

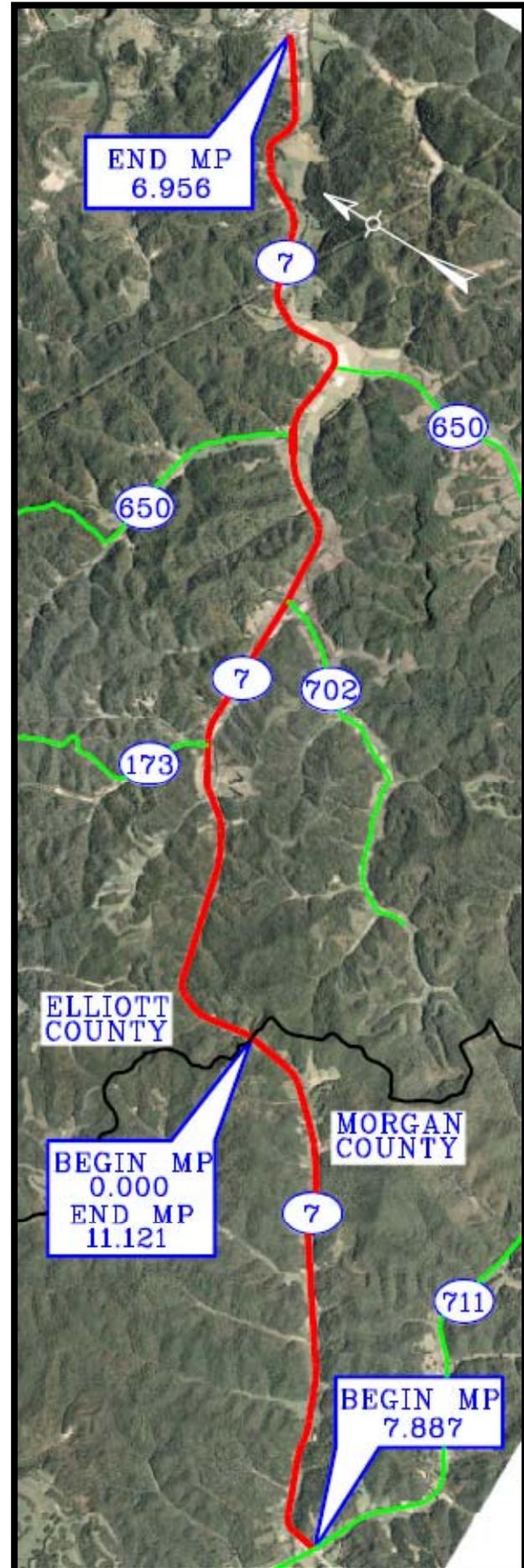
Data Needs Analysis

Reconstruction of KY 7 From South
City Limits of Sandy Hook
Toward Wrigley
Elliott / Morgan Counties
Item No. 09-0228.00

Prepared by the KYTC
District 9 Office

April 2013

Scoping Study



I. PRELIMINARY PROJECT INFORMATION

County:	Elliott / Morgan	Item No.:	09-228.00
Route Number(s):	KY 7	Road Name:	KY 7
Program No.:	8694901D	UPN:	FD52 032 0007 000-007
Federal Project No.:	STP 0071 (023)	Type of Work:	Reconstruction

2012 **Highway Plan Project Description:**

Reconstruct KY 7 from south city limits of Sandy Hook toward Wrigley (project limits extended to KY 711 at Wrigley and include Morgan County).

Morgan Co. Beginning MP:	7.887	Ending MP:	11.121	Length:	3.234
Elliott Co. Beginning MP:	0.000	Ending MP:	6.956	Length:	6.956
				Total Project Length:	10.19

Functional Class.: Urban Rural
 Arterial

State Class.: Primary Secondary
Route is on: NHS NN Ext Wt

MPO Area: Not Applicable
 In TIP: Yes No

Truck Class.: AAA
% Trucks: 22.8

ADT (current): 1196 - 2188 (2011)
Access Control: None Permit Fully Controlled Partial Spacing:

Median Type: Undivided Divided (Type): None
Existing Bike Accommodations: None **Ped:** Sidewalk

Posted Speed: 35 mph 45 mph 55 mph Other (Specify):

KYTC Guidelines Preliminarily Based on : 55 MPH Proposed Design Speed

COMMON GEOMETRIC

Roadway Data:	EXISTING	PRACTICES*	
No. of Lanes	2	2	Existing Rdwy. Plans available?
Lane Width	Varies from 9' to 12'	12 feet	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Shoulder Width	1 to 3 feet	8 feet	Year of Plans: 1934-2007
Max. Superelevation**	Unknown	8%	<input type="checkbox"/> Traffic Forecast Requested
Minimum Radius**	458 feet	965 feet	Date Requested:
Maximum Grade	6%	5%	<input type="checkbox"/> Mapping/Survey Requested
Min. Stopping Sight Dist.	Inadequate	495 feet	Date Requested:
Min. Passing Sight Dist.	Inadequate	1985 feet	Type: <input type="checkbox"/>
Sidewalk Width(urban)	NONE	N/A	
Clear-zone***	Poor	26 feet to 30 feet	

Project Notes/Design Exceptions?: None

*Based on proposed Design Speed, **AASHTO's A Policy on Geometric Design of Highways and Streets, ***AASHTO's Roadside Design Guide

