

## Inspection Report with SI&A Data

**Structure Description:** 2107.94 Foot - Single Span Steel Arch - Thru

**2 District:** 01      **3 County:** Marshall      **16 Latitude:** 37°01'33.00"      **7 Longitude:** 88°17'09.00"

**7 Facility Carried:** I-24

**Milepoint:** 29.240

**6A Feature Intersected:** TENNESSEE RIVER

**9 Location:** EBL OVER TENNESSEE RIVER

NBI	X
Element	X
Fracture Critical	X
Underwater	
Special	

NBI CONDITION RATINGS			
<b>58 Deck:</b>	6	<b>61 Channel:</b>	6
<b>59 Superstructure:</b>	6	<b>62 Culvert:</b>	N
<b>60 Substructure:</b>	6	<b>Sufficiency Rating:</b>	93

GEOMETRIC DATA		
<b>48 Max Length Span:</b>		534.121 ft
<b>49 Structure Length:</b>		2,107.940 ft
<b>32 Approach Roadway:</b>		40.026 ft
<b>33 Median:</b>		(0) No Median
<b>34 Skew:</b>		0°
<b>35 Flare:</b>		No Flare
<b>50A Curb/Sidewalk Width L:</b>		0.656 ft
<b>50B Curb/Sidewalk Width R:</b>		0.656 ft
<b>47 Horiz. Clearance:</b>		39.042 ft
<b>51 Width Curb to Curb:</b>		39.042 ft
<b>52 Width Out to Out:</b>		42.323 ft

DESIGN	
<b>Substandard:</b>	No
<b>Fracture Critical:</b>	Yes
<b>43A Main Span Material:</b>	(3) Steel
<b>43B Main Span Design:</b>	(12) Arch-Thru
<b>45 Number of Spans Main:</b>	1
<b>44A Approach Span Material:</b>	(4) Steel Continuous
<b>44B Approach Span Design:</b>	(03) Girder-Floorbeam
<b>46 Number of Approach Spans:</b>	8
<b>107 Deck Type:</b>	(1) Concrete-Cast-in-Place
<b>108A Wearing Surface:</b>	(4) Low Slump Concrete
<b>108B Membrane:</b>	(0) None
<b>108C Deck Protection:</b>	(0) None
<b>Overlay Y/N:</b>	Yes
<b>Overlay Type:</b>	PCC
<b>Overlay Thickness:</b>	1.000 in
<b>Overlay Date:</b>	1971

ADMINISTRATIVE		
<b>27 Year Built:</b>		1974
<b>106 Year Reconstructed:</b>		0
<b>42A Type of Service On:</b>		(1) Highway
<b>42B Type of Service Under:</b>		(5) Waterway
<b>37 Historical Significance:</b>		(5) Not Eligible
<b>21 Maintenance Responsibility:</b>		(01) State Hwy Agency
<b>22 Owner:</b>		(01) State Hwy Agency
<b>101 Parallel Structure:</b>		(L) Left Of II Structure

APPRAISAL	
<b>36A Bridge Railings:</b>	(0) Substandard
<b>36B Transitions:</b>	(1) Meets Standards
<b>36C Approach Guardrail:</b>	(1) Meets Standards
<b>36D Approach Guardrail Ends:</b>	(1) Meets Standards
<b>71 Waterway Adequacy:</b>	(9) Above Desirable
<b>72 Approach Alignment:</b>	(8) Equal Desirable Crit
<b>113 Scour Critical:</b>	(5) Stable w/in footing
<b>Recommended Scour Critical:</b>	(5) Stable w/in footing

CLEARANCES		
<b>10 Vert. Clearance:</b>		18.999 ft
<b>53 Min. Vert. Clearance Over:</b>		18.999 ft
<b>54A Vert. Under Reference:</b>		(N) Feature not hwy or RR
<b>54B Min. Vert. Underclearance:</b>		0.000 ft
<b>55A Lateral Under Reference:</b>		(N) Feature not hwy or RR
<b>55B Min. Lat. Underclearance R:</b>		0.000 ft
<b>56 Min. Lat. Underclearance L:</b>		0.000 ft

