the bridge.

GARY SELCER
SUPERVISING BRIDGE INSPECTOR

BRIDGE RATING [ ] GOOD [XX] FAIR [ ] POOR [ ] CRITICAL

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

FORM BIR 3.1
Rev. 3-1-97 BRIDGE LOC. NO. 33 - 3578 - 0.80 (1.29) DATE: 09-03-98
DT-0080 CO. ROUTE L.M. (LOG km)

PERFORMANCE EVALUATION

Time of day inspected A.M. Weather conditions CLOUDY-WARM
Vehicles observed _____

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	NA
Joints	(G)	F	P	C	
Pavement	(G)	(F)	P	C	UNEVEN, CRACKED.
Embankment	(G)	F	P	C	
Drains	G	F	P	C	NONE

TRAFFIC SAFETY FEATURES

					STANDARD	SUB-STANDARD	
Bridgerailing	G	F	P	C	[ ]	[X]	DWG. # H-5-110
Transitions	G	F	P	C	[ ]	[ ]	NONE
Guardrail	G	P	C	C	[ ]	[ ]	NONE
Guardrail Terminal	G	F	P	C	[ ]	[ ]	NONE

SIGNING

	YES	NO	NEEDED	
Paddleboard - - - - - - - - - - - -	[ ]	[X]	[ ]	WEIGHT LIMIT POSTED YES [ ] NO [X]
Vertical Clearance (< 4.4 m) - - -	[ ]	[X]	[ ]	
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 _____

RECOMMENDATIONS

Bridgerail Is Substandard [ ]
Approach Rail Is Substandard [ ]
Install Paddleboard Signs [ ]
Install Post Load Limit Signs [ ]
Level Approach [ ]

Other Recommendations _____

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

FORM BIR 3.2
Rev. 3-1-97 BRIDGE LOC. NO. 33 - 3578 - 0.80 (1.29) DATE: 09-03-98
DT-0081 CO. ROUTE L.M. (LOG km)

DECK					COMMENTS
WEARING SURFACE	G	(F)	P	C	LONG. CRKS. ALONG CENTRLN 1½ WIDE @ PAVING JNT
DECK - STRUCTURAL CONDITION	G	F	P	C	NA (PCBB'S)
CURBS	(G)	F	P	C	
MEDIAN	(G)	F	P	C	
SIDEWALKS	(G)	(F)	P	C	CRACKS, SCALE, POPOUTS.
PARAPET	G	F	P	C	NA
RAILING	(G)	(F)	P	C	SCALE, POPOUTS, CRACKS.
PAINT	G	F	P	C	NA
DRAINS	G	F	(P)	C	BLOCKED
LIGHTING STD'S	(G)	F	P	C	
UTILITIES	G	F	P	C	NA
JOINT LEAKAGE	G	F	(P)	C	HEAVY
EXPANSION JOINTS	G	(F)	P	C	NON-COMP. MTLS. UPHEAVEL IN OVERLAY.

SUPERSTRUCTURE					COMMENTS
BEARING DEVICES	(G)	F	P	C	
GIRDERS OR BEAMS	(G)	(F)	P	C	SEVERAL ARE CRACKED. MINOR SPALLS.
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		F	P	C	NA
- PORTALS	G	F	P	C	NA
- BRACING	G	F	P	C	NA
PAINT	G	F	P	C	NA
ALIGNMENT OF MEMBERS	(G)	F	P	C	

TEXTURE COAT

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

COMMENTS: SLIGHT SCALE ALONG CRACKS IN PARAPETS. SCALING G F P C

RECOMMENDATIONS _____ CLEAN & SEAL JOINTS [ ]

_____ CLEAN DRAINS [ ]

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

FORM BIR 3.3
Rev. 8-26-97 BRIDGE LOC. NO. 33 - 3578- 0.80 (1.29) DATE: 09-03-98
DT-0082 CO. ROUTE L.M. (LOG km)

SUBSTRUCTURE

ABUTMENTS

					COMMENTS
CAPS	(G)	(F)	P	C	HL-SMALL CRACKS, REBAR POPOUTS, DELAMS.
BREASTWALL	G	F	P	C	NA
WINGS	(G)	F	P	C	
BACKWALL	G	F	P	C	NA
PLUMB	(G)	F	P	C	
FOOTING	G	F	P	C	NONE
PILES	G	F	P	C	NOT VISIBLE
EMBANKMENT	(G)	F	P	C	
BEARING SURFACE	(G)	F	P	C	
SLOPE PAVING	(G)	F	P	C	
RIP RAP	G	F	P	C	NA

PIERS

CAPS	G	F	P	C	
COLUMNS	G	F	P	C	
PLUMB	G	F	P	C	N/A
FOOTINGS	G	F	P	C	
PILES	G	F	P	C	
BEARING SURFACE	G	F	P	C	

BENTS

CAPS	(G)	(F)	P	C	DELAMS, CRACKS, SCALE.
COLUMNS	(G)	(F)	P	C	TIE WIRE POPOUTS, REBAR POPOUTS.
PLUMB	(G)	F	P	C	
FOOTINGS	G	F	P	C	NOT VISIBLE
PILES	G	F	P	C	NOT VISIBLE
BEARING SURFACE	(G)	F	P	C	

PILES NEED REPLACEMENT NO [X] YES [ ] ---------- **PILES TO BE REPLACED**

			PILE(S)	BENT	PILE(S)	BENT
CUT VEGETATION	NO [X]	YES [ ]				
CLEAR DRIFT	NO [X]	YES [ ]				

RECOMMENDATIONS:

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

FORM BIR 3.9
Rev. 3-1-97 BRIDGE LOC. NO. 33 - 3578 - 0.80 (1.29) DATE: 09-03-98
DT-1507 CO. ROUTE L.M. (LOG km)

FRACTURE CRITICAL MEMBERS AND DETAILS

NOTE: Questions I and II both must be answered.

I. Is this a non-redundant bridge? YES [ ] NO [X]
(If YES then answer question III)

II. Does it have Fracture Critical Details? YES [ ] NO [X]
(If YES then answer question IV)

NOTE: Only check items that apply for questions III and IV.

III. Type of non-redundant bridge:
1. Simply supported two girder system . . . . . [ ]
2. Continuous two girder system . . . . . [ ]
3. Simply supported truss. . [ ]
4. Continuous truss. . . . . [ ]
5. Simply supported longitudinal box beam . . [ ]
6. Continuous longitudinal box beam. . . . . [ ]
7. Suspension bridge . . . . [ ]
8. Tied arch bridge. . . . . [ ]
9. Steel pier/bent cap . . . [ ]
10. Single bearing devices. . [ ]

IV. Fracture critical details:
1. Changes in cross section at:
   A. Cover plates . . [ ]
   B. Insert plates. . [ ]
   C. Coped sections . [ ]
2. Framing system member connected at tension areas of:
   A. Floor beams. . . [ ]
   B. Bracing members. [ ]
   C. Diaphragms or cross frames . . [ ]
3. Web stiffeners . . . [ ]
4. Eyebars. . . . . [ ]
5. Pin and hanger connections. . . . . [ ]
6. Single bearing devices. . . . . [ ]

V. Structural condition of FC members and details: (note location)

A. 1. Cracking of FC members? YES [ ] NO [ ]
2. Cracking of FC details? YES [ ] NO [ ]

B. 1. Corrosion of FC members? G F P C
2. Corrosion of FC details? G F P C

VI. Comments:

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

FORM BIR 3.0A
Rev. 3-1-97
DT-1443

CURRENT FIELD REPORT NO. 14 DATE 09-03-98
PREVIOUS FIELD REPORT NO. 13 DATE 10-15-96

INSPECTION REPORT FOR UNDERPASS ROUTE

BRIDGE NO. 33I00240059 (ELEVEN DIGIT NO.) UNDERPASS LOC. NO. 33 I24 13.34L (21.47) (CO. ROUTE L.M. (LOG km))

33- 3578- 0.80 (1.29) OVER 33- I24 13.34L(21.47) SOUTH MOORE ROAD
(CO. RTE. L.M. (LOG km)) (CO. RTE. L.M. (LOG km)) (STRUCTURE NAME)

COUNTY HAMILTON

YEAR CONSTRUCTED 1964 YEAR WIDENED NA YEAR REHABILITATED NA
ESTIMATED [ ] ACTUAL [X]

GEOMETRIC FEATURES UNDER BRIDGE

DIVIDED HIGHWAY - - - - LEFT RDWY [X] RIGHT RDWY [ ] N.A. [ ]
TYPE OF WEARING SURFACE - - - - CONCRETE [X] ASPHALT [ ] GRAVEL [ ]
WIDTH OF APPROACH TRAVELED ROADWAY 10.97 m (DOES NOT INCLUDE SHOULDERS)
WIDTH OF MEDIAN IF DIVIDED HIGHWAY 4.88 m
APPROACH SHOULDER WIDTH 1.83 m (RT.) 3.05m (LT.)
*HORIZONTAL CLEARANCE UNDER BRIDGE 16.15 m
*DISTANCE BETWEEN PIER PROTECTION GUARDRAIL AND SUBSTRUCTURE NA m (RT.) NA m (LT.)
*WIDTH OF SIDEWALK UNDER BRIDGE NA m (RT.) NA m (LT.)
MINIMUM VERTICAL CLEARANCE 5.08 m (.**m)

*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 (< 4.4 m)	YES [ ]	NO [X]	NEEDED [ ]
NARROW PASSAGE	YES [ ]	NO [X]	NEEDED [ ]
ONE LANE PASSAGE	YES [ ]	NO [X]	NEEDED [ ]

INSPECTORS

1. B.DERAMUS
2. F.WATKINS
3. G.SWAFFORD
4. G.SELCER
5.
6.

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

FORM BIR 3.0A (CONTINUED)
Rev. 3-1-97
DT-1443

UNDERPASS LOC. NO. 33 - I24 -13.34L (21.47)
CO. ROUTE L.M. (LOG km)

OTHER SIGNS OR PLAQUES _____

COMMENTS REGARDING ANY PROBLEM WITH SIGNING _____

BRIDGE FEATURES

BRIDGE SKEW 90°
STRUCTURE TYPE PCBB (MAIN SPAN) NO. SPANS 4 (MAIN TYPE)
STRUCTURE TYPE NA (APPROACH SPAN) NO. SPANS NA (APPROACH TYPE)
MAXIMUM SPAN LENGTH 16.84 m TOTAL LENGTH 53.19 m
WIDTH OF BRIDGE OUT-TO-OUT 24.23 m (RIGHT ANGLE TO CENTERLINE OF BRIDGE)
WIDTH OF BRIDGE ALONG SKEW NA m (IF UNABLE TO MEASURE AT RIGHT ANGLE TO CENTERLINE OF BRIDGE)
NUMBER OF LANES/TRACKS ON BRIDGE 5

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 OR 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

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

FORM BIR 3.0A
Rev. 3-1-97
DT-1443

CURRENT FIELD REPORT NO. 14 DATE 09-03-98
PREVIOUS FIELD REPORT NO. 13 DATE 10-15-96

INSPECTION REPORT FOR UNDERPASS ROUTE

BRIDGE NO. 33I00240059 (ELEVEN DIGIT NO.) UNDERPASS LOC. NO. 33 I24 13.34R (21.47) (CO. ROUTE L.M. (LOG km))

33- 3578- 0.80 (1.29) (CO. RTE. L.M. (LOG km)) OVER 33- I24 13.34R(21.47) (CO. RTE. L.M. (LOG km)) SOUTH MOORE ROAD (STRUCTURE NAME)

COUNTY HAMILTON

YEAR CONSTRUCTED 1964 YEAR WIDENED NA YEAR REHABILITATED NA
ESTIMATED [ ] ACTUAL [X]

GEOMETRIC FEATURES UNDER BRIDGE

DIVIDED HIGHWAY - - - - LEFT RDWY [ ] RIGHT RDWY [X] N.A. [ ]
TYPE OF WEARING SURFACE - - - - CONCRETE [X] ASPHALT [ ] GRAVEL [ ]
WIDTH OF APPROACH TRAVELED ROADWAY 10.97 m (DOES NOT INCLUDE SHOULDERS)
WIDTH OF MEDIAN IF DIVIDED HIGHWAY 4.88 m
APPROACH SHOULDER WIDTH 3.05m (RT.) 1.83 m (LT.)
*HORIZONTAL CLEARANCE UNDER BRIDGE 16.15 m
*DISTANCE BETWEEN PIER PROTECTION GUARDRAIL AND SUBSTRUCTURE NA m (RT.) NA m (LT.)
*WIDTH OF SIDEWALK UNDER BRIDGE NA m (RT.) NA m (LT.)
MINIMUM VERTICAL CLEARANCE 5.08 m (.**m)

*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 (< 4.4 m)	YES [ ]	NO [X]	NEEDED [ ]
NARROW PASSAGE	YES [ ]	NO [X]	NEEDED [ ]
ONE LANE PASSAGE	YES [ ]	NO [X]	NEEDED [ ]

INSPECTORS

1. B.DERAMUS
2. F.WATKINS
3. G.SWAFFORD
4. G.SELCER
5.
6.

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

FORM BIR 3.0A (CONTINUED)
Rev. 3-1-97
DT-1443

UNDERPASS LOC. NO. 33 - I24 -13.34R (21.47)
CO. ROUTE L.M. (LOG km)

OTHER SIGNS OR PLAQUES _____

COMMENTS REGARDING ANY PROBLEM WITH SIGNING _____

BRIDGE FEATURES

BRIDGE SKEW 90° ___
STRUCTURE TYPE PCBB NO. SPANS 4
MAIN SPAN MAIN TYPE
STRUCTURE TYPE NA NO. SPANS NA
APPROACH SPAN APPROACH TYPE
MAXIMUM SPAN LENGTH 16.84 m TOTAL LENGTH 53.19 m
WIDTH OF BRIDGE OUT-TO-OUT 24.23 m (RIGHT ANGLE TO CENTERLINE OF BRIDGE)
WIDTH OF BRIDGE ALONG SKEW NA m (IF UNABLE TO MEASURE AT RIGHT ANGLE TO CENTERLINE OF BRIDGE)
NUMBER OF LANES/TRACKS ON BRIDGE 5

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 OR 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

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

BRIDGE INSPECTION SUMMARY

BRIDGE NO.	COUNTY	ROUTE	LOG MILE	(LOG km)	DATE
33		3578	0.80	(1.29)	09/03/98

TYPE SERVICE: SOUTH MOORE ROAD
OVER: I 24 (L.M. 13.34)

On September 3, 1998, A Region Two Bridge Inspection Team inspected this structure and found it to be in FAIR condition.

The abutment cap beams have hairline to small cracks, minor delaminated areas and a few rebar popouts. The bent caps have delaminated areas, cracks and scale. The bent columns have rebar popouts. The bearing pads are good.

Some beams have minor spalls and a few are cracked.

The wearing surface has a large open longitudinal crack along the centerline paving joint. The approach pavement is cracked and uneven. The bridge rail is substandard with a few rebar spalls. There are no approach guardrails. The expansion joints over abutment #2 and bent #1 are breaking up and settling at the center of the bridge. The underpass raodway (I-24) has been upgraded to standard guardrail and parapets.

Top Span No. 1 PAGE 000015

BRIDGE NO. 33 FAU3578/I-24 0.80 / .13.34 2/14/95 10-7-92

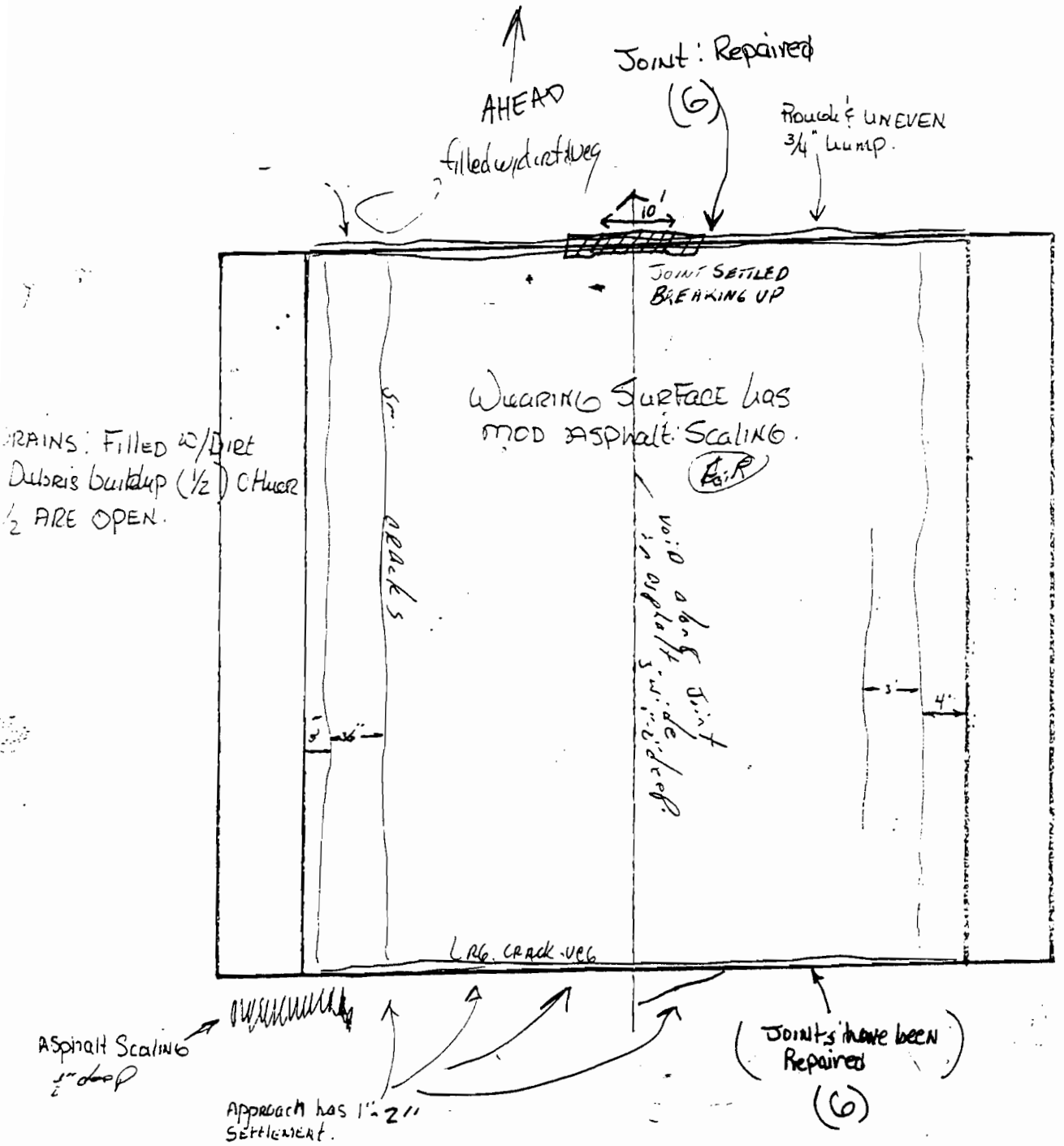
COUNTY ROUTE LOG MILE DATE 10/15/96 9-3-98

ELEMENT	RATING	COMMENTS
Approach Pavement	Fair	Large crack across bridgend w/1" settlement @ Lt. side bridgend. Some scaling of asphalt - Uneven
Approach Guardrail	–	None.
Drains	Fair	Half are filled w/ dirt.
Sidewalks	Good	
Bridgerail	Good	SUBSTANDARD
Wear. Surf.	FAIR	4 longitudinal small cracks. Asphalt cracked and humped. 1/2" OPEN JOINT DOWN CENTER OF BRIDGE
Joint	G/F	JOINT SETTLED AND BEGINING TO BREAK UP AT CENTER OF BRIDGE

Top Span No. #1

Page No.
00016

33	FAU 3518 / I-24	0.88 / 13.34	2/14/95 10-7-92 10/15/96
COUNTY	ROUTE	LOG MILE	DATE 9-3-98



Bottom Span No. 1 PAGE 2-14-95

BRIDGE NO. 33 FAU3578/I-24 0.80 13.34 9/9/92

COUNTY ROUTE LOG MILE DATE 10/15/96 9/3/98

ELEMENT	RATING	COMMENTS
BEAM	G	"A" SM. SPALL AT BENT #1 "Z" A H.L. CRACK " - "

Bottom Span no. 1 000068 Page no.

33	FAU 3578/I-24	0.80 - 13.34	9/9/92 2-14-95 10/15/96 9/3/98
COUNTY	ROUTE	LOC. MILE	DATE

BEAMS (G)

'A' SM SPALL AT BENT #1

Z' A H.L. CRACK

A.	
B.	
C.	
D.	
E.	
F.	
G.	
H.	
I.	
J.	
K.	
L.	
M.	
N.	
O.	
P.	
Q.	
R.	
S.	
T.	
U.	
V.	
W.	
X.	
Y.	
Z.	

~~Beam A Span 1~~

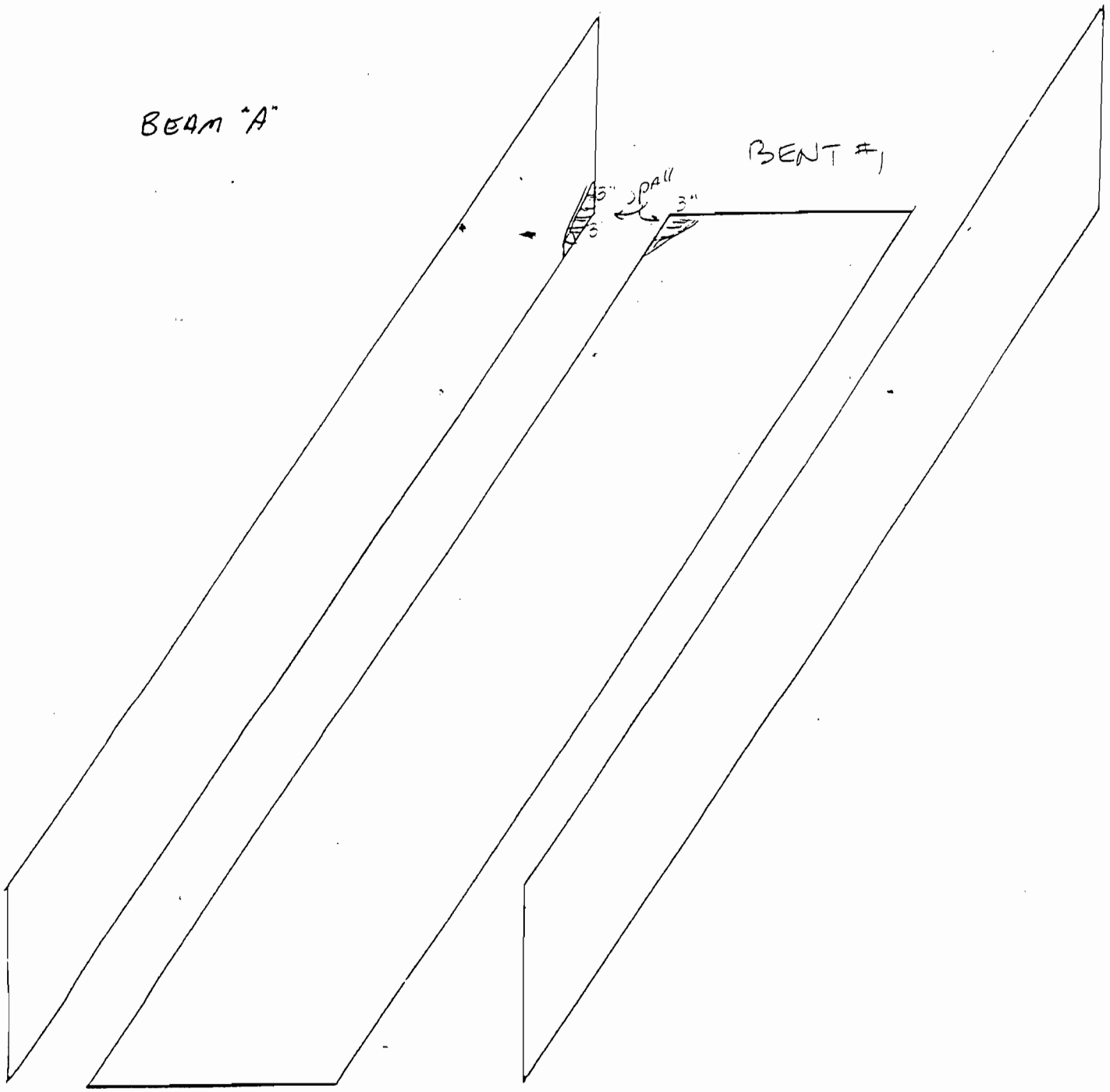
33 COUNTY

3578/I24 ROUTE

span #1

0.80/13.34 LOG MILE

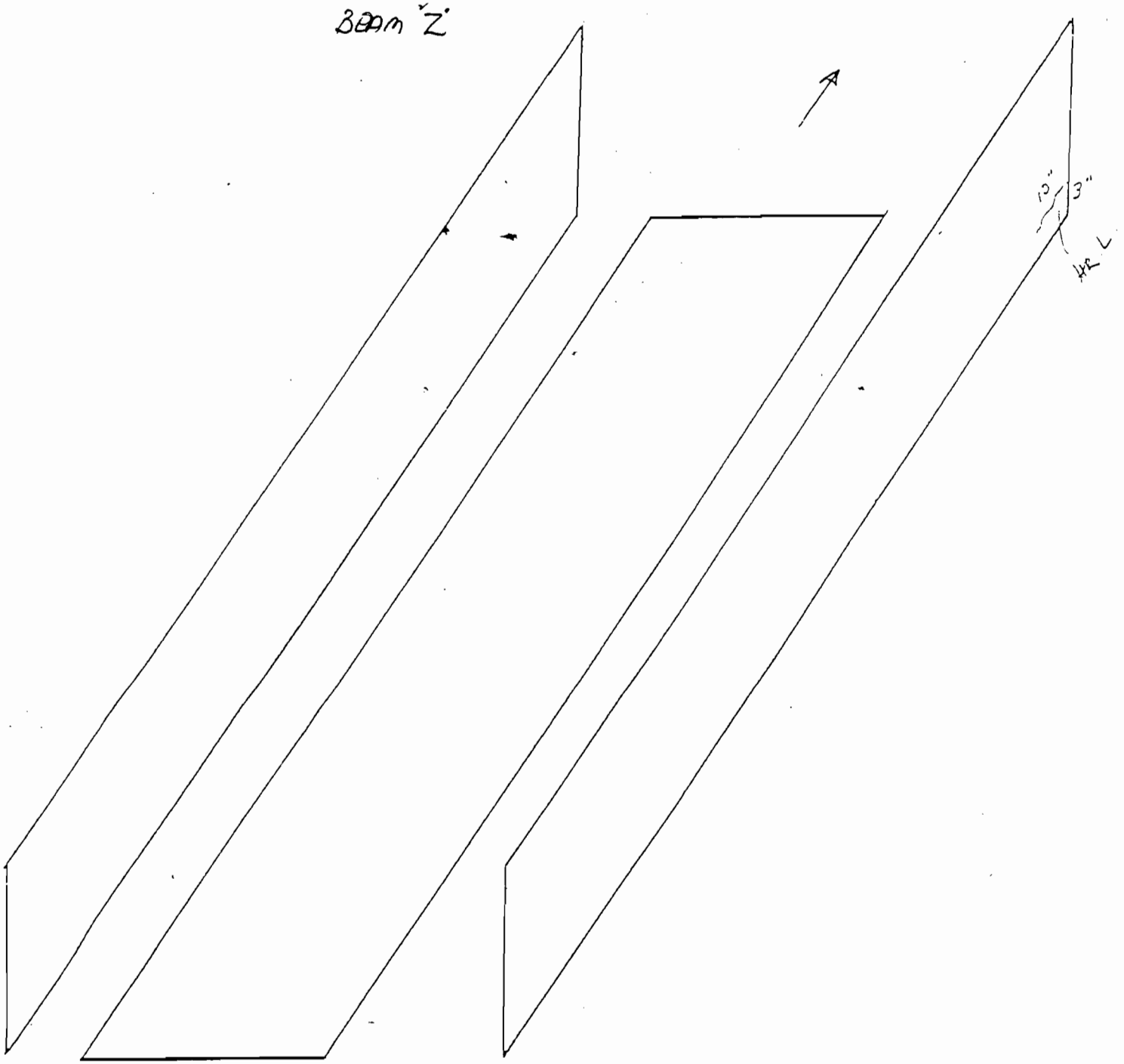
2-14-95
9-10-92
DATE 10/15/96
9/3/9



I BOTTOM RT

Beam "Z" span #1

33	3578/I24	0.80/13.34	2-14-95 9-10-92	10/15/96 9/3/98
COUNTY	ROUTE	LOG MILE	DATE	



I BOTTOM RT.

Top Span No. 2 000021 PAGE

BRIDGE NO. 33 FAU3578/I-24 080/ 13.34 2/14/95 10-7-92

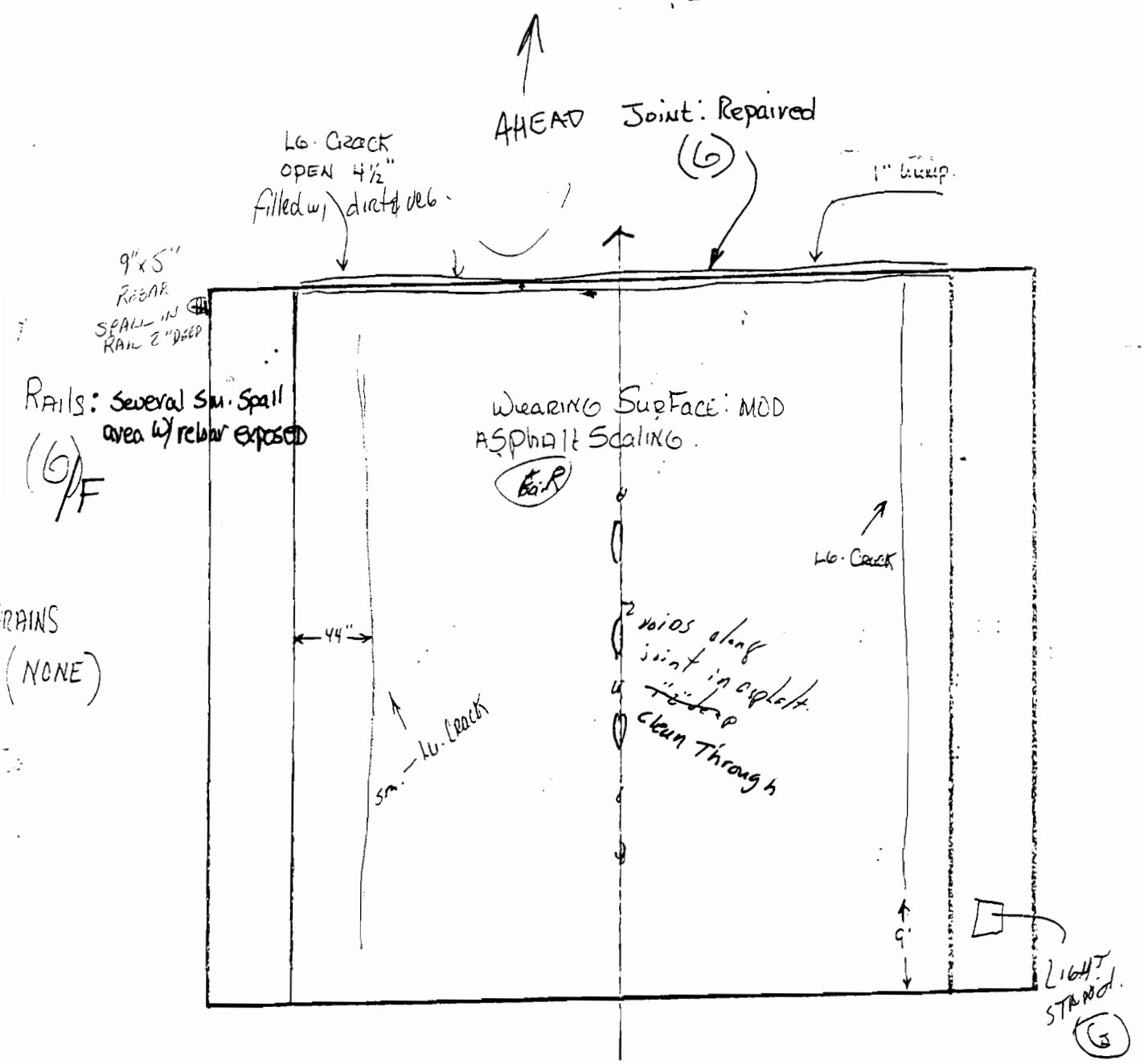
COUNTY ROUTE LOG MILE DATE 10/15/96 9-3-98

ELEMENT	RATING	COMMENTS
Wear. Surf.	FAIR	2 long. small-large cracks, 1"-2" deep voids
		along joint in asphalt. Asphalt cracked
		and humped @ joint.
Joint	GOOD	
Drains	—	None
Bridgerail	Good	SUBSTANDARD
Sidewalks	Good	
LIGHT STANDARD	Good	

Top Span NO. #2

Page No. 000022

33	FAU 3578 / I-24	0.80 / 13.34	2/14/95 10-7-92 10/15/96 9-3-98
COUNTY	ROUTE	LOG MILE	DATE



RAINS
(NONE)

Bottom Span No. 2 PAGE 2-26-95

BRIDGE NO. 33 FAU 3578/I-24 0.80/13.34 9/9/92

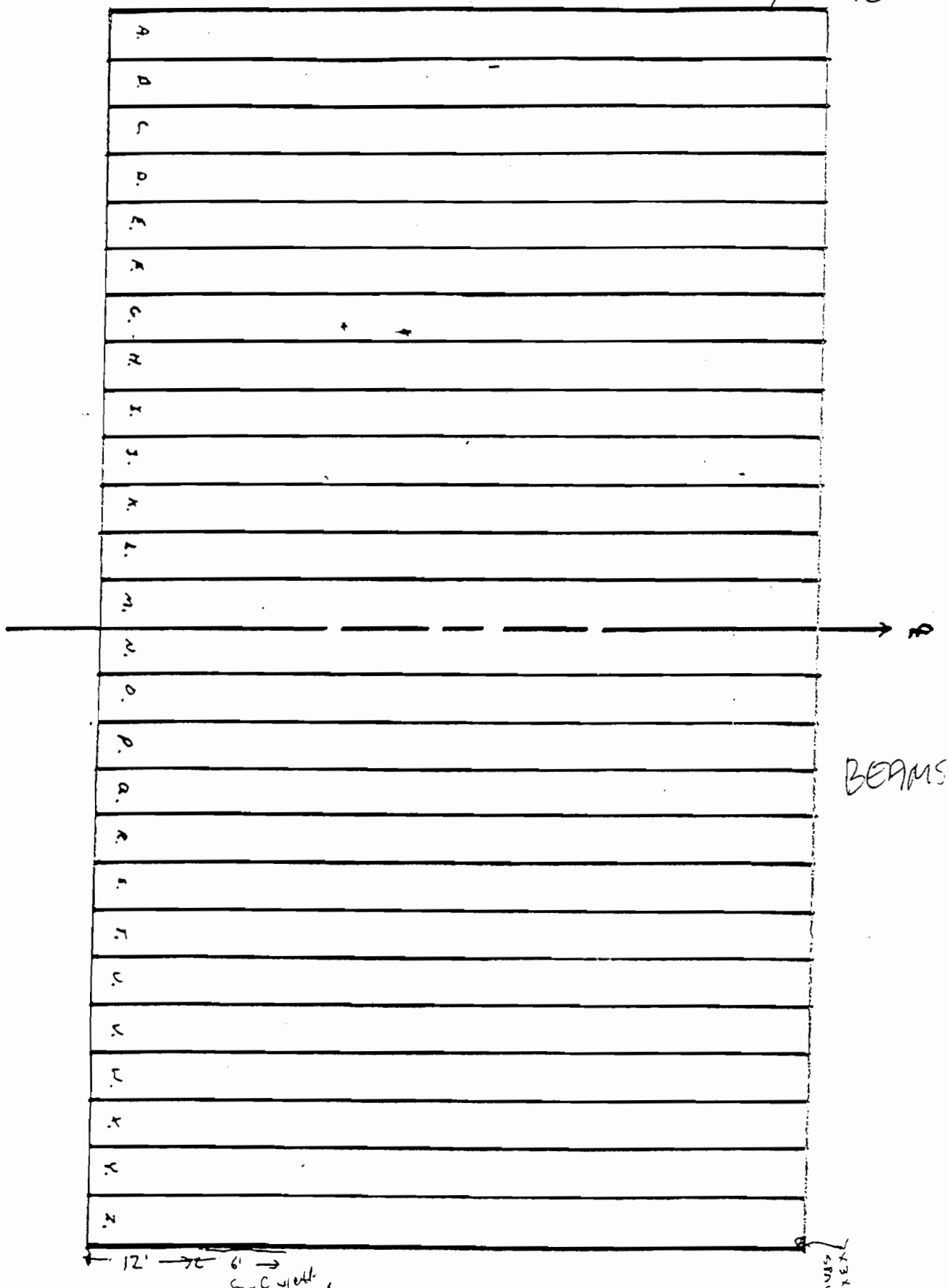
COUNTY ROUTE LOG MILE DATE 10/15/96 9/3/98