[Existing Geotech data available?](#)
 Yes No

Detour Length(s): 9.9 to 16.8

I. PRELIMINARY PROJECT INFORMATION (cont.)

Bridge No.*:	<u>032B00007N</u>	<u>088B00005N</u>
Sufficiency Rating	<u>79.2</u>	<u>52.9</u>
Total Length	<u>56.1 feet</u>	<u>43 feet</u>
Width, curb to curb	<u>28' O/O, 24' C/C</u>	<u>21.7' O/O, 19' C/C</u>
Span Lengths	<u>Max Span 24.9 feet</u>	<u>40 feet</u>
Year Built	<u>1937</u>	<u>1934</u>
Posted Weight Limit	<u>None</u>	<u>Yes</u>
Structurally Deficient?	<u>No</u>	<u>No</u>
Functionally Obsolete?	<u>No</u>	<u>Yes</u>
Existing Bridge Type	<u>2 Span Conc. Tee Beam</u>	<u>1 Span Conc. Tee Beam</u>
Bridge No.*:	<u>088B00006N</u>	<u>088B00007N</u>
Sufficiency Rating	<u>69.1</u>	<u>69.1</u>
Total Length	<u>38.1 feet</u>	<u>32.2 feet</u>
Width, curb to curb	<u>Approach width 19 feet</u>	<u>Approach width 19 feet</u>
Span Lengths	<u>Max span 12.1 feet</u>	<u>Max span 9.8 feet</u>
Year Built	<u>1934</u>	<u>1934</u>
Posted Weight Limit	<u>None</u>	<u>None</u>
Structurally Deficient?	<u>No</u>	<u>No</u>
Functionally Obsolete?	<u>No</u>	<u>No</u>
Existing Bridge Type	<u>2 Span Conc. Culvert</u>	<u>2 Span Conc. Culvert</u>

II. PROJECT PURPOSE AND NEED

A. Legislation

The following funds are listed in the 2012 State Highway Plan. Funding source is the Federal State Transportation Program (STP).	Funding	Phase	Year	Amount
	STP	D	2014	\$1,500,000
	SP1	R	2019	\$10,000,000
	SP1	U	2019	\$6,000,000
	SP1	C	2019	\$57,000,000

B. Project Status

\$1 million of Planning / Design funds were initially authorized August 2012. The project is scheduled to be advertised to consultants in April 2013.

C. System Linkage

This 10.19 mile portion of KY 7 is part of the primary arterial that links Sandy Hook (Elliott County) to Wrigley (Morgan County.) The larger KY 7 corridor affords North/South connectivity to the cities of Salyersville, West Liberty, Grayson, and South Shore. Once construction of a five mile section north of Sandy Hook is complete (expected by 2016), this will remain the only unimproved section between West Liberty and Grayson . Typical section and design speed have been held consistent through all the prior completed segments.

D. Modal Interrelationships

N/A

II. PROJECT PURPOSE AND NEED (cont.)

E. Social Demands & Economic Development

By improving the system linkage between Sandy Hook and West Liberty, the two communities will see enhanced possibility for economic development and safer access to nearby towns.

F. Transportation Demand

The current traffic demands (2188 ADT maximum) are met within the project limits.

G. Capacity

The present traffic demands are met with the current number of lanes. The current ADT varies along different segments of the proposed project limits, with a maximum ADT of 2188 nearest Sandy Hook.

H. Safety

In the KYTC data base between January 2000 and December 2012 there are 190 recorded accidents within the proposed project limits. Of the 190 recorded accidents 2 were fatal (3 deaths) and 10 were incapacitating. The critical rate factor (CRF) varies within the project, from an average of 0.65 to a maximum of 1.36 (from MP 7.8 to 8.8 in Morgan Co.)

Between January 2010 and December 2012 there were 29 recorded accidents: 3 were incapacitating, 6 had injuries that were evident, 4 had possible injuries and 16 had property damage only. The majority of these accidents were single vehicle incidents. Accident history has been provided as an exhibit to this study.

I. Roadway Deficiencies

Safety improvement and system linkage are primary purposes for the reconstruction of this roadway. Sight distance is poor and does not meet the current design standards throughout. Specifically, inadequate radii, grades in excess of standard allowable, insufficient clear zone and other deficiencies are present along KY 7 within the project limits.

- 1.) Poor sight distance / inadequate stopping sight distance
- 2.) Substandard curve geometry
- 3.) Narrow and varied lane width
- 4.) Vertical grades in excess of 5%
- 5.) Inadequate clear-zones
- 6.) Inadequate shoulder widths
- 7.) Functionally obsolete bridges

Draft Purpose and Need Statement:

Need: Improve the safety and roadway deficiencies of a segment of KY 7 between Sandy Hook (Elliott County) and West Liberty (Morgan County).

Purpose: Reconstruct KY 7 from southern city limits of Sandy Hook toward West Liberty (to KY 711 at Wrigley) to meet the current design standards, thereby improving the safety of the traveling public and enhancing both connectivity and economic viability for the area.

III. PRELIMINARY ENVIRONMENTAL OVERVIEW

A. Air Quality

Project is in: Attainment area Nonattainment or Maintenance Area PM 2.5 County

STIP Pg. #: Pg. 24 of 127 FY13-16

TIP Pg. #: _____

B. Archeology/Historic Resources

Known Archeological or Historic Resources are present

Two known historic properties have been previously surveyed and documented with the Kentucky Heritage Council. The Sandy Hook School and the Sandy Hook United Methodist Church, both on Main Street, were identified as part of a Cultural Historic site check. Their NRHP-eligibility status was undetermined. Field investigations of the project area revealed numerous other sites that appear to be potentially eligible due to age and construction type. Additionally, the existing bridges meet the >50 year old age criteria and one of them has concrete railing. One recorded archaeology site was identified within the project limits. Additionally, there are several cemeteries along the corridor. The likelihood of encountering a historic cemetery is good. Once an alignment is chosen, an archaeology survey will be conducted and any historic cemeteries or archaeology sites will be recorded and assessed. Avoidance of these areas is desirable if possible.

C. Threatened and Endangered Species

USFWS lists Indiana bat, gray bat, and Virginia big-eared bat as federally endangered species that are known to or potentially can occur in Elliott County. KSNPC and KDFWR only list the Indiana bat and gray bat for Elliott County. USFWS lists Indiana bat and Virginia big-eared bat as federally endangered species that are known to occur in Morgan County. Additionally, KSNPC and KDFWR also list the snuffbox mussel as an endangered species for Morgan County.