LOAD RATINGS	
<b>63 Operating Type:</b>	(2) Allowable Stress (AS)
<b>64 Operating Rating:</b>	36.0 tons
<b>65 Inventory Type:</b>	(2) Allowable Stress (AS)
<b>66 Inventory Rating:</b>	36.0 tons
<b>Truck Capacity Type I:</b>	tons
<b>Truck Capacity Type II:</b>	tons
<b>Truck Capacity Type III:</b>	tons
<b>Truck Capacity Type IV:</b>	tons

POSTINGS	
<b>41 Posting Status:</b>	(A) Open, No Restriction
<b>Signs Posted Cardinal:</b>	No
<b>Signs Posted Non-Cardinal:</b>	No
<b>Field Postings Gross:</b>	tons
<b>Field Postings Type I:</b>	tons
<b>Field Postings Type II:</b>	tons
<b>Field Postings Type III:</b>	tons
<b>Field Postings Type IV:</b>	tons

### Inspection Report with SI&A Data

**12: Re Concrete Deck**

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
SQ.FT	89,213.98	0	0%	89,213.98	100%	0	0%	0	0%

Minor wear to surface, random popouts and cracking.

**510: Wearing Surfaces**

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
SQ.FT	82,303.55	0	0%	82,303.55	100%	0	0%	0	0%

P.C.C. overlay, minor wear, random popouts and cracking.

**107: Steel Opn Girder/Beam**

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	3,146	0	0%	3,146	100%	0	0%	0	0%

Minor surface rust throughout.

**515: Steel Protective Coating**

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	25,248.11	0	0%	25,248.11	100%	0	0%	0	0%

Areas of minor surface rust throughout.

**113: Steel Stringer**

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	7,351.02	7,291.02	99%	60	1%	0	0%	0	0%

Rust formation on stringer ends at End Bents/Pier 4/Pier 5, T3, T7, T11

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515: Steel Protective Coating									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	13,443.51	13,370.36	99%	0	0%	73.15	1%	0	0%
Rust on stringer ends at End bents, Pier #4, Pier #5, T-3, T-7, T-11.									

141: Stl Arch									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	1,068.4	0	0%	1,068.4	100%	0	0%	0	0%
Areas of paint distress ... wear, areas of minor rust, freckled rust throughout both bottom and top chord. Minor pack rust at connections at joint locations in lower chord.									

515: Steel Protective Coating									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	3,845.05	0	0%	1,922.68	50%	1,922.37	50%	0	0%
Areas of paint distress, light rust, freckled rust throughout.									

147: Stl Main Cables									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	6,193	0	0%	5,193	84%	1,000	16%	0	0%
Rust formed on various cables, paint is chipping. Some cable keepers have edged notch in steel. Various sleeves have slipped down(top).									

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515: Steel Protective Coating									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	742.19	0	0%	559.31	75%	182.88	25%	0	0%
Light rust formation on various cables.									

152: Steel Floor Beam									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	3,115.2	2,878.8	92%	236.4	8%	0	0%	0	0%
Minor to moderate deterioration of beams at joint locations, due to leaking joints. Floor beam T0 has cracks on up and downstream sides, cracks have been drilled. Ends of floor beams have been coped in span 5(arch).									

515: Steel Protective Coating									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	11,868.3	11,258.7	95%	0	0%	609.6	5%	0	0%
Rust formation on floor beams under joints.									

162: Stl Gus Plate									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
EACH	52	52	100%	0	0%	0	0%	0	0%
Areas of light rust, minor pitting in main cable connections in both bottom and top chord, nuts and blocks.. R-4 upstream side blocks for cables twisted.									

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515: Steel Protective Coating									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
EACH	69.58	0	0%	69.58	100%	0	0%	0	0%
Areas of light rust, minor pitting in connections, nuts and blocks.									

205: Re Conc Column									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
EACH	16	0	0%	16	100%	0	0%	0	0%
Minor cracking with leaching									

215: Re Conc Abutment									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	84.8	0	0%	84.8	100%	0	0%	0	0%
Minor cracking and spalls with leaching.									

220: Re Conc Pile Cap/Ftg									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	3.28	3.28	100%	0	0%	0	0%	0	0%
220...4 FOOTER ARE EXPOSE DUE TO SCOUR AND EROSION									

234: Re Conc Pier Cap									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	84.8	0	0%	84.8	100%	0	0%	0	0%
Minor cracking									

## Inspection Report with SI&A Data

### 302: Compressn Joint Seal

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	212	212	100%	0	0%	0	0%	0	0%

New compression joints at T3,T7,T11 in arch span, End Bent joints need to be cleaned.