ELEMENT	RATING	COMMENTS
BEAMS	(G)	"A" HAVE A SM. SPALL AT #1 BENT WITH A FEW SM SPALLS

Bottom Span No. 2

Page 000024

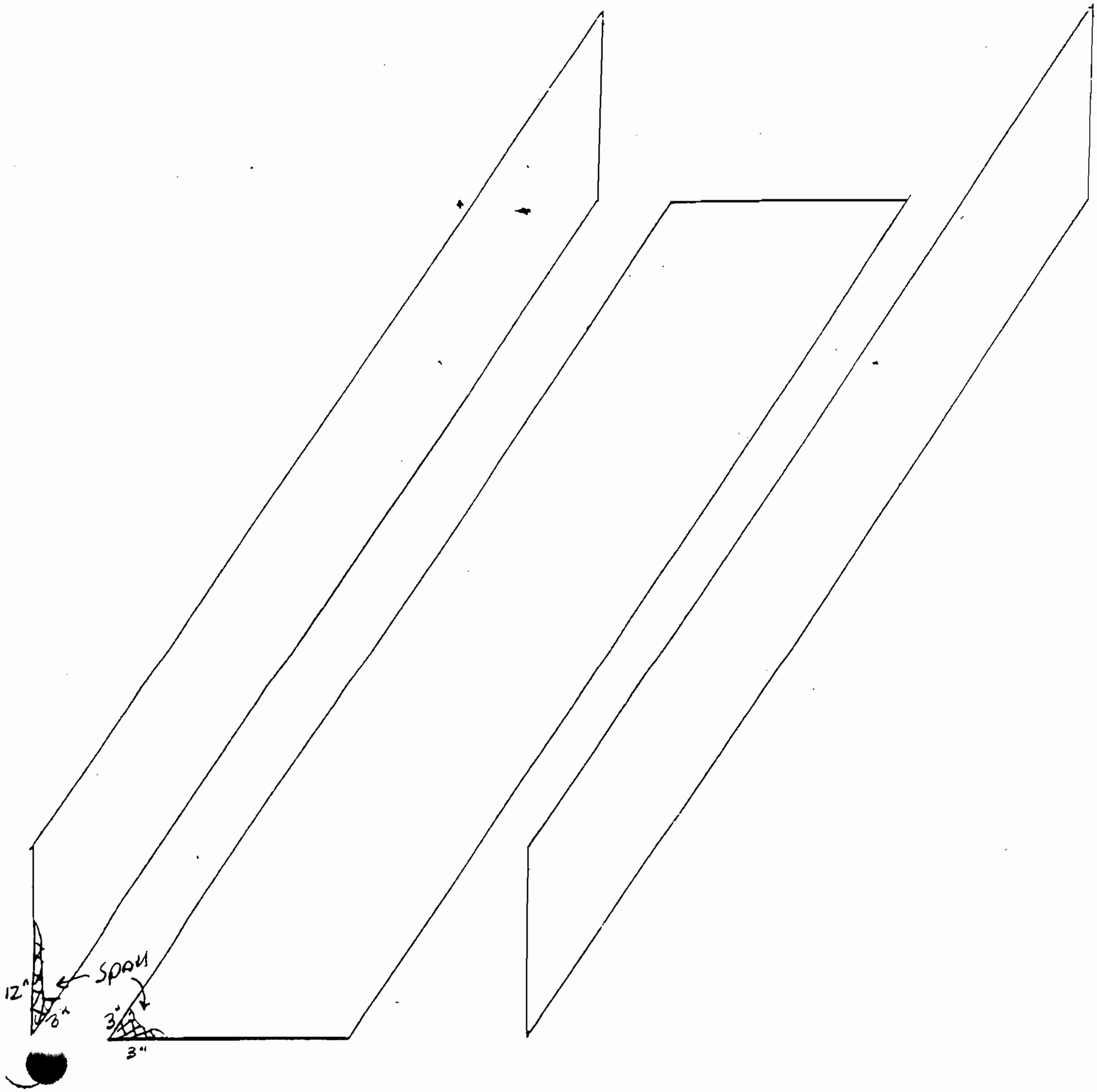
33 COUNTY | FAU 3578/I-24 ROUTE | 0.80/13.34 LOG. MILE | 2-26-95, 9-10-92, 10/15/96, 9/3/98 DATE



[illegible]

33	3578/I24	0.80/13.34	2/26/95 9-10-92 10/15/96 9/3/98
COUNTY	ROUTE	LOG MILE	DATE

Bm 'A' Span #2



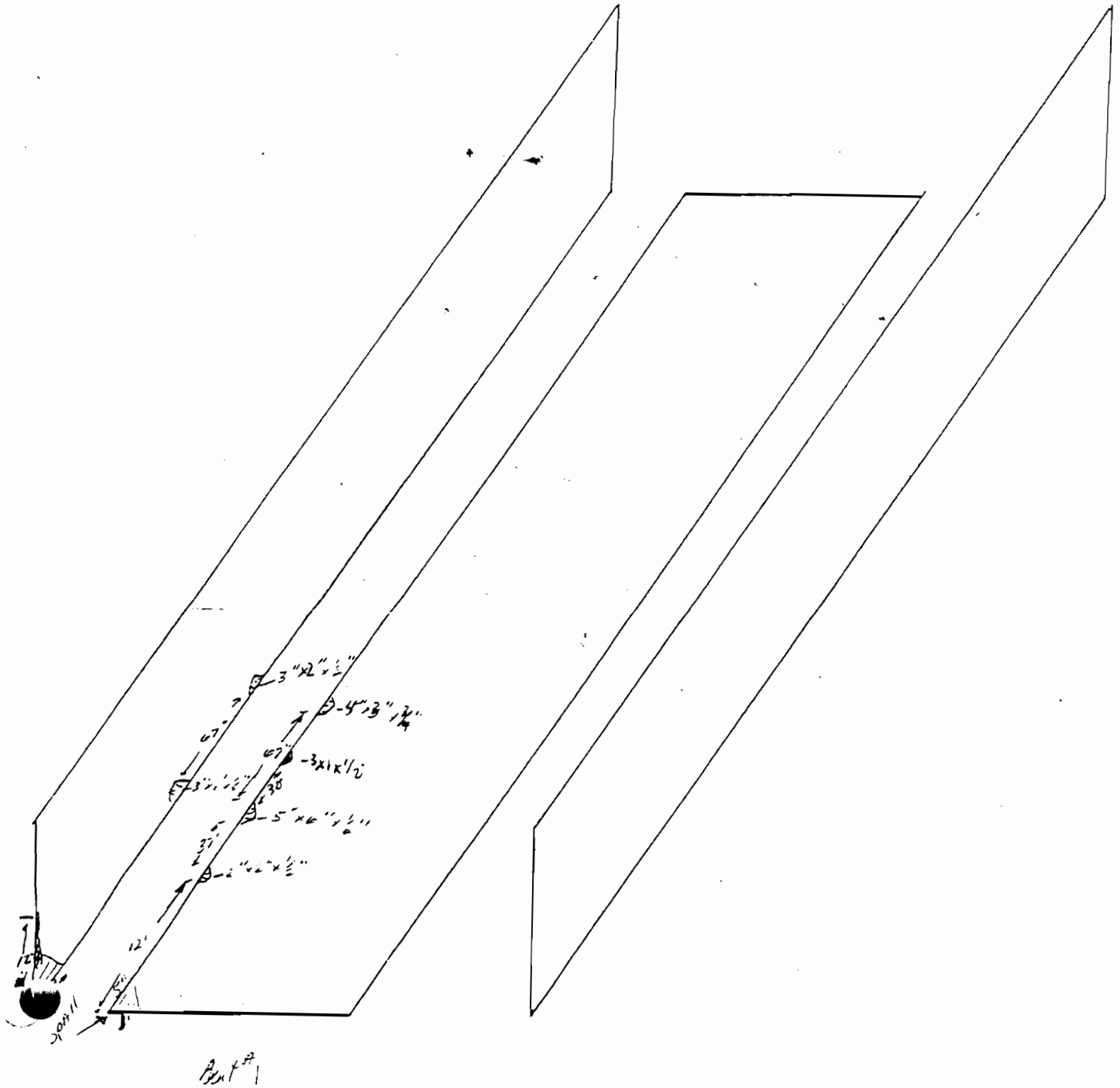
T. BOTTOM RT.

BEAM 1 SPAN NO. 2 PAGE NO.

2-26-95

33 COUNTY | FAU 3578/524 ROUTE | 0.80/13.34 LOG MILE | 9-10-92 DATE 10/15/96 9/3/98

Bent #2



L BOTTOM RT.

Top Span No. 3 0000 PAGE

BRIDGE No. 33 FAU3578/I-24 080/13.34 2/14/95 10-7-92

COUNTY ROUTE LOG MILE DATE 10/15/96

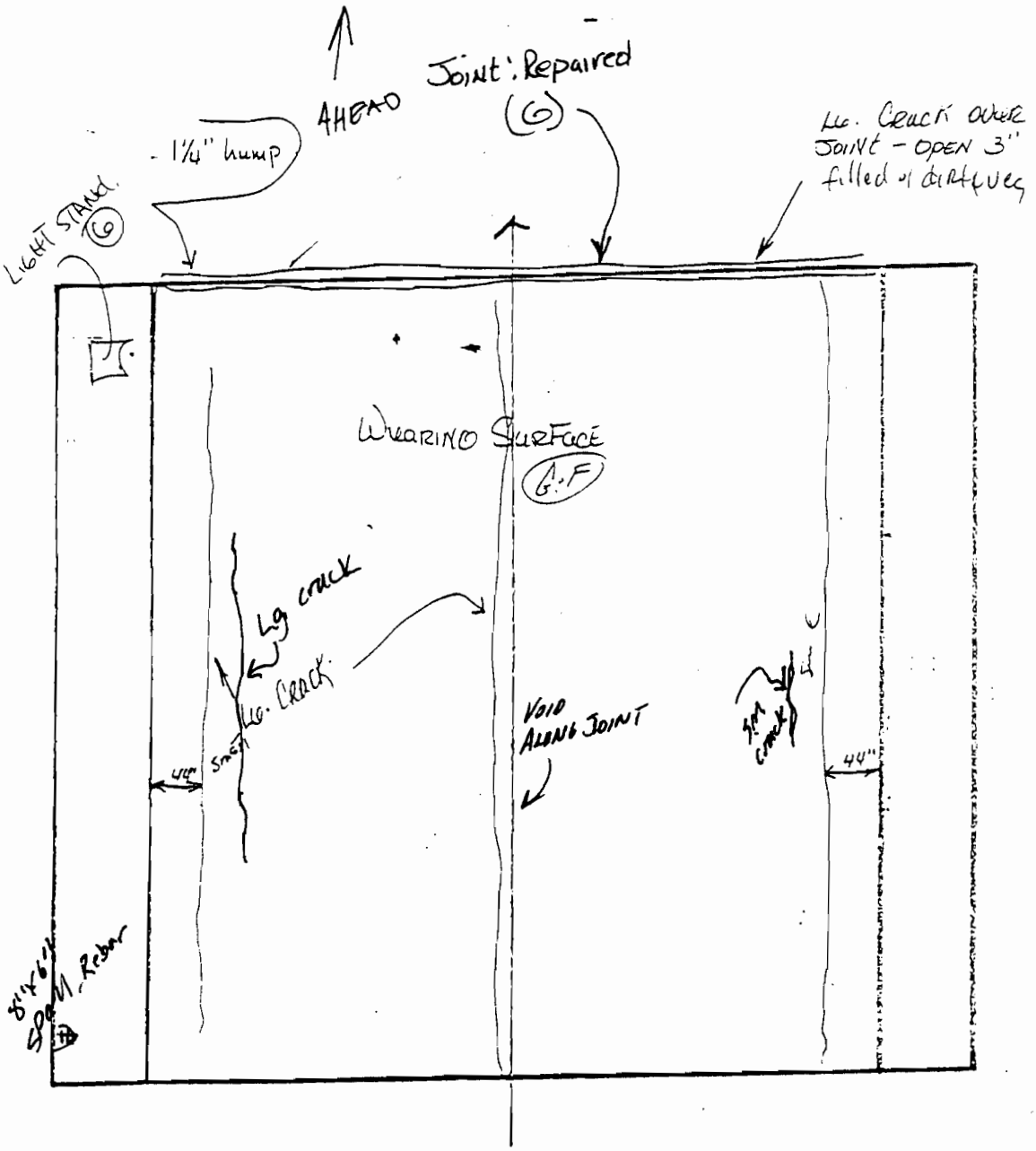
9-3-98

ELEMENT	RATING	COMMENTS
Wear. Surf.	G-F	2 long, sm-large cracks. Asphalt humped @ joint.
Joint	GOOD	
Bridgerail	Good	SUBSTANDARD, FEW SMALL SPALLS
Sidewalks	Good	
Drains	—	None.
LIGHT STANDARD	Good	

Top Span No. # 3

Page No.

33	FAU 3578 / I-24	0.80 / 13.34	10-7-92	10/15/96
COUNTY	ROUTE	LOG MILE	DATE	9-3-98



Rails (6)

Bottom Span No. 3 PAGE 000029 2-26-95

BRIDGE NO. 33 (ALA)3578/I-24 0.80/13.34 9/9/92

COUNTY ROUTE LOG MILE DATE 10/15/96 9/3/98

ELEMENT	RATING	COMMENTS
BEAM	G	H.L. SURFACE CRACKS ON A FEW BEAMS
		1 LG & SM SPALL FROM COLLISION DAMAGE

Bottom Span no. 3 — Page

2-26-95 000080

33	FAU 3578 / I-24	0.80 / 13.34	9-10-92
COUNTY	ROUTE	LOC. MILE	DATE 10/15/96, 9/3/98

SCRAPE MARKS

SM SPALL 6"x8"x1"

A.

B. H.L. SURFACE CRACKS — 24"x8"x1 1/2" LG SPALL ON R/SIDE OF BEAM "A"

C.

D.

E.

F.

G.

H.

I.

J.

K.

L.

M.

N.

O.

P.

Q.

R.

S.

T.

U.

V.

W.

X. LIGHT SURFACE CRACKS

Y.

Z.

BEAMS (G)

BEAM Z SPALL 2x3x2

Top Span No. 4 PAGE No. ____

BRIDGE No. 33 FAU3578/I-24 080/ 000031 13.34 2/14/95 10-7-92

COUNTY ROUTE LOG MILE DATE 10/15/96

9-3-98

ELEMENT	RATING	COMMENTS
Wear. Surf.	Fair	2 large longitudinal cracks, 1"-2" deep voids in asphalt joint.
Bridgerail	Good	
Sidewalks	Good.	20 Foot section settling 6" At ~~Right~~ Both sides of Approach # 2
Drains	Poor	All are blocked w/dirt and debris.
Approach Pavement	Good	LARGE CRACK
Approach Guardrail	—	None.
Embankment	Good	Steep.
Joints	G/P	15' LONG SECTION BEGINING TO SETTLE AND BREAKUP VOIDS 3" deep @ two places

Top Span No. #4

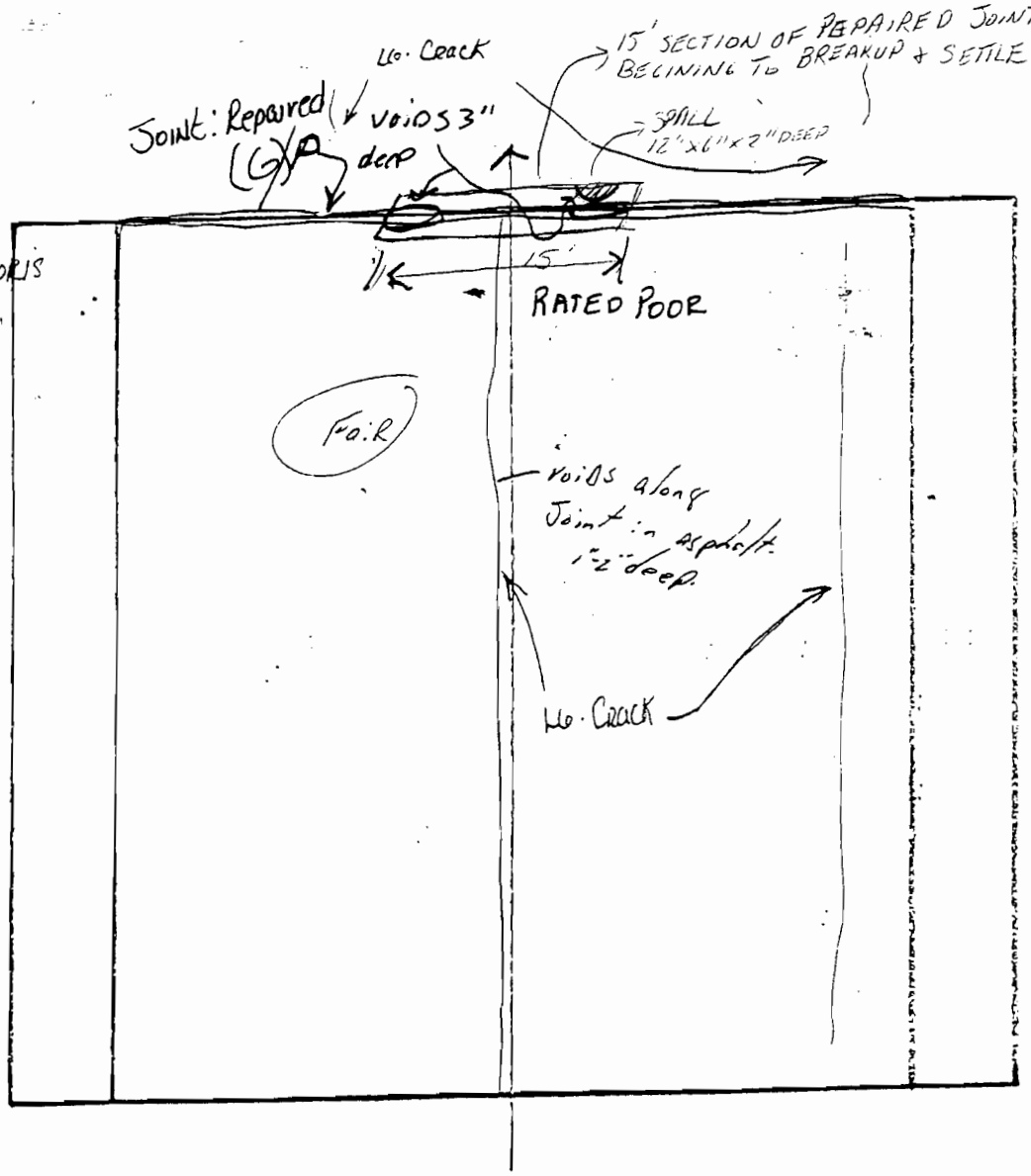
Page No. 000032

33 / FAU 3578 / E-24 / 0.80 / 13.34 / 10-7-92 2/14/95 10/15/96 9-3-98

COUNTY / ROUTE / LOG MILE / DATE

APP Rails (None)

APP. Pavement (G)



Embankment (E) Steep

ALL FILLED W/ DIRT & DEBRIS

DRAINS (P)

(G)

SIDE WALK (G)

Bottom Span No. 4 PAGE

000083 2-14.95

BRIDGE No. 33 FAU3578/I-24 0.80/13.34 9/9/92

COUNTY ROUTE LOG MILE DATE 10/15/96

9/3/98

ELEMENT	RATING	COMMENTS
BEAMS	G	

Bottom Span no. 4

Page No. 000084

33	FAU 3578/I-24	0.80/13.34	2-14-95 9-10-92 10/15/96 9/3/98
COUNTY	ROUTE	LOG MILE	DATE

BEAMS (G)

A.	
B.	
C.	
D.	
E.	
F.	
G.	
H.	
I.	
J.	
K.	
L.	
M.	LEAKAGE
N.	LEAKAGE
O.	
P.	
Q.	
R.	
S.	
T.	
U.	
V.	
W.	
X.	
Y.	
Z.	

ABUTMENT No. 1

PAGE No. 2-14-95 10-7-96 9/3/98

BRIDGE No. 33 (County) FAN 3518/I-24 (Route) 0.80/13.34 (Log Mile) DATE 10/15/96

[redacted]EMENT	RATING	COMMENTS
WINGS	G	
BREASTWALL	G-F	SEVERAL H.L. TOSM. CRACKS. SM DELAM & SM REBAR/SPALL
BEARING	G	
SLOPE	G	HAS SETTLED 1" & OUT 3/4"

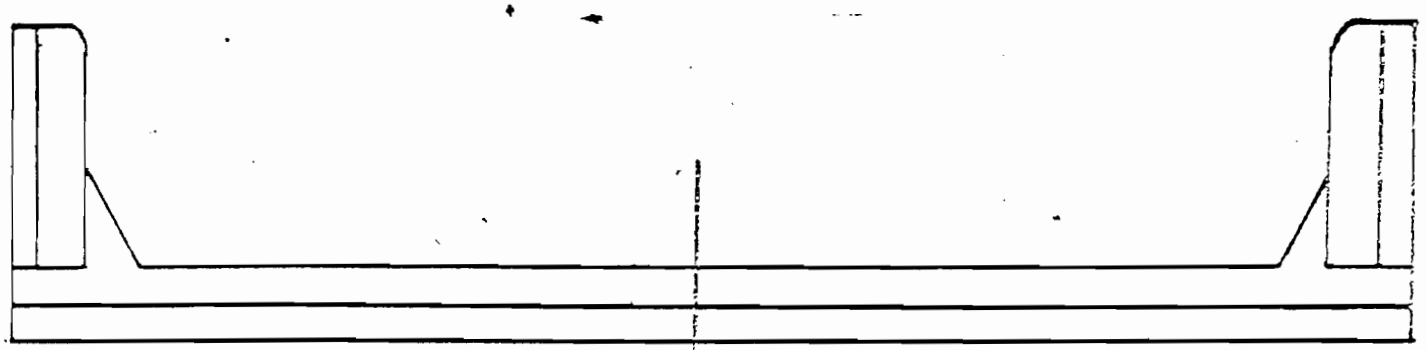
000036

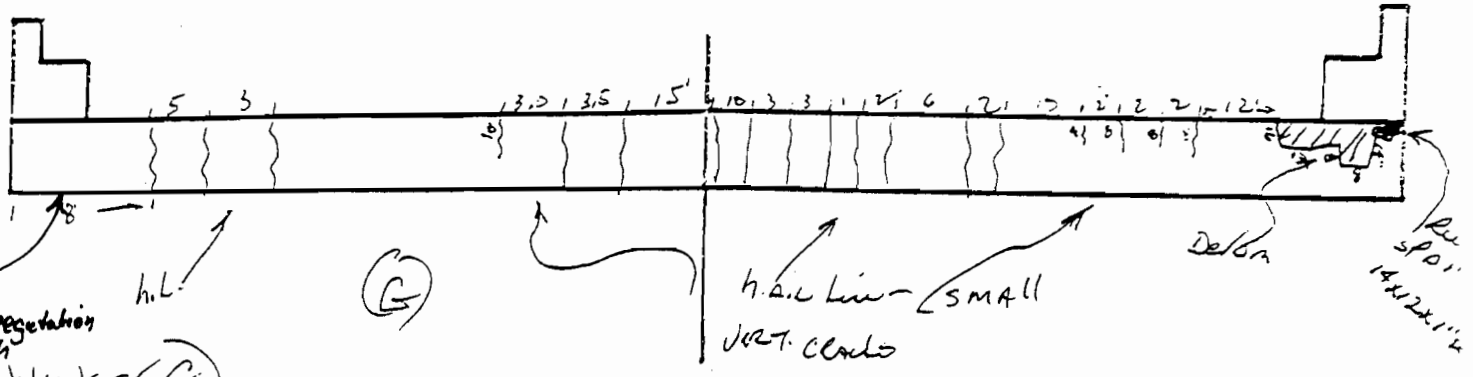
PAGE NO. 10/15/96

Abutment No. 1

DATE 2-14-95 9/3/96
10-7-92

33 COUNTY | ~~FAO 3578~~ / I-24 Route | 0.80 / 13.34 Log Mile





WINGS (G)

BREASTWALL (G) - (F)

BEARING (G)

SLOPE (G) HAS SETTLED 1" & OUT 3/4"

BENT No. 1 PAGE ____

000087

BRIDGE No. 33 (COUNTY) FAU 3578/I-24 (ROUTE) 0.80/ 13.34 (LOG MILE) 2-26-95 9/9/92 9/3/98 DATE 10/15/96

ELEMENT	RATING	COMMENTS
CAP	G	SM. DELAM, 3/4 HOLES FROM CORE SAMPLES
COLUMN	G/F	"A" HAVE LG. DELAM, "C" & "F" HAVE LG DELAMS/SPA[LLS] WITH REBAR P.O. AND MED. SIZE REBAR POP-OUT
BEARING	G	
FOOTING	N/V	

BENT NO. 1

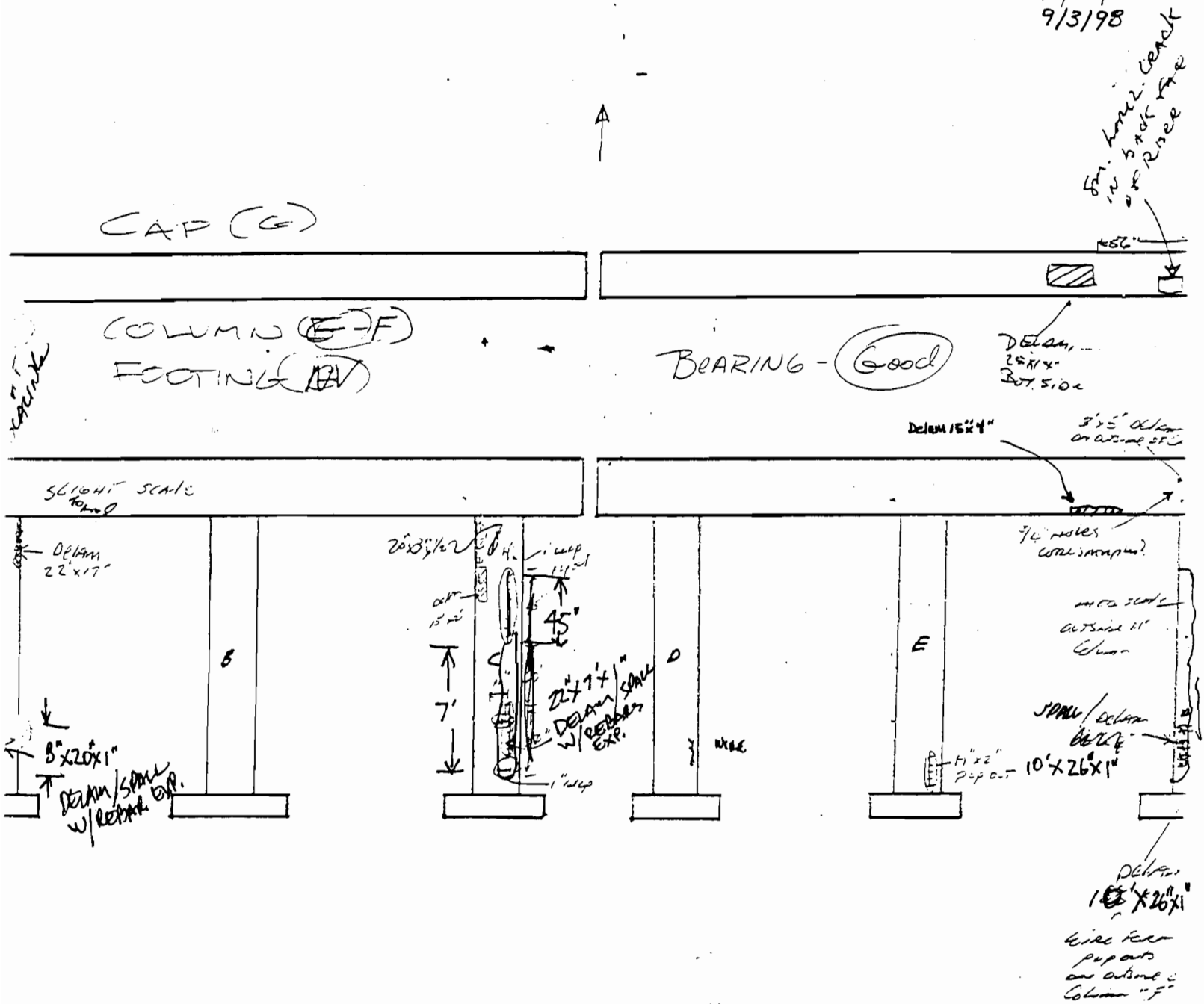
PAGE 000038

33 COUNTY

FAU 3578 / I-24 ROUTE

0.80 / 13.34 LOG MILE

9/9/97
2-26-95
10/15/96
9/3/98



BENT No. 2 PAGE 000089

BRIDGE No. 33 (COUNTY) FAU 3578/5-24 (ROUTE) 0.80/13.34 (LOG MILE) 2-26-95 9/9/92 9/13/98 (DATE 10/15/96)

ELEMENT	RATING	COMMENTS
CAP	G/F	SEVERAL LG. DELAMS ON BACK, FRONT & BOTTOM
COLUMN	G/F	SEVERAL LG. WIRE POPOUTS WITH SPALLS ON "D", "E" & "F"
FOOTING	N/V	

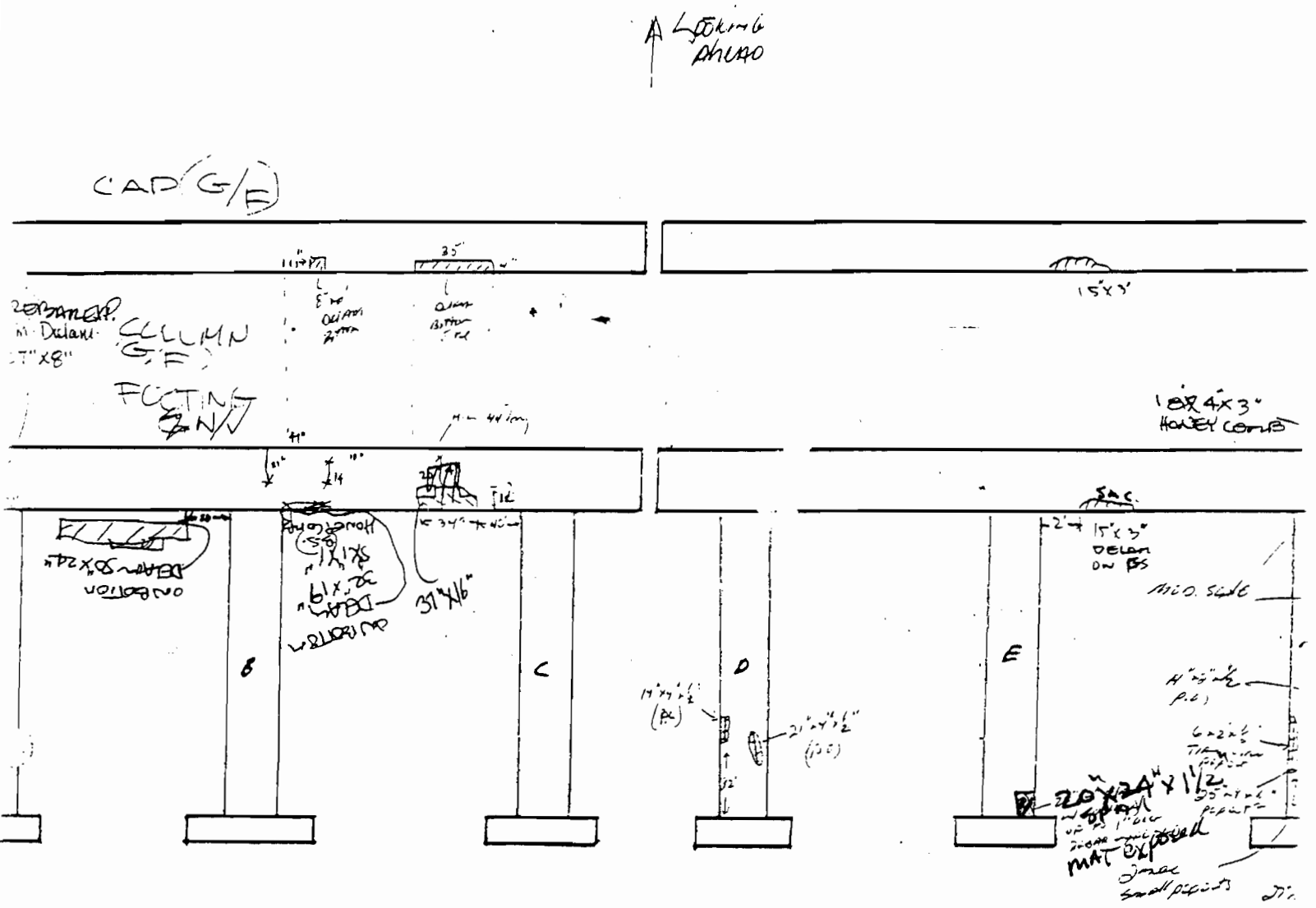
BENT NO. 2

PAGE 2-26-95
DATE 9-10-92 10/15/96 9/3/98

33
COUNTY

KAU 3578 / I-24
ROUTE

0.80 / 13.34
LOG MILE



BENT No. 3 PAGE 2-26-95

BRIDGE No. 33 (KAN 3578/E-24) 0.80/13.34 9/9/92 9/3/98

COUNTY ROUTE LOG MILE DATE 10/15/96

ELEMENT	RATING	COMMENTS
CAP	G/F	SEVERAL LG. DELAMS WITH SM CRACKS ON FRONT BACK AND BOTTOM (H.L. MAP CRACK, LIGHT-MOD SCALING
COLUMN	G	'E' & 'F' HAVE W/ REPOROUTS AND A LG. DELAM
FOOING	N/V	
BEARING	G	

BENT NO. 3

PAGE 000042

DATE 9/9/92 9/3/98

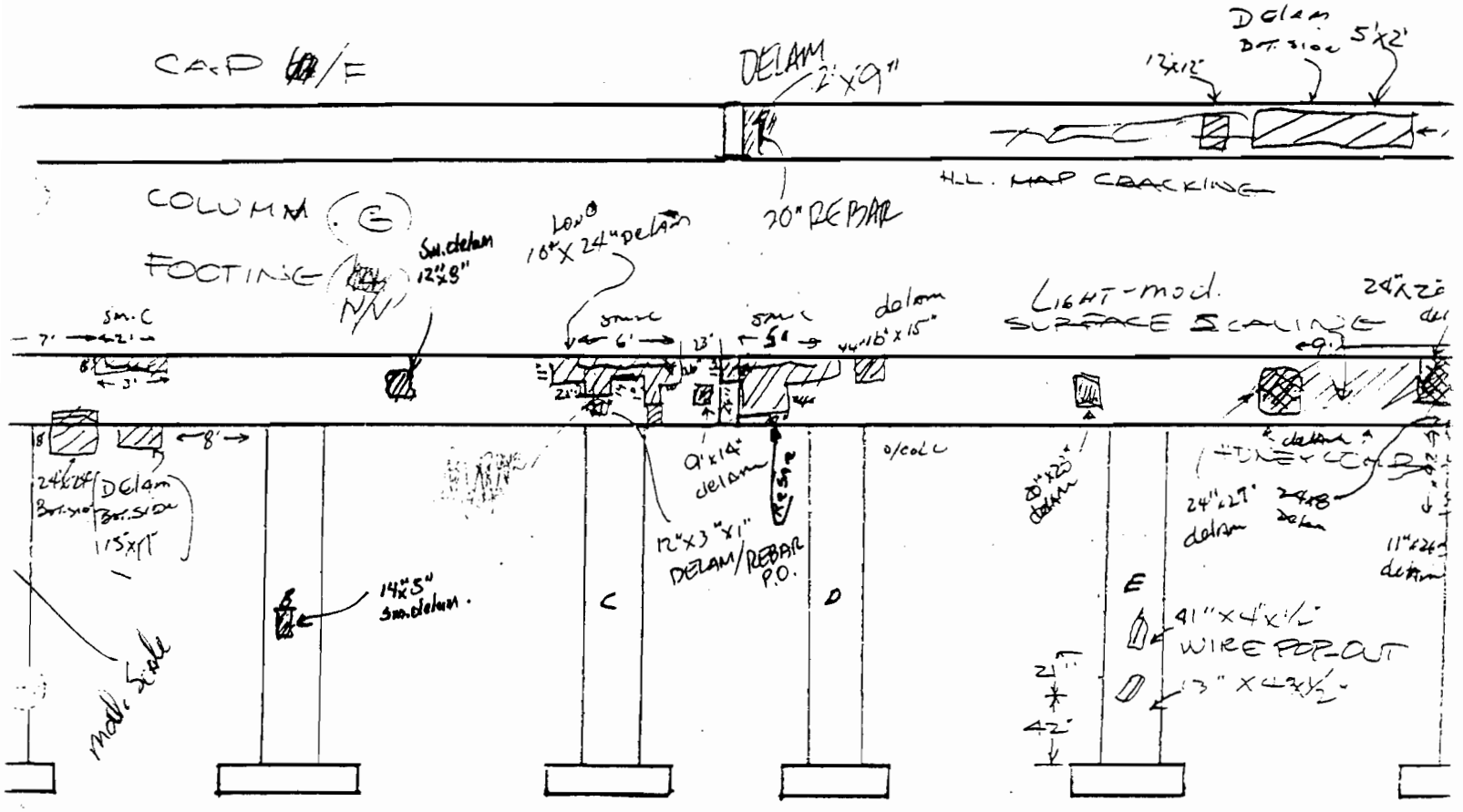
33 COUNTY

FAU 3578 / S-24 ROUTE

0.80 / 13.34 LOG MILE

2-26-95

10/15/96



ABUTMENT No. 2

PAGE 000048 2-14-95

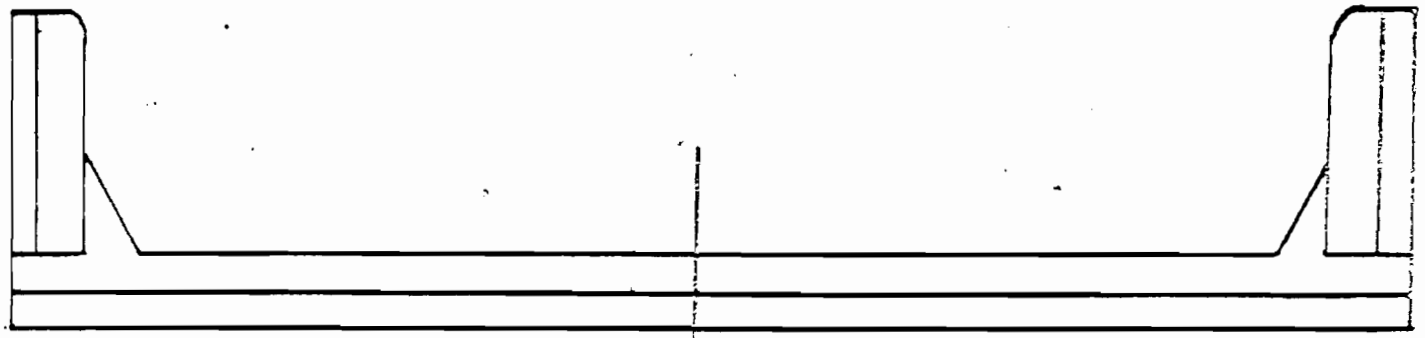
BRIDGE No. 33 (COUNTY) FAN 3578/I-24 (ROUTE) 0.80/13.34 (LOG MILE) 10-7-92 9/3/98 DATE 10/15/96