D. Hazardous Materials

Potentially Contaminated Sites are present Potential Bridge or Structure Demolition

Numerous potentially contaminated sites (>15) are present within the project limits. These include currently operating gas stations and/or garages, as well as, sites that appeared to have formerly been one of those types of businesses. Once an alignment is chosen for development and impacts are more fully defined, a Phase II Environmental Site Assessment will be completed to determine the extent of any contamination that may be present at the effected sites.

E. Permitting

Check all that may apply: Waters of the US MS4 area Floodplain Impacts Navigable Waters of the US Impacts
Are 401/404 Permits likely to be required? Yes No Impacts to: Wetlands Stream/Lake/Pond
 ACE LON ACE NW ACE IP DOW IWQC Special Use Waters

Because of the length of the project, number of crossings, and the anticipated fill depths, it is expected that the impacts will require a USACE Individual Permit and a KY DOW Individual Water Quality Certification. There are no Special Use Waters that appear to be directly impacted by the proposed project.

F. Noise

Are existing or planned noise sensitive receptors adjacent to the proposed project? Yes No
Is this considered a "Type I Project" according to the [KYTC Noise Analysis and Abatement Policy?](#) Yes No

The reconstruction of KY 7 could include both horizontal and vertical alterations which could affect noise at the various receptors in the area. There were two churches and several businesses along the route in addition to the residences. It is also possible that some auxiliary lanes (such as truck climbing lanes) could be warranted. Therefore, at this time, it appears that the project would be considered a "Type I Project."

III. PRELIMINARY ENVIRONMENTAL OVERVIEW (cont.)

G. Socioeconomic

Check all that may apply: Low Income/Minority Populations affected Relocations Local Land Use Plan available

Until Census Tract data can be analyzed, it is not known for certain whether low income/minority populations are affected and if so, whether they are disproportionately impacted. Some relocations would be expected on a project of this scale.

H. Section 4(f) or 6(f) Resources

The following are present on the project: Section 4(f) Resources Section 6(f) Resources

There were no publicly-owned parks or recreation areas observed within the project limits. Additionally, there are no wildlife or waterfowl refuge areas. Therefore, Section 4(f) would not apply to the project unless NRHP eligible properties are identified and impacted. A search for properties that have used LWCFA funds in the past revealed that there are no properties within the project limits that have used such funds. Therefore, Section 6(f) does not appear to be an issue.

Anticipated Environmental Document: EA/FONSI ▼

IV. PROJECT SCOPING

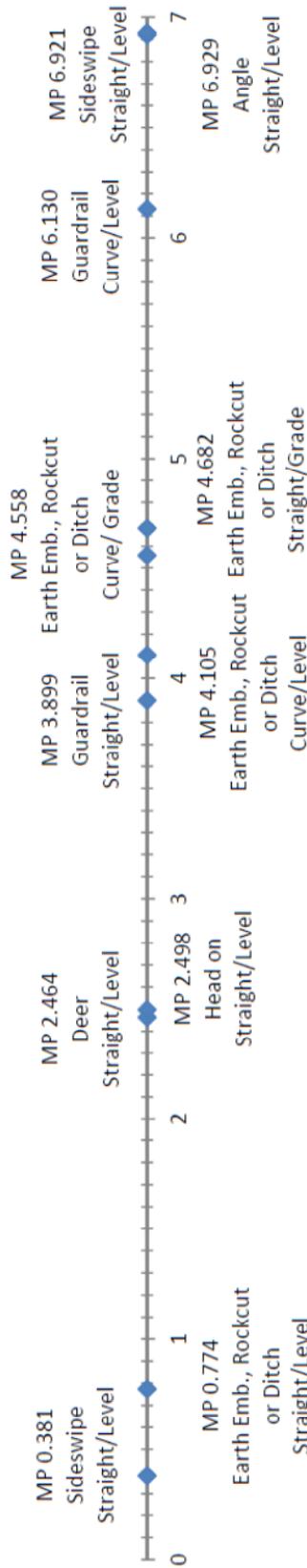
Current Estimate	
<u>Phase</u>	<u>Estimate</u>
Planning	\$1,000,000
Design	\$1,500,000
R/W	\$10,000,000
Utilities	\$6,000,000
Const	\$57,000,000
Total	\$75,500,000

V. SUMMARY

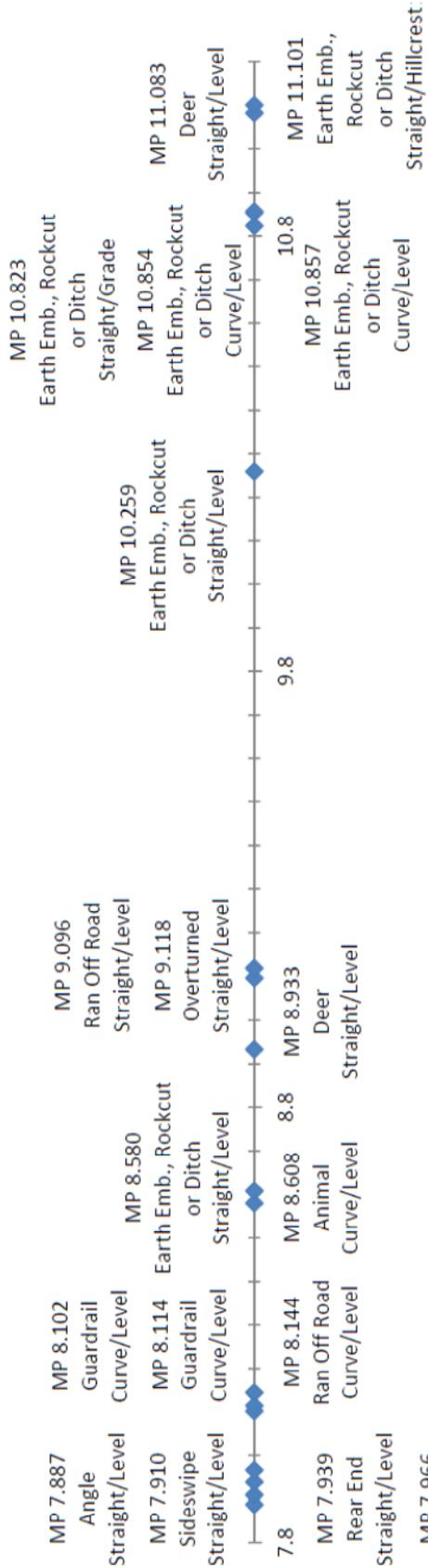
This study is to address the proposed redesign and reconstruction of KY 7 from south city limits of Sandy Hook toward West Liberty (to KY 711 at Wrigley). The proposed project includes a total of 10.19 miles of primary arterial roadway, connecting two counties (Elliott and Morgan) and falling within two KYTC Districts (D-9 and D-10). Four bridges (NBI) and numerous culverts / pipes are found within the project. Close attention should be given to section "B" under the Preliminary Environmental Overview portion of this study during all phases of the project, due to close proximity of known archeological or historic resources. The primary purpose for the proposed project is to correct the current roadway deficiencies and increase the safety of the traveling public.