### 304: Open Expansion Joint

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	81.8	0	0%	81.8	100%	0	0%	0	0%

304...FINGER DAMS, minor rust.

### 311: Moveable Bearing

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
EACH	14	10	71%	4	29%	0	0%	0	0%

Minor to moderate rust at Pier 4/5 bearing areas and abutment bearing areas, minor deterioration to remaining. Cotter pin missing from pin Pier 4.

### 515: Steel Protective Coating

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
EACH	44.22	31.59	71%	0	0%	12.63	29%	0	0%

Moderate rust on piers' #4 and #5 bearing areas.

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313: Fixed Bearing									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
EACH	10	0	0%	10	100%	0	0%	0	0%
Minor surface rust									

515: Steel Protective Coating									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
EACH	30.94	0	0%	30.94	100%	0	0%	0	0%
Minor surface rust.									

331: Re Conc Bridge Railing									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	4,216.01	0	0%	4,216.01	100%	0	0%	0	0%
Minor deterioration, cracks and scrapes.									

333: Other Bridge Railing									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
FT	4,216	4,196	100%	20	0%	0	0%	0	0%
Areas scraped, damage by vehicles									

803: Curb									
Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(LF)	4,216.01	0	0%	4,216.01	100%	0	0%	0	0%
Minor deterioration, cracks and scrapes.									

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**851: Transitions**

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(EA)	1	0	0%	1	100%	0	0%	0	0%

Minor to moderate impact at structure ends.

**852: Drains**

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(EA)	1	0	0%	1	100%	0	0%	0	0%

New drain system for finger dams at piers' #4 and #5, . Clear and flush all drains.

**853: Utilities**

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(EA)	1	0	0%	0	0%	1	100%	0	0%

Noted loose conduit and exposed wiring for navation lighting. Heavy deterioration to conduit located in concrete barrier at joint locations.

**855: Debris on Super**

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(EA)	1	0	0%	1	100%	0	0%	0	0%

Clear debris from top of lower chord.

**857: Embankment Erosion**

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(EA)	1	0	0%	1	100%	0	0%	0	0%

Minor to moderate bank erosion up and downstream, pier footer exposed at 8S.



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### 858: Channel Alignment

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(EA)	1	1	100%	0	0%	0	0%	0	0%

< none >

### 6000: Scour

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(EA)	1	1	100%	0	0%	0	0%	0	0%

See media tab in 2014 underwater inspection for copy of underwater inspection report.

### 859: Vegetation

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(EA)	1	1	100%	0	0%	0	0%	0	0%

Minor between bridge ends.

### 860: Erosion Ctrl/Prt

Units	Total Qty	Qty. St. 1	% in 1	Qty. St. 2	% in 2	Qty. St. 3	% in 3	Qty. St. 4	% in 4
(EA)	1	1	100%	0	0%	0	0%	0	0%

Minor to moderate displacment at slopes under structure at abutments

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### STRUCTURE NOTES

SI&A Rating:  
 60.8 ? Substructure (Piers and/or Bents) Rating: 7 ? Good Condition  
 113 ? Scour Critical Rating: 5 ? Scour Within Limits of Foundation

### INSPECTION NOTES

Seismic monitoring equipment on structure is not in a properly placed or functioning condition, needs to be removed or put back in working condition. 3/19/2015

Fracture Critical/Element inspection performed by District 1 inspectors Jim Redick, J. P. Tilley and Central Office Bridge staff members Josh Rogers, Rick Rogers, Evan Dick and Harry Grier.  
 Joint measurements: Abutment#1 compression joint ... 2 3/4", Pier #4 finger dam ... 8 1/2", T-3 compression joint ... 2 1/2", T-7 compression joint ... 1 1/2", T- 11 compression joint .. 2", Pier #5 finger dam ... 8 1/2", Abutment #2 compression joint ... 2 3/4". Temp.52 degrees.2015  
 Noted: Several areas of loose/damaged bolts for catwalk to floor beam connections throughout Arch span. 2015

### WORK

**Action:** -