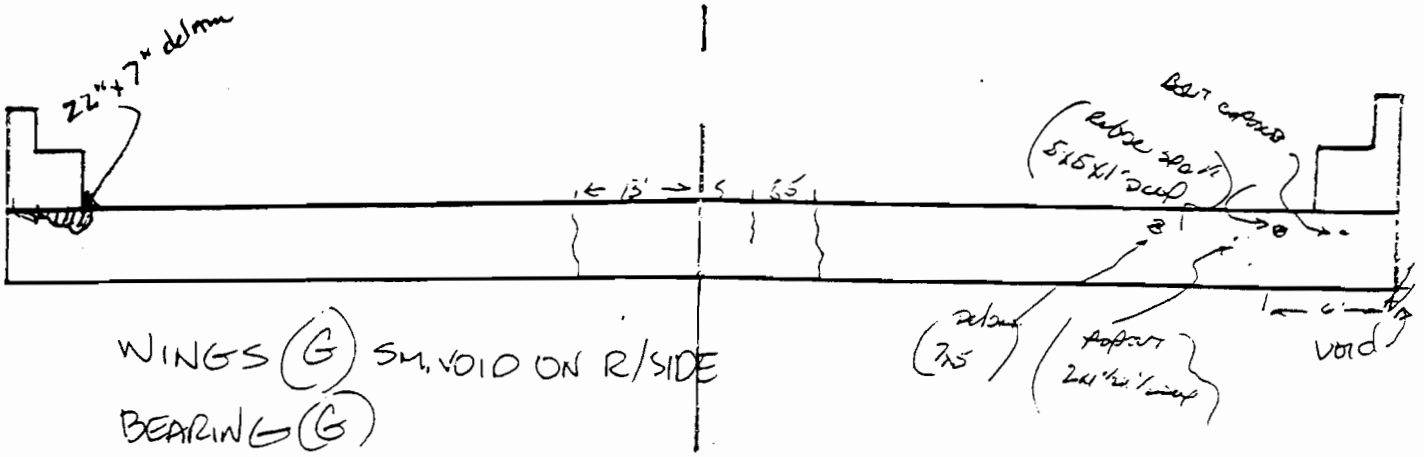
ELEMENT	RATING	COMMENTS
WINGS	G	SM. VOID ON R/SIDE
BEARING	G	
BREASTWALL	G	Few Hr. Line - small cracks - delam
SLOPE	G	

DATE 10-7-92 9/13/98 10/15/96

Abutment No. 2

33	FAO 3578 / I-24	0.80 / 13.34
COUNTY	Route	Log Mile





WINGS (G) SM. VOID ON R/SIDE

BEARING (G)

BREASTWALL (G) A FEW H.L. CRACKS & SM. REBAR/SPALL
SM DELAM

SLOPE (G)

Index Of Sheets

(SEE SHEET 1A)

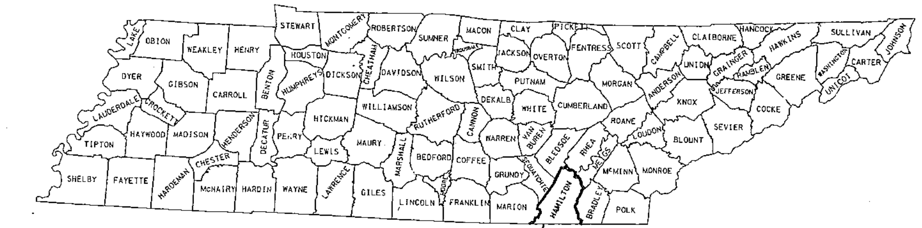
TENN.	YEAR	SHEET NO.
	1996	1
FED. AID PROJ. NO.		
STATE PROJ. NO.	33003-4154-04	

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF PLANNING AND DEVELOPMENT

HAMILTON COUNTY
I-24
FROM EAST OF S.R. 8 TO I-75 (INCL. MEDIAN BARRIER)

PARTIAL PAVING, MEDIAN MODIFICATION,
GUARDRAIL

INTERSTATE HIGHWAY NO. I-24

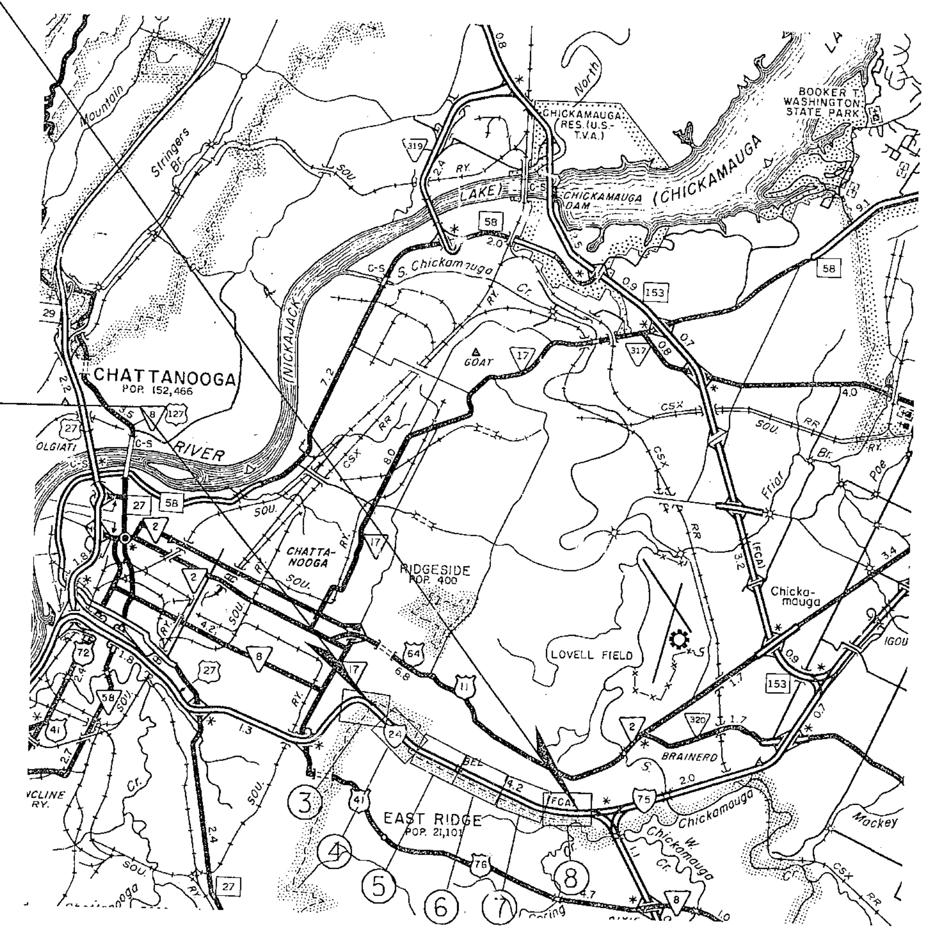


HAMILTON COUNTY
33003-4154-04

END PROJ. NO. 33003-4154-04 CONST.
STA. 334+00.00 E.B.L.

N
W E
S

BEG. PROJ. NO. 33003-4154-04 CONST.
STA. 191+44.33 E.B.L.



SCALE: 1" = 5,000'

NO EXCLUSIONS

TABLE OF EQUATIONS		
EQUATIONS WEST BOUND LANE		
STATIONS (BK.) = STATIONS (AHD.)	+	-
204+02.94 = 203+13.80	89.14'	
EQUATIONS EAST BOUND LANE		
203+48.66 = 203+13.80	34.86'	
EFFECT ON ENUMERATION	34.86'	

NOTE : PROJECT LENGTH BASED ON E.B.L. LENGTH

MICHAEL J. AGNEW
REGISTERED ENGINEER
STATE OF TENNESSEE

6-25-96

APPROVED: Paul R. Morrison
DESIGN DIVISION

DATE:

APPROVED:
COMMISSIONER

SPECIAL NOTES

PROPOSALS MAY BE REJECTED BY THE COMMISSIONER IF ANY OF THE UNIT PRICES CONTAINED THEREIN ARE OBVIOUSLY UNBALANCED, EITHER EXCESSIVE OR BELOW THE REASONABLE COST ANALYSIS VALUE.

THIS PROJECT TO BE CONSTRUCTED UNDER THE STANDARD SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION DATED MARCH 1, 1995 AND ADDITIONAL SPECIFICATIONS AND SPECIAL PROVISIONS CONTAINED IN THE PLANS AND IN THE PROPOSAL CONTRACT

TDOT ROAD C.E. MGR. 1 MICHAEL AGNEW

DESIGNER JIMMY C. LEDBEITER CHECKED BY LARRY RAY

P.E. NO. 33003-1152-44

ROADWAY LENGTH	2.675 MILES
BRIDGE LENGTH	0.031 MILES
BOX BRIDGE LENGTH	0.000 MILES
PROJECT LENGTH	2.706 MILES

TRAFFIC DATA	
ADT (1996)	51,450
ADT (2016)	118,900
DHV (2016)	11,890
D	60 - 40
T (ADT)	15 %
T (DHV)	10 %
V	55 MPH

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR DATE

TENNESSEE D.O.T.
DESIGN DIVISION
FILE NO. 35

c:\users\jlm\title-24.dgn
20-JUN-996 08:13

Aug Let - 1996
4359

TENNESSEE D.O.T. | DESIGN DIVISION

FILE NO.

SCANNED

INDEX OF SHEETS

(TO BE PRINTED WITH PLANS)

DWG. NO.	CURRENT REVISION	DESCRIPTION
ESC-STR-1	10-26-95	TEMPORARY DEWATERING STRUCTURE, PAY ITEMS & GENERAL NOTES
ESC-STR-3	5-27-95	TEMPORARY SILT FENCE & FILTER BARRIER
ESC-STR-5	12-18-94	STRAW OR HAY BALE OR FABRIC TEMPORARY SILT CHECKS
ESC-STR-19	5-27-95	CATCHBASIN PROTECTION
S-GR-11	6-10-96	W-BEAM & THRIE BEAM BARRIER RAIL AND RUB RAIL ALTERNATES
S-GR-12	6-10-96	BARRIER RAIL MOUNTING, POST BLOCK-OUTS
S-GR-13	6-10-96	W-BEAM BARRIER POST DETAILS AND SPECIFICATIONS
S-GR-15	7-29-95	W-BEAM BARRIER TERMINAL ELEMENT DETAILS
S-GR-18	5-27-96	GUARDRAIL TERMINAL ANCHOR (TYPE 11) GUARDRAIL ANCHOR (TYPE IN-LINE)
S-GR-18A	2-14-96	DETAILS FOR BREAKAWAY POST ANCHOR PLATE AND SWAGE FITTING
S-GR-19	5-27-96	TERMINAL ANCHORS, TYPE 12 AND TYPE 13
S-GR-20	7-29-95	MEDIAN DIVIDER GUARDRAIL AND GUARDRAIL TERMINAL ANCHORS
S-GR-21	5-27-96	LENGTH OF NEED AND TERMINAL REQUIREMENTS IN FILLS
S-GR-23	12-18-95	GUARDRAIL ATTACHMENT TO STRUCTURES AND PROTECTIVE GUARDRAIL AT BRIDGE ENDS DETAILS
S-GR-24	5-27-96	MINIMUM INSTALLATION LENGTH FOR PROTECTIVE GUARDRAIL AT BRIDGE ENDS
S-GR-25	5-27-96	GUARDRAIL TERMINAL ANCHOR (TYPE 20) POST LAYOUT AND ERECTION DETAILS
S-GR-29	2-14-96	GUARDRAIL TERMINAL ANCHOR (TYPE 16) POST LAYOUT AND ERECTION DETAILS
S-GR-30	2-14-96	MELT GUARDRAIL ELEMENT ASSEMBLY DETAILS
S-GR-31	2-14-96	MELT GUARDRAIL POST AND ASSEMBLY DETAILS
S-MB-1	5-27-96	CONCRETE MEDIAN BARRIER
S-MB-3	5-27-96	CONCRETE GLARE SCREEN MEDIAN BARRIER
S-MB-3A	5-27-96	CONCRETE GLARE SCREEN MEDIAN BARRIER
S-MB-4	5-27-96	CONCRETE GLARE SCREEN MEDIAN BARRIER BRIDGE PIER PROTECTION
T-L-1A	10-26-95	LIGHTING DETAILS-FOUNDATIONS
T-PBR-1	1-19-96	INTERCONNECTED PORTABLE BARRIER RAIL
SBR-2-124	1-04-96	DETAILS SHOWING REPLACEMENT OF EXISTING BRIDGERAIL SYSTEM WITH NEW JERSEY SHAPE CONCRETE PARAPET AND NEW 10'-2" ENDPOST - 1988
SBR-2-125	1-04-96	DETAILS SHOWING REPLACEMENT OF EXISTING BRIDGERAIL SYSTEM WITH NEW JERSEY SHAPE CONCRETE PARAPET AND NEW 10'-2" ENDPOST - 1988
SBR-2-126	1-04-96	DETAILS SHOWING REPLACEMENT OF EXISTING BRIDGERAIL SYSTEM WITH NEW JERSEY SHAPE CONCRETE PARAPET AND NEW 10'-2" ENDPOST - 1988

(TO BE PRINTED WITH PLANS- CONT.)

DWG. NO.	CURRENT REVISION	DESCRIPTION
SBR-2-127	1-04-96	DETAILS SHOWING PIER PROTECTION WITH NEW CONCRETE BARRIER WALL - 1988
SBR-2-128	1-04-96	DETAILS SHOWING PIER PROTECTION WITH NEW CONCRETE BARRIER WALL - 1988
SBR-2-129	1-04-96	DETAILS SHOWING PIER PROTECTION WITH NEW VERTICAL CONCRETE BARRIER - 1988
SBR-2-130	1-04-96	DETAILS SHOWING PIER PROTECTION WITH NEW VERTICAL CONCRETE BARRIER - 1988
SBR-2-131	1-04-96	DETAILS SHOWING GUARDRAIL ATTACHMENT AT BRIDGE ENDS TO EXISTING CONCRETE SLOPE FACE ENDPOST - 1989
SBR-2-132	1-04-96	DETAILS SHOWING GUARDRAIL ATTACHMENT AT BRIDGE ENDS TO EXISTING CONCRETE SLOPE FACE ENDPOST - 1989
RD-L-4	5-27-96	STANDARD LEGEND FOR EROSION AND SEDIMENT CONTROL
RD-S-11A	1-29-96	ROADSIDE DITCH DETAILS FOR DESIGN AND CONSTRUCTION
D-CB-31	1-19-95	PRECAST CIRCULAR NO. 31 CATCH BASIN
RP-D-14	5-27-96	DETAILS OF CONCRETE DRIVEWAYS
RP-J-9	5-27-96	CONTRACTION AND CONSTRUCTION JOINTS FOR CONCRETE PAVEMENT

(INCLUDE IN PLANS - TO BE REFILED WITH STRUCTURES)

DWG. NO.	CURRENT REVISION	DESCRIPTION
G-9-91	9-87	SOUTH MOORE ROAD OVERPASS-GENERAL DRAWING
G-9-94	4-60	SOUTH MOORE ROAD OVERPASS-BENTS AND COLUMNS
G-9-95	4-60	SOUTH MOORE ROAD OVERPASS-BENTS
G-9-99	7-65	McBRIEN ROAD OVERPASS-GENERAL DRAWING
G-9-101	7-60	McBRIEN ROAD OVERPASS-BENTS AND COLUMNS
G-9-102	7-60	McBRIEN ROAD OVERPASS-BENTS
H-2-15	----	BELVOIR AVENUE OVERPASS-GENERAL DRAWING
H-2-18	4-60	BELVOIR AVENUE OVERPASS-BENTS AND COLUMN
H-2-19	4-60	BELVOIR AVENUE OVERPASS-BENTS
K-19-1	----	MISSIONARY RIDGE, SO. SEMINOLE DR. OVERPASS-GENERAL DRAWING
K-19-4	----	MISSIONARY RIDGE, SO. SEMINOLE DR. OVERPASS-BENTS AND COLUMNS
K-19-5	----	MISSIONARY RIDGE, SO. SEMINOLE DR. OVERPASS-BENTS

STANDARD ROADWAY DRAWINGS

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	1996	33003-4154-04	1A

REV. 7/17/96: ADDED SHEET NO'S. 2M, 2N & 2P TO PLANS. DELETED STD. DWG. RP-J-23 & 24.

REV. 7-25-96: ADDED SHEET NO. 2F(1) TO PLANS. ADDED STD. DWG. NO. S-EA-1 TO PLANS.

DWG. NO.	CURRENT REVISION	DESCRIPTION
ROADWAY DESIGN STANDARDS		
RD-A-1	9-05-94	STANDARD ABBREVIATIONS
RD-L-1	10-26-94	STANDARD LEGEND
RD-L-2	10-26-94	STANDARD LEGEND FOR UTILITY INSTALLATIONS
RD-L-3	10-26-94	STANDARD LEGEND FOR SIGNALIZATION AND LIGHTING
RD-S-11	10-26-93	DESIGN AND CONSTRUCTION DETAILS FOR ROADSIDE SLOPE DEVELOPEMENT
RD-S-17	7-29-91	MEDIAN SECTIONS & MEDIAN BARRIER WARRANT CRITERIA
RD-TS-5B	7-29-92	DESIGN STANDARDS FREEWAYS WITH MEDIAN BARRIER
RD-UD-3	--------	UNDERDRAIN DETAILS
RD-UD-4	--------	UNDERDRAIN DETAILS
RD-UD-6	12-18-94	LATERAL UNDERDRAIN ENDWALL DETAIL FOR 1:1 & 2:1 SLOPES
RD-UD-7	12-18-94	LATERAL UNDERDRAIN ENDWALL DETAIL FOR 3:1 & 4:1 SLOPES
DRAINAGE - CULVERTS AND ENDWALLS		
D-PB-1	7-29-94	CLASS "B" BEDDING AND CULVERT EXCAVATION
D-PE-4B (1)	11-06-89	CONCRETE ENDWALL TYPE "U" WITH STEEL PIPE GRATE (FOR 18" THRU 48" PIPES) 4:1 SLOPE)
D-PE-4B (2)	3-20-86	CONCRETE ENDWALL TYPE "U" WITH STEEL PIPE GRATE (FOR 18" THRU 48" PIPES) 4:1 SLOPE)
D-PG-3	7-29-94	FERROUS AND ALUMINUM CORRUGATED METAL PIPE
DRAINAGE-CATCH BASINS AND MANHOLES		
D-CB-3	6-20-90	NO. 36 AND NO. 37 CATCH BASINS AND GRATE
D-CB-31S	-------	7' X 7' SQUARE CONCRETE NO.31 CATCH BASIN
D-CBB-31	-------	TYPE "B" CAST IRON FRAME, GRATE & INLET DETAILS FOR NO. 31 TYPE CATCH BASIN
ROADWAY AND PAVEMENT APPURTENANCES		
RP-J-1	12-18-94	PORTLAND CEMENT CONCRETE PAVEMENT JOINT TYPES AND SPACING
RP-J-3	12-18-94	PORTLAND CEMENT CONCRETE PAVEMENT JOINT TYPES AND SPACING
RP-J-11	12-18-94	¾" AND 1-3/4" EXPANSION AND EDGE PAVEMENT JOINTS
RP-J-13	3-20-91	¾" AND 1-3/4" ELASTOMERIC COMPRESSION JOINT SEALS
RP-J-15	3-20-91	METAL LONGITUDINAL JOINTS
RP-J-17	12-18-94	DOWEL ASSEMBLY DEVICES
RP-J-18	12-18-94	DOWEL ASSEMBLY DEVICES
RP-J-19	12-18-94	DOWEL ASSEMBLY DEVICES
SAFETY APPURTENANCES AND FENCE		
S-EA-1	9-19-91	CONSTRUCTION ZONE GUARDRAIL ENERGY ABSORBING TERMINAL
S-F-10	7-17-81	RIGHT-OF-WAY STOCK FENCE
S-F-10B	7-17-81	RIGHT-OF-WAY CHAIN LINK FENCE
S-GR-17A	10-26-94	TABLES OF OFFSETS FOR STAKING OUT GUARDRAIL FLARE
TRAFFIC CONTROL APPURTENANCES		
T-FAB-1	5-30-91	FLASHING YELLOW ARROW BOARD
T-L-1	11-12-93	LIGHTING DETAILS-SUPPORTS
T-M-5	10-26-92	MARKING DETAILS FOR EXPRESSWAYS AND FREEWAYS
T-M-6	1-19-94	MARKING DETAIL FOR EXPRESSWAY AND FREEWAY
T-M-7	12-18-92	GORE MARKING DETAILS FOR EXPRESSWAY AND FREEWAY INTERCHANGES
T-M-8	12-18-92	MARKING DETAILS FOR EXPRESSWAYS AND FREEWAYS
T-PBR-2	--------	DETAIL FOR VERTICAL PANELS
T-M-7	12-18-92	GORE MARKING DETAILS FOR EXPRESSWAY AND FREEWAY INTERCHANGES

MICHAEL J. AGNEW, JR. REGISTERED ENGINEER AGRICULTURE No. 19176 STATE OF TENNESSEE

7-17-96

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF PLANNING & DEVELOPMENT

INDEX AND STANDARD ROADWAY DRAWINGS

17-JUL-1996 14:05
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WHEN BRIDGE DECK DRAINS ARE ENCOUNTERED. THE CONTRACTOR SHALL MAKE PROVISIONS FOR EXTENDING DRAINS TO TOP OF WEARING SURFACE. METHOD OF EXTENSION TO MEET WITH THE APPROVAL OF THE ENGINEER. COST TO BE INCLUDED IN BRIDGE DECK SEALANT ITEM NO. 617-01.

[E] FOR EXPANSION JOINT REPAIR DETAILS. SEE STANDARD DRAWING NOS. BR-2-115 THRU BR-2-121. THE CONTRACTOR SHALL FIELD VARIFY ALL THE LENGTHS REQUIRED FOR INSTALLATION PRIOR TO JOINT FABRICATION. ALSO THE FOLLOWING SPECIAL PROVISIONS SHALL APPLY:
105A REGARDING APPROVAL OF SHOP DRAWINGS
604S REGARDING STRIP SEAL EXPANSION JOINTS

◒ FOR DETAIL AND NOTES ON REINFORCED CONCRETE MEDIAN BARRIER (ITEM NO. 711-02.03), REFER TO SHEET NO.

CONST. NO. 33003-4154-04

PROJECT NO.	YEAR	SHEET NO.
	1996	2H

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

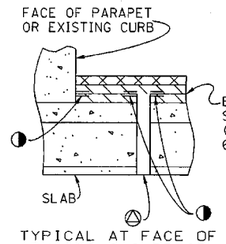
TABULATION OF BRIDGE RELATED WORK AND ESTIMATED QUANTITIES

LOCATION OF BRIDGE AND BRIDGE NUMBER	REFERENCE DRAWINGS TO BE PRINTED WITH CONTRACT DRAWINGS	TYPE OF WORK	604-10.30 BRIDGE DECK REPAIR (FULL DEPTH OF SLAB) S.Y.	604-10.50 BRIDGE DECK REPAIR (PARTIAL DEPTH OF SLAB) S.Y.	617-01 BRIDGE DECK SEALANT S.Y.	407-02 REMOVAL & DISPOSAL OF EXISTING SURFACE (BITUMINOUS) C.Y.	705-10.29 CONCRETE BARRIER WALL FOR BRIDGE PIERS ☒ L.F.	711-02.03 REINFORCED CONCRETE MEDIAN BARRIER (BRIDGES) ◒ L.F.	604-03.09 CLASS "D" CONCRETE (BRIDGE DECK) C.Y.	604-02.03 EPOXY COATED REINFORCING STEEL LB.	604-04.01 APPLIED TEXTURE FINISH (NEW STRUCTURES) S.Y.
33-4148-3.27/124-11.45 33I00240053	K-19-1,K-19-4,K-19-5	PIER PROTECTION					88				
33-124-12.08(EBL)/3577 33I00240055		BRIDGE DECK REPAIR BRIDGE DECK SEALANT	10	200	737			166	41	12,719	175
33-124-12.08(WBL)/3577 33I00240055		BRIDGE DECK REPAIR BRIDGE DECK SEALANT	10	200	737						
33-3611-1.01/124-12.54 33I00240057	H-2-15,H-2-18,H-2-19	PIER PROTECTION					180				
33-3578-0.08/124-13.34 33I00240059	G-9-91,G-9-94,G-9-95	PIER PROTECTION					180				
33-3610-1.58/124-13.62 33I00240061	G-9-99,G-9-101,G-9-102	PIER PROTECTION					193				
TOTAL			20	400	1474		641	166	41	12,719	175

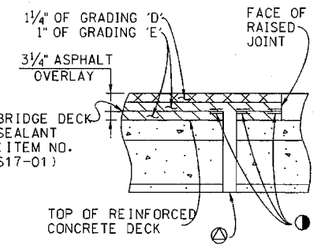
☒ FOR DETAIL AND NOTES ON CONCRETE PARAPET (BRIDGERAIL REPLACEMENT) (ITEM NO. 620-10.01), REFER TO STD.DWG. NO. BR-2-124, BR-2-125 & BR-2-126.

◑ MASTIC AS RECOMMENDED BY MANUFACTURER OF MEMBRANE. SEE STD. SPEC. ART. 906.04.

△ 1½" ø HOLE TO BE DRILLED BY THE CONTRACTOR NEAR FACE OF NEW PARAPETS OR EXISTING CURBS AT LOW POINTS.

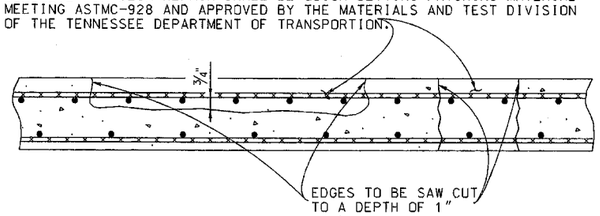


TYPICAL AT FACE OF EXISTING CURB OR NEW PARAPET



TYPICAL FOR NEW RAISED EXPANSION JOINTS

CONCRETE FOR DECK REPAIR SHALL BE QUICK SETTING PATCHING MATERIAL MEETING ASTMC-928 AND APPROVED BY THE MATERIALS AND TEST DIVISION OF THE TENNESSEE DEPARTMENT OF TRANSPORTION.



SKETCH SHOWING DECK REPAIR

NOTE: REMOVE CONCRETE IN ALL DELAMINIATED AREAS TO A DEPTH OF ¾" BELOW THE TOP BAR OF THE TOP MAT OF REINFORCING STEEL. ALL REINFORCING STEEL IN AREAS OF DECK REPAIR SHALL BE BLAST CLEANED. BLASTING AND CLEANING SHALL BE DONE PRIOR TO PLACING NEW CONCRETE OR INSTALLING PATCHING MATERIAL. AREAS OF CONCRETE REMOVAL SHALL BE DESIGNATED BY PERSONNEL FROM THE HEADQUARTERS, BRIDGE INSPECTION AND REPAIR OFFICE.

NOTE: ITEM NO. 604-10.50, BRIDGE DECK REPAIR (PARTIAL DEPTH OF SLAB), AND ITEM NO. 604-10.30, BRIDGE DECK REPAIR (FULL DEPTH OF SLAB), SHALL BE BID WITH THE CONTINGENCY THAT THIS MAY BE INCREASED, DECREASED OR ELIMINATED AS DIRECTED BY THE ENGINEER.

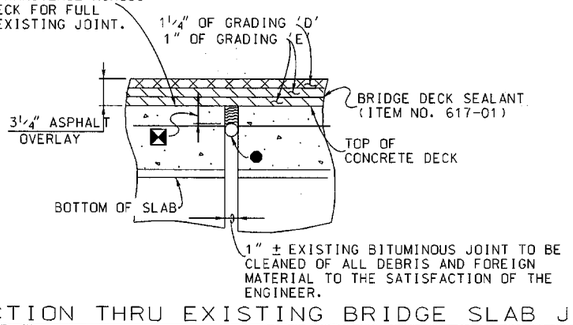
POWER DRIVEN HAND TOOLS:

POWER DRIVEN HAND TOOLS USED FOR THE REMOVAL OF UNSOUND CONCRETE IN MAKING PARTIAL AND FULL DEPTH REPAIRS ARE SUBJECT TO THE FOLLOWING RESTRICTIONS: (1) PARTIAL DEPTH REPAIRS: PNEUMATIC HAMMERS HEAVIER THAN NOMINAL 60 LBS CLASS SHALL NOT BE USED. ALSO TRAFFIC CONTROL SHALL BE SET UP DURING PARTIAL DEPTH REPAIRS OVER TRAFFIC. (2) FULL DEPTH REPAIRS: PNEUMATIC HAMMERS HEAVIER THAN NOMINAL 90 LBS CLASS SHALL NOT BE USED. ALSO ALL DECK REPAIR OVER BEAMS WILL BE RESTRICTED TO 60 LBS PNEUMATIC HAMMERS. (3) CHIPPING HAMMERS OF THE 15 LB CLASS SHALL BE USED TO REMOVE CONCRETE FROM BENEATH ANY REINFORCING STEEL.

OPTIONAL BRIDGE DECK REPAIR MATERIAL

IF LANE CLOSURES ARE PROVIDED FOR THIS PROJECT AND THE LANE CLOSURES ARE SUCH THAT TRAFFIC WILL BE KEPT OFF OF THE BRIDGE DECK WHERE DECK REPAIRS WILL BE MADE, THEN HIGH EARLY STRENGTH CONCRETE, f'c = 24 MPa @ 28 DAY STRENGTH MAY BE SUBSTITUTED FOR THE QUICK SET PATCHING MATERIALS SPECIFIED IN THE SKETCH TO THE RIGHT. ALSO SEE TENNESSEE STANDARD SPECIFICATIONS. IF EARLY STRENGTH CONCRETE IS USED, THEN TRAFFIC WILL NOT BE PERMITTED ON THE REPAIRED AREAS UNTIL A MINIMUM OF TEN (10) DAYS HAVE ELASPED FROM THE DATE OF POUR AND REPRESENTIVE TEST SPECIMENS HAVE ATTAINED A COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 psi. ALSO AN APPROVED EPOXY BONDING AGENT SHALL BE USED BETWEEN THE OLD AND THE NEW CONCRETE POURS.

ONE LAYER OF DECK SEALANT (ITEM NO. 617-01) PLACED 2'-6" (±) TRANSVERSE ACROSS EXISTING DECK FOR FULL LENGTH OF EXISTING JOINT.

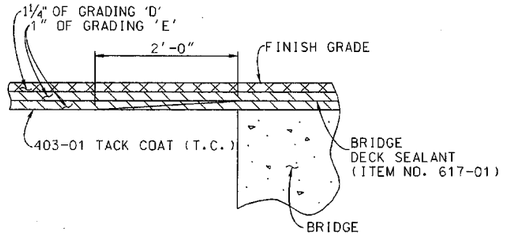


SECTION THRU EXISTING BRIDGE SLAB JOINT

(TYPICAL AT ALL EXISTING BITUMINOUS JOINTS WHEN NO JOINT REPAIR DETAIL IS SPECIFIED IN THE TABLE ABOVE)

● NOTE: THE EXISTING JOINT OPENING SHALL BE CAULKED WITH A BACKER ROD OF SUITABLE DIAMETER. THE ROD SHALL BE PLACED AT A DEPTH TO ENSURE THE CORRECT WIDTH/DEPTH RATIO OF THE NEW JOINT SEALANT MATERIAL. BACKER ROD SHALL BE AS PER JOINT MANUFACTURERS RECOMMENDATION.

☒ DENOTES: TOP 2" OF ALL EXISTING BITUMINOUS JOINTS IN THE BRIDGE SLAB TO BE CLEANED AND RESEALED WITH NEW JOINT SEALER. CONTRACTOR HAS THE OPTION OF USING EITHER: (1) A TYPE k HOT-POURED ELASTIC TYPE CONCRETE JOINT SEALER. SEE STANDARD SPECIFICATIONS SECTION 905.05, JOINT SEALER. (2) A COLD POUR SINGLE COMPONENT JOINT SEALER AS APPROVED BY THE DIVISION OF MATERIALS AND TEST. COST OF JOINT CLEANING AND SEALING TO BE INCLUDED UNDER ITEM NO. 617-01 (BRIDGE DECK SEALANT). THE SEALER SHALL EXTEND UP AND ACROSS THE CURB OR SIDEWALK AREA TO THE OUTER EDGE OF THE BRIDGE SLAB.



BRIDGE DECK SEALANT DETAILS

NOTE: ON BRIDGE DECK WHERE THERE IS A BITUMINOUS JOINT OR WITH NO EXPANSION JOINT, MEMBRANE SHALL EXTEND 2'-0" OVER THE END OF THE BRIDGE DECK. IF THE DECK HAS A STEEL EXPANSION JOINT, THE MEMBRANE SHALL STOP AT THE STEEL EXPANSION JOINT.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

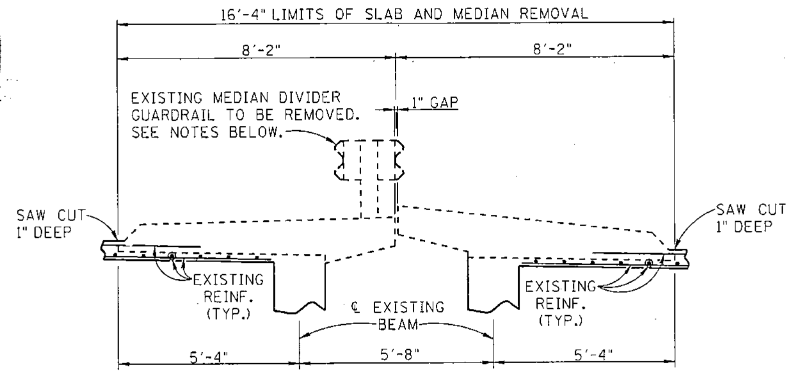
BRIDGE TABULATIONS AND ESTIMATED QUANTITIES
INTERSTATE 24
FROM (L.M. 10.50) TO (L.M. 14.70)
HAMILTON COUNTY

1996

9633BSC.DGN

TENNESSEE D.O.T. DESIGN DIVISION

FILE NO. 2B



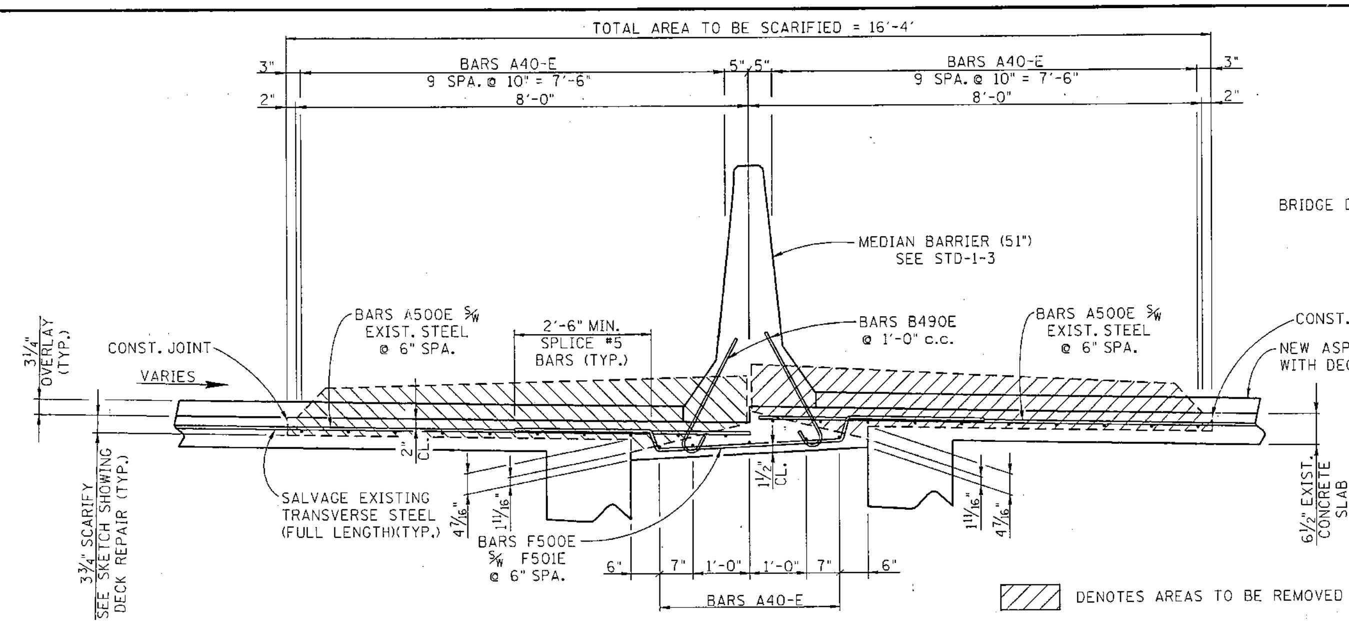
SECTION SHOWING LIMITS OF SLAB AND MEDIAN REMOVAL

NOTE: COST OF REMOVING EXISTING MEDIAN DIVIDER GUARDRAIL ON THE BRIDGE, REMOVING EXISTING CONCRETE MEDIAN BARRIER TRANSITION ON THE WEST END OF THE BRIDGE AND POURING THE NEW MEDIAN BARRIER TRANSITION ON THE EAST END OF THE BRIDGE, LABOR, FORMING AND ANY MISCELLANEOUS MATERIALS NECESSARY TO COMPLETE THE REPAIRS TO BE INCLUDED UNDER ITEM NO. 711-02.03, REINFORCED CONCRETE MEDIAN BARRIER (BRIDGES), L.F.

NOTE: EXISTING MEDIAN DIVIDER GUARDRAIL AND RUB RAILS TO BE ATTACHED TO THE NEW MEDIAN BARRIER TRANSITION. COST OF ATTACHING EXISTING RAILS AND/OR ANY NEW ADDITIONAL GUARDRAIL, RUB RAILS, AND ANY MISCELLANEOUS MATERIALS NECESSARY TO COMPLETE THE REPAIRS AS SHOWN, COMPLETE AND IN PLACE, TO BE INCLUDED UNDER ITEM NO. 711-02.03, REINFORCED CONCRETE MEDIAN BARRIER (BRIDGES), L.F.

NOTE: ALL EXISTING MEDIAN DIVIDER GUARDRAIL TO BE REMOVED FOR THE LIMITS AS SHOWN IN DETAILS THIS SHEET AND TO BE STOCK PILED ON THE JOB SITE AS DIRECTED BY THE ENGINEER. RAILINGS TO BE PICKED UP BY STATE MAINTENANCE FORCES.