VI. TABLES AND EXHIBITS

**Location of Accidents Mile Points 0.000 to 6.956 Elliott
 January 2010 to December 2012**



**Location of Accidents Mile Points 7.887 to 11.121 Morgan
 January 2010 to December 2012**



VI. Tables and Exhibits (cont.)

Structure Inventory and Appraisal Sheet (English Units)

Bridge Key: 3598 Agency ID: 032B00007N SR: 79.2 SD/FO: ND

IDENTIFICATION

State 1: 21 Kentucky Struc Num 8: 032B00007N
 Facility Carried 7: KY-7 Location 9: .60 MI WEST OF JCT KY 650
 Rte.(On/Under)5A: Route On Structure Rte. Signing Prefix 5B: 3 State Hwy
 Level of Service 5C: 1 Mainline Rte. Number 5D: 00007
 Directional Suffix 5E: 0 N/A (NBI) % Responsibility: Unknown
 SHD District 2: District 9 County Code 3: Elliott (032)
 Place Code 4: FIPS 0000 Mile Post 11: 4.147 mi
 Feature Intersected 6: DOCTORS BRANCH
 Latitude 16: 38d 04' 04" Longitude 17: 083d 09' 58"
 Border Bridge Code 98: Unknown (P)
 Border Bridge Number 99:

INSPECTION

Frequency 91: 24 months Inspection Date 90: 8/2/2011 Next Inspection: 08/02/2013
 FC Frequency 92A: NA FC Inspection Date 93A: NA Next FC Inspection: NA
 UW Frequency 92B: NA UW Inspection Date 93B: NA Next UW Inspection: NA
 SI Frequency 92C: NA SI Date 93C: NA Next SI: NA
 Element Frequency: 24 months Element Inspection Date: 08/02/2011 Next Elem. Insp. Due: 08/02/2013

CLASSIFICATION

Defense Highway 100: 0 Not a STRAHNET hwy Parallel Structure 101: No || bridge exists
 Direction of Traffic 102: 2 2-way traffic Temporary Structure 103: Not Applicable (P)
 Highway System 104: 0 Not on NHS NBIS Length 112: Long Enough
 Toll Facility 20: 3 On free road Functional Class 26: 06 Rural Minor Arterial
 Defense Hwy 110: 0 Not a STRAHNET hwy Historical Significance 37: 5 Not eligible for NRHP
 Owner 22: 01 State Highway Agency
 Custodian 21: 01 State Highway Agency

STRUCTURE TYPE AND MATERIALS

Number of Approach Spans 46: 0 Number of Spans Main Unit 45: 2
 Main Span Material/Design 43A/B:
 1 Concrete 04 Tee Beam
 Deck Type 107: 1 Concrete-Cast-in-Place
 Wearing Surface 108A: 6 Bituminous
 Membrane 108B: 0 None
 Deck Protection 108C: None

CONDITION

Lock 58: 5 Fair Super 59: 6 Satisfactory Sub 60: 6 Satisfactory
 Culvert 62: N N/A (NBI) Channel/Channel Protection 61: 6 Bank Slumping

LOAD RATING AND POSTING

Inventory Rating Method 65: 2 AS Allowable Stress Operating Rating Method 63: 2 AS Allowable Stress
 Inventory Rating 66: HS22.8 Operating Rating 64: HS37.8
 Design Load 31: 2 M 13.5 (H 15) Posting 70: 5 AT/Above Legal Loads
 Posting status 41: A Open, no restriction

AGE AND SERVICE

Year Built 27: 1937 Year Reconstructed 106: 0
 Type of Service on 42A: 1 Highway
 Type of Service under 42B: 5 Waterway
 Lanes on 28A: 2 Lanes Under 28B: 0 Detour Length 19: 9.9 mi
 ADT 29: 1,940 Truck ADT 109: 23 % Year of ADT 30: 2012

APPRAISAL

Bridge Rail 36A: 0 Substandard Approach Rail 36C: 1 Meets Standards
 Transition 36B: 0 Substandard Approach Rail Ends 36D: 1 Meets Standards
 Str. Evaluation 67: 6 Deck Geometry 68: 4 Tolerable
 Underclearance, Vertical and Horizontal 69: N Not applicable (NBI)
 Waterway Adequacy 71: 8 Equal Desirable Approach Alignment 72: 7 Above Min Criteria
 Scour Critical 113: 8 Stable Above Footing