NOTE: COST OF REMOVING EXISTING MEDIAN FOR LIMITS AS SHOWN, NEW CLASS "A" F'c = 4,500 p.s.i. CONCRETE, FORMING, LABOR, BLAST CLEANING, AND ANY MISCELLANEOUS MATERIALS NEEDED TO COMPLETE THE REPAIRS TO BE INCLUDED UNDER ITEM NO. 604-03.09, CLASS "D" CONCRETE (BRIDGE DECK)



SECTION SHOWING REINFORCING STEEL IN NEW SLAB

(LOOKING BACK ON SURVEY)

CONST. NO.	33003-4154-04	
PROJECT NO.	YEAR	SHEET NO.
X	1996	21

REVISIONS

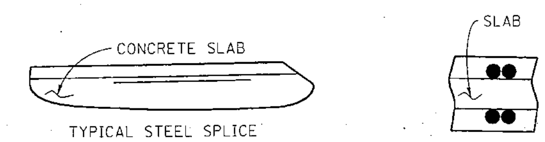
NO.	DATE	BY	BRIEF DESCRIPTION

BRIDGE DECK SEALANT: USE SYSTEM A OR B MODIFIED.

NOTE: EXISTING REINFORCING STEEL TO REMAIN IN PLACE. CONTRACTOR TO TAKE EXTREME CARE WHEN REMOVING EXISTING SLAB AND MEDIAN FOR LIMITS SHOWN SO AS NOT TO DAMAGE EXISTING REINFORCING STEEL. ALL EXPOSED EXISTING REINFORCING STEEL TO BE BLAST CLEANED AND INCORPORATED IN WITH NEW EPOXY COATED REINFORCING STEEL.

NOTE: WHEN POURING NEW MEDIAN SLAB, PROVISIONS SHALL BE MADE FOR SETTING BARS B490E FOR THE NEW CONCRETE MEDIAN BARRIER.

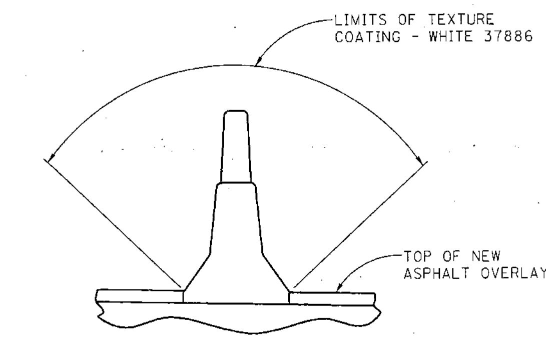
NOTE: COST OF ALL CLASS "A" F'c = 3,000 p.s.i. CONCRETE, EPOXY COATED REINFORCING STEEL, FORMING, TEXTURE COATING, LABOR AND ANY MISCELLANEOUS MATERIALS NECESSARY TO CONSTRUCT THE CONCRETE MEDIAN BARRIER AS SHOWN IN DETAILS TO BE INCLUDED UNDER ITEM NO. 711-02.03, REINFORCED CONCRETE MEDIAN BARRIER (BRIDGES), L.F. SEE OPTIONAL CONCRETE NOTE ON DWG. NO. .



TOP VIEW

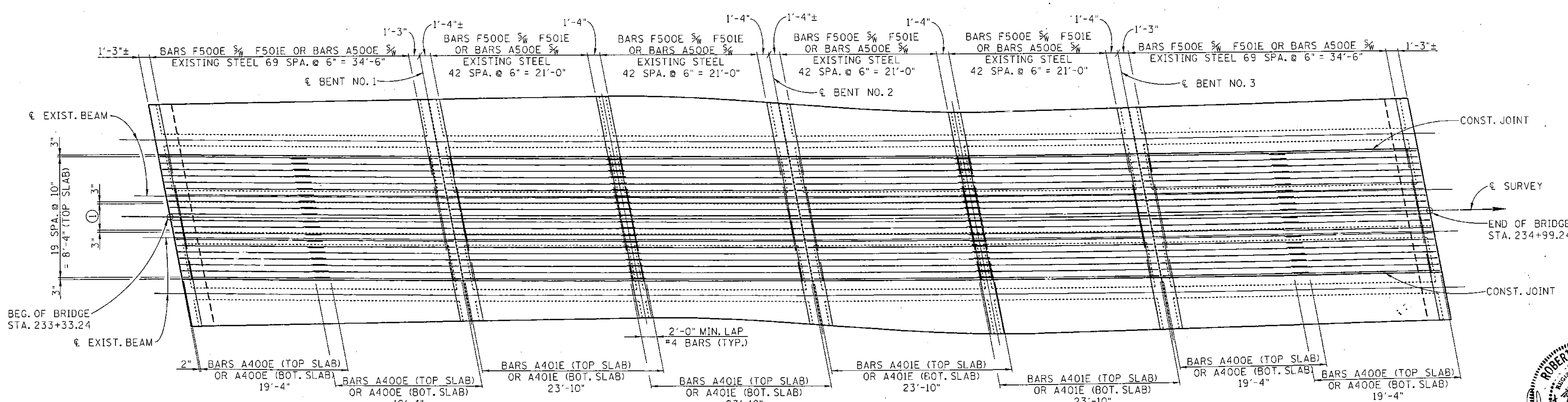
ELEVATION VIEW

SIDE BY SIDE SPLICE



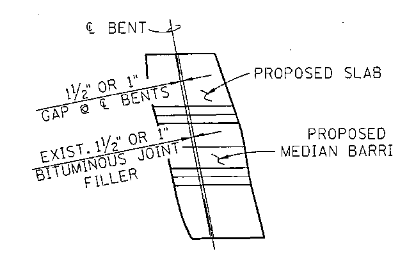
TEXTURE COATING DETAIL

COST OF TEXTURE COATING TO BE INCLUDED UNDER ITEM NO. 604-04.01 S.Y.)



① DENOTES: SEE SECTION SHOWING REINFORCING STEEL IN NEW SLAB ON THIS SHEET FOR SPACING OF BARS A400E IN BOTTOM OF SLAB

PART SLAB PLAN

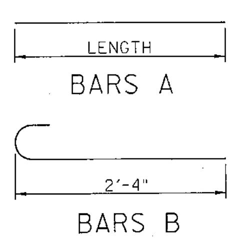


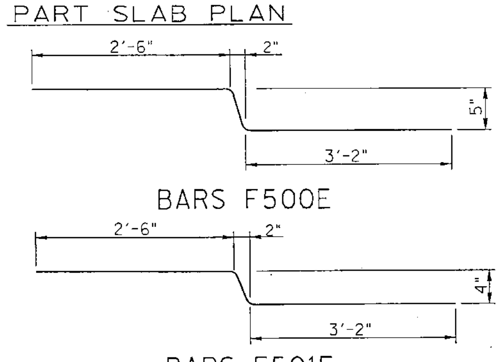
EXISTING EXPANSION JOINT LOCATIONS

(TYPICAL AT ALL BENTS)

BILL OF STEEL

BAR	SIZE	NO. REQ'D	LENGTH
A400E	4	100	19'-4"
A401E	4	100	23'-10"
A500E	5	624	8'-0"
B490E	4	334	3'-0"
F500E	5	312	6'-2"
F501E	5	312	6'-0"





ESTIMATED QUANTITIES

CLASS "D" CONCRETE (BRIDGE DECK) C.Y.	EPOXY-COATED REINFORCING STEEL (BRIDGES) LB.	APPLIED TEXTURE FINISH S.Y.
41	12,719	175

ROBERT M. DISHNER — STATE OF TENNESSEE

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

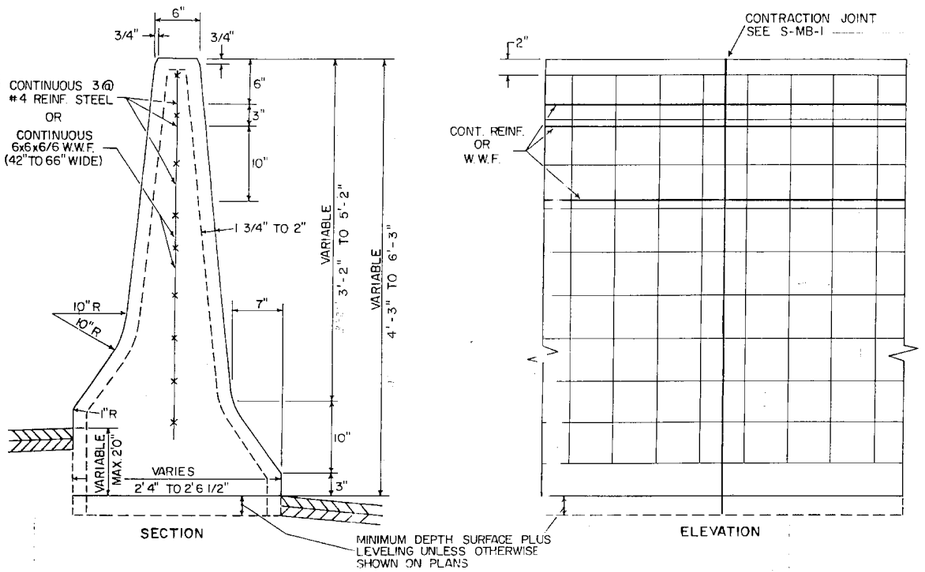
BRIDGE REPAIR DETAILS INTERSTATE 24 OVER GERMANTOWN ROAD HAMILTON COUNTY 1996

DESIGNED BY ALI WEHBI DATE 6-96
DRAWN BY STEVEN STEELE DATE 6-96
SUPERVISED BY ______ DATE ______
CHECKED BY ______ DATE ______

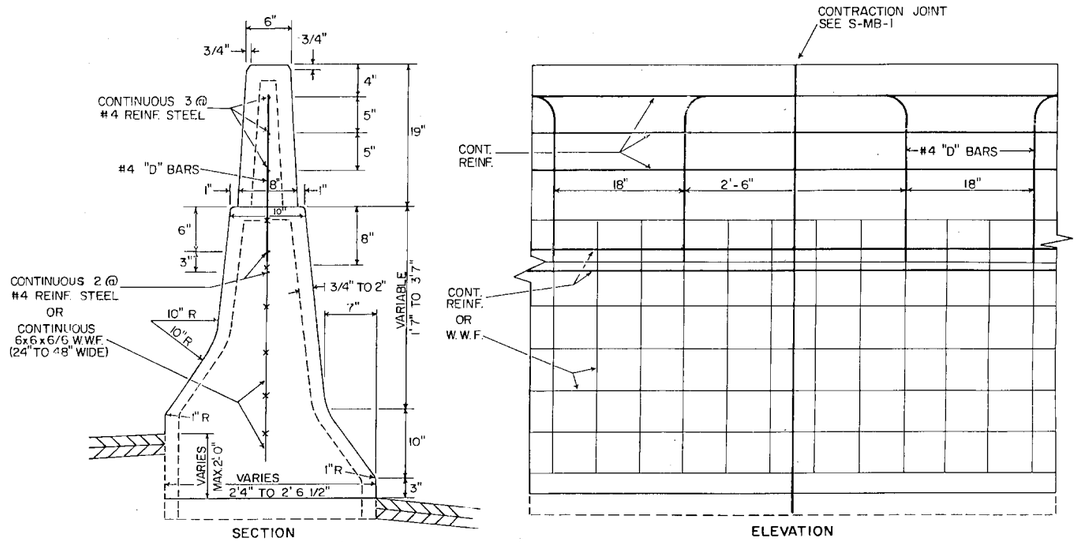
CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-

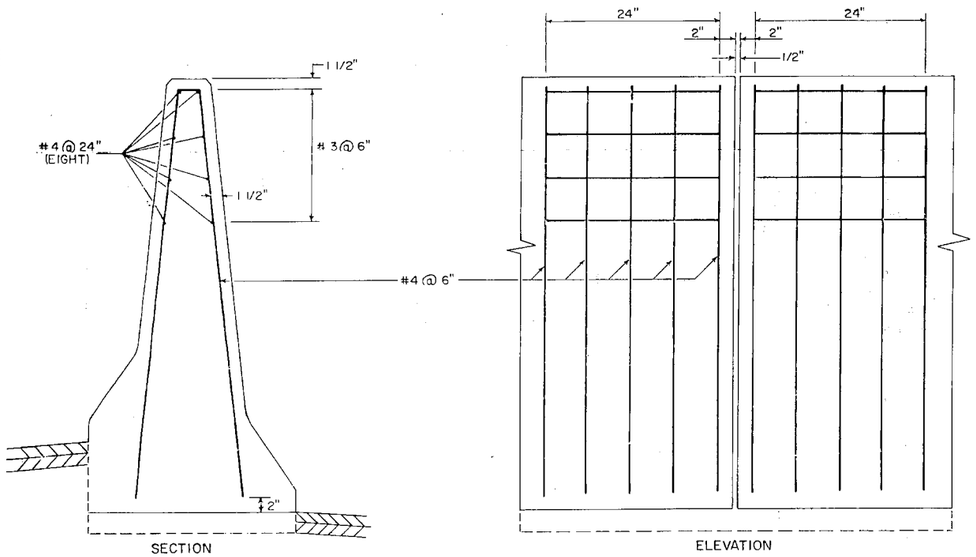
TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	1996	33003-4154-04	2J



DETAILS OF REINFORCING AND CONTRACTION JOINT

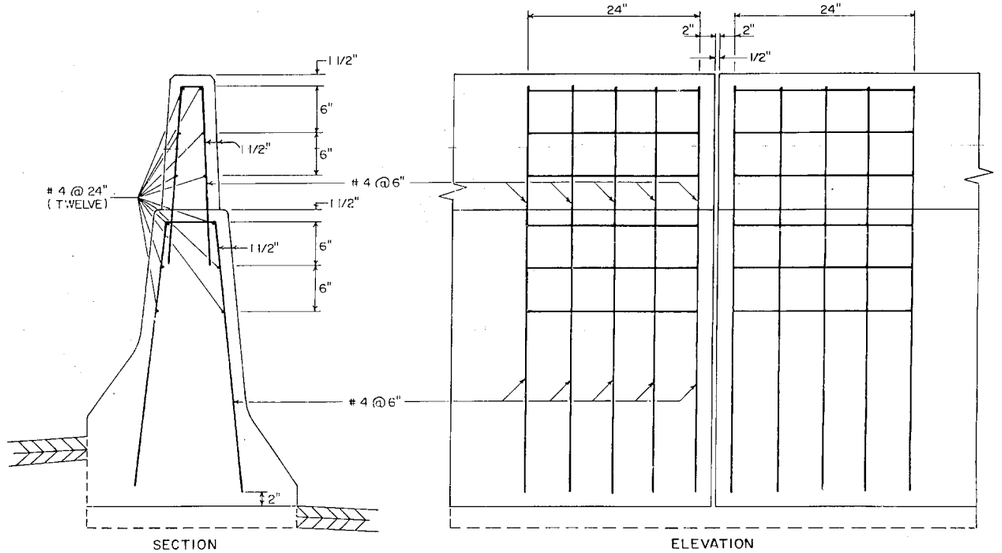


DETAILS OF REINFORCING AND CONTRACTION JOINT



DETAILS OF REINFORCING AT EXPANSION JOINT

MONOLITHIC BARRIER



DETAILS OF REINFORCING AT EXPANSION JOINT

ALTERNATE BARRIER

6-25-96

NOTES

① SEE STANDARD DRAWING S-MB-1 FOR NOTES AND ADDITIONAL DETAILS.

② PAYMENT WILL BE MADE UNDER ITEM NO.711-04, CONCRETE GLARE SCREEN MEDIAN BARRIER _____ LIN. FT.

③ THE COST OF FURNISHING AND INSTALLING MEDIAN BARRIER DELINEATORS, INCLUDING ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO COMPLETE THE INSTALLATION, SHALL BE INCLUDED IN BID PRICE FOR CONCRETE GLARE SCREEN MEDIAN BARRIER.

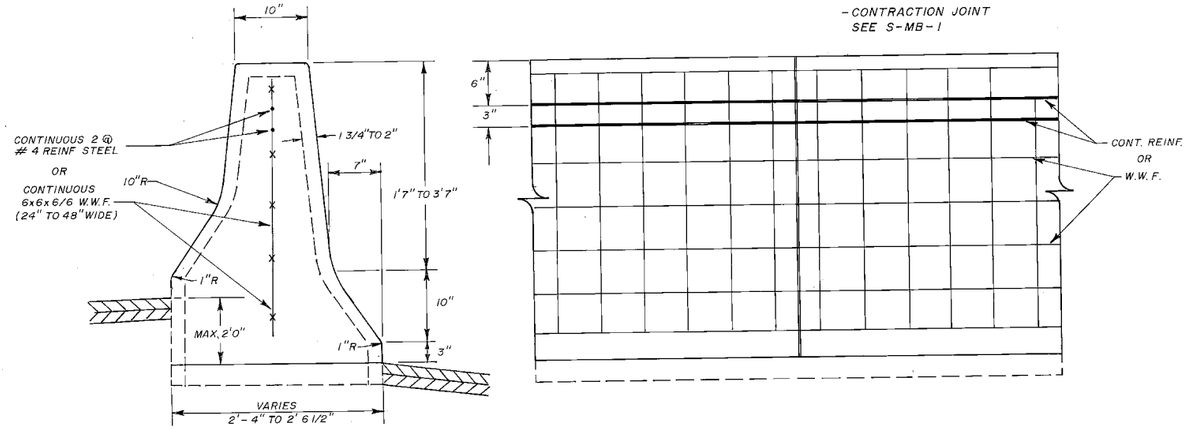
④ VERTICAL BARS MAY BE "D" BARS AT 18" MAXIMUM SPACING OR STRAIGHT DOWELS AT 24" MAXIMUM SPACING.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF PLANNING & DEVELOPMENT

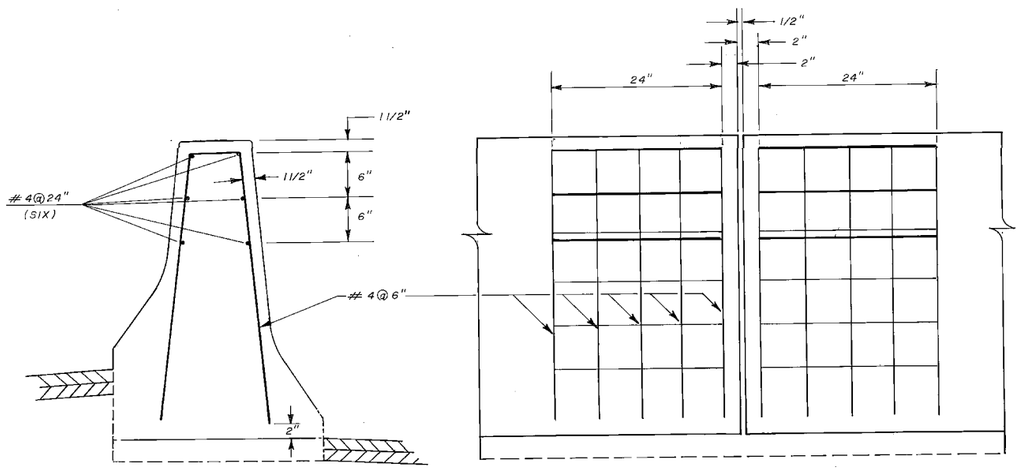
MEDIAN BARRIER DETAILS

TENNESSEE DEPARTMENT OF TRANSPORTATION
FILE NO. 23

TYPE	YEAR	PROJECT NO.	SHEET NO.
CONST.	1996	33003-4154-04	2K



DETAILS OF RENFORCING AND CONTRACTION JOINT



DETAILS OF REINFORCING AT EXPANSION JOINT

MICHAEL J. AGNEW JR
REGISTERED ENGINEER
No. 19112
STATE OF TENNESSEE

6-25-96

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF PLANNING & DEVELOPMENT

MEDIAN BARRIER DETAILS

N.T.S.

Project No.: 98022-3213-04
Counties: Bledsoe, Bradley, Clay, Coffee, Cumberland, Fentress, Franklin, Hamilton, McMinn, Marion, Overton, Putnam, Rhea, Sequatchie, Van Buren, Warren

ESTIMATED QUANTITIES

	Item No.	Description	Quantity	Unit
1,2)	604-10.44	Expansion Joint Repairs	6684	L.F.
3)	712-01	Traffic Control	1	L.S.
	717-01	Mobilization	1	L.S.

FOOTNOTES

1) For quantity per bridge, see enclosed tables (EXPANSION JOINT REPAIR QUANTITIES). For details and notes see expansion joint repair detail sheet (Sheet 36 of 36).

2) The cost of removing existing asphalt and bituminous joint, cleaning and preparing existing joint opening, installing new backer rod and joint sealer, and any miscellaneous materials necessary to install and complete expansion joint repair to be included under Item No. 604-10.44, EXPANSION JOINT REPAIRS, L.F.

3) Traffic Control will be for fifty-two (52) bridge locations and located in sixteen (16) different counties. (See location sketches for Bridge No. and County) This item includes construction signs and flashing arrow boards as required for construction phasing and as shown on enclosed traffic control layouts.

STANDARD DRAWING

No.	REV. DATE	DRAWING
T-FAB-1	5-30-91	Flashing Yellow Arrow Board

33I002A0059

GENERAL NOTES

1) Design Specifications: AASHTO 1992 Edition with Addenda.

2) Specifications: Standard Specifications for Road and Bridge Construction of the Tennessee Department of Transportation (March 1, 1981 Edition).

3) Any damage during repairs to any portion of the Bridge or approaches shall be repaired at the Contractor's own expense to the approval of the Engineer.

4) Utilities: The Contractor is responsible for verifying locations of all existing utilities whether shown on Plans or as found on the site and shall not disturb any existing utility.

5) Traffic Control shall consist of furnishing Flagmen and erecting and maintaining all Warning Signs and other traffic control devices installed in accordance with the Manual on Uniform Traffic Control Devices, Part 6, and all cost shall be included in the unit price bid for Item No. 712-01.

GENERAL NOTES

CONSTRUCTION WORK ZONE AND TRAFFIC CONTROL NOTES

ADVANCED WARNING SIGNS SHALL NOT BE DISPLAYED MORE THAN FORTY-EIGHT (48) HOURS BEFORE PHYSICAL CONSTRUCTION BEGINS. SIGNS MAY BE ERECTED UP TO ONE WEEK BEFORE NEEDED, IF THE SIGN FACE IS FULLY COVERED.

IF THE CONTRACTOR MOVES OFF THE PROJECT, HE SHALL COVER OR REMOVE ALL UNNEEDED SIGNS AS DIRECTED BY THE ENGINEER. COSTS OF REMOVAL, COVERING, AND REINSTALLING SIGNS SHALL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT ALL COSTS SHALL BE INCLUDED IN THE ORIGINAL UNIT PRICE BID FOR ITEM NO. 712-06, SIGNS (CONSTRUCTION) PER SQUARE FOOT.

A LONG TERM BUT SPORADIC USE WARNING SIGN, SUCH AS FLAGGER SIGNS MAY REMAIN IN PLACE WHEN NOT REQUIRED PROVIDED THE SIGN FACE IS FULLY COVERED.

TRAFFIC CONTROL DEVICES SHALL NOT BE DISPLAYED OR ERECTED UNLESS RELATED CONDITIONS ARE PRESENT NECESSITATING WARNING.

USE OF BARRICADES, PORTABLE BARRIER RAILS, VERTICAL PANELS, AND DRUMS SHALL BE LIMITED TO THE IMMEDIATE AREAS OF CONSTRUCTION WHERE A HAZARD IS PRESENT. THESE DEVICES SHALL NOT BE STORED ALONG THE ROADWAY WITHIN THIRTY (30) FEET OF THE EDGE OF THE TRAVELED WAY BEFORE OR AFTER USE UNLESS PROTECTED BY GUARDRAIL, BRIDGE RAIL, AND/OR BARRIERS INSTALLED FOR OTHER PURPOSES. THESE DEVICES SHALL BE REMOVED FROM THE CONSTRUCTION WORK ZONE WHEN THE ENGINEER DETERMINES THEY ARE NO LONGER NEEDED. WHERE THERE IS INSUFFICIENT RIGHT-OF-WAY TO PROVIDE FOR THIS THIRTY (30) FEET SETBACK, THE CONTRACTOR SHALL DETERMINE THE ALTERNATE LOCATIONS AND REQUEST THE ENGINEER'S APPROVAL TO USE THEM.

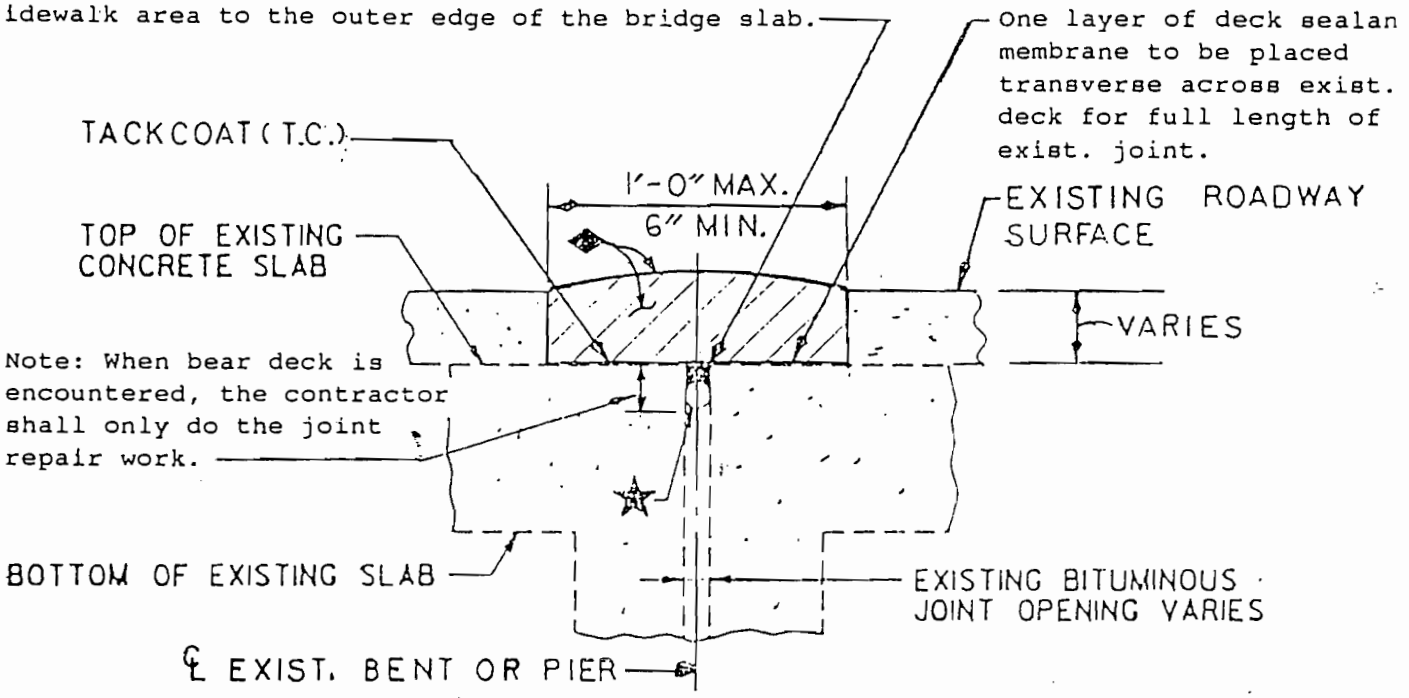
THE CONTRACTOR SHALL NOT BE PERMITTED TO PARK ANY VEHICLES OR CONSTRUCTION EQUIPMENT DURING PERIODS OF INACTIVITY, WITHIN THIRTY (30) FEET OF THE EDGE OF PAVEMENT WHEN THE LANE IS OPEN TO TRAFFIC, UNLESS PROTECTED BY GUARDRAIL, BRIDGE RAIL, AND/OR BARRIERS INSTALLED FOR OTHER PURPOSES. PRIVATELY OWNED VEHICLES SHALL NOT BE ALLOWED TO BE PARKED WITHIN THIRTY (30) FEET OF AN OPEN TRAFFIC LANE AT ANY TIME UNLESS PROTECTED AS DESCRIBED ABOVE. WHERE THERE IS INSUFFICIENT RIGHT-OF-WAY TO PROVIDE FOR THIS THIRTY (30) FEET SETBACK, THE CONTRACTOR SHALL DETERMINE THE ALTERNATE LOCATIONS AND REQUEST THE ENGINEER'S APPROVAL TO USE THEM.

ALL DETOUR AND CONSTRUCTION SIGNING SHALL BE IN STRICT ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

SPECIAL NOTES

THE DETAILS FOR TRAFFIC CONTROL SHOWN IN THESE PLANS APPLY TO DAYTIME ONLY LANE CLOSURES. ALL LANES ARE TO BE REOPENED TO TRAFFIC AT THE END OF THE DAY'S WORK.

Top two inches (2") of all existing bituminous joints in the bridge slab to be cleaned and resealed with new joint sealer. New joint sealer shall be a self-leveling, cold-applied, rapid-cure, two-part, ultra-low-modulus, 100 per cent (100%) silicone rubber sealant, Dow Corning 902 RCS joint sealant, or approved equal.
Cost of joint cleaning and sealing to be included under Item No. 604-10.44, EXPANSION JOINT REPAIRS, L.F. The sealer shall extend up and across the curb and/or sidewalk area to the outer edge of the bridge slab.



EXISTING BITUMINOUS JOINT REPAIR DETAIL

◆ NOTE: Grading "A" or "D" asphalt material shall be used to repair roadway surface. When existing asphalt surface is two inches (2") deep or less, use Grading "D" asphalt. When existing asphalt is greater than two inches (2") in depth use Grading "A" asphalt. The contractor shall tamp and compact new asphalt while pouring back to original grade. The new asphalt shall be left mounded across the new joint for settlement.

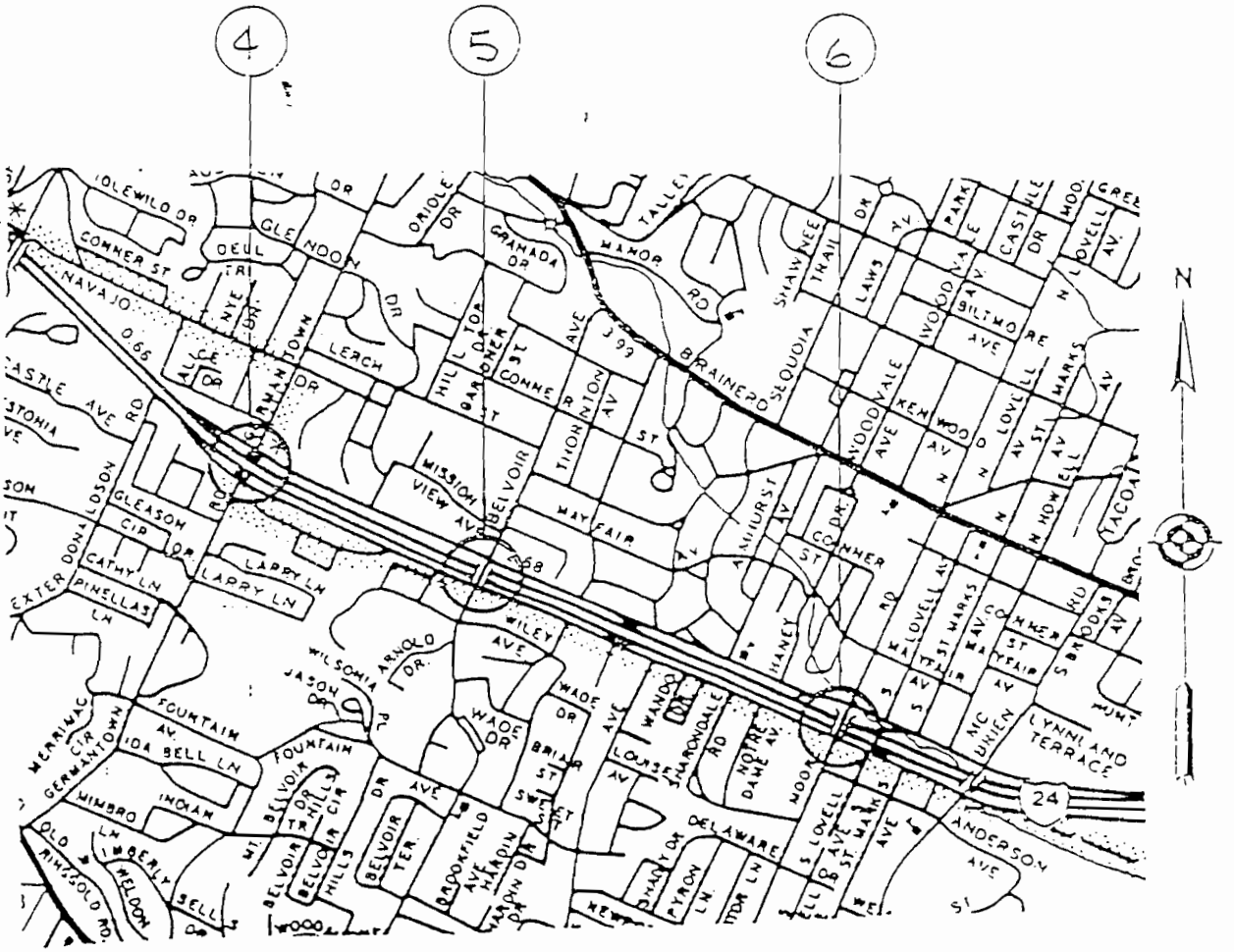
★ NOTE: The movement gap shall be caulked with a backer rod of suitable diameter. The rod shall be placed at a depth to ensure the correct width/depth ratio of the new bridge joint sealer. Backer rod and caulk shall be as per the sealer manufacturer recommendations.

NOTE: Following removal of the existing bituminous fiberboard to an appropriate depth, the joint shall be completely cleaned in accordance with the sealer manufacturer's instructions.

NOTE: Cost of cleaning,preparing, and sealing existing joint opening and any miscellaneous materials necessary to complete repairs as shown to be included in Item No. 604-10.44, EXPANSION JOINT REPAIRS, L.F. This item number shall be bid with the contingency that this item may be increased, decreased, or eliminated as directed by the Engineer.

EXPANSION JOINT REPAIR DETAIL

4	33-I124-12.08(RL & LL)/ GERMANTOWN ROAD	
5	33-3611-1.01/ INTERSTATE 24	
6	33-3578-0.80/ INTERSTATE 24	33I00240059



LOCATION SKETCH of BRIDGE

HAMILTON COUNTY

JOINT REPAIR QUANTITIES CONTINUED

HAMILTON COUNTY

BRIDGE NO.	NO. JOINTS	LENGTH	TOTAL LENGTH	BRIDGE LOCATION SHEET
33-I124-0.71(RL)	3	50'-8"	152'-0"	Sheet 24 of 36
33-I124-0.71(LL)	3	50'-8"	152'-0"	Sheet 24 of 36
33-I124-0.73 RAMP	2	29'-0"	58'-0"	Sheet 24 of 36
33-I24-12.08(RL)	3	51'-1"	154'-0"	Sheet 25 of 36
33-I24-12.08(LL)	3	51'-1"	154'-0"	Sheet 25 of 36
33-SR2-16.10	4	52'-6"	210'-0"	Sheet 26 of 36
33-SR27-5.60(RL)	4	37'-6"	150'-0"	Sheet 24 of 36
33-SR27-5.60(LL)	4	50'-3"	201'-0"	Sheet 24 of 36
33-SR29-11.04(RL)	2	74'-0"	148'-0"	Sheet 27 of 36
33-SR29-11.04(LL)	2	60'-0"	120'-0"	Sheet 27 of 36
33-SR320-0.86	1	38'-0"	38'-0"	Sheet 26 of 36
33I00240059 33-3578-0.80	5	79'-6"	398'-0"	Sheet 25 of 36
33-3611-1.01	5	79'-6"	398'-0"	Sheet 25 of 36

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	STATE AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	TENN.	I-24-3(15)	128		83	204

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS — Tennessee Department of Highways and Public Works Standard Specifications for Road and Bridge Construction.

DESIGN SPECIFICATIONS — AASHO, 1957 Edition* with H20-S16-44 Live Load. Also, Alternate Loading as per Sect. 4c of PPM 20-4 for Germantown Road Underpass only.

MATERIALS

Concrete — All concrete except precast concrete piling and prestressed concrete beams shall be Class "A". Concrete for precast concrete piling shall be Class "S" with Class "A" aggregates. For concrete in prestressed beams see Special Provisions. For materials, forms, and finish, see Construction Specifications.

Reinforcing Steel — See Construction Specifications and Reinforcing Steel Schedules.

Prestressing Steel Cables — See Special Provisions.

Structural Steel — Except as noted below or shown elsewhere, all materials shall be carbon structural steel, ASTM-A7-56T. Bolts, nuts, and washers shall be ASTM-A7-56T or A307-55T. Nuts shall be self-locking "Stover", or approved equal.
Painting: Shop paint - one coat of red lead. Field paint - one coat of red lead paint-tinted- and two coats of aluminum paint with first coat tinted. See Construction Specifications.

Bronze Alloy — See Special Provisions and H-2-11.

Piling — See Construction Specifications and H-5-111

Prefabricated Masonry Pad — See Special Provisions and F-10-84.

Sheet Packing — Two layers of Johns-Mansville Service Sheet Packing No. 60, 1/16" thick, or approved equal. Graphite surfaces to be in contact with each other.

Premolded Joint Filler — See Construction Specifications.

WELDING — All welding shall conform to the current "Standard Specifications for Welded Highway and Railway Bridges" of the American Welding Society.

HANDRAILING — SEE H-5-110 G-9-97, G-9-104 H-2-12 AND H-2-21.

ELECTRICAL LIGHTING — See G-9-97, G-9-104, H-2-12, H-2-21 and G-7-5.

BITUMINOUS SURFACING — See Construction Specifications.

CAMBER — Concrete T-Beams shall be cambered for the dead load deflection as follows:

Camber for DL Deflection of Center of Span

Spans
37'--------------------------3/8"
46'--------------------------5/8"

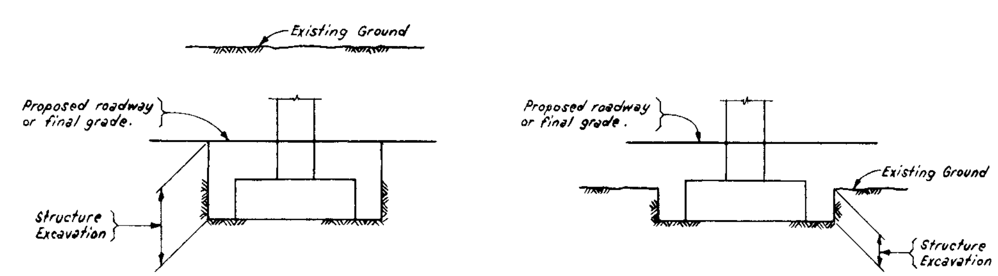
Sufficient camber shall be provided in the falsework and forms for each span to allow the closing up of joints in the forms and supporting falsework.

ESTIMATED QUANTITIES

ITEM NO.	17-2	17-4	104-1	104-2	104-3	105-1	105-2	105-3	132-1	135-4	135-12	137-3	139-1	139-3	154-1	154-1A	154-1B	154-1C	154-1D	154-1E	154-1F	704	702	501
ITEM			A.C.S.C.			S.A. or S.A.S.C. **							Precast Concrete Piling †††		Precast - Prestressed Concrete Beams ⊕							CONCRETE		
STRUCTURE	Dry Excav. *	Rock Excav.	Mineral Agg.	Asphalt Cement	Tack Coat	Mineral Agg.	Asphalt Cement	Tack Coat	Struct. Steel ***	Class "A" Concrete †	Reinf. Steel	10BP42 Steel H-Piling ††	Test	Size 1	33"x3'-0" 59'-11"	27"x3'-0" 55'-2"	27"x3'-0" 46'-11½"	21"x3'-0" 37'-11½"	17"x3'-0" 33'-11½"	17"x3'-0" 31'-11½"	17"x3'-0" 32'-11½"	Handrail ⊕⊕	2-Rail Steel Handrail ⊕⊕	Lighting ⊕⊕⊕
	C.Y.	C.Y.	Tons	Tons	Tons	Tons	Tons	Tons	Lbs.	C.Y.	Lbs.	L.F.	L.F.	L.F.	Each	Each	Each	Each	Each	Each	Each	L.F.	L.F.	Lump Sum
GERMANTOWN ROAD UNDERPASS	439								6,860	1,300.9	292,307		400	4,900								332	332	Lump Sum
BELVOIR AVENUE OVERPASS	681	4	134.6	9.3	0.7	134.6	9.3	0.7		526.2	86,952		320	5,155		52	26				26	381		Lump Sum
SOUTH MOORE ROAD OVERPASS	597	9	122.8	8.6	0.6	122.8	8.6	0.6		486.1	83,842	1,891				52				52		349		Lump Sum
McBRIEN ROAD OVERPASS	294	2	135.2	9.4	0.6	135.2	9.4	0.6		562.7	89,816	2,302			52			26	26			384		Lump Sum
TOTALS	2,011	15	392.6	27.3	1.9	392.6	27.3	1.9	6,860	2,875.9	552,917	4,193	720	10,055	52	104	26	26	26	52	26	1,446	332	Lump Sum

* All earth excavation shall be measured and paid for as dry excavation only.
** S.A. or S.A.S.C. may be used as alternates for A.C.S.C. bituminous surface materials.
*** Includes bronze alloy plates in bearings and anchor bolts for bearings.
† Cost of all embedded material such as joint fillers,* drains, sheet packing, etc. shall be included in the unit price of Class "A" concrete. *Unless otherwise provided for in the Special Provisions.
†† No alternates may be used for the steel H-piling in the S. Moore Road and McBrien Rd. Overpasses.
††† No alternates may be used for the precast concrete piling in the Germantown Rd. Underpass, but may be used in the bents only on the Belvoir Ave. Overpass. If it becomes necessary to use Size 2 piles, the Contractor will be allowed an increase of 25% in his Size 1 bid price.
⊕ Prestressed concrete members complete in place with tie-rods, dowels (and drilling for dowels), bearing pads, etc.; but not including concrete sidewalks. Quantities for the sidewalks on the prestressed beam bridges are included in Item Nos. 135-4 and 135-12.

⊕⊕⊕ Lump sum for lighting complete shall include furnishing and placing all conduits, junction boxes, anchor bolts for light standards, and all other accessories necessary to complete this item.



EXCAVATION DETAILS
NO SCALE

LIST OF DRAWINGS

REV 4/28/61 - DWG NO FOR TEL. CONDUITS ADDED
REVISED 11-9-60 DBM
Revised Oct. 1960 - Changed handrailing To Concrete Handrailing
Revised April 1960 - Changed handrailing to steel handrailing. Reduced number of lighting standards. Increased vertical clearance to 16'-6" minimum.

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
CHATTANOOGA FREEWAY
HAMILTON COUNTY-F.A. PROJ. NO. I-24-3( )

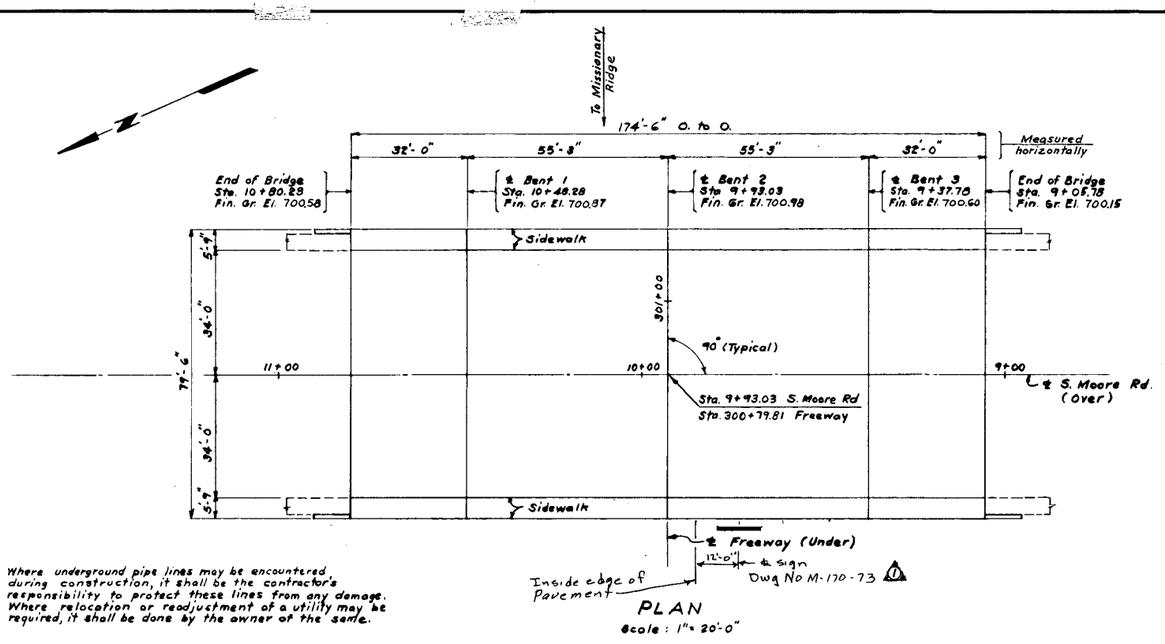
GENERAL NOTES AND SPECIFICATIONS

SULLIVAN & HOEBEL - CONSULTING ENGINEERS - KNOXVILLE, TENN.
AAKE F. HEDMAN - CONSULTING ENGINEERS - CHATTANOOGA, TENN.

DSGN:	DRWN: AB-JP	SCALE: NONE	DATE: 4-2-59
CHKD:	CHKD: AC SUPV: TMS	FILE NO. 57.77	SHEET NO. G-9-90

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	STATE AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	TENN.	I-24-3(11)	129		112	200

FED. ROAD DIST. NO.	TYPE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	N.	I-24-3(29)128	19~~65~~	10	18



PLAN

Scale : 1" = 20'-0"

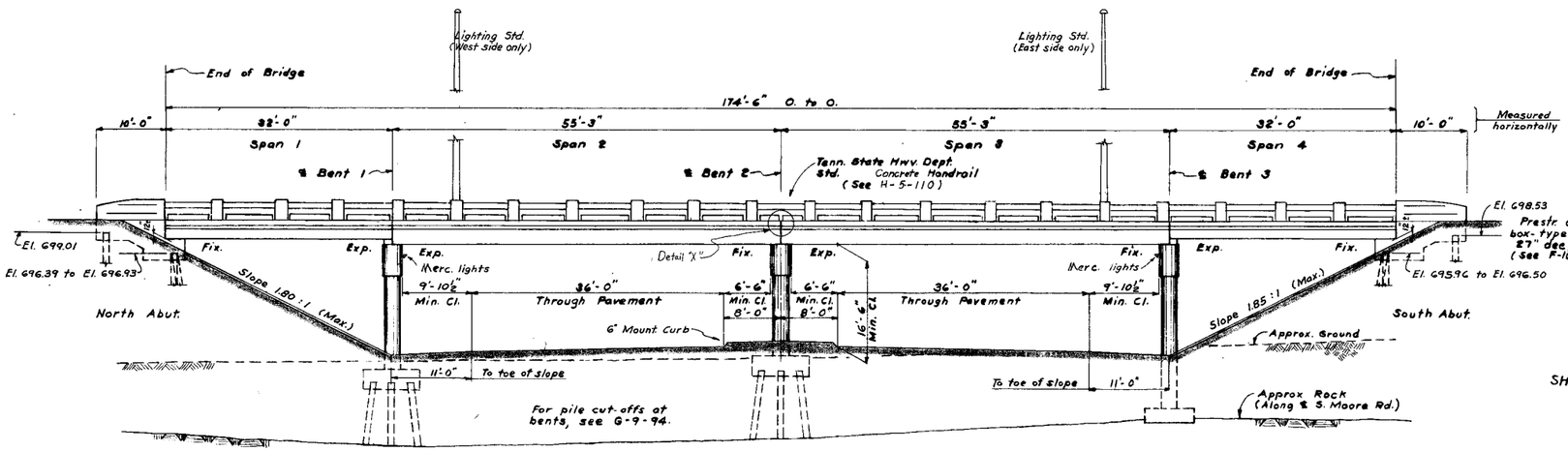
Where underground pipe lines may be encountered during construction, it shall be the contractor's responsibility to protect these lines from any damage. Where relocation or readjustment of a utility may be required, it shall be done by the owner of the same.

ESTIMATED QUANTITIES (LIGHTING)

ITEM NO.	17-2	17-4	17-5	104-1	104-2	104-3	105-1	105-2	105-3	135-4	135-12	137-3	154-1A	154-1E	501	709
ITEM	Dry Exc.	Rock Exc.	Rock Drilling	Mineral Agg.	A.C.S.C. Asphalt Cement	Tack Coat	S.A. or S.A.S.C. Mineral Agg	Asphalt Cement	Tack Coat	Class "A" Conc.	Reinf. Steel	10 BP42 Steel H-Piling	Prestr. Beams		Lighting Complete	Concrete Handrail
STRUCT.	C.Y.	C.Y.	L.F.	Ton	Ton	Ton	Ton	Ton	Ton	C.Y.	Lbs.	L.F.	Each	Each	Lump Sum	L.F.
N. Abut.	37									36.6	3,990					
Bent 1	171	3								117.5	24,636					
Bent 2	129									125.0	22,885					
Bent 3	223	6								97.2	24,481					
S. Abut.	37									36.6	3,990					
Span 1				22.5	1.6	0.1	22.5	1.6	0.1	13.4	670			26		
Span 2				38.9	2.7	0.2	38.9	2.7	0.2	23.2	1,260		26			
Span 3				38.9	2.7	0.2	38.9	2.7	0.2	23.2	1,260		26			
Span 4				22.5	1.6	0.1	22.5	1.6	0.1	13.4	670			26		
Total	597	9	None	122.8	8.6	0.6	122.8	8.6	0.6	486.1	83,842	1,891	52	52	Lump Sum	349'

HANDRAIL NOTE:

Build handrail according to the Dwg. H-5-110 except use end post as shown on Dwg. G-9-93 Dimensions L = 6'-10⅝"(-). See also details on G-9-97.

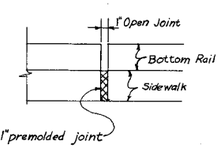


ELEVATION

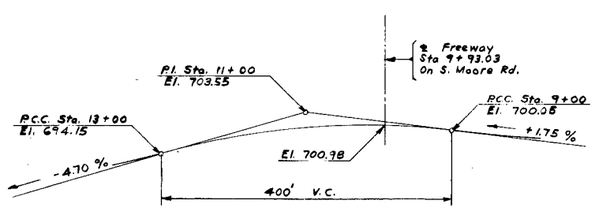
Scale : 1" = 10'-0"

Note: Elevs. shown are to pile cut-offs.

End fills for abutments shall be in place, thoroughly compacted before piles are driven.

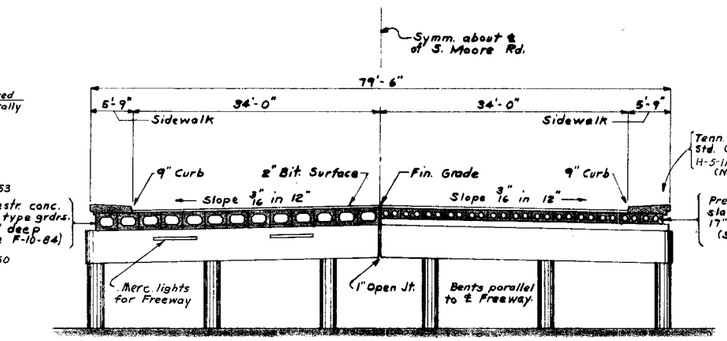


DETAIL "X"



FINISHED GRADE PROFILE OF S. MOORE RD.

No Scale



WEST HALF
SHOWING BEAMS FOR SPANS 2 AND 3

EAST HALF
SHOWING BEAMS FOR SPANS 1 AND 4

TYPICAL CROSS SECTION
LOOKING NORTH
Scale : 1" = 10'-0"

LIST OF DRAWINGS

Drawing No.	Title
G-9-91	General Drawing
G-9-92	Sounding Data
G-9-93	Abutments
G-9-94	Bents - Column and Footing Details
G-9-95	Bents
G-9-96	Typical Cross Section and Sidewalk
G-9-97	Lighting, Handrailing and Drains
G-9-98	Reinforcing Steel
H-5-110 *	Handrail
H-5-111	Piles

* See Note This Sheet.

NOTES :
For General Notes and Specifications, see G-9-90.
For handrailing and lighting details, see G-9-97 and G-7-5.

BRIDGE NO. 33I00240059

One 68' roadway with two 4'-6" sidewalks.

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
CHATTANOOGA FREEWAY
HAMILTON COUNTY-F.A. PROJ. NO. I-24-3( )

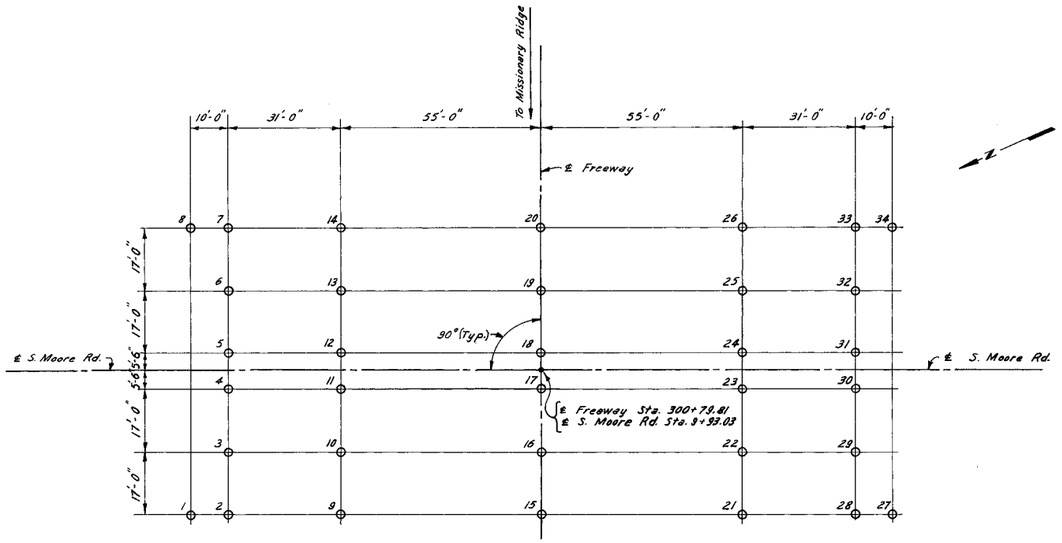
SOUTH MOORE ROAD OVERPASS
GENERAL DRAWING

SULLIVAN & HOEBEL - CONSULTING ENGINEERS - KNOXVILLE, TENN.
AAKE F. HEDMAN - CONSULTING ENGINEERS - CHATTANOOGA, TENN.

DSGN: AC	DRWN: AC	SCALE: AS NOTED	DATE: 10-8-58
CHKD: TMS	CHKD: TMS		
	SUPV: TMS	FILE NO. 57.77 SHEET NO.	G-9-91

Revised July 1965 Reduced number of mercury lights.
Revised July 1965 Changed fluorescent luminaires to Inc.
Revised Oct. 1965 Changed handrailing to Concrete Handrailing.
Revised April 1960 Changed handrailing to Steel handrailing.
Revised April 1960 Changed number of lighting standards.
Revised April 1960 Increased vertical clearance to 16'-6".
28 sept 1967 ELD Added sign

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	STATE AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	TENN.	I-24-3(5)	128	1958	113	204



SOUNDING PLAN
(NOT TO SCALE)

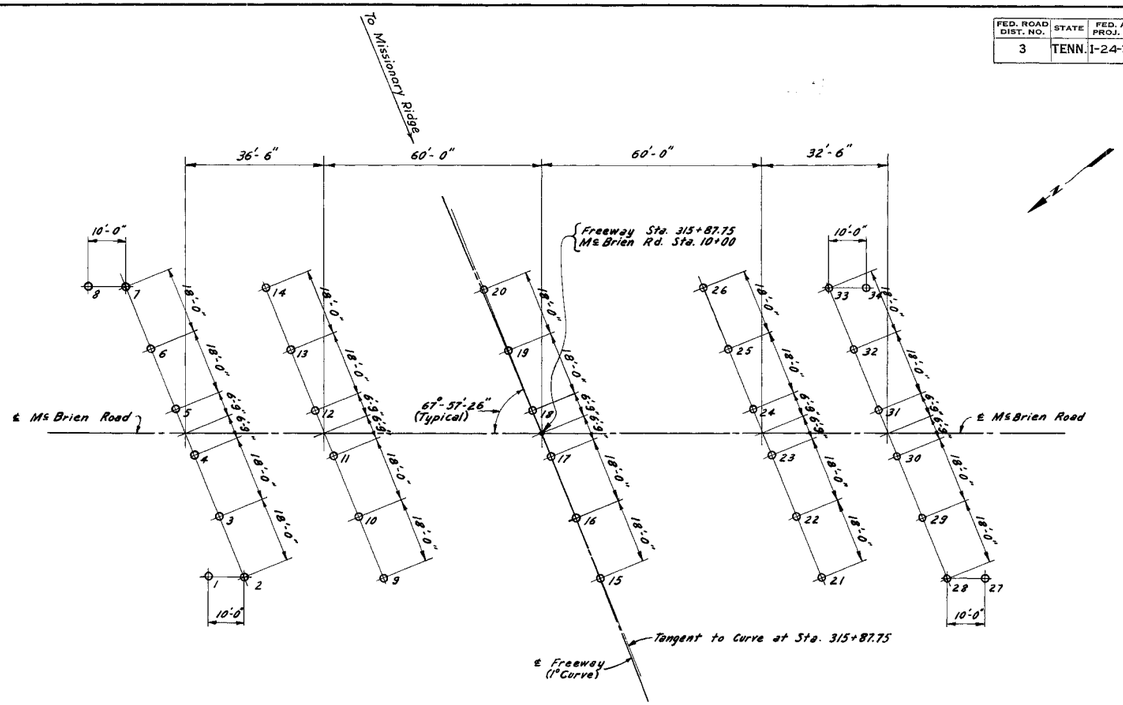
Hole No.	Ground Elev.	Rock Elev.
1	679.4	668.4
2	679.3	668.3
3	679.5	666.5
4	679.5	667.5
5	679.3	667.3
6	679.3	669.3
7	677.9	670.9
8	677.9	669.9
9	678.1	666.1
10	679.7	669.7
11	679.7	665.7
12	679.5	668.5
13	678.4	668.4
14	677.6	670.6
15	678.5	667.5
16	680.5	667.5
17	680.5	667.5
18	680.2	669.2
19	679.6	666.6
20	678.4	668.4
21	679.2	670.2
22	681.8	670.8
23	681.8	670.8
24	681.7	671.7
25	680.9	667.9
26	680.8	666.8
27	682.2	671.2
28	*	*
29	682.7	671.7
30	682.9	669.9
31	682.7	669.7
32	682.6	671.6
33	681.0	668.0
34	681.1	667.1

* Not Drilled

SOUNDING DATA

SOUTH MOORE ROAD OVERPASS

BRIDGE NO. 33I00240059



SOUNDING PLAN
(NOT TO SCALE)

Hole No.	Ground Elev.	Rock Elev.
1	675.1	668.1
2	674.5	667.5
3	676.0	668.0
4	676.5	666.5
5	676.7	667.7
6	676.9	666.9
7	677.0	669.0
8	677.5	668.5
9	673.6	666.6
10	674.5	667.5
11	675.7	665.7
12	675.8	664.8
13	675.0	664.0
14	675.7	665.7
15	672.8	666.8
16	673.1	666.1
17	674.4	665.4
18	674.5	665.5
19	673.5	664.5
20	673.6	665.6
21	672.8	665.8
22	672.9	664.9
23	674.1	665.1
24	674.2	665.2
25	672.4	665.4
26	671.8	663.8
27	672.8	664.8
28	672.9	664.9
29	673.0	666.0
30	674.1	665.1
31	674.3	665.3
32	671.9	664.9
33	671.6	664.6
34	671.5	664.5

SOUNDING DATA

McBRIEN ROAD OVERPASS

BRIDGE NO. 33I00240061

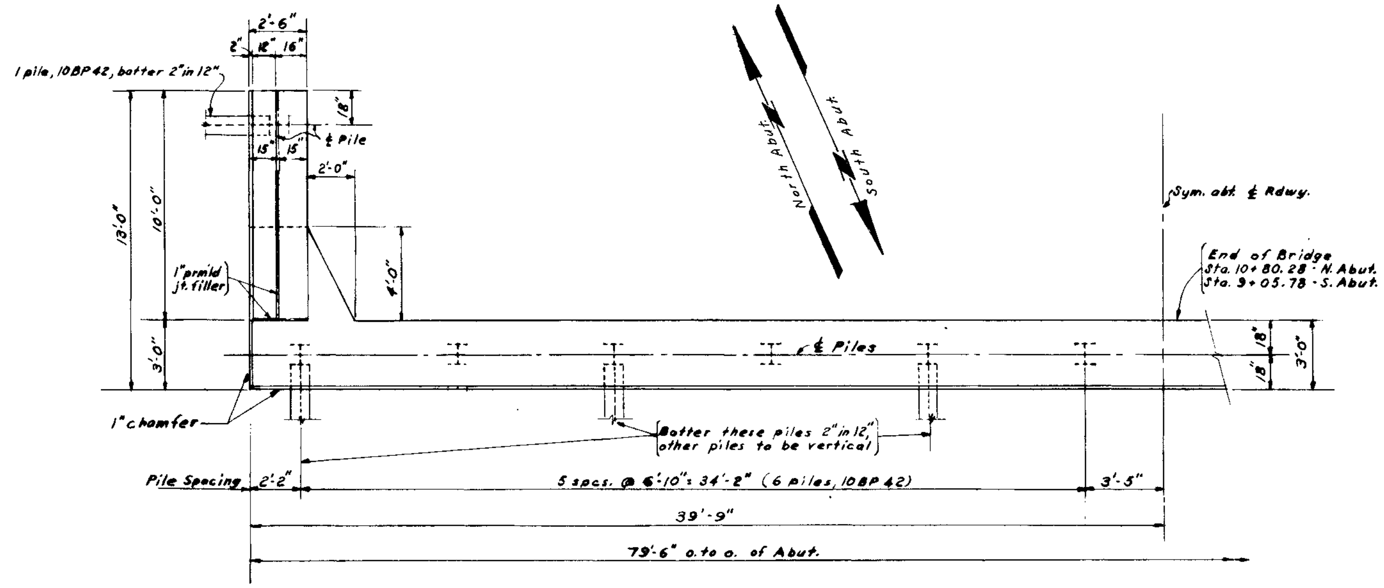
STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
CHATTANOOGA FREEWAY
HAMILTON COUNTY - F.A. PROJ. NO. I-24-3( )

SOUTH MOORE RD. & McBRIEN RD. OVERPASSES
SOUNDING DATA

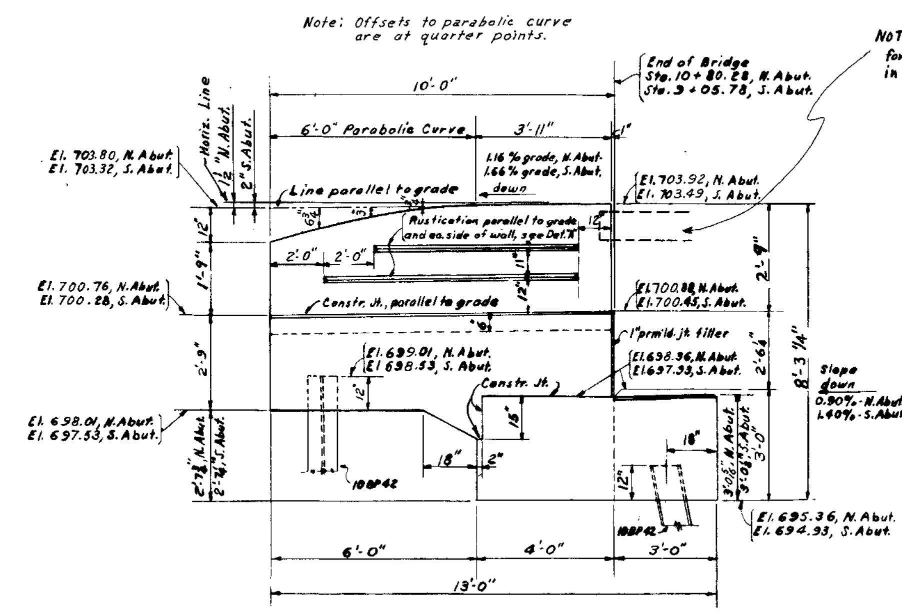
SULLIVAN & HOEBEL - CONSULTING ENGINEERS - KNOXVILLE, TENN.
AAKE F. HEDMAN - CONSULTING ENGINEERS - CHATTANOOGA, TENN.

DSGN:	DRWN: RLF	SCALE: AS NOTED	DATE: 10-8-58
CHKD:	CHKD: TMS SUPV: TMS	FILE NO. 57.77 SHEET NO.	G-9-92

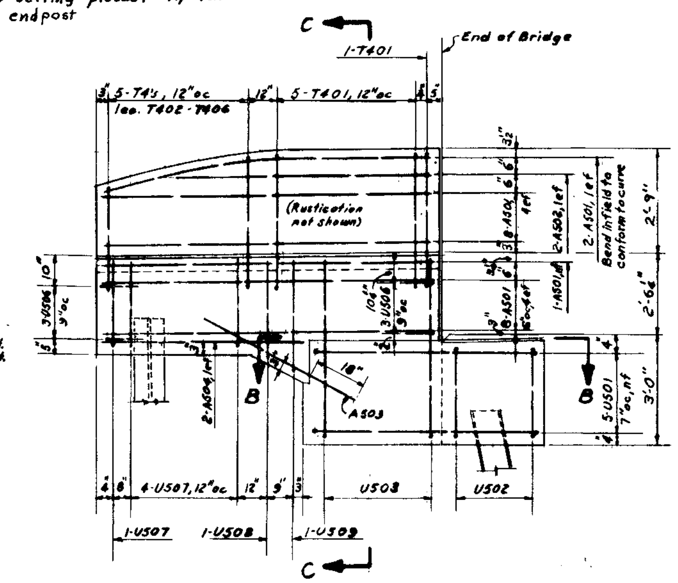
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	STATE AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	TENN.	I-24-3(1)	128		114	204



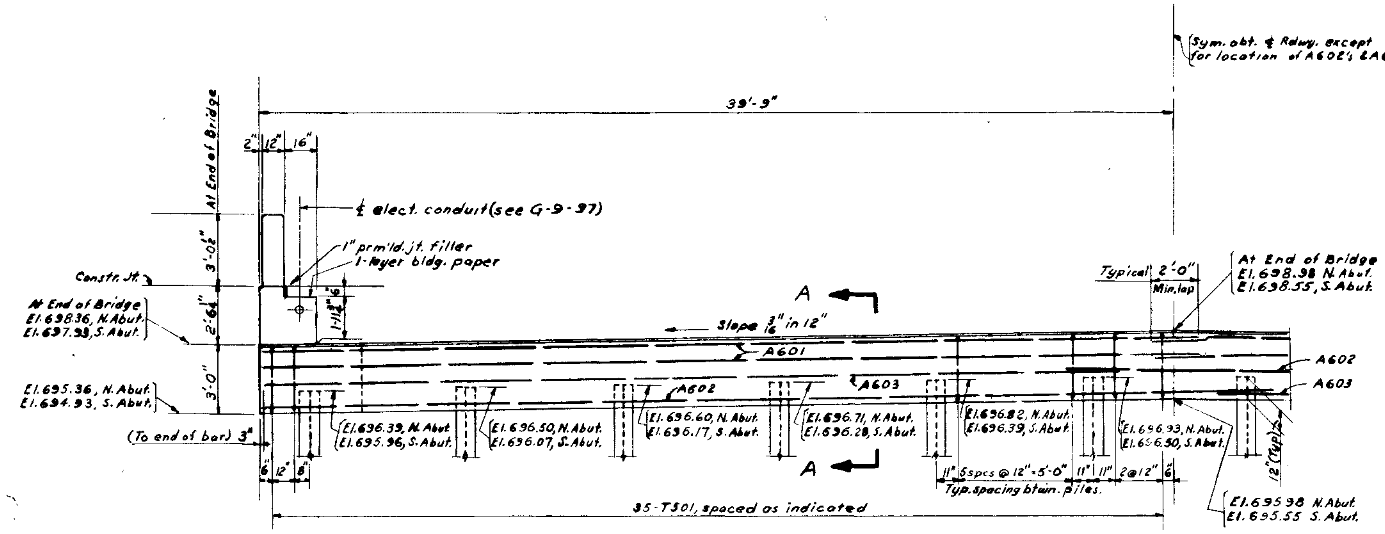
PLAN
Scale: 1/4" = 1'-0"



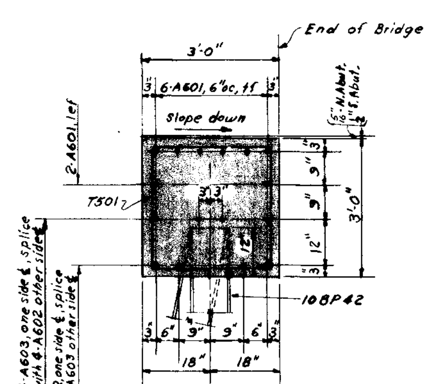
ELEVATION - WING WALL
Showing Outline only
Scale: 3/8" = 1'-0"



ELEVATION - WINGWALL
Showing Reinforcement
Scale: 3/8" = 1'-0"

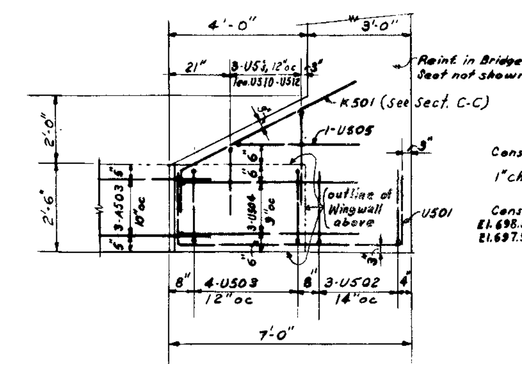


ELEVATION
Scale: 1/4" = 1'-0"

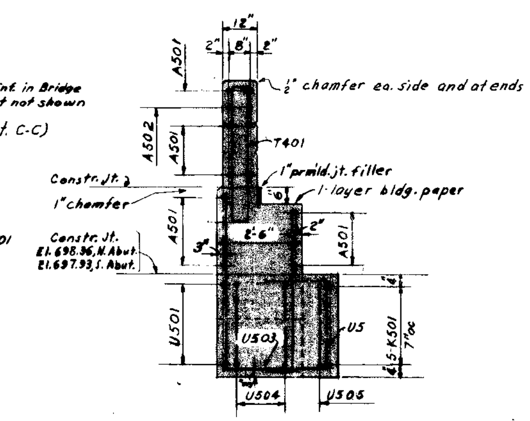


SECTION A-A
Scale: 1/2" = 1'-0"

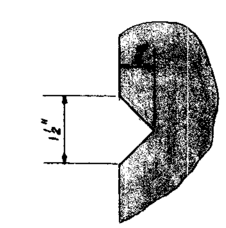
Note: Holes shall be drilled in Bridge Seat for dowels for beams. Therefore, exceptional care shall be exercised to place longitudinal reinf. in top of Bridge Seat as shown, to avoid possible interference with these dowels.



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



SECTION C-C
Scale: 1/2" = 1'-0"



DETAIL "A"
Showing Rustication
No Scale

Abbreviations:
ef ______ each face
nf ______ near face
tf ______ top face

NOTES:
For General Notes and Specifications, see G-9-90.
For location of abutments, see G-9-91.
For reinforcing steel and bending diagrams, see G-9-98.
All dimensions relative to spacing of reinforcing bars are to centers of bars, except as noted.
Chamfer all exposed edges 3/4", except as noted.
Marks to all reinforcing steel in abutments shall have suffix "A", (Thus: A601-A, U501-A, etc.).
Holes for beam dowels to be drilled after placing precast beams, see F-10-84.
For details of piles, see H-5-111
Piles shall be driven to refusal on rock, or min. bearing of 28 Tons.
For lighting details, see G-9-97.

Revised Oct. 1960 Changed Handrailing To Concrete Handrailing
Revised April 1960 Increased vertical clearance to 16'-6".
Revised April 1960 Changed handrailing to steel handrailing.

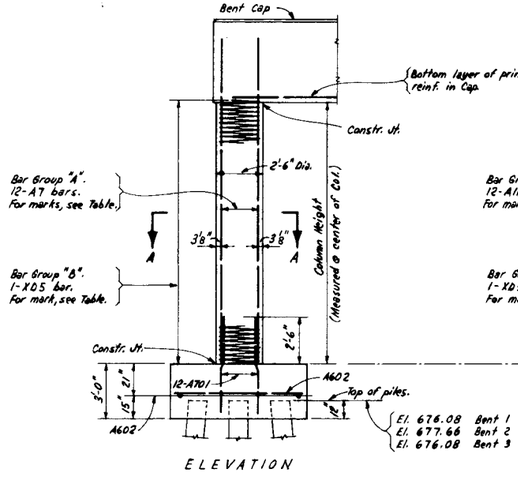
STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
CHATTANOOGA FREEWAY
HAMILTON COUNTY-F.A. PROJ. NO. I-24-3( )

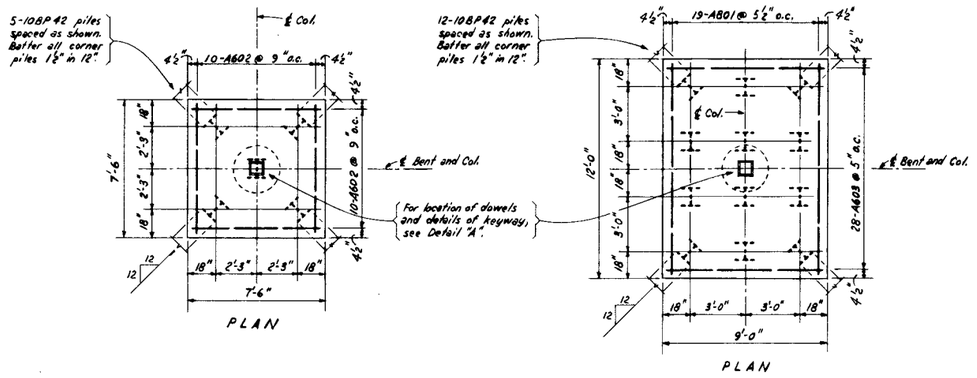
SOUTH MOORE ROAD OVERPASS
ABUTMENTS

SULLIVAN & HOEBEL - CONSULTING ENGINEERS - KNOXVILLE, TENN.
AAKE F. HEDMAN - CONSULTING ENGINEERS - CHATTANOOGA, TENN.

DSGN: TMS	DRWN: TMS	SCALE: AS NOTED		DATE: 10-8-58
CHKD: AC	CHKD: AC SUPV: TMS	FILE NO. 57.77	SHEET NO.	G-9-93

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	STATE AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	TENN.	I-24-3(18)	128		115	204



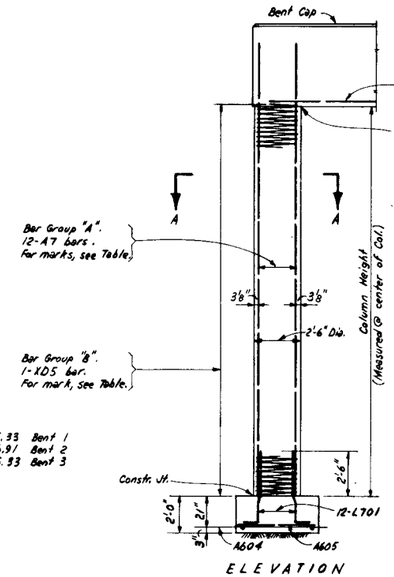


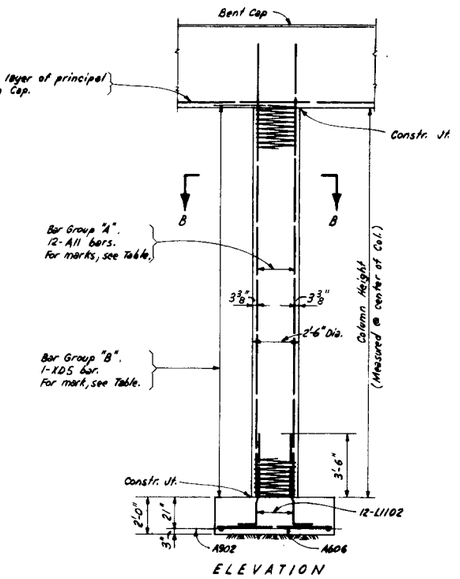
EXTERIOR COLUMNS & FOOTINGS
(Col. & Ftg. 1 and 6)

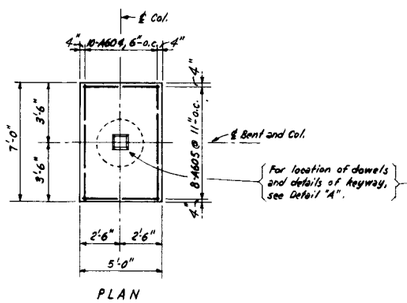
INTERIOR COLUMNS & FOOTINGS
(Col. & Ftg. 2, 3, 4, and 5)

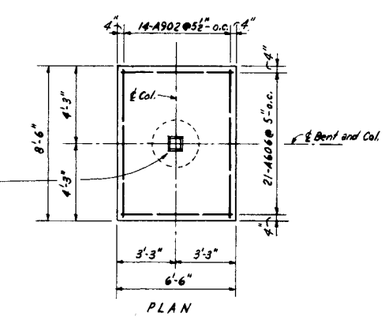
DETAILS FOR FOOTINGS ON PILES

Scale: ¼"=1'-0"









EXTERIOR COLUMNS & FOOTINGS
(Col. & Ftg. 1 and 6)

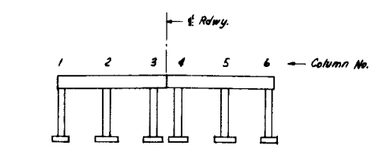
INTERIOR COLUMNS & FOOTINGS
(Col. & Ftg. 2, 3, 4, and 5)

DETAILS FOR FOOTINGS ON ROCK

Scale: ¼"=1'-0"

Maximum design bearing pressure = 12,000 pounds per sq. foot.