GEOMETRIC DATA

Length Max Span 48: 24.9 ft Structure Length 49: 56.1 ft
 Curb/Sdwk Width L 50A: 0.0 ft Curb/Sidewalk Width R 50B: 0.0 ft
 Width Curb to Curb 51: 24.0 ft Width Out to Out 52: 28.0 ft
 Approach Roadway Width 32: 23.0 ft Median 33: 0 No median (w/ shoulders)
 Deck Area: 1,570.8 sq. ft
 Skew 34: 45.00 ° Structure Flared 35: 0 No flare
 Vertical Clearance 10: 99.99 ft Horiz. Clearance 47: 23.95 ft
 Minimum Vertical Clearance Over Bridge 53: 328.1 ft
 Minimum Vertical Underclearance Reference 54A: N Feature not hwy or RR
 Minimum Vertical Underclearance 54B: 0.0 ft
 Minimum Lateral Underclearance Reference R 55A: N Feature not hwy or RR
 Minimum Lateral Underclearance R 55: 0.0 ft
 Minimum Lateral Underclearance L 56: 0.0 ft

PROPOSED IMPROVEMENTS

Bridge Cost 94: \$ 0 Type of Work 75: Unknown (P)
 Roadway Cost 95: \$ 0 Length of Improvement 76: 0.0 ft
 Total Cost 96: \$ 0 Future ADT 114: 2,890
 Year of Cost Estimate 97: Unknown Year of Future ADT 115: 2032

NAVIGATION DATA

Navigation Control 38: 0 Permit Not Required
 Vertical Clearance 39: 0.0 ft Horizontal Clearance 40: 0.0 ft
 Pier Protection 111: Not Applicable (P) Lift Bridge Vertical Clearance 116:

ELEMENT CONDITION STATE DATA

Str Unit	Elm/Env	Description	Units	Total Qty	% in 1	Qty. St. 1	% in 2	Qty. St. 2	% in 3	Qty. St. 3	% in 4	Qty. St. 4	% in 5	Qty. St. 5
1	13/1	Unp Conc Deck/AC Ovl	(SF)	1,400	0 %	0	100 %	1,400	0 %	0	0 %	0	0 %	0
1	110/1	R/Conc Open Girder	(LF)	280	96 %	268	4 %	11	0 %	1	0 %	0	0 %	0
1	205/1	R/Conc Column	(EA)	3	0 %	0	100 %	3	0 %	0	0 %	0	0 %	0
1	215/1	R/Conc Abutment	(LF)	140	95 %	133	5 %	7	0 %	0	0 %	0	0 %	0
1	234/1	R/Conc Cap	(LF)	42	86 %	36	14 %	6	0 %	0	0 %	0	0 %	0
1	301/1	Pourable Joint Seal	(LF)	41	0 %	0	0 %	0	100 %	41	0 %	0	0 %	0

VI. Tables and Exhibits (cont.)

Structure Inventory and Appraisal Sheet (English Units)

Str Unit	Elm/Env	Description	Units	Total Qty	% in 1	Qty. St. 1	% in 2	Qty. St. 2	% in 3	Qty. St. 3	% in 4	Qty. St. 4	% in 5	Qty. St. 5
1	331/1	Conc. Bridge Railing	(LF)	108	4 %	0	96 %	108	0 %	0	0 %	0	0 %	0
1	359/1	Soffit Smart Flag	(EA)	1	0 %	0	0 %	0	100 %	1	0 %	0	0 %	0
1	361/1	Scour Smart Flag	(EA)	1	0 %	0	100 %	1	0 %	0	0 %	0	0 %	0
1	503/3	Curbs	(LF)	112	99 %	111	0 %	0	1 %	1	0 %	0	0 %	0
1	604/1	2nd Elem Dist	(EA)	1	100 %	1	0 %	0	0 %	0	0 %	0	0 %	0
1	606/1	Drains	(FA)	1	0 %	0	0 %	0	100 %	1	0 %	0	0 %	0
1	610/3	Chan Drift	(EA)	1	0 %	0	100 %	1	0 %	0	0 %	0	0 %	0

Str Unit	Elm/Env	Description	Element Notes
1	13/1	Concrete Deck - Unprotected w/ Asphalt	Deck has asphalt overlay with only minor cracking at this time. See photos.
1	110/1	Reinforced Conc. Open Girder/Bearing	Beams have some areas of light cracking with efflorescence, mainly at the bearings. Beam 4 from upstream in span 1 has a couple of small shallow cover spalls with exposed steel on the downstream face near pier 2. See photos.
1	205/1	Reinforced Conc. Column or Pile Exposure	Pier columns are scaled at flowline. See photos.
1	215/1	Reinforced Conc. Abutment	Abutments have some minor cracking with efflorescence. See photos.
1	234/1	Reinforced Conc. Cap	Pier cap ends have some cracking with efflorescence. Efflorescence is present along the length of the cap from the leaking joint above. See photos.
1	301/1	Pourable Joint Seal	The joint over the pier is not visible, but is allowing seepage at this time.
1	331/1	Reinforced Conc. Bridge Railing	The concrete railing has areas of cracking and scaling. Some of the rail post are cracked with exposed steel. See photos.
1	359/1	Soffit of Concrete Deck or Slab	The deck underside has some minor cracking with efflorescence. Discoloration indicates some possible full depth deterioration. Deck overhangs have areas of cracking with efflorescence, scaling and spalling. Deck overhang supports also have cracking with efflorescence and the supports at the upstream end of pier 2 are spalled with exposed steel. See photos.
1	361/1	Scour	Minor scour is present at the upstream nose of pier, an approximate 2' deep hole. This not a problem at this time. Need to monitor. See photos.
1	503/3	Reinforced Concrete Curbs and Trenches	A small portion of the upstream curb corner at abutment 1 is broke with exposed steel. The majority of the curbs are not visible due to years of overlays that have built the roadway up to level with curbs. See photos.
1	604/1	Second Element Distress	Diaphragms have areas of minor cracking and spalling. Spalling is present at the downstream ends of both abutments and at the upstream end of abutment 2. See photos.
1	606/1	Drains	Drains are blocked by the asphalt overlay. See photos.
1	610/3	Channel Drift	Span 1 is silted approximately 30% in comparison to span 2. This should be cleaned out. See photos.

BRIDGE NOTES

-70

PAST INSPECTION

Inspection Date: 08/02/2011 Type: 2 Standard (24 months)
 Inspector: AGREINER Pontis User Key: AGREINER - Alex

Scope:
 NBI: Other: Element:
 Underwater: Fracture Critical:

INSPECTION NOTES

Inspected by R.Rogers and A.Greiner.

VI. Tables and Exhibits (cont.)

Structure Inventory and Appraisal Sheet (English Units)

Bridge Key: 10553 Agency ID: 088B00005N SR: 52.9 SD/FO: FO

IDENTIFICATION
 State 1: 21 Kentucky Struc Num 8: 088B00005N
 Facility Carried 7: KY-7 Location 9: .10 MI NOR. OF JCT KY 711
 Rte.(On/Under)5A: Route On Structure Rte. Signing Prefix 5B: 3 State Hwy
 Level of Service 5C: 1 Mainline Rte. Number 5D: 00007
 Directional Suffix 5E: 0 N/A (NBI) % Responsibility: Unknown
 SHD District 2: District 10 County Code 3: Morgan (088)
 Place Code 4: FIPS 0000 Mile Post 11: 8.040 mi
 Feature Intersected 6: ROAD FORK
 Latitude 16: 38d 01' 14" Longitude 17: 083d 16' 15"
 Border Bridge Code 98: Unknown (P)
 Border Bridge Number 99:

INSPECTION
 Frequency 91: 12 months Inspection Date 90: 10/2/2012 Next Inspection: 10/02/2013
 FC Frequency 92A: NA FC Inspection Date 93A: NA Next FC Inspection: NA
 UW Frequency 92B: NA UW Inspection Date 93B: NA Next UW Inspection: NA
 SI Frequency 92C: NA SI Date 93C: NA Next SI: NA
 Element Frequency: 12 months Element Inspection Date: 10/02/2012 Next Elem. Insp. Due: 10/02/2013

CLASSIFICATION
 Defense Highway 100: 0 Not a STRAHNET hwy Parallel Structure 101: No || bridge exists
 Direction of Traffic 102: 2 2-way traffic Temporary Structure 103: Not Applicable (P)
 Highway System 104: 0 Not on NHS NBIS Length 112: Long Enough
 Toll Facility 20: 3 On free road Functional Class 26: 06 Rural Minor Arterial
 Defense Hwy 110: 0 Not a STRAHNET hwy Historical Significance 37: 5 Not eligible for NHRP
 Owner 22: 01 State Highway Agency
 Custodian 21: 01 State Highway Agency

STRUCTURE TYPE AND MATERIALS
 Number of Approach Spans 46: 0 Number of Spans Main Unit 45: 1
 Main Span Material/Design 43A/B:
 1 Concrete 04 Tee Beam
 Deck Type 107: 1 Concrete-Cast-in-Place
 Wearing Surface 108A: 6 Bituminous
 Membrane 108B: 0 None
 Deck Protection 108C: None

CONDITION
 Deck 58: 6 Satisfactory Super 59: 6 Satisfactory Sub 60: 6 Satisfactory
 Culvert 62: N N/A (NBI) Channel/Channel Protection 61: 6 Bank Slumping

LOAD RATING AND POSTING
 Inventory Rating Method 65: 2 AS Allowable Stress Operating Rating Method 63: 2 AS Allowable Stress
 Inventory Rating 66: HS9.4 Operating Rating 64: HS25.5
 Design Load 31: 2 M 13.5 (H 15) Posting 70: 5 At/Above Legal Loads
 Posting status 41: P Posted for load

AGE AND SERVICE
 Year Built 27: 1934 Year Reconstructed 106: 0
 Type of Service on 42A: 1 Highway
 Type of Service under 42B: 5 Waterway
 Lanes on 28A: 2 Lanes Under 28B: 0 Detour Length 19: 16.8 mi
 ADT 29: 1,250 Truck ADT 109: 7 % Year of ADT 30: 2012

APPRAISAL
 Bridge Rail 36A: 1 Meets Standards Approach Rail 36C: 1 Meets Standards
 Transition 36B: 0 Substandard Approach Rail Ends 36D: 1 Meets Standards
 Str. Evaluation 67: 4 Deck Geometry 68: 2 Intolerable - Replace
 Underclearance, Vertical and Horizontal 69: N Not applicable (NBI)
 Waterway Adequacy 71: 8 Equal Desirable Approach Alignment 72: 6 Equal Min Criteria
 Scour Critical 113: 8 Stable Above Footing

GEOMETRIC DATA
 Length Max Span 48: 40.0 ft Structure Length 49: 43.0 ft
 Curb/Sdwk Width L 50A: 0.0 ft Curb/Sidewalk Width R 50B: 1.5 ft
 Width Curb to Curb 51: 19.0 ft Width Out to Out 52: 21.7 ft
 Approach Roadway Width 32: 18.0 ft Median 33: 0 No median (w/ shoulders)
 Deck Area: 930.6 sq. ft
 Skew 34: 30.00 ° Structure Flared 35: 0 No flare
 Vertical Clearance 10: 99.99 ft Horiz. Clearance 47: 18.70 ft
 Minimum Vertical Clearance Over Bridge 53: 328.1 ft
 Minimum Vertical Underclearance Reference 54A: N Feature not hwy or RR
 Minimum Vertical Underclearance 54B: 0.0 ft
 Minimum Lateral Underclearance Reference R 55A: N Feature not hwy or RR
 Minimum Lateral Underclearance R 55: 0.0 ft
 Minimum Lateral Underclearance I 56: 0.0 ft

PROPOSED IMPROVEMENTS
 Bridge Cost 94: \$ 140,000 Type of Work 75: 31 Repl-Load Capacity
 Roadway Cost 95: \$ 50,000 Length of Improvement 76: 4.3 ft
 Total Cost 96: \$ 189,000 Future ADT 114: 1,862
 Year of Cost Estimate 97: 1995 Year of Future ADT 115: 2032