NOTE:
All footings shall extend into rock a minimum of 6 inches.



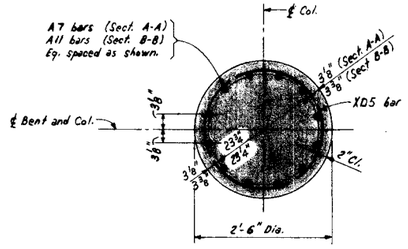
TYPICAL ELEVATION OF BENT
LOOKING NORTH
No Scale

COLUMN AND FOOTING DATA

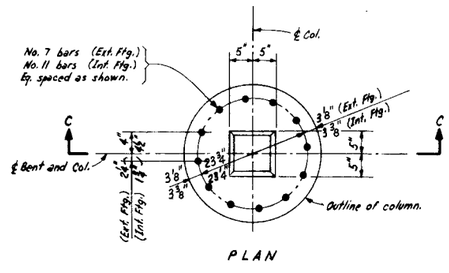
Bent & Column	Column Height	Elev. Top Ftg.	Type Ftg. *	Reinf. Steel Group "A"	Reinf. Steel Group "B"
Bent 1					
Col. 1	15'-2⅝"	678.08	Piles	A702	XD501
Col. 2	22'-4"	671.23	Rock	A1107	XD502
Col. 3	15'-9⅝"	678.08	Piles	A1108	XD503
Col. 4	15'-9⅝"	678.08	Piles	A1108	XD503
Col. 5	15'-5¾"	678.08	Piles	A1109	XD504
Col. 6	21'-2"	672.12	Rock	A703	XD505
Bent 2					
Col. 1	13'-8⅜"	679.66	Piles	A704	XD506
Col. 2	14'-0⅛"	679.66	Piles	A1110	XD507
Col. 3	14'-3½"	679.66	Piles	A1111	XD508
Col. 4	14'-3½"	679.66	Piles	A1111	XD508
Col. 5	14'-0⅛"	679.66	Piles	A1110	XD507
Col. 6	13'-8⅜"	679.66	Piles	A704	XD506
Bent 3					
Col. 1	21'-4"	671.69	Rock	A703	XD509
Col. 2	21'-0"	672.29	Rock	A1112	XD510
Col. 3	21'-3"	672.32	Rock	A1113	XD509
Col. 4	20'-8"	673.24	Rock	A1114	XD511
Col. 5	15'-2⅝"	678.08	Piles	A1115	XD501
Col. 6	14'-11¼"	678.08	Piles	A705	XD512

* The assumed type of footing is based upon the sounding data. See also note left of title block.

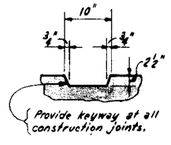
NOTES:
For General Notes and Specifications, see G-9-90.
For lighting details, see G-9-97.
For details of piles, see H-5-111.
For reinforcing steel and bending diagrams, see G-9-98.
All dimensions relative to spacing of reinforcing steel are to centers of bars, except as noted.
Chamfer all exposed edges ¾", except as noted.
Marks to all reinforcing steel in Bents shall have suffix "B", (thus: A1101-B, T501-B, etc.).
All piles shall be driven to refusal on rock or a minimum bearing of 28 Tons



SECTIONS A-A & B-B
Scale: ⅜"=1'-0"



PLAN



SECTION C-C

DETAIL "A"
SHOWING DOWELS & KEYWAY
Scale: ⅜"=1'-0"

Exceptional care shall be exercised in placing longit. column reinf. to avoid possible interference with principal reinf. in bent cap.

The type of footings shown for the various columns is based on the available sounding data.
Excavation for the footings for the bents shall first be carried to the elevations shown for pile cut-offs. Then, additional soundings shall be made in the field at the pile locations shown on the pile footing, to determine accurately the rock elevation at each footing. From the results obtained, the Engineer shall decide whether to use a pile footing or a footing on rock.
Cost of soundings shall be included in cost of items bid.

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
CHATTANOOGA FREEWAY
HAMILTON COUNTY-F.A. PROJ. NO. I-24-3( )

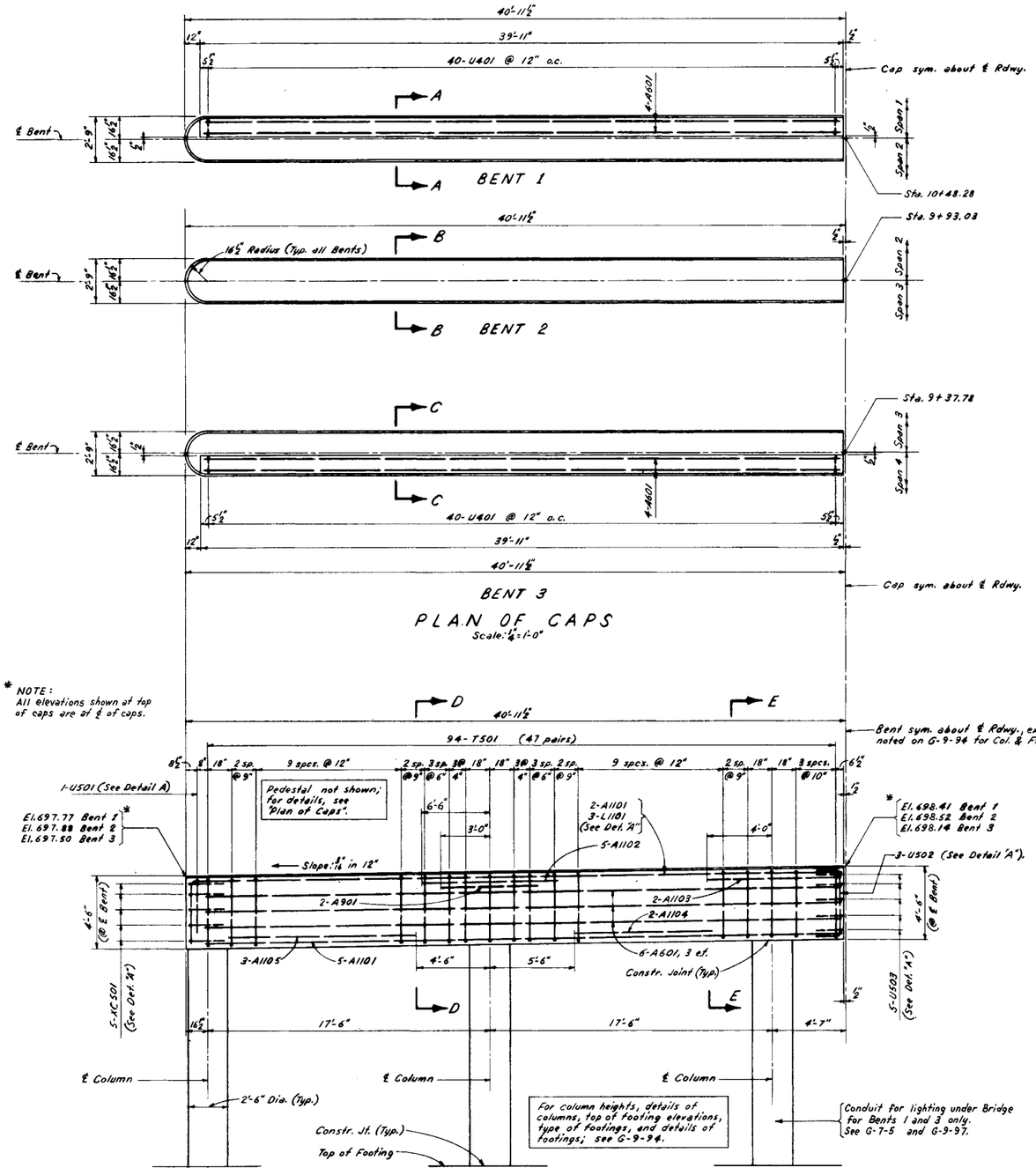
SOUTH MOORE ROAD OVERPASS
BENTS-COLUMN AND FOOTING DETAILS

SULLIVAN & HOEBEL - CONSULTING ENGINEERS - KNOXVILLE, TENN.
AAKE F. HEDMAN - CONSULTING ENGINEERS - CHATTANOOGA, TENN.

DSGN: JRP	DRWN: JRP	SCALE: AS NOTED	DATE: 10-8-58
CHKD: TMS	CHKD: AC SUPV: TMS	FILE NO. 57.77	SHEET NO. G-9-94

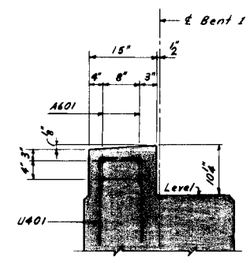
Revised April 1960 Increased vertical clearance to 16'-6".

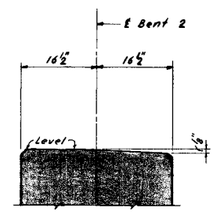
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	STATE AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	TENN.	I-24-3(19)	128		116	204

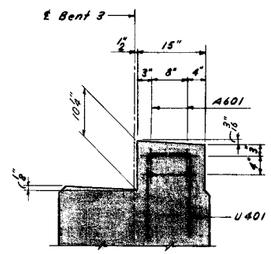


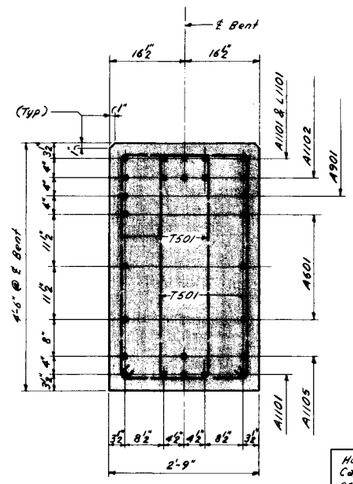
* NOTE:
All elevations shown at top of caps are at ℄ of caps.

Note: Slope top of pedestals, same as top of bent cap along length of bent. Slope top of pedestals perpendicular to bent as shown.

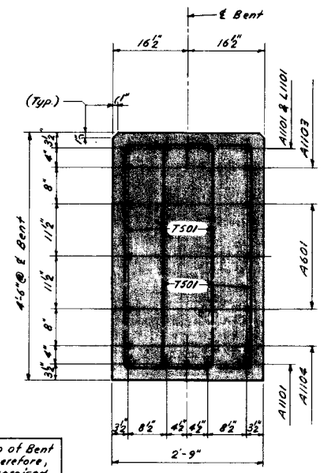


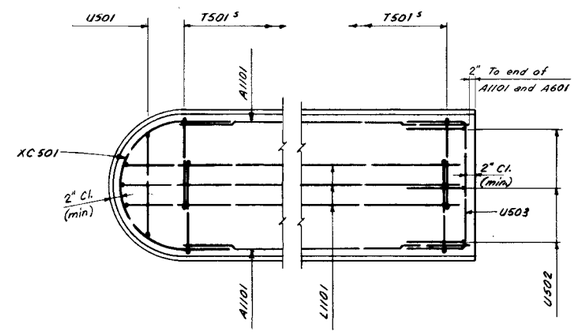






Holes shall be drilled in top of Bent Cap for dowels for beams, therefore, exceptional care shall be exercised in placing longitudinal cap reinf., as shown, to avoid possible interference with these dowels.





Abbreviations
e.f. each face

NOTES:
For General Notes and Specifications, see G-9-90.
For lighting details, see G-9-97 and G-7-5.
For details of piles see H-S-111.
For reinforcing steel and bending diagrams, see G-9-98.
All dimensions relative to spacing of reinforcing steel are to centers of bars, except as noted.
Chamfer all exposed edges 3/4" (including pedestals), except as noted.
Marks to all reinforcing steel in bents shall have suffix 'B', (thus: A1101-B, T501-B, etc.).

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
CHATTANOOGA FREEWAY
HAMILTON COUNTY-F.A. PROJ. NO. I-24-3( )

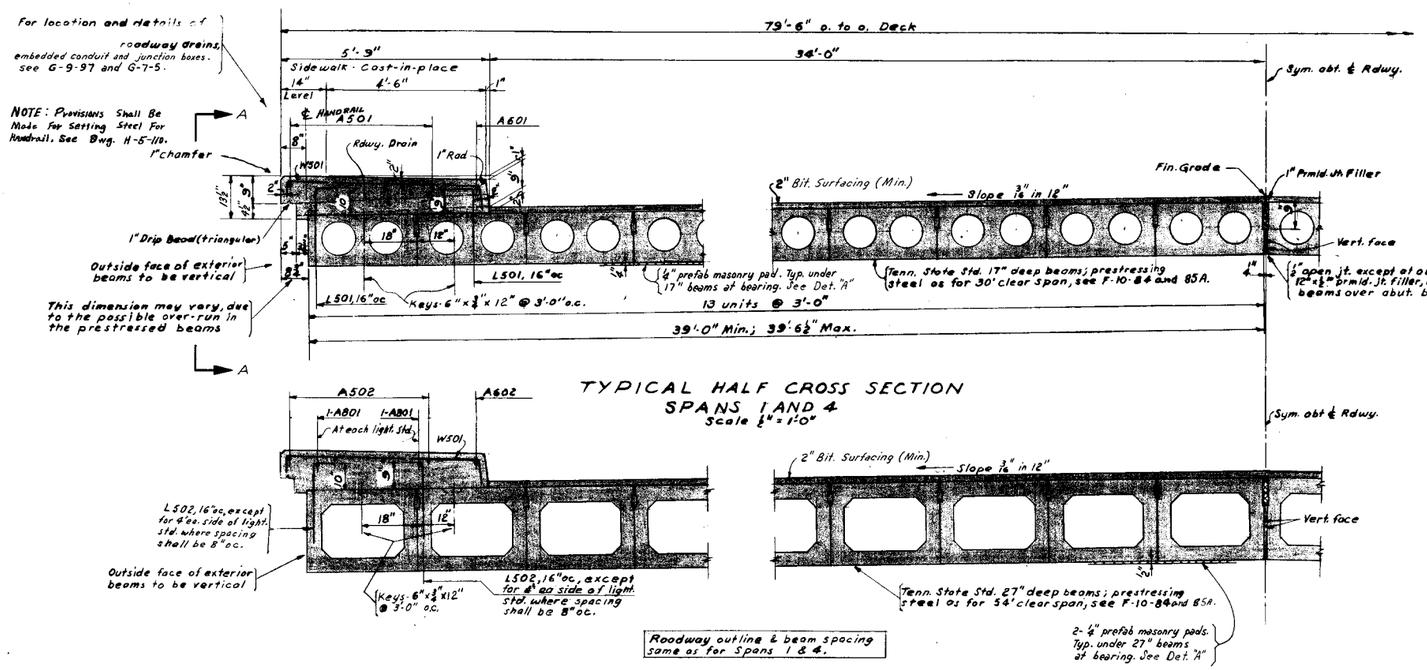
SOUTH MOORE ROAD OVERPASS
BENTS

SULLIVAN & HOEBEL - CONSULTING ENGINEERS - KNOXVILLE, TENN.
AAKE F. HEDMAN - CONSULTING ENGINEERS - CHATTANOOGA, TENN.

DSGN: JRP	DRWN: WRA	SCALE: AS NOTED	DATE: 10-8-58
CHKD: TMS	CHKD: AC SUPV: TMS	FILE NO. 57.77 SHEET NO.	G-9-95

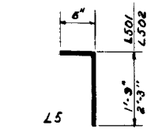
Revised April 1960 Increased vertical clearance to 16'-6".

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	STATE AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	TENN.	I-24-3(1)	128		117	204



TYPICAL HALF CROSS SECTION
SPANS 1 AND 4
Scale ½" = 1'-0"

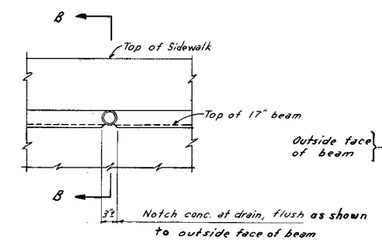
TYPICAL HALF CROSS SECTION
SPANS 2 AND 3
Scale: ½" = 1'-0"



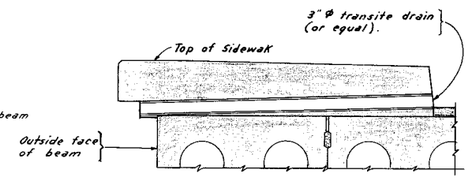
BENDING DIAGRAM
No Scale
These reinf. bars to be included with prestressed bms.

Prestressed Beam Quantities			
Location	Concrete Cu. Yds.	Reinforcing Steel Lbs. *	Prestressing steel Lbs.
Span 1	97.4	5,819	5,015
Span 2	201.0	17,895	12,593
Span 3	201.0	17,895	12,593
Span 4	97.4	5,819	5,015
Total	596.8	46,828	35,220

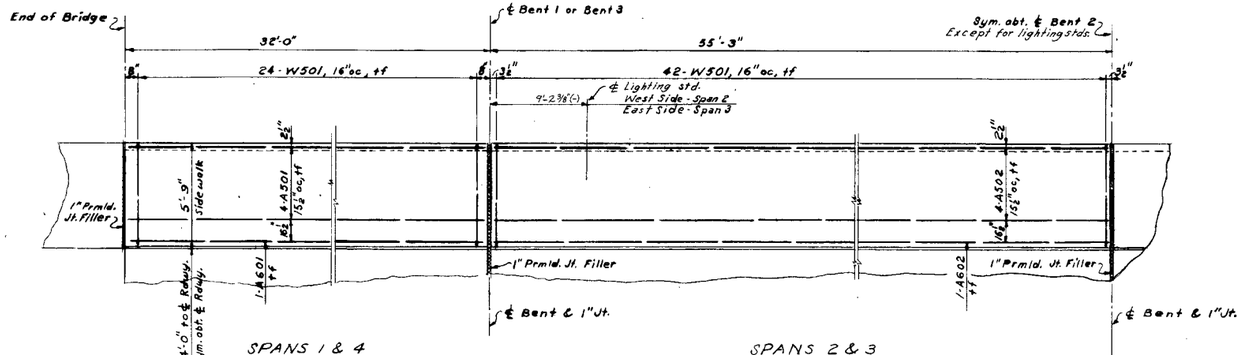
* Includes only reinf. embedded in the prestressed beams.



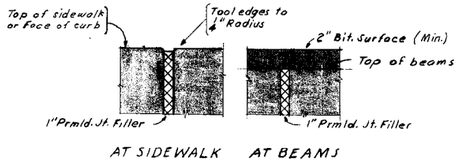
ELEVATION A-A



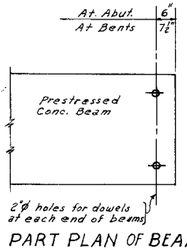
SECT. ELEVATION B-B



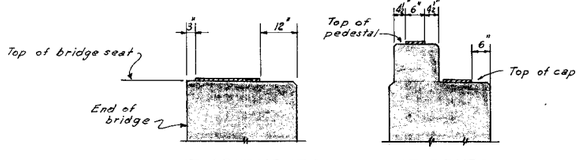
PART PLAN - SIDEWALK
Scale: ¼" = 1'-0"



AT SIDEWALK AT BEAMS
TYPICAL DETAILS AT 1" JOINT
No Scale



PART PLAN OF BEAM
Showing holes for dowels
Scale: ½" = 1'-0"



AT ABUTMENTS AT BENTS

DETAIL "A"
Showing location of prefab. masonry pad
Scale: ½" = 1'-0"

DRAIN DETAIL
Scale: ¾" = 1'-0"

Abbreviations:
tf. ..... top face

NOTES:
For General Notes and Specifications, see G-9-90.
For Span arrangement and Profile of Finish Grade, see G-9-91.
All beams shall be in accordance with the Tenn. State Highway Dept's standard drawings F-10-84, 85 and 85A and the Special Provisions by that Dept, except as shown and noted on this drawing.
All beams shall be standard precast prestressed concrete girders, box type or hollow slab type as indicated and noted. All beams shall be 3'-0" wide (3'-0½" max.).
For reinforcing steel and bending diagrams of bars for side walk, see G-9-98.
All dimensions relative to spacing of reinforcing bars shall be to centers of bars.
All reinforcing steel shown embedded in the prestressed concrete beams to be furnished with these beams, and the cost of this reinf. steel shall be included in the contract unit price per bm.
The outside faces of exterior beams in all spans shall line up.
Marks to all reinforcing steel in the Deck shall have suffix "D", (thus A501-D, W501-D, etc.).
Chamfer all exposed edges of sidewalk ½", except as noted.

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
GHATTANOOGA FREEWAY
HAMILTON COUNTY-F.A. PROJ. NO. I-24-3( )

SOUTH MOORE ROAD OVERPASS
TYPICAL CROSS SECTION AND SIDEWALK

SULLIVAN & HOEBEL - CONSULTING ENGINEERS - KNOXVILLE, TENN.
AAKE F. HEDMAN - CONSULTING ENGINEERS - CHATTANOOGA, TENN.

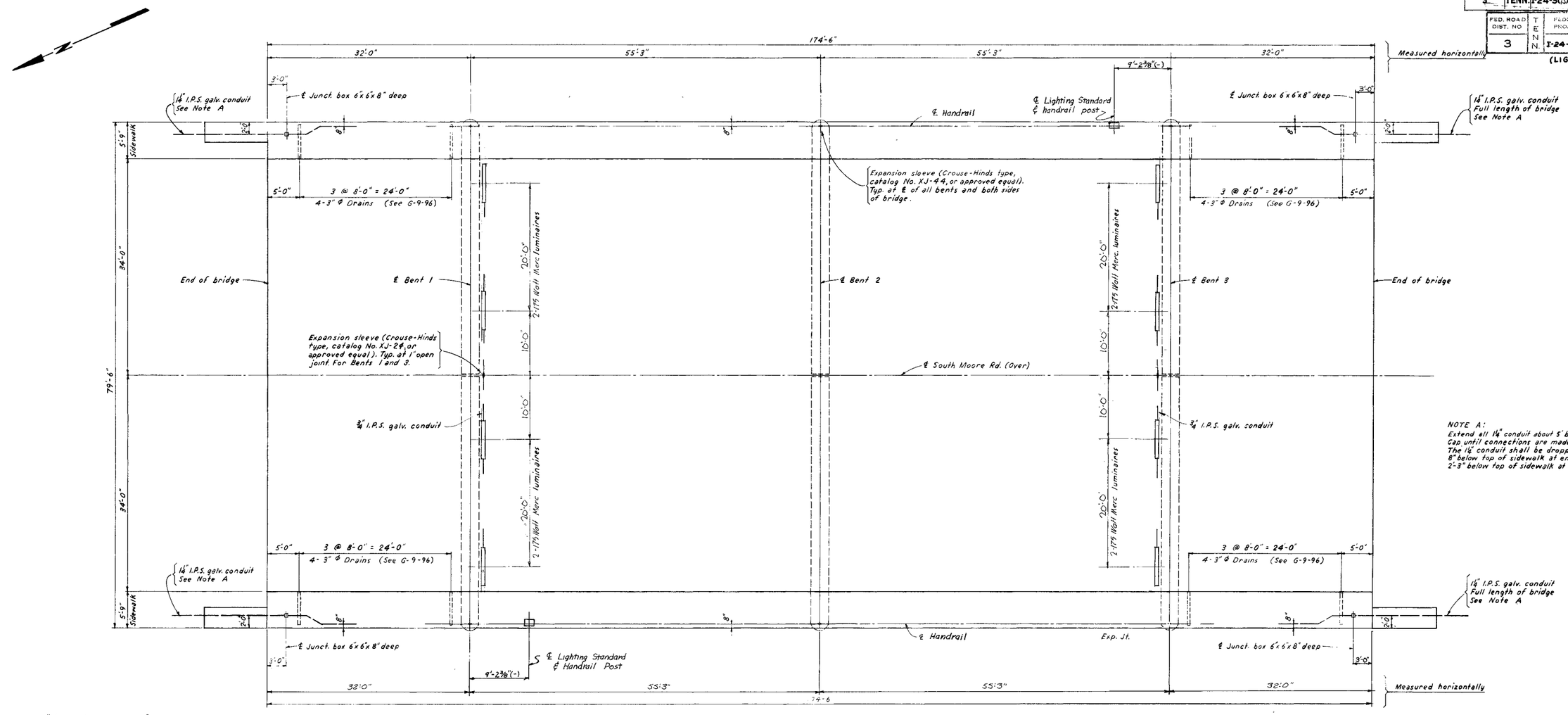
DSGN: TMS	DRWN: TMS	SCALE: AS NOTED	DATE: 10-8-58
CHKD: AC	CHKD: AC SUPV: TMS	FILE NO. 57.77 SHEET NO.	G-9-96

Revised Oct. 1960 Changed handrailing to concrete handrailing
Revised April 1960 Reduced number of light standards.
Revised April 1960 Changed handrailing to steel handrailing.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	STATE AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	TENN.	I-24-3(28)	128		117A	200

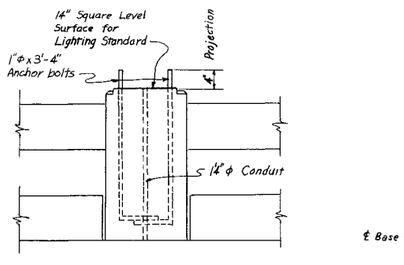
FED. ROAD DIST. NO.	T E N N.	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	TENN.	I-24-3(28)128	19 65	11	18

(LIGHTING)

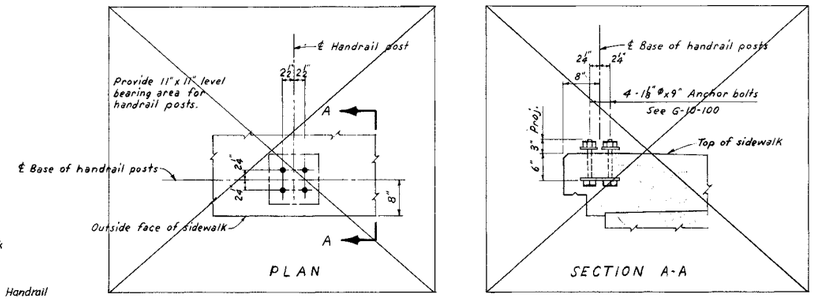


PLAN
Scale: ⅛"=1'-0"

NOTE A:
Extend all 1½" conduit about 5' beyond end of wingwall. Cap until connections are made by others. The 1½" conduit shall be dropped in elevation from 8" below top of sidewalk at end of bridge to about 2'-3" below top of sidewalk at end of wingwall.



HANDRAIL POST
DETAIL AT LIGHTING STANDARD



DETAILS AT HANDRAIL POSTS
Scale: ¾"=1'-0"

NOTES:
For General Notes and Specifications, see G-9-90.
For standard Electrical Lighting Details, see G-7-5
For handrailing details, see H-5-110.
Location of fluorescent lights, junction boxes and drains may be shifted slightly so as to avoid interference with reinforcing steel.

For Telephone Conduits in Sidewalks, see K-2-247

Revised Jan., 1965 Reduced number of mercury lights
Revised July, 1957 Changed Fluorescent Luminaires to Merc
Revised Sept. 1961 Changed Telephone Conduits added.
Revised Oct. 1960 Changed handrailing to concrete handrailing
Redrawn April 1960 Reduced number of lighting standards. Changed handrailing to steel handrailing.

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
CHATTANOOGA FREEWAY
HAMILTON COUNTY-F.A. PROJ. NO. I-24-3( )

SOUTH MOORE ROAD OVERPASS
LIGHTING, HANDRAILING AND DRAINS

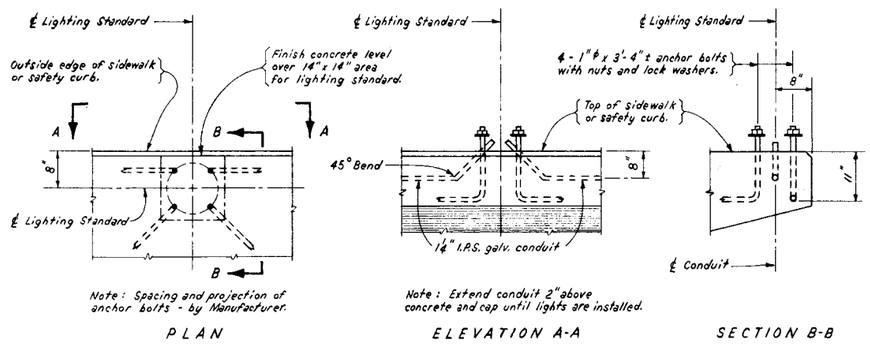
SULLIVAN & HOEBEL - CONSULTING ENGINEERS - KNOXVILLE, TENN.
AAKE F. HEDMAN - CONSULTING ENGINEERS - CHATTANOOGA, TENN.

DSGN: FAM	DRWN: WRA	SCALE: AS NOTED	DATE: 4-4-60
CHKD: AC	CHKD: AC SUPV: TMS	FILE NO. 57.77	SHEET NO. G-9-97

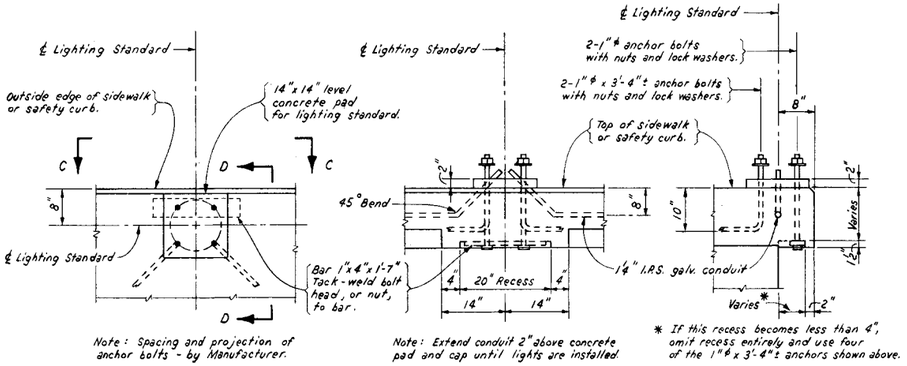
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	STATE AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	TENN.	[illegible]		1960	8A	82

U-027-2(9)

Note:
All lighting standards shall be vertical.



CONCRETE T-BEAM AND STEEL BEAM BRIDGES



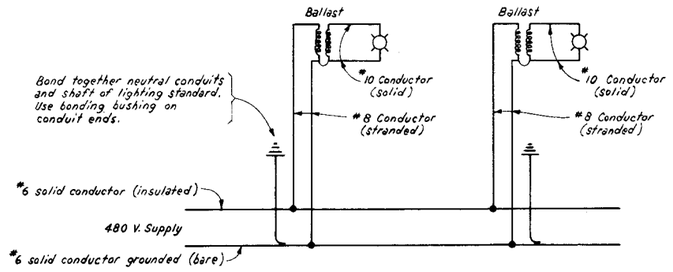
PRESTRESSED CONCRETE BEAM BRIDGES

These details are not applicable for Project I-24-3(15)128

DETAILS AT LIGHTING STANDARD

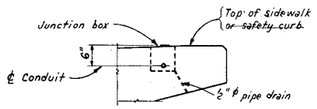
Scale: ¾"=1'-0"

Note:
Contacting surfaces between aluminum lighting standard and concrete shall be thoroughly coated with an aluminum impregnated caulking compound.

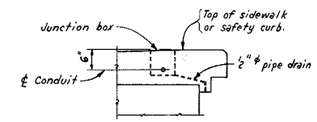


CIRCUIT DIAGRAM

No Scale



CONCRETE T-BEAM AND STEEL BEAM BRIDGES



PRESTRESSED CONCRETE BEAM BRIDGES

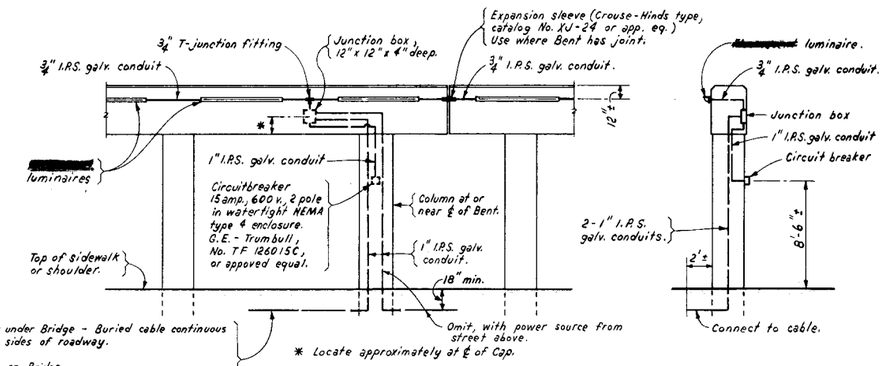
DETAILS AT JUNCTION BOXES

Scale: ½"=1'-0"

LIGHTING ON BRIDGE

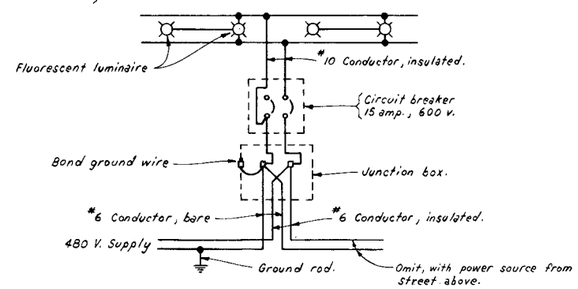
Note:
For location of ~~fluorescent~~ luminaires, see drawing "Lighting, Handrailing and Drains."

~~fluorescent~~ luminaires and circuit breakers shall be fastened with cinch anchors, or as approved by the Engineer.



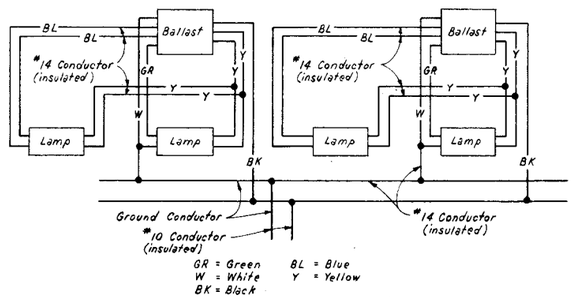
LIGHTING DETAILS

Scale: ¾"=1'-0"



CIRCUIT DIAGRAM

No Scale



LUMINAIRE WIRING DIAGRAM

No Scale

LIGHTING UNDER BRIDGE

ELECTRICAL LIGHTING SPECIFICATIONS

LIGHTING ON BRIDGE:

Lighting Standards: See Special Provisions.

All lighting standards shall have hand hole (approx. 4" x 6 1/2") with cover near base of pole, located 90° off bracket center line. Where required, drill in field suitable openings in base of lighting standards for conduits.

Luminaires to be Westinghouse type OV-20, catalog No. 1568, 517, having 1 1/4" adjustable slipfitter and IES type III distribution for E-H1 mercury vapor lamp; or approved equal.

Lamp bulbs to be 400 watt, 20,000 lumen, E-H1 mercury vapor.

Ballast to be 480 volt primary for 400 watt, 20,000 lumen, E-H1 mercury vapor lamp, ballast to be similar to G.E. Co. type 1LH, catalog No. 9SA20H5AB, except omit aerial mounting bracket and substitute pole top adapter similar to G.E. Co. No. 108A3006G3. Finish assembly with aluminum paint.

LIGHTING UNDER BRIDGE: See Sheet 7, Proj. I-24-3(29)128

~~Luminaires to be fluorescent Form 106U, G.E. catalog No. 2F106UB1~~ (without ballast) and G.E. catalog No. 2F106UB5AB (with 480-volt internal 2-lamp ballast) connected in pairs; or approved equal.

~~Lamps to be G.E. Co. type F72T12/CW/HO, or approved equal.~~

GENERAL:

Conduits to be rigid hot dip galvanized steel, sizes as shown on drawings. Provide standard watertight expansion sleeve, suitably grounded, at all expansion joints in bridge deck and as otherwise called for on plans. Expansion sleeves to be Crouse-Hinds type, catalog No. XJ-44 for 1 1/4" conduit, catalog No. XJ-34 for 1" conduit, catalog No. XJ-24 for 3/4" conduit, or approved equal.

Junction boxes - Sizes shall be as shown on drawings. Boxes shall be drilled to provide the connections shown and shall be of cast iron watertight construction, with removable cover (checkered on top) fastened with brass screws. Provide galvanized bushings and lock nuts at connections of conduits to junction boxes.

Conductors - All wiring inside the conduits and light poles shall be 600 volt, rubber insulated, General Electric Co. Versatol-Geoprene; or approved equal.

National Electric Code - Where not covered by these specifications, all other material and workmanship to be incorporated in this project shall be in strict conformance with requirements of the National Electric Code, current edition.

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
CHATTANOOGA FREEWAY
HAMILTON COUNTY-F.A. PROJ. NO. I-24-3( )

STANDARD ELECTRICAL LIGHTING DETAILS

SULLIVAN & HOEBEL - CONSULTING ENGINEERS - KNOXVILLE, TENN.
AAKE F. HEDMAN - CONSULTING ENGINEERS - CHATTANOOGA, TENN.

DSGN:	DRWN: JRP	SCALE: AS NOTED	DATE: 2-24-59
CHKD:	CHKD: AC	FILE NO. 57.77	SHEET NO. G-7-5
	SUPV: AC		

Revised Oct. 1960 - Eliminated 2" Light Standards, Luminaires for Under-Bridge Lighting and Wiring
Revised April 1960 - Changed note on lighting standards and added "See Special Provisions".
Revised Feb. 1960 - Changed handrailing to steel handrailing (affecting location of conduit).
Revised June - Sept 1959 Due to change of Interchange Layout

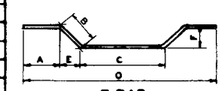
LOCATION	MARK	NO. LINES	PER UNIT	TOTAL NO. REQ'D.	BENDING DIMENSIONS – FEET & INCHES A	B	C	D	E	F	O	LENGTH BAR FEET & INCHES	WEIGHT LBS.
NORTH AND SOUTH ABUTMENTS													
Bridge Seat	A601	2	16	32								40-6	1947
	A602	2	8	16								44-0	1057
	A603	2	8	16								37-0	889
	A503	2	6	12								5-0	63
	K501	2	10	20	1-7	5-10			0-8½	1-5	6-6½	7-3	151
	U510	2	2	4	2-10½	2-7	2-10½					8-0	33
	U511	2	2	4	2-4½	2-7	2-4½					7-0	29
	U512	2	2	4	1-10½	2-7	1-10½					6-0	26
	T501	2	70	140	2-8	2-8						11-3	1643
	U501	2	10	20	2-0	6-6½	2-0½					10-3	214
	U502	2	6	12	2-0	2-6½	2-0½					6-3	78
	U503	2	8	16	5-0	2-0½	4-6½					11-3	188
	U504	2	6	12	5-4	2-5½	5-3½					12-9	160
	U505	2	2	4	3-7	2-5½	3-6½					9-3	39
Wingwalls	A501	4	19	76								9-6	753
	A502	4	2	8								7-6	63
	A504	4	2	8								5-9	47
	U506	4	6	24	2-1	2-1½	2-1½					6-0	150
	U507	4	5	20	2-5	2-0½	1-10½					6-0	125
	U508	4	1	4	2-9	2-0½	2-3½					6-9	28
	U509	4	1	4	3-2	2-0½	2-7½					7-6	31
	T401	4	6	24	3-11	0-7½						9-6	152
	T402	4	1	4	2-11	0-7½						7-6	20
	T403	4	1	4	3-3	0-7½						8-3	22
	T404	4	1	4	3-6	0-7½						8-9	23
	T405	4	1	4	3-8	0-7½						9-0	24
	T406	4	1	4	3-10	0-7½						9-3	25
					TOTAL WEIGHT - NORTH & SOUTH ABUTMENTS								7980
					TOTAL WEIGHT - NORTH ABUTMENT								3990
					TOTAL WEIGHT - SOUTH ABUTMENT								3990
BENT 1													
Footing 1	A701	1	12	12								5-3	129
	A602	1	20	20								7-0	210
Footing 2	L1102	1	12	12	1-0	5-1						5-9	367
	A902	1	14	14								8-0	381
	A606	1	21	21								6-0	189
Ftgs. 3, 4, & 5	A1106	3	12	36								7-0	1339
	A801	3	19	57								11-6	1750
	A603	3	28	84								8-6	1072
Footing 6	L701	1	12	12	0-9½	4-2						4-9	117
	A604	1	10	10								6-6	98
	A605	1	8	8								4-6	54
Column 1	A702	1	12	12								18-6	454
	XD501	1	1	1	0-3½			2-2			15-6	373-0	389
Column 2	A1107	1	12	12								25-6	1626
	XD502	1	1	1	0-3½			2-2			22-7	534-3	557
Column 3	A1108	1	12	12								19-0	1211
	XD503	1	1	1	0-3½			2-2			16-0	384-6	401
Column 4	A1108	1	12	12								19-0	1211
	XD503	1	1	1	0-3½			2-2			16-0	384-6	401
Column 5	A1109	1	12	12								18-9	1195
	XD504	1	1	1	0-3½			2-2			15-9	378-9	395
Column 6	A703	1	12	12								24-6	601
	XD505	1	1	1	0-3½			2-2			21-5	507-9	530
	No. 3 spacer bars for spirals (3 bars per spiral)											321-9	121
Cap	A1101	2	7	14								39-9	2957
	A1102	2	5	10								13-0	691
	A1103	2	2	4								8-3	175
	A1104	2	2	4								8-0	170
	A1105	2	3	6								11-9	375
	L1101	2	3	6	4-0	40-4						44-0	1403
	A901	2	2	4								6-0	82
	A601	2	6	12								39-6	712
	T501	2	94	188	4-2	1-8½						12-3	2402
	U501	2	1	2	3-1½	1-10	3-1½					7-9	16

Revised April 1960 increased vertical clearance to 16'-6".

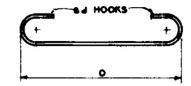
LOCATION	MARK	NO. LINES	PER UNIT	TOTAL NO. REQ'D.	BENDING DIMENSIONS – FEET & INCHES A	B	C	D	E	F	O	LENGTH BAR FEET & INCHES	WEIGHT LBS.
BENT 1 (Cont.)													
Cap (cont.)	U502	2	3	6	1-2	3-11½	1-2½					6-0	38
	U503	2	5	10	1-4	2-2½	1-3½					4-6	47
	XC501	2	5	10	2-3	1-6	1-1½					6-6	68
													(9136)
Pedestal	A601	2	4	8								39-6	475
	U401	2	40	80	1-10	0-10	1-10					4-3	227
													(702)
					TOTAL WEIGHT - BENT 1								24,636
BENT 2													
Ftgs. 1 and 6	A701	2	12	24								5-3	258
	A602	2	20	40								7-0	421
Ftgs. 2, 3, 4, & 5	A1106	4	12	48								7-0	1785
	A801	4	19	76								11-6	2334
	A603	4	28	112								8-6	1430
Column 1	A704	1	12	12								17-0	417
	XD506	1	1	1	0-3½			2-2			14-0	338-9	353
Column 2	A1110	1	12	12								17-3	1100
	XD507	1	1	1	0-3½			2-2			14-3	344-6	359
Column 3	A1111	1	12	12								17-6	1116
	XD508	1	1	1	0-3½			2-2			14-7	352-0	367
Column 4	A1111	1	12	12								17-6	1116
	XD508	1	1	1	0-3½			2-2			14-7	352-0	367
Column 5	A1110	1	12	12								17-3	1100
	XD507	1	1	1	0-3½			2-2			14-3	344-6	359
Column 6	A704	1	12	12								17-0	417
	XD506	1	1	1	0-3½			2-2			14-0	338-9	353
	No. 3 spacer bars for spirals (3 bars per spiral)											257-0	97
Cap	Same as for Bent 1.												9136
					TOTAL WEIGHT - BENT 2								22,885
BENT 3													
Footing 1	L701	1	12	12	0-9½	4-2						4-9	117
	A604	1	10	10								6-6	98
	A605	1	8	8								4-6	54
Ftgs. 2, 3, & 4	L1102	3	12	36	1-0	5-1						5-9	1100
	A902	3	14	42								8-0	1142
	A606	3	21	63								6-0	568
Footing 5	A1106	1	12	12								7-0	446
	A801	1	19	19								11-6	583
	A603	1	28	28								8-6	357
Footing 6	A701	1	12	12								5-3	129
	A602	1	20	20								7-0	210
Column 1	A703	1	12	12								24-6	601
	XD509	1	1	1	0-3½			2-2			21-7	511-6	533
Column 2	A1112	1	12	12								24-3	1546
	XD510	1	1	1	0-3½			2-2			21-3	504-0	526
Column 3	A1113	1	12	12								24-6	1562
	XD509	1	1	1	0-3½			2-2			21-7	511-6	533
Column 4	A1114	1	12	12								23-6	1498
	XD511	1	1	1	0-3½			2-2			20-7	488-9	510
Column 5	A1115	1	12	12								18-6	1179
	XD501	1	1	1	0-3½			2-2			15-6	373-0	389
Column 6	A705	1	12	12								18-3	448
	XD512	1	1	1	0-3½			2-2			15-3	367-3	383
	No. 3 spacer bars for spirals (3 bars per spiral)											347-3	131
Cap	Same as for Bent 1												9136
Pedestal	Same as for Bent 1												702
					TOTAL WEIGHT - BENT 3								24,481

LOCATION	MARK	NO. LINES	PER UNIT	TOTAL NO. REQ'D.	BENDING DIMENSIONS – FEET & INCHES A	B	C	D	E	F	O	LENGTH BAR FEET & INCHES	WEIGHT LBS.
SPANS 1 AND 4													
Sidewalk	A601	4	1	4								31-6	189
	A501	4	4	16								31-6	526
	W501	4	24	96	0-7	5-5	0-5½		0-1	0-7	5-6	6-3	625
					TOTAL WEIGHT - SPANS 1 AND 4								1340
					TOTAL WEIGHT - SPAN 1								670
					TOTAL WEIGHT - SPAN 4								670
SPANS 2 AND 3													
Sidewalk	A801	4	2	8								8-6	132
	A602	4	1	4								54-9	329
	A502	4	4	16								54-9	914
	W501	4	42	168	0-7	5-5	0-5½		0-1	0-7	5-6	6-3	1095
					TOTAL WEIGHT - SPANS 2 AND 3								2520
					TOTAL WEIGHT - SPAN 2								1260
					TOTAL WEIGHT - SPAN 3								1260

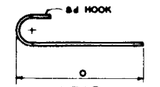
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	STATE AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	TENN.	I-24-3(15)	128		117B	204



E BAR

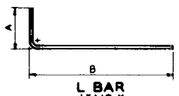


H BAR
L=O+N

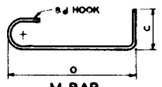


J BAR
L=O+M

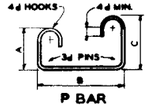
K BAR



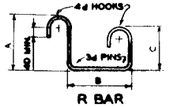
L BAR
L=A+B-K



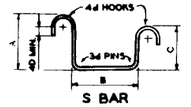
M BAR
L=O+C+M-K



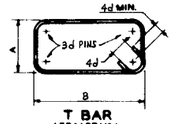
P BAR



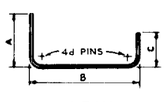
R BAR



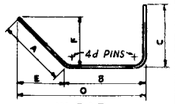
S BAR



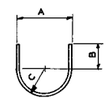
T BAR
L=2A+2B+10d



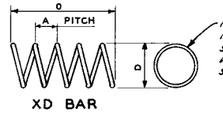
U BAR
L=A+B+C-2K



W BAR

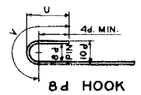


XC BAR



XD BAR

Note: Where bar lengths in spiral are spliced, it shall be done by welding which will develop full strength of bar.



8d HOOK

GAIN "K" IN LENGTH FOR 1-90° BEND									
BAR NO.	3	4	5	6	7	8	9	10	11
8d PIN	1"	1½"	2"	2"	2½"	3"	3½"	3½"	4"
4d PIN	1"	1"	1½"	1½"	2"	2"	2½"	2½"	3"
3d PIN	1"	1"	1"	1½"	1½"	2"	2"	2½"	2½"

8d HOOKS AND H & J BARS									
BAR NO.	3	4	5	6	7	8	9	10	11
M	8"	9"	9"	11"	12"	13"	15"	17"	20"
N	13"	15"	17"	20"	23"	26"	30"	34"	38"
U	4½"	5½"	6"	7"	8"	9"	10½"	11½"	13"
V	8"	10"	11½"	14"	16"	18"	20½"	23"	26"

NOTES:

MATERIAL: REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" OF THE TENNESSEE DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS. EXCEPT THAT STRUCTURAL GRADE IS NOT PERMITTED. SPIRALS TO BE PLAIN BUT TO SAME SPECIFICATIONS.

FABRICATION: ALL BENDS SHALL BE MADE COLD. MINIMUM PIN DIAMETER SHALL BE 8d, UNLESS SPECIFIED OTHERWISE. TOLERANCES SHALL BE ± ½", EXCEPT THAT HOOKS MAY HAVE A GREATER OVERRUN TO ABSORB CUTTING LENGTH. THE NOMINAL DIAMETER OF ANY BAR, d, IS ASSUMED TO BE THE BAR NUMBER X ⅛". LENGTHS ARE CENTER LINE LENGTHS OF BARS – DESIGNATED AS "L" ON DIAGRAMS.

GENERAL: BENDING DIAGRAMS SHOWN WITH SYMBOLS FOR VARIABLE DIMENSIONS ARE STANDARD TYPES OF BARS. SOME TYPES SHOWN MAY NOT BE BILLED IN THE SCHEDULES. ALL BARS "MARK A" ARE STRAIGHT. BARS ARE SYMMETRICAL; UNLESS OTHERWISE SHOWN. ON SLOPING BENDS, THE "F" DIMENSION IS OMITTED EXCEPT WHERE CLEARANCES ARE LIMITED. ALL BARS ARE SPECIFIED BY NUMBERS, INSTEAD OF SIZE, AND THE BAR MARKS ARE MADE UP FROM THE FOLLOWING CODE:

(1) THE LETTER REPRESENTS THE TYPE OF BAR – A, B, L, ETC. – SPECIAL TYPE BARS ARE DESIGNATED BY LETTERS "XA", "XB", ETC.

(2) THE FIRST FIGURE TO THE RIGHT OF THE LETTER, OR LETTERS, REPRESENTS THE BAR NUMBER 4, 5, 6, 7, 8, 9, 10, OR 11.

(3) THE FIGURES TO THE RIGHT OF THE BAR NUMBER REPRESENT THE BAR MARK. THE FIRST BAR IN A GROUP OF BARS OF THE SAME BAR NUMBER AND THE SAME TYPE BUT OTHERWISE DIFFERENT IS MARKED 01, THE NEXT 02, ON THROUGH 09, 10, 11, AND SO ON.

Fabricator shall suffix bar marks to all reinforcing steel in Abutments, Bents, and Deck with letters "A", "B", and "D" respectively. (Thus: A501-A, etc., for Abutments; A501-B, etc., for Bents; and A501-D, etc., for Deck.)

STATE OF TENNESSEE

DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS

CHATTANOOGA FREEWAY

HAMILTON COUNTY – F.A. PROJ. NO. I-24-3( )

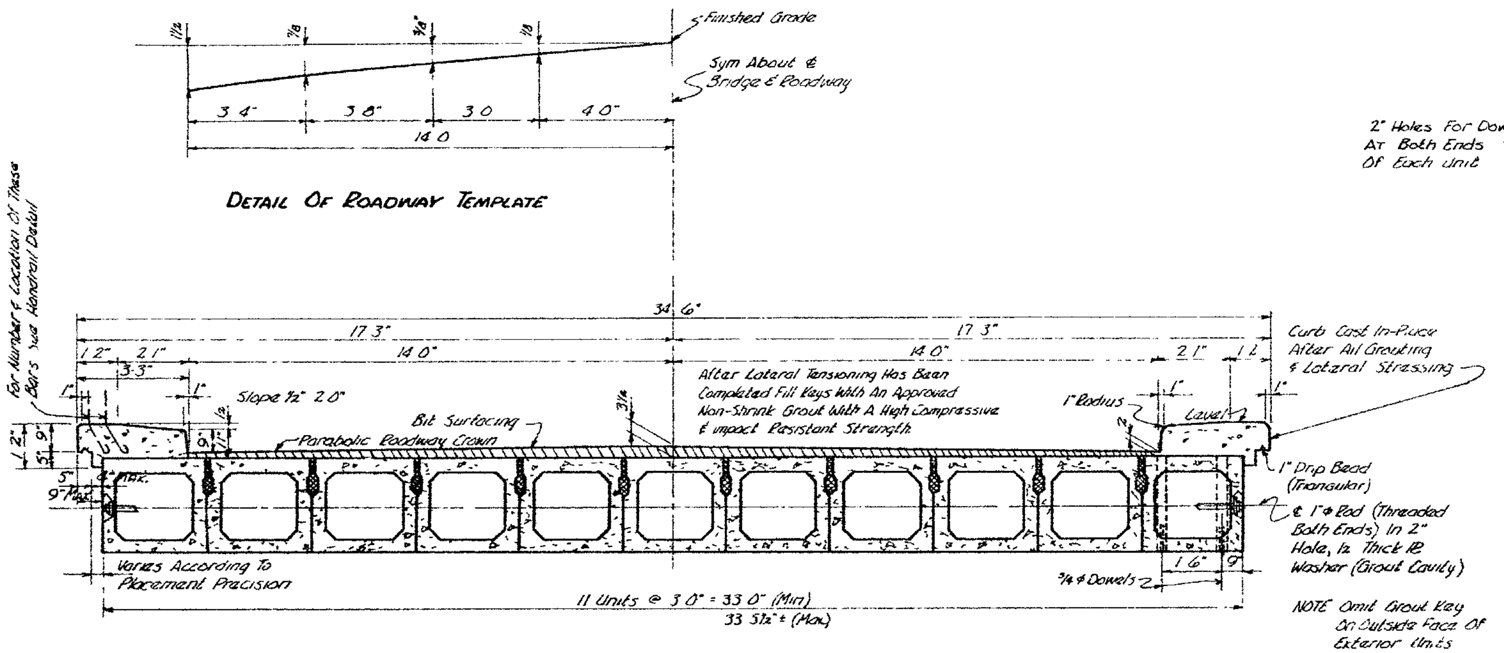
SOUTH MOORE ROAD OVERPASS
REINFORCING STEEL

SULLIVAN & HOEBEL – CONSULTING ENGINEERS – KNOXVILLE, TENN.

AAKE F. HEDMAN – CONSULTING ENGINEERS – CHATTANOOGA, TENN.

DSGN:	DRWN: JRP	SCALE: NONE	DATE: 10-8-58
CHKD:	CHKD: AC		
	SUPV: TMS	FILE NO. 57.77	SHEET NO. G-9-98

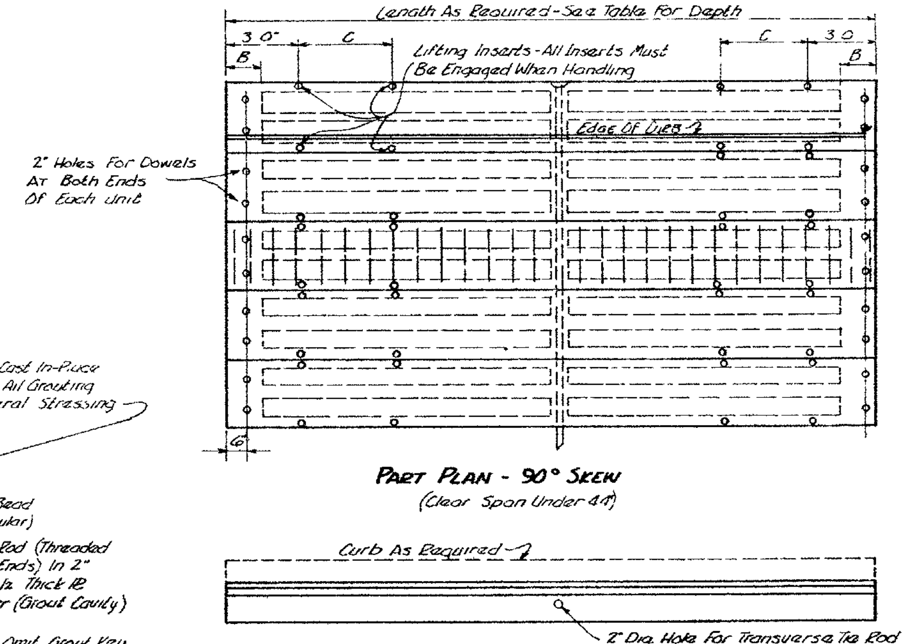
FED. ROAD DIST. NO.	STATE	FED AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	TENN				



Detail Of Roadway Template

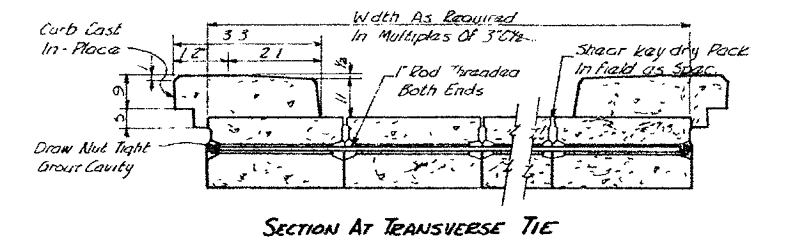
Section Near Midspan

Section Near Bearings

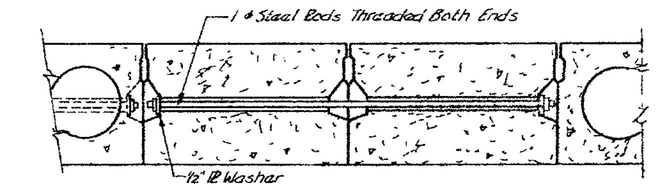


Part Plan - 90° Skew (Clear Span Under 44')

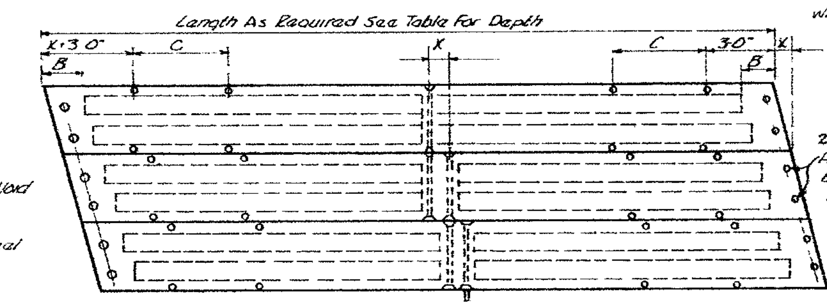
Elevation



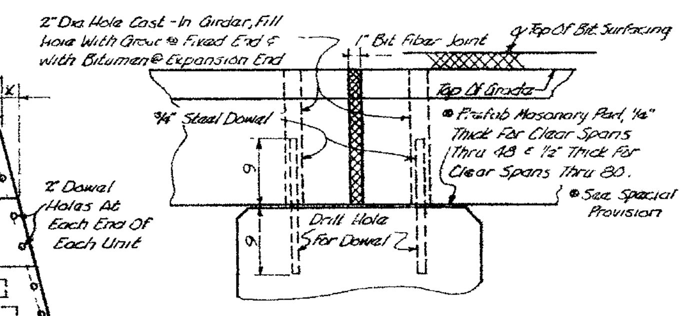
Section At Transverse Tie 90° Skew



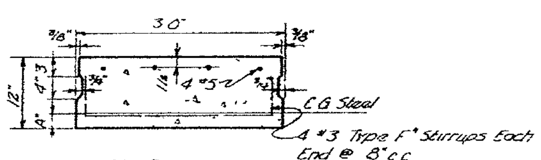
Section At Transverse Tie Skew As Required



Part Plan - Skew As Required

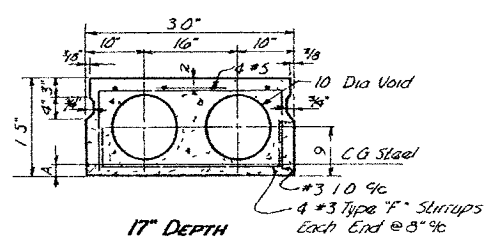


Elevation At Abutment - Pier Or Bent



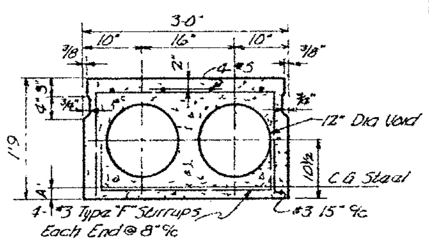
12" Depth

Clear Span Feet	A Inches	B Inches		Prestressed Steel Area	No. 3/8" Strands	Weight Basic Member	Suggested Bearing
14	225	Omit		0.96	12	7,050	12"
16	216	"		1.20	15	[illegible]	
18	244	"		1.52	19	8,300	
20	264	"		1.76	22	9,700	
22	284	"		2.08	26	10,600	



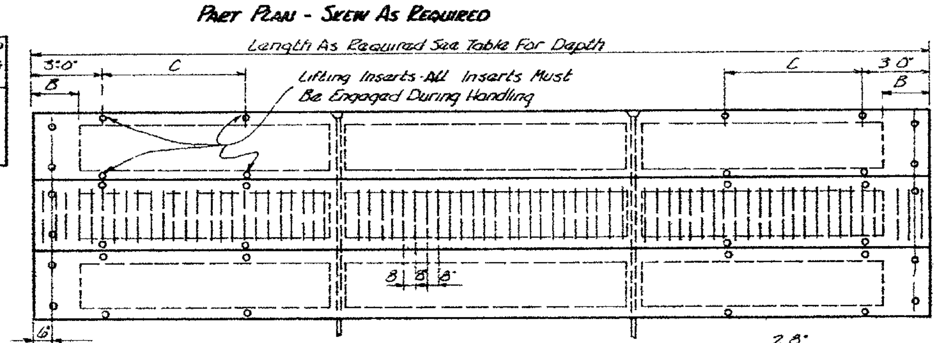
17" Depth

Clear Span Feet	A Inches	B Inches		Prestressed Steel Area	No. 3/8" Strands	Weight Basic Member	Suggested Bearing
24	222	18		[illegible]	[illegible]	[illegible]	12"
26	220			1.36	17	13450	
28	225			1.60	20	14400	
30	230			1.76	22	15,350	
32	262			2.00	25	16,300	
34	275			2.16	27	17250	

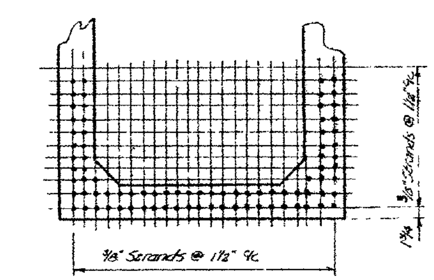


21" Depth

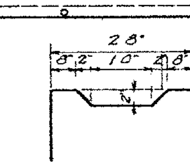
Clear Span Feet	A Inches	B Inches		Prestressed Steel Area	No. 3/8" Strands	Weight Basic Member	Suggested Bearing
36	230	18		1.76	22	22,100	12"
38	231			1.92	24	23,200	
40	264			2.16	27	24350	
42	320			2.48	31	255[illegible]	



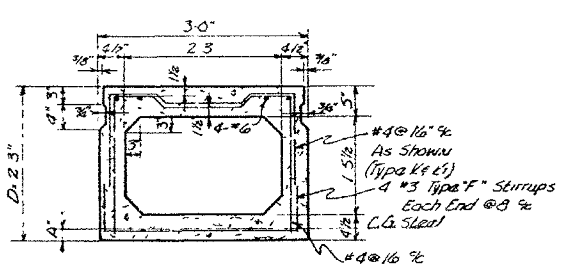
Part Plan - 90° Skew (Clear Span Over 44')



Typical Pattern For Prestressing Steel

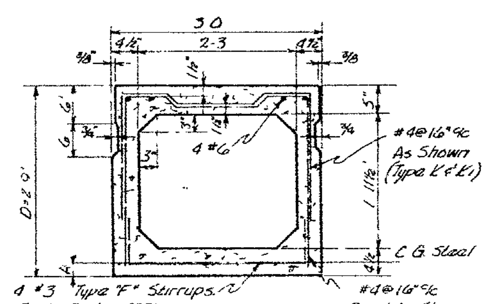


No.4 Bars Type K and K1



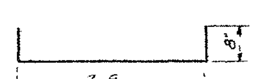
27" Depth

Clear Span Feet	A Inches	B Inches		Prestressed Steel Area	No. 3/8" Strands	Weight Basic Member	Suggested Bearing
44	230	18		1.76	22	27100	12"
46	226			1.84	23	28,200	
48	227			2.00	25	29,300	
50	235			2.24	28	30,500	
52	263			2.40	30	31,600	
54	293			2.56	32	32,800	
56	323			2.80	35	33,400	

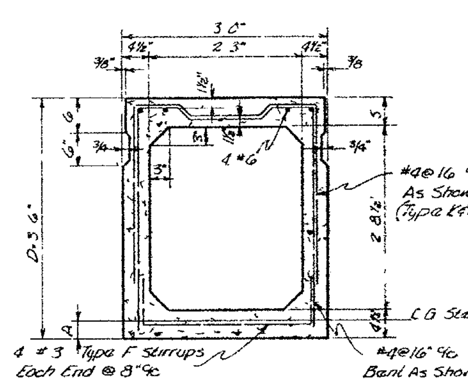


33" Depth

Clear Span Feet	A Inches	B Inches		Prestressed Steel Area	No. 3/8" Strands	Weight Basic Member	Suggested Bearing
58	247	18		2.32	29	39,900	12"
60	263			2.48	31	41,300	
62	303			2.64	33	42,600	
64	333			2.88	36	43,900	
66	363			3.04	38	45,200	
68	390			3.28	41	46,500	



#3 Type "F" Stirrup



42" Depth

Clear Span Feet	A Inches	B Inches		Prestressed Steel Area	No. 3/8" Strands	Weight Basic Member	Suggested Bearing
70	312	18		2.72	34	51300	18" 12" Min
72	328			2.88	36	52,960	
74	369			3.04	38	54,620	
76	407			3.20	40	56,280	
78	432			3.36	42	57940	
80	422			3.52	44	59,600	

General Notes.

SPECIFICATIONS Standard Road & Bridge Specifications Of The Tennessee Department Of Highways
LOADING H20-S16-44
CONCRETE (Cast in Place) To Be Class "A"
PRECAST, PRETENSIONED CONCRETE See Specifications
REINFORCING STEEL See Specifications.
FORMS & FINISH See Specifications.
HANDLING PRE-TENSIONED DECK-UNIT See Specifications.
LATERAL TENSIONING Prior To Grouting Longitudinal, Keys Of In Place Deck Units, The Nuts Of The Transverse Rods Shall Be Given Two Full Turns From Hand Tight Position, To Develope A Stress Of 30,000 PSI, In Rods
PRETENSIONING STEEL: An Initial Force Of 14,000 Lbs. Shall Be Applied To Each Strand In All Beams
The Design Is Based On Federal Bureau Criteria & Special Provision.

DESIGNED BY		DATE
DRAWN BY A. BURKS		DATE 6 26 57
TRACED BY B. BAUMAN		DATE 8 30 60
CHECKED BY		DATE

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
NASHVILLE

Standard
Prestressed Concrete Bridge
Pretensioned
Clear Spans 14'-0" To 80-0"
28'-0" Roadway With Safety Curbs
1957

CORRECT: Fred Greene — BRIDGE ENGINEER
APPROVED: [signature] — STATE HIGHWAY ENGINEER

F-10-84

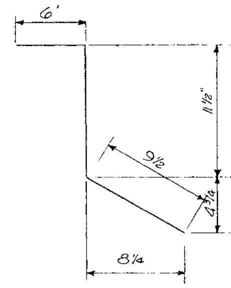
With Std. Dwg. F-10-85 & 86

FED ROAD DIST NO	STATE	FED AID PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
3	TENN		19		

QUANTITIES FOR CAST CURB BOTH SIDES

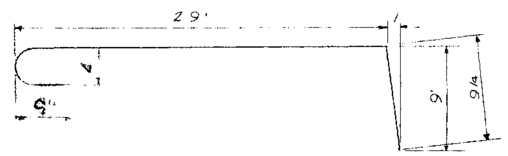
Clear Span	Concrete Cu Yds	Reinf Steel Lbs	No Of Bars D1	No Of Bars C2	No Of Bars C1
14	36	206	24	22	12
16	40	235	28	26	12
18	45	265	30	28	[illegible]
20	49	294	34	32	12
22	54	324	36	34	12
24	58	353	40	38	12
26	63	38[illegible]	42	40	12
28	67	412	46	44	12
30	71	441	48	46	12
32	76	470	52	50	12
34	80	500	54	52	12
36	85	524	58	56	12
38	89	584	60	58	12
40	94	588	62	60	[illegible]
42	98	617	66	64	12
44	103	[illegible]47	68	66	12
46	107	676	72	70	12
48	112	706	74	72	12
50	116	735	78	76	12
52	121	764	80	78	12
54	125	794	84	82	12
56	130	[illegible]	86	84	12
58	134	853	90	88	24
60	138	882	92	90	24
62	143	911	96	94	24
64	147	941	98	96	24
66	152	970	102	[illegible]	24
68	156	[illegible]	106	[illegible]	24
70	163	[illegible]	110	108	24
72	167	[illegible]	112	110	24
74	172	1088	116	114	24
76	176	1117	118	116	24
78	181	1147	122	120	24
80	185	1176	124	122	24

NOTE Above Quantities Apply To All Skews
* For Skewed Bridge Less Than 90° Curb Bars To Be Flared At Each End Of Span
NOTE Bars D1 To Be Included In Unit Price Bid For Girders



BARS D1 (To Be ½" φ)

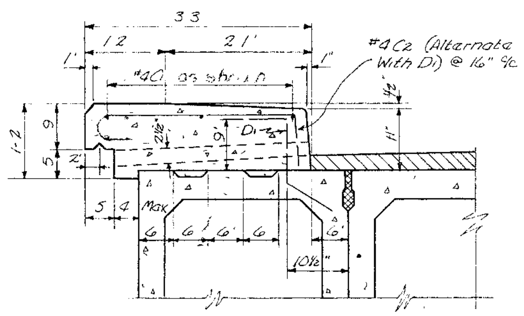
Total Length 2 3



BARS C2

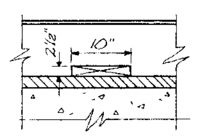
Total Length 4

NOTE Length Of Longitudinal Bars C1 To Be Total Span Length Minus 6 Also Lap Bars C1 10' When Splice Is Required



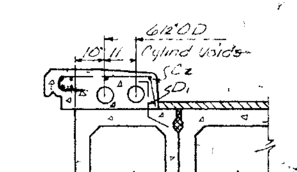
TYPICAL SECTION FOR CURB AND EXTERIOR BOX

NOTE Curb To Be Cast In Place Provisions May Be Made In The Fascia Of Ext Units For Approved Inserts To Facilitate Forming Of Curbs



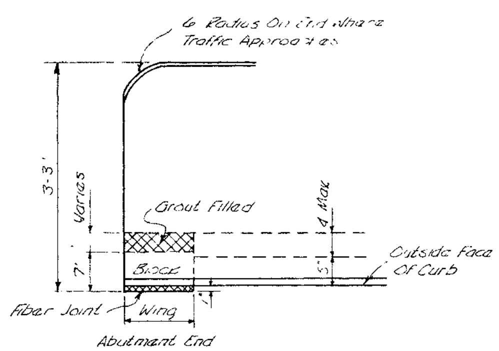
Locate Drain Slots @ Center Of Every Other Railing Panel

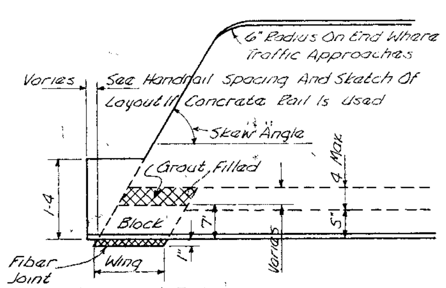
DRAINAGE SLOT DETAIL

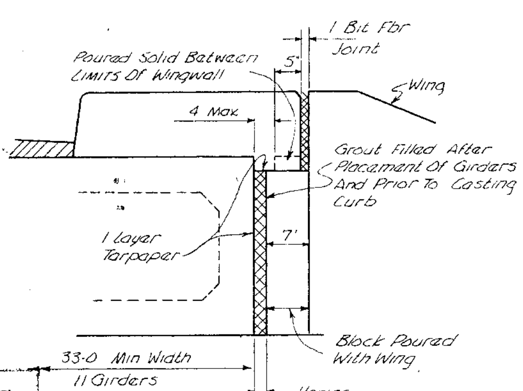


NOTE Cylind Voids To Be Continuous Except They Are Stopped @ 3" On Either Side Of Drainage Slots

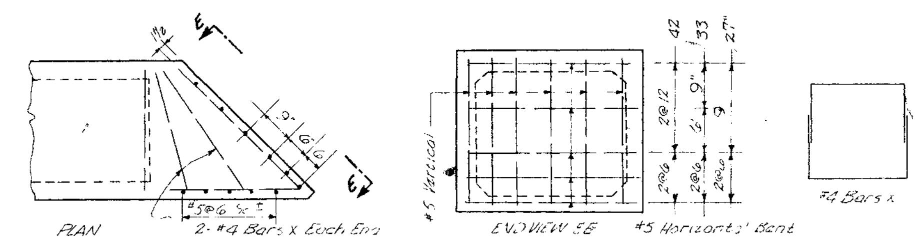
ALTERNATE CURB







SKETCH SHOWING CURB DETAIL AT ABUTMENT END



SKETCH SHOWING ADDITIONAL REINFORCEMENT TO BE PLACED IN ACUTE CORNERS OF PRESTRESSED BOX BEAM

Revised 6-15-60 - Reinf In Acute Corner
Revised 4-17-58 Bar D1 Deducted From Reinf Steel Quantities
Revised 9-30-57 Drip bead location changed

DESIGNED BY		DATE	
DRAWN BY	A. BURKE	DATE	10-28-57
TRACED BY	B BAUMAN & Q. PARKER	DATE	8-30-60
CHECKED BY		DATE	

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
NASHVILLE

STANDARD

PRESTRESSED CONCRETE BRIDGE

PRETENSIONED

CLEAR SPANS 14'-0" - 80'-0"

28'-0" ROADWAY WITH SAFETY CURBS

1957

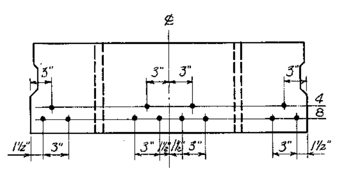
CORRECT ____ BRIDGE ENGINEER

APPROVED ____ STATE HIGHWAY ENGINEER

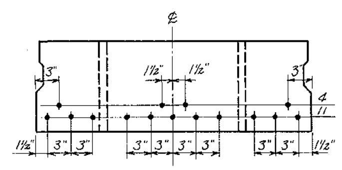
F-10-85

With Std. Dwg. F-10-84 & F-10-85A

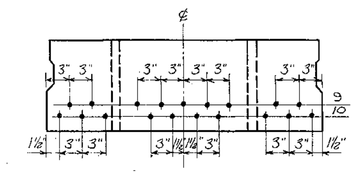
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	TENN.		19	168	391