NAVIGATION DATA
 Navigation Control 38: 0 Permit Not Required
 Vertical Clearance 39: 0.0 ft Horizontal Clearance 40: 0.0 ft
 Pier Protection 111: Not Applicable (P) I ft Bridge Vertical Clearance 116:

ELEMENT CONDITION STATE DATA

Str Unit	Elm/Env	Description	Units	Total Qty	% in 1	Qty. St. 1	% in 2	Qty. St. 2	% in 3	Qty. St. 3	% in 4	Qty. St. 4	% in 5	Qty. St. 5
1	13/1	Unp Conc Deck/AC Ovl	(SF)	798	100 %	798	0 %	0	0 %	0	0 %	0	0 %	0
1	110/1	R/Conc Open Girder	(LF)	168	0 %	0	100 %	168	0 %	0	0 %	0	0 %	0
1	215/1	R/Conc Abutment	(LF)	112	0 %	0	98 %	110	2 %	2	0 %	0	0 %	0
1	334/1	Metal Rail Coated	(LF)	84	88 %	74	0 %	0	0 %	0	0 %	0	12 %	10
1	361/1	Scour Smart Flag	(EA)	1	100 %	1	0 %	0	0 %	0	0 %	0	0 %	0
1	503/1	Curbs	(LF)	84	0 %	0	100 %	84	0 %	0	0 %	0	0 %	0

VI. Tables and Exhibits (cont.)

Structure Inventory and Appraisal Sheet (English Units)

Str Unit	Elm/Env	Description	Units	Total Qty	% in 1	Qty. St. 1	% in 2	Qty. St. 2	% in 3	Qty. St. 3	% in 4	Qty. St. 4	% in 5	Qty. St. 5
1	611/1	Embankment Erosion	(EA)	1	0 %	0	100 %	1	0 %	0	0 %	0	0 %	0

Str Unit	Elm/Env	Description	Element Notes
1	13/1	Concrete Deck - Unprotected w/ Asphalt	Asphalt wearing surface is excessive with no membrane.
1	110/1	Reinforced Conc. Open Girder/Bearing	fairly good condition
1	215/1	Reinforced Conc. Abutment	There is a crack with eff. and rust staining at the NE corner.
1	334/1	Metal Bridge Railing - Coated	< none >
1	361/1	Scour	There is some scour at Abut 1, but no undermining.
1	503/1	Reinforced Concrete Curbs and Tird	A new, higher curb has been added to the DS side.
1	611/1	Embankment Erosion	SW approach needs cribbed, pave ment breaking away. NW approach also needs attention.

BRIDGE NOTES

-14.9

PAST INSPECTION

Inspection Date: 10/02/2012 Type: 3 Substandard (12 months)
 Inspector: JSHEFFELL Pontis User Key: JSHEFFELL - Jere

Scope:

NBI: Other: Element:
 Underwater: Fracture Critical:

INSPECTION NOTES

The entire structure is in fairly good condition with the exception of outside of the deck and super with moderate to heavy concrete deterioration (conc.rot, exposed aggregates). Deck also has excessive asphalt overlay.

VI. Tables and Exhibits (cont.)

Structure Inventory and Appraisal Sheet (English Units)

Bridge Key: 10554 Agency ID: 088B00006N SR: 69.1 SD/FO: ND

IDENTIFICATION

State 1: 21 Kentucky Struc Num 8: 088B00006N
 Facility Carried /: KY-7 Location 9: 1.75 MI NE OF JCT KY 711
 Rte.(On/Under)5A: Route On Structure Rte. Signing Prefix 5B: 3 State Hwy
 Level of Service 5C: 1 Mainline Rte. Number 5D: 00007
 Directional Suffix 5E: 0 N/A (NBI) % Responsibility: Unknown
 SHD District 2: District 10 County Code 3: Morgan (088)
 Place Code 4: FIPS 0000 Mile Post 11: 9.416 mi
 Feature Intersected 6: ROAD FORK
 Latitude 16: 38d 01' 44" Longitude 17: 083d 14' 54"
 Border Bridge Code 98: Unknown (P)
 Border Bridge Number 99:

INSPECTION

Frequency 91: 24 months Inspection Date 90: 10/2/2012 Next Inspection: 10/02/2014
 FC Frequency 92A: NA FC Inspection Date 93A: NA Next FC Inspection: NA
 UW Frequency 92B: NA UW Inspection Date 93B: NA Next UW Inspection: NA
 SI Frequency 92C: NA SI Date 93C: NA Next SI: NA
 Element Frequency: 24 months Element Inspection Date: 10/02/2012 Next Elem. Insp. Due: 10/02/2014

CLASSIFICATION

Defense Highway 100: 0 Not a STRAHNET hwy Parallel Structure 101: No || bridge exists
 Direction of Traffic 102: 2 2-way traffic Temporary Structure 103: Unknown (NBI)
 Highway System 104: 0 Not on NHS NBIS Length 112: Long Enough
 Toll Facility 20: 3 On free road Functional Class 26: 06 Rural Minor Arterial
 Defense Hwy 110: 0 Not a STRAHNET hwy Historical Significance 37: 5 Not eligible for NRHP
 Owner 22: 01 State Highway Agency
 Custodian 21: 01 State Highway Agency

STRUCTURE TYPE AND MATERIALS

Number of Approach Spans 46: 0 Number of Spans Main Unit 45: 2
 Main Span Material/Design 43A/B:
 1 Concrete 19 Culvert
 Deck Type 107: N N/A (NBI)
 Wearing Surface 108A: N N/A (no deck (NBI))
 Membrane 108B: N N/A (no deck (NBI))
 Deck Protection 108C: N N/A (no deck (NBI))