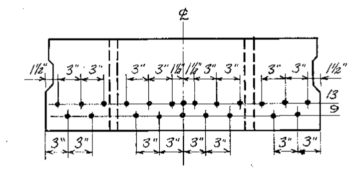
12" DEPTH~ 14' CLEAR SPAN
12 STRANDS



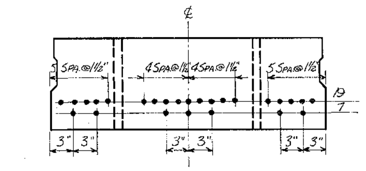
12" DEPTH ~ 16' CLEAR SPAN
15 STRANDS



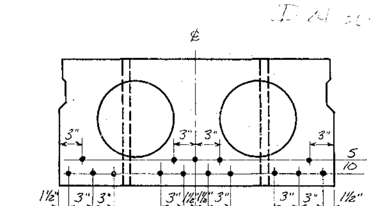
12" DEPTH~18' CLEAR SPAN
19 STRANDS



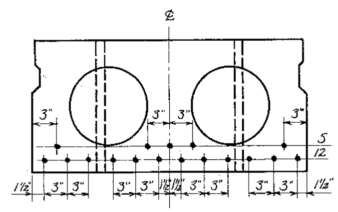
12" DEPTH ~ 20' CLEAR SPAN
22 STRANDS



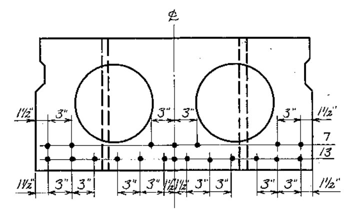
12" DEPTH~ 22' CLEAR SPAN
26 STRANDS



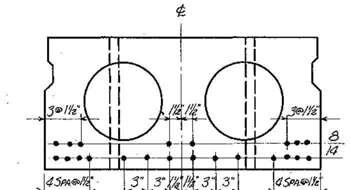
17" DEPTH ~ 24' CLEAR SPAN
15 STRANDS



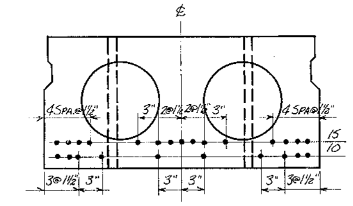
17" DEPTH~ 26' CLEAR SPAN
17 STRANDS



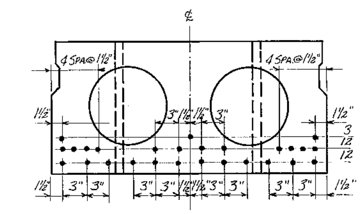
17" DEPTH~ 28' CLEAR SPAN
20 STRANDS



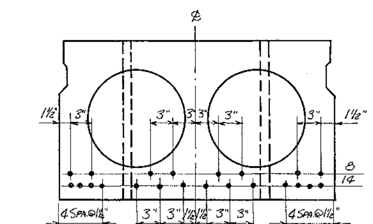
17" DEPTH~30' CLEAR SPAN
22 STRANDS



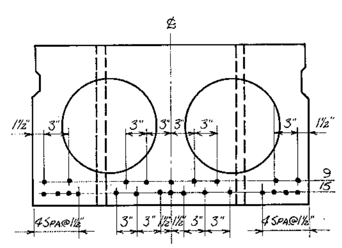
17" DEPTH~32' CLEAR SPAN
25 STRANDS



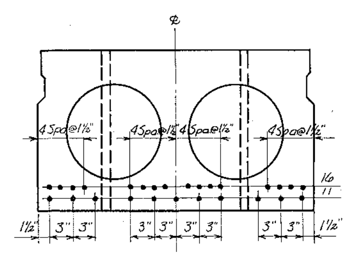
17" DEPTH~34' CLEAR SPAN
27 STRANDS



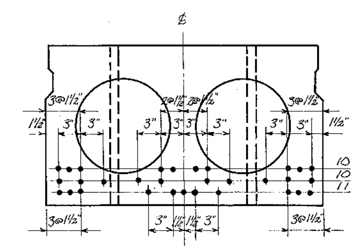
21" DEPTH~36' CLEAR SPAN
22 STRANDS



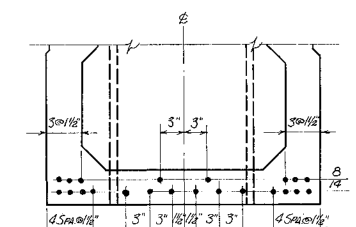
21" DEPTH~ 38' CLEAR SPAN
24 STRANDS



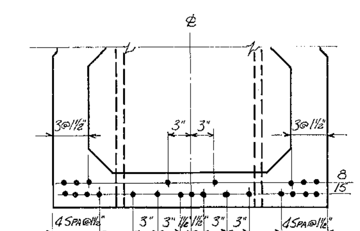
21" DEPTH~ 40' CLEAR SPAN
27 STRANDS



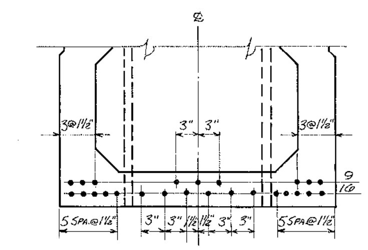
21" DEPTH~ 42' CLEAR SPAN
31 STRANDS



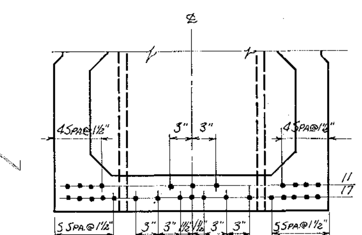
27" DEPTH~ 44' CLEAR SPAN
22 STRANDS



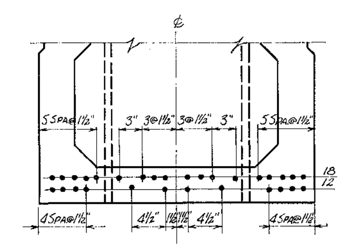
27" DEPTH~ 46' CLEAR SPAN
23 STRANDS



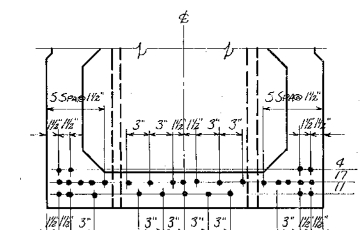
27" DEPTH~48' CLEAR SPAN
25 STRANDS



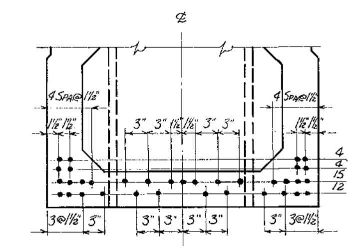
27" DEPTH~50' CLEAR SPAN
28 STRANDS



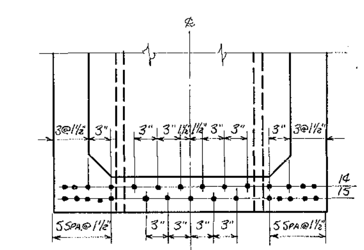
27" DEPTH~52' CLEAR SPAN
30 STRANDS



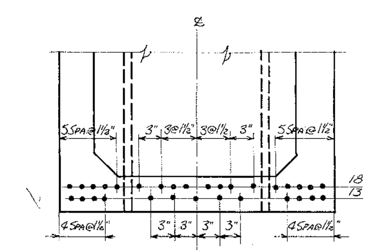
27" DEPTH~54' CLEAR SPAN
32 STRANDS



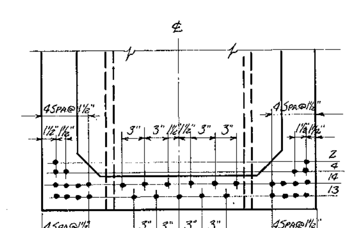
27" DEPTH~56' CLEAR SPAN
35 STRANDS



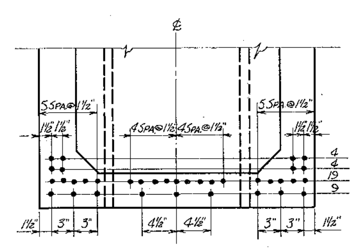
33" DEPTH~58' CLEAR SPAN
29 STRANDS



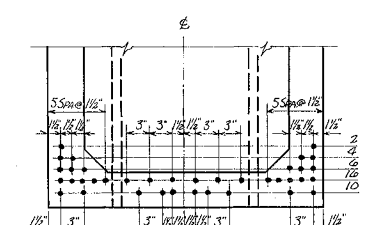
33" DEPTH~ 60' CLEAR SPAN
31 STRANDS



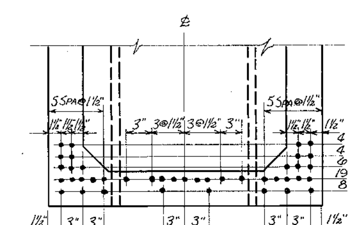
33" DEPTH ~ 62' CLEAR SPAN
33 STRANDS



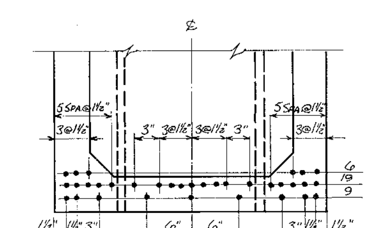
33" DEPTH~ 64' CLEAR SPAN
36 STRANDS



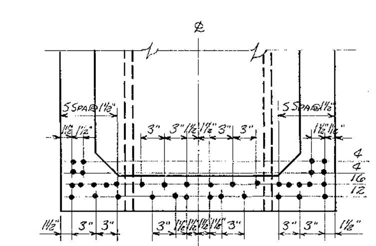
33" DEPTH~66' CLEAR SPAN
38 STRANDS



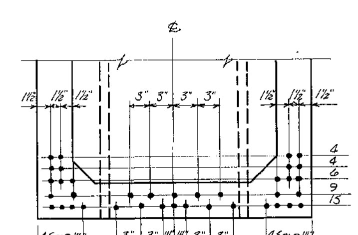
33" DEPTH~68' CLEAR SPAN
41 STRANDS



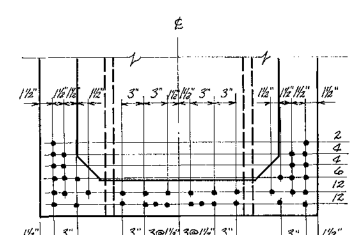
42" DEPTH ~ 70' CLEAR SPAN
34 STRANDS



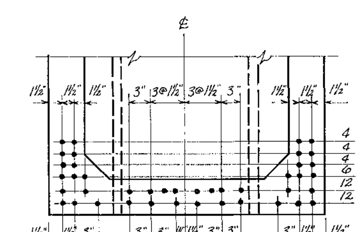
42" DEPTH~72' CLEAR SPAN
36 STRANDS



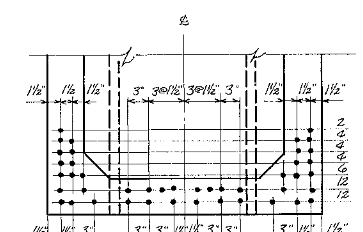
42" DEPTH~ 74' CLEAR SPAN
38 STRANDS



42" DEPTH~ 76' CLEAR SPAN
40 STRANDS



42" DEPTH~ 78' CLEAR SPAN
42 STRAND



42" DEPTH~80' CLEAR SPAN
44 STRANDS

OBSOLETE

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
AND PUBLIC WORKS
NASHVILLE

STANDARD
PRESTRESSED CONCRETE BRIDGE

DETAILS FOR REQUIRED PRESTRESSING PATTERNS

CLEAR SPANS 14'-0"-80'-0"
28'-0" ROADWAY - WITH SAFETY CURBS
1958

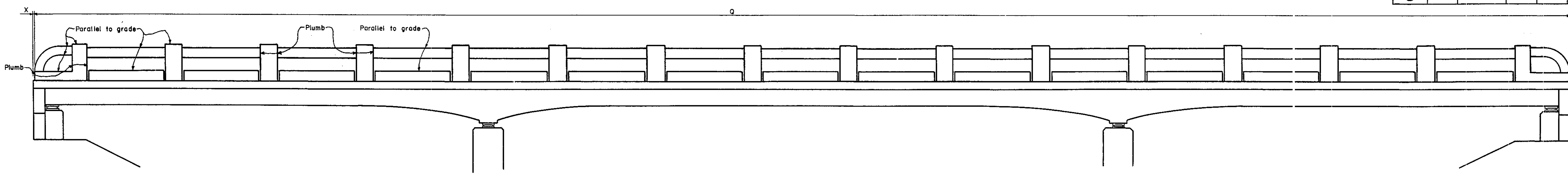
CORRECT Fred Grove BRIDGE ENGINEER
APPROVED C.W. Long STATE HIGHWAY ENGINEER

DESIGNED BY ______ DATE ______
DRAWN BY A. BURKE DATE 3-13-58
RE-TRACED BY B. BAUMAN DATE 9-23-60
CHECKED BY ______ DATE ______

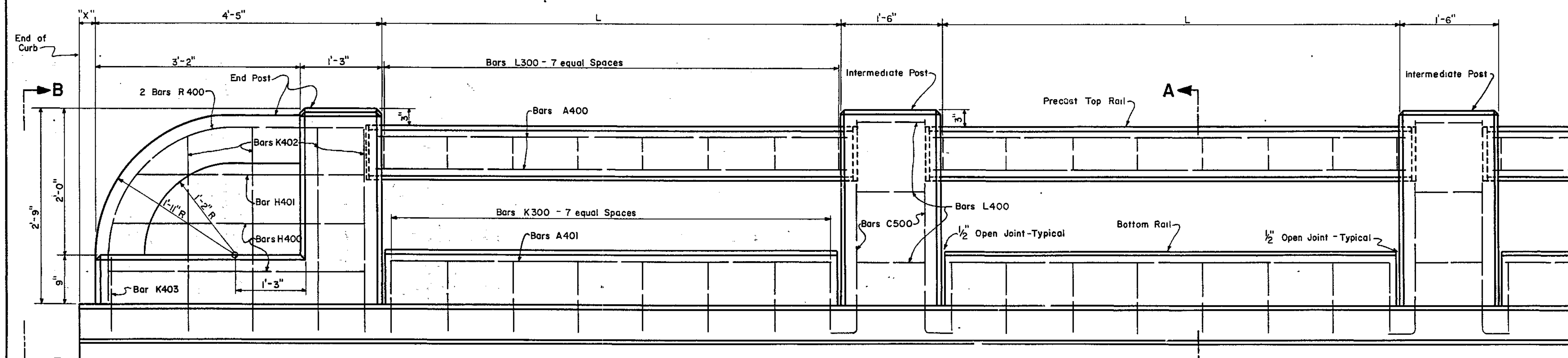
F-10-85A

With Std. Dwgs. F-10-84-F-10-85
2 COPIES

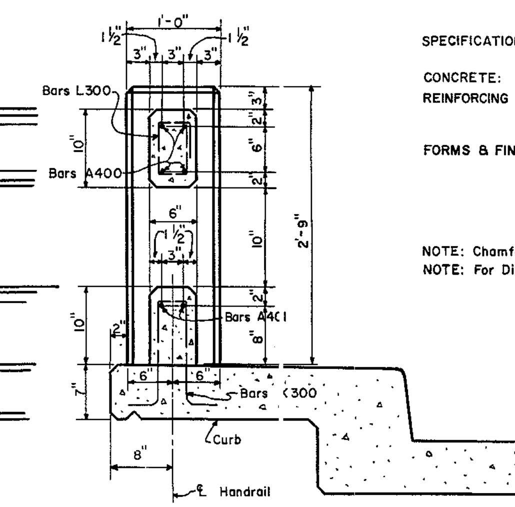
FED ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	TENN.		19		



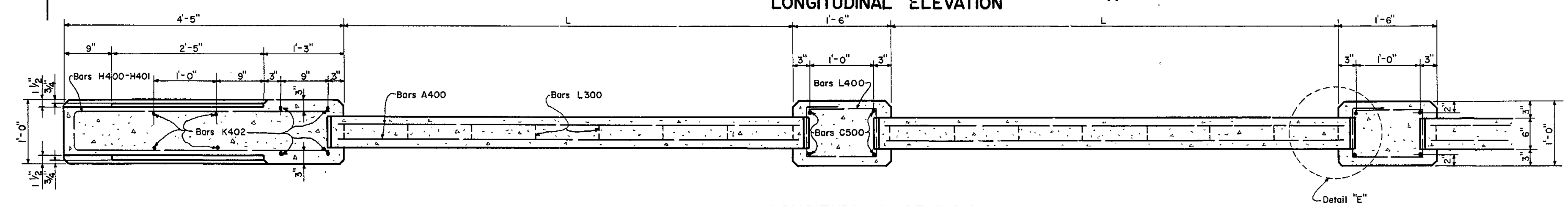
TYPICAL ELEVATION



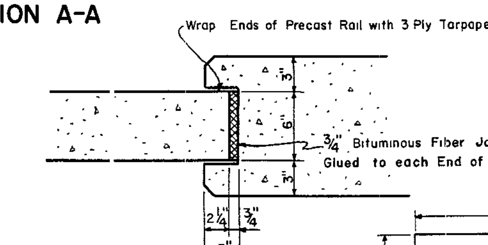
LONGITUDINAL ELEVATION



SECTION A-A



LONGITUDINAL SECTION



DETAIL E

GENERAL NOTES

SPECIFICATIONS: Standard Road & Bridge Specifications of the Tennessee Department of Highways.

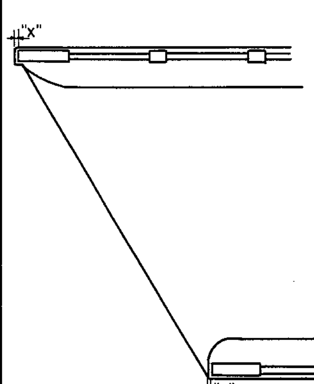
CONCRETE: To be Class "A".

REINFORCING STEEL: See Specifications. To be intermediate or hard grade with Standard Hook Details as recommended by C.R.S.I.

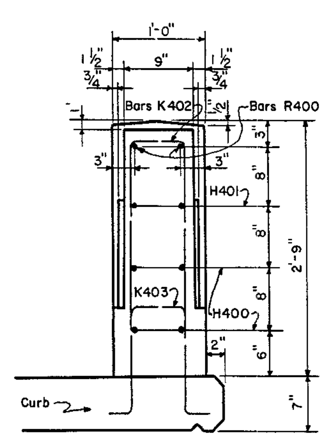
FORMS & FINISH: See Specifications.

NOTE: Chamfer all edges on Handrail Posts and Rails ½".

NOTE: For Dimensions X, Q, & L See Bridge Layout Sheet.



HANDRAIL ON SKEWED DECK



ELEV. B-B

END POST-LIST OF MATERIALS-EACH

Bar	Size	No Req'd	Bending Dimensions a	b	c	d	Length	Quantities Steel Lbs	Conc. Cu.Yd
H400	4	2	0'-6"	4'-0"			8'-6"	45.0	0.37
H401	4	1	0'-6"	3'-7"			7'-8"		
K402	4	4	0'-3"	0'-7"	2'-11"		6'-11"		
K403	4	1	0'-3"	0'-7"	1'-2"		3'-5"		
R400	4	2	1'-9"	4'-0"	2'-6"		5'-9"		

INTERMEDIATE POST LIST OF MATERIALS-EACH

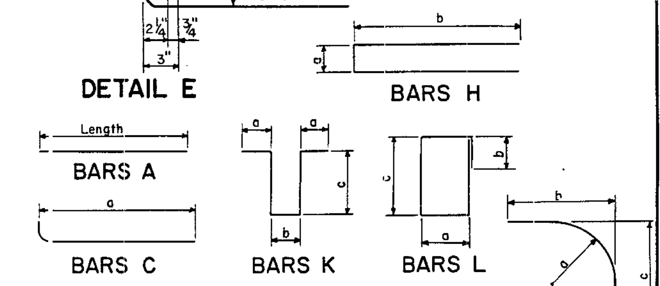
Bar	Size	No Req'd	Bending Dimensions a	b	c	d	Length	Quantities Steel Lbs	Conc. Cu Yd
C500	5	4	3'-0"				3'-4"	22.6	0.15
L400	4	3	0'-9"	0'-6"	1'-2"		4'-4"		

TOP RAIL-LIST OF MATERIALS-EACH

L	Bar	Size	No Req'd	Bending Dimensions a	b	c	d	Length	Quantities Steel Lbs	Conc. Cu.Yd
6'-0" to 6'-1"	A400	4	4					6'-2"	23.6	0.10
	L300	3	8	0'-4"	0'-6"	0'-7"		2'-4"		
6'-1" to 6'-2"	A400	4	4					6'-3"	23 8	0.10
	L300	3	8	0'-4"	0'-6"	0'-7"		2'-4"		
6'-2" to 6'-3"	A400	4	4					6'-4"	24 1	0.10
	L300	3	8	0'-4"	0'-6"	0'-7"		2'-4"		
6'-3" to 6'-4"	A400	4	4					6'-5"	24.3	0.10
	L300	3	8	0'-4"	0'-6"	0'-7"		2'-4"		
6'-4" to 6'-5"	A400	4	4					6'-6"	24.5	0.10
	L300	3	8	0'-4"	0'-6"	0'-7"		2'-4"		
6'-5" to 6'-6"	A400	4	4					6'-7"	24.7	0.11
	L300	3	8	0'-4"	0'-6"	0'-7"		2'-4"		
6'-6" to 6'-7"	A400	4	4					6'-8"	25.0	0 11
	L300	3	8	0'-4"	0'-6"	0'-7"		2'-4"		
6'-7" to 6'-8"	A400	4	4					6'-9"	25 2	0 11
	L300	3	8	0'-4"	0'-6"	0'-7"		2'-4"		
6'-8" to 6'-9"	A400	4	4					6'-10"	25.4	0.11
	L300	3	8	0'-4"	0'-6"	0'-7"		2'-4"		
6'-9" to 6'-10"	A400	4	4					6'-11"	25.6	0.11
	L300	3	8	0'-4"	0'-6"	0'-7"		2'-4"		
6'-10" to 6'-11"	A400	4	4					7'-0"	25.9	0.11
	L300	3	8	0'-4"	0'-6"	0'-7"		2'-4"		
6'-11" to 7'-0"	A400	4	4					7'-1"	26.1	0.11
	L300	3	8	0'-4"	0'-6"	0'-7"		2'-4"		

BOTTOM RAIL-LIST OF MATERIALS-EACH

L	Bar	Size	No Req'd	Bending Dimensions a	b	c	d	Length	Quantities Steel Lbs	Conc. Cu.Yd
6'-0" to 6'-1"	A401	4	2					5'-8"	17 7	0 09
	K300	3	8	0'-4"	0'-4"	1'-2"		3'-4"		
6'-1" to 6'-2"	A401	4	2					5'-9"	17 8	0.09
	K300	3	8	0'-4"	0'-4"	1'-2"		3'-4"		
6'-2" to 6'-3"	A401	4	2					5'-10"	17 9	0 09
	K300	3	8	0'-4"	0'-4"	1'-2"		3'-4"		
6'-3" to 6'-4"	A401	4	2					5'-11"	18.1	0.10
	K300	3	8	0'-4"	0'-4"	1'-2"		3'-4"		
6'-4" to 6'-5"	A401	4	2					6'-0"	18.2	0.10
	K300	3	8	0'-4"	0'-4"	1'-2"		3'-4"		
6'-5" to 6'-6"	A401	4	2					6'-1"	18.3	0.10
	K300	3	8	0'-4"	0'-4"	1'-2"		3'-4"		
6'-6" to 6'-7"	A401	4	2					6'-2"	18.4	0.10
	K300	3	8	0'-4"	0'-4"	1'-2"		3'-4"		
6'-7" to 6'-8"	A401	4	2					6'-3"	18.5	0.10
	K300	3	8	0'-4"	0'-4"	1'-2"		3'-4"		
6'-8" to 6'-9"	A401	4	2					6'-4"	18.6	0.10
	K300	3	8	0'-4"	0'-4"	1'-2"		3'-4"		
6'-9" to 6'-10"	A401	4	2					6'-5"	18.7	0.10
	K300	3	8	0'-4"	0'-4"	1'-2"		3'-4"		
6'-10" to 6'-11"	A401	4	2					6'-6"	18.8	0.10
	K300	3	8	0'-4"	0'-4"	1'-2"		3'-4"		
6'-11" to 7'-0"	A401	4	2					6'-7"	19.0	0.11
	K300	3	8	0'-4"	0'-4"	1'-2"		3'-4"		



BENDING DIAGRAMS

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
NASHVILLE

STANDARD CONCRETE HANDRAIL 1960

CORR.:CT. Fred Greene — BRIDGE ENGINEER

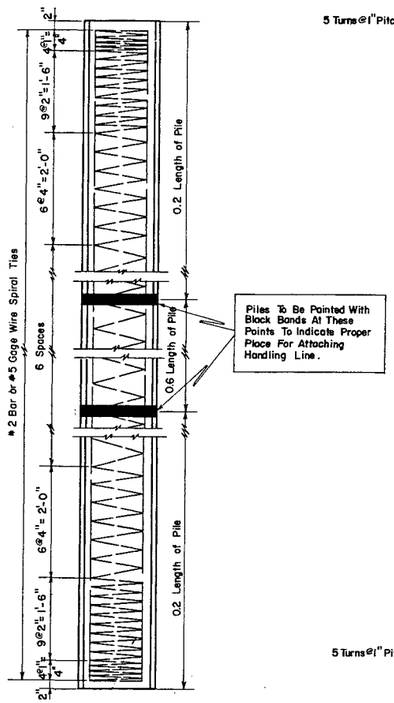
APPROVED: — STATE HIGHWAY ENGINEER

H-5-110

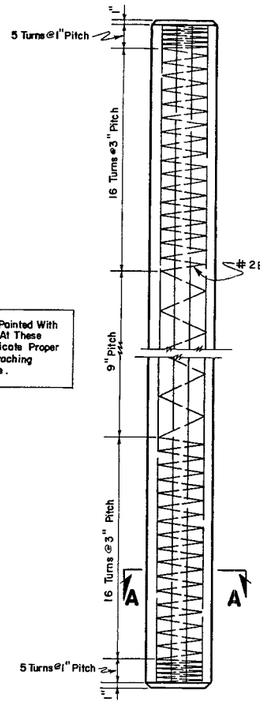
DESIGNED BY ______ DATE ______
DRAWN BY J L Parkes DATE ______
RETRACED BY R. Reagan DATE 4-4-63
CHECKED BY ______ DATE ______

Revised: 1 - June - 1962
Revised: 8 - September - 1960

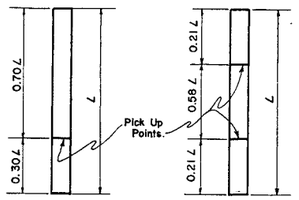
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	TENN.		19		



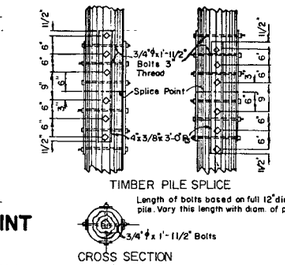
PRECAST CONCRETE PILE



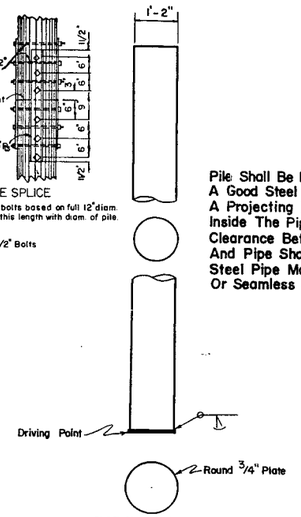
PRESTRESSED CONCRETE PILE



SINGLE POINT PICK-UP **DOUBLE POINT PICK-UP**

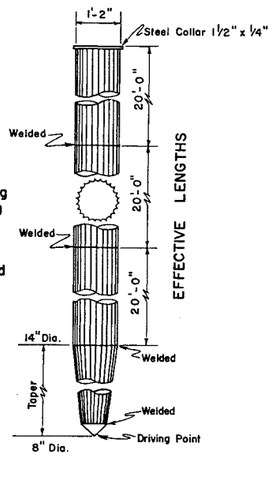


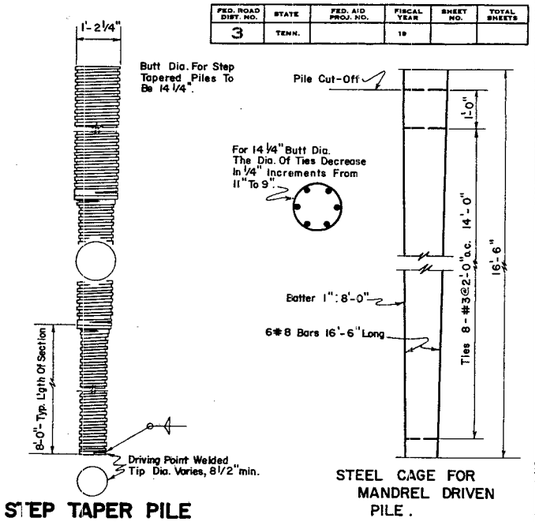
NOTES: (1.) Maximum Length Single Pick Up Point - 60'-0"
(2.) Maximum Length Double Pick Up Point - 85'-0"
(3.) Piles To Be Marked At These Points To Indicate Proper Place For Attaching Handling Lines.
(4.) For Greater Lengths Three Point Pick-up Is Required.



PIPE PILE

Pile Shall Be Driven With A Good Steel Head Having A Projecting Ring Fitting Inside The Pipe. Clearance Between Ring And Pipe Should Be 1/4". Steel Pipe May Be Welded Or Seamless Steel.



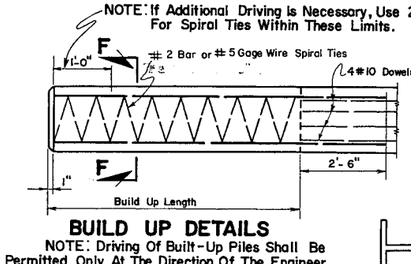


STEP TAPER PILE

STEEL CAGE FOR MANDREL DRIVEN PILE.

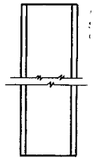
CAST IN PLACE PILES

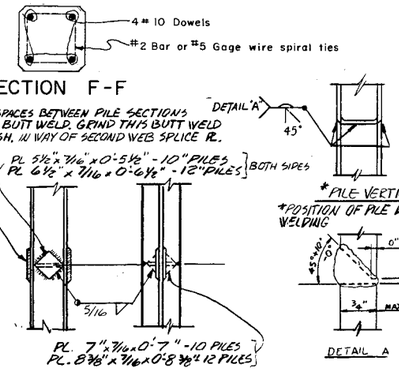
NOTE: Concrete In Cast In Place Piles To Be Class "A"



BUILD UP DETAILS

NOTE: Driving Of Built-Up Piles Shall Be Permitted Only At The Direction Of The Engineer.





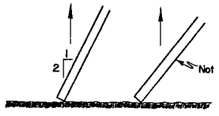
GENERAL NOTES

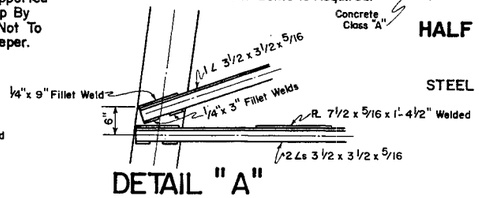
(1.) SPECIFICATIONS: Standard Road And Bridge Specifications Of The Tennessee Department Of Highways.
(2.) CHOICE OF PILES: To Be Specified On The Layout Sheet For Each Bridge.
(3.) CAST IN PLACE: Pile Shells Shall Have A Minimum Thickness As Follows:
1. Piles Driven Without Mandrel - 7 Gage.
2. Piles Driven With Mandrel Shall Be Of Sufficient Strength And Thickness To Hold Its Original Form And Show No Sign Of Distortion After The Core Has Been Withdrawn.
3. Steel Pipe Shall Be Welded Or Seamless Steel Conforming To ASTM Designation A-252 Grade 2 Welded And Seamless Steel Pipe Piles.
Steel Cage For All Mandrel Driver Piles Will Be Required.
The Contractor Shall Maintain On The Job At All Time Prior To And During The Filling Of The Shells, A Light Suitable For Their Inspection. Improperly Driven, Broken Or Otherwise Defective Shells Shall Be Removed And Replaced Or Otherwise Corrected To The Satisfaction Of The Engineer By Removal And Replacement Or The Driving Of An Additional Pile At No Extra Cost.
(4.) PRESTRESSED CONCRETE PILES: 1. Concrete Shall Have A Minimum 28 Day Strength Of 5000 PSI With A Release Strength Of 3500 PSI For 3/8" ø Strands.
2. Spiral Ties Shall Be Tied To Corner Strands At Intervals Adequate To Prevent Excessive Movement During Vibration. They May Be Manufactured From Stock Meeting Any Grade Of Reinforcing Steel Or Hard Drawn Wire.
(5.) PILE POINTS: All Cast In Place Piles Shall Be Equipped With A Steel Driving Point. Driving Points Shall Be Mill Welded To The Pile Shell. Driving Points May Be Either Structural Steel, Forged Steel Or Cast Steel. Steel Piles Shall Have A Square Cut End Only. No Driving Point Is Required Unless Shown On The Bridge Plans.
(6.) SPLICES: Splice Details For Cast In Place Piles Shall Be Made In Accordance With The Manufacturers Recommendations, Subject To The Approval Of The Engineer. Splice Details For Steel And Prestressed Concrete Piles Shall Be In Accordance With The Details Shown On This Sheet.
(7.) DRIVING FORMULA: Piles Shall Be Driven To A Minimum Capacity As Specified On The Layout Sheet As Determined By The Driving Formulas Stipulated In The Specifications.
(8.) MILL TEST REPORTS: Notarized Mill Test Reports Will Be Required For All Steel Piles And Cast In Place Pile Shells.
(9) WELDING SPECIFICATIONS: AWS for Bridges.
(10) STRUCTURAL STEEL: Structural Steel conforming to ASTM A-7 or ASTM A-36-62T will be acceptable.

NOTE: If It Becomes Necessary To Use Size 2 Piles The Contractor Will Be Allowed An Increase In The Size 1 Bid Of 25 %.

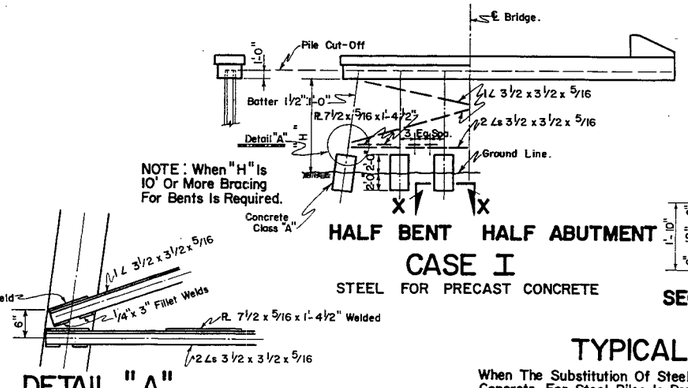
Length Of Of Pile	Longitudinal Reinforcing	Weight Of Steel Per Ft.	Weight Of Pile Per Ft.
Up To 35'	4 # 7 Bars	9.6 #	205.3 #
36' To 40'	4 # 8 Bars	12.2 #	205.3 #
41' To 45'	4 # 9 Bars	15.1 #	265.3 #
46' To 50'	4 # 10 Bars	18.8 #	265.3 #
51' To 55'	8 # 9 Bars	28.9 #	265.3 #
56' To 60'	8 # 10 Bars	36.2 #	265.3 #

NOTE: In Handling The Piles, They Shall Be Supported At The Points Indicated. Piles To Be Picked Up By Pulling On Both Lines Uniformly. End Of Pile Not To Touch Ground Unless Piles Inclined 1:2 Or Steeper.





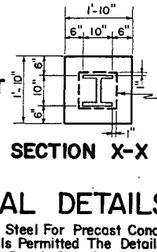
DETAIL "A"
Welds Typical For All End Joints And Intersections.



HALF BENT HALF ABUTMENT

CASE I
STEEL FOR PRECAST CONCRETE

NOTE: When "H" Is 10' Or More Bracing For Bents Is Required.



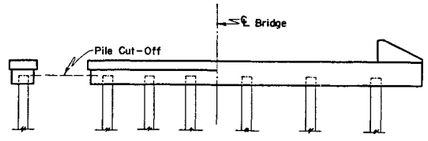
SECTION X-X

NOTE: Wrap Pile With American Welded Fabric 2" x 2" No. 10 Wire. Cost of Wire Fabric to be included in Unit Price Bid for Class "A" Concrete

TYPICAL DETAILS

When The Substitution Of Steel For Precast Concrete Piles Or Precast Concrete For Steel Piles Is Permitted The Details Will Be As Shown Above. The Substitution Does Not Permit Changing The Number Of Piles In Either Case. Should The Contractor, When Permitted, Elect To Make The Substitution Of Case I, The Cost Of Encasing Blocks At Ground Lines And Bracing If Required Shall Be Included In The Price Per Lin. Ft. Of Piles.

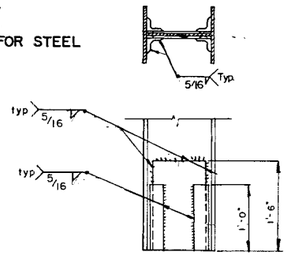
DETAIL OF PILE SPLICE



HALF BENT HALF ABUTMENT

CASE II
PRECAST CONCRETE FOR STEEL

Pile	2 Pls	4 Ls
10"	6" x 1/2"	3 1/2" x 3 1/2" x 1/2"
12"	7" x 1/2"	4" x 4" x 1/2"
14"	8" x 1/2"	5" x 5" x 1/2"



DETAIL OF PILE DRIVING POINT
NOTE Cost of driving point to be included in the unit price bid for steel piles

REV. - FEB. 6, 1962	REV. - JULY 25, 1960
REV. - MAR. 1, 1961 BATTER ON PRESTRESSED PILE	REV. - DEC. 14, 1964 SPIRAL TIES
REV. - DEC. 8, 1960	REV. - JAN. 22, 1964 COST OF WIRE FABRIC
REV. - OCT. 27, 1960	REV. - FEB. 24, 1966 TIMBER PILE SPLICE, DETAIL OF PILE DRIVING POINT
REV. - SEPT. 27, 1960 DELETE PILE SUBSTITUTIONS	REV. - NOV. 27, 1973 ADDED ALT. SECTION A-A
	REV. - NOV. 12, 1982 DETAIL OF PILE SPLICE

DESIGNED BY
DRAWN BY J.W. SOUTHERLAND DATE 5-27-60
RETRACED BY JOE B. CANTRELL JR. DATE 2-6-62
CHECKED BY DATE

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
NASHVILLE

STANDARD PILE DETAILS

CORRECT Fred Green BRIDGE ENGINEER
APPROVED [illegible] STATE HIGHWAY ENGINEER

H-5-III

SEE Std.-5-1 & 5-2