CONDITION

Deck 58: N N/A (NBI) Super 59: N N/A (NBI) Sub 60: N N/A (NBI)
 Culvert 62: 6 Deterioration Channel/Channel Protection 61: 7 Minor Damage

LOAD RATING AND POSTING

Inventory Rating Method 65: 1 1 F Load Factor Operating Rating Method 63: 1 1 F Load Factor
 Inventory Rating 66: HS8.3 Operating Rating 64: HS13.9
 Design Load 31: 2 M 13.5 (H 15) Posting 70: 1 30.0-39.9%below
 Posting status 41: A Open, no restriction

AGE AND SERVICE

Year Built 27: 1934 Year Reconstructed 106: 0
 Type of Service on 42A: 1 Highway
 Type of Service under 42B: 5 Waterway
 Lanes on 28A: 2 Lanes Under 28B: 0 Detour Length 19: 16.8 mi
 ADT 29: 1,250 Truck ADT 109: 7 % Year of ADT 30: 2012

APPRAISAL

Bridge Rail 36A: N N/A or not required Approach Rail 36C: N N/A or not required
 Transition 36B: N N/A or not required Approach Rail Ends 36D: N N/A or not required
 Str. Evaluation 67: 4 Deck Geometry 68: N Not applicable (NBI)
 Underclearance, Vertical and Horizontal 69: N Not applicable (NBI)
 Waterway Adequacy 71: 8 Equal Desirable Approach Alignment 72: 8 Equal Desirable Crit
 Scour Critical 113: 8 Stable Above Footing

GEOMETRIC DATA

Length Max Span 48: 12.1 ft Structure Length 49: 38.1 ft
 Curb/Sdwk Width L 50A: 0.0 ft Curb/Sidewalk Width R 50B: 0.0 ft
 Width Curb to Curb 51: 0.0 ft Width Out to Out 52: 0.0 ft
 Approach Roadway Width 32: 19.0 ft Median 33: 0 No median (w/ shoulders)
 Deck Area: . sq. ft
 Skew 34: 45.00 ° Structure Flared 35: 0 No flare
 Vertical Clearance 10: 99.99 ft Horiz. Clearance 47: 26.90 ft
 Minimum Vertical Clearance Over Bridge 53: 328.1 ft
 Minimum Vertical Underclearance Reference 54A: N Feature not hwy or RR
 Minimum Vertical Underclearance 54B: 0.0 ft
 Minimum Lateral Underclearance Reference R 55A: N Feature not hwy or RR
 Minimum Lateral Underclearance R 55: 0.0 ft
 Minimum Lateral Underclearance L 56: 0.0 ft

PROPOSED IMPROVEMENTS

Bridge Cost 94: \$ 0 Type of Work 75: Unknown (P)
 Roadway Cost 95: \$ 0 Length of Improvement 76: 0.0 ft
 Total Cost 96: \$ 0 Future ADT 114: 1,862
 Year of Cost Estimate 97: 2000 Year of Future ADT 115: 2032

NAVIGATION DATA

Navigation Control 38: 0 Permit Not Required
 Vertical Clearance 39: 0.0 ft Horizontal Clearance 40: 0.0 ft
 Pier Protection 111: Not Applicable (P) Lift Bridge Vertical Clearance 116:

ELEMENT CONDITION STATE DATA

Str Unit	Elm/Env	Description	Units	Total Qty	% in 1	Qty. St. 1	% in 2	Qty. St. 2	% in 3	Qty. St. 3	% in 4	Qty. St. 4	% in 5	Qty. St. 5
1	241/1	Concrete Culvert	(LF)	76	0 %	0	92 %	70	8 %	6	0 %	0	0 %	0
1	500/1	RC Culv Wing	(LF)	42	90 %	38	0 %	0	10 %	4	0 %	0	0 %	0
1	501/1	RC Culv Head	(LF)	74	100 %	74	0 %	0	0 %	0	0 %	0	0 %	0
1	612/1	Chan Algn	(EA)	1	100 %	1	0 %	0	0 %	0	0 %	0	0 %	0
1	613/1	Vegetation	(EA)	1	100 %	1	0 %	0	0 %	0	0 %	0	0 %	0

VI. Tables and Exhibits (cont.)

Structure Inventory and Appraisal Sheet (English Units)

Str Unit	Elm/Env	Description	Element Notes
1	241/1	Reinforced Concrete Culvert	The floor of both barrels has heavy abrasion, aggregate exposed and missing. Barrel 2 has a crack with rust staining near the inlet. Barrel 1 is carrying all the flow.
1	500/1	Reinforced Concrete Culvert Wing	Two of four wingwalls (the NW and the SE) have vertical cracking adjacent to the barrels. Cracks have been strapped and appear stable. There is efflorescence and rust staining present.
1	501/1	Reinforced Concrete Culvert Head	< none >
1	612/1	Channel Alignment	Barrel 2 is carrying no flow.
1	613/1	Vegetation	< none >

BRIDGE NOTES

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PAST INSPECTION

Inspection Date: 10/02/2012 Type: 2 Standard (24 months)
 Inspector: JSHEFFELL Pontis User Key: JSHEFFELL - Jere
 Scope:
 NBI: Other: Element:
 Underwater: Fracture Critical:

INSPECTION NOTES

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PAST INSPECTION

Inspection Date: 11/01/2010 Type: 2 Standard (24 months)
 Inspector: SHERALD Pontis User Key: SHERALD - Sam I
 Scope:
 NBI: Other: Element:
 Underwater: Fracture Critical:

INSPECTION NOTES

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VI. Tables and Exhibits (cont.)

Structure Inventory and Appraisal Sheet (English Units)

Bridge Key: 10555 Agency ID: 088B00007N SR: 69.1 SD/FO: ND

IDENTIFICATION

State 1: 21 Kentucky Struc Num 8: 088B00007N
 Facility Carried 7: KY-7 Location 9: 1.9 MI NE OF JCT KY 711
 Rte.(On/Under)5A: Route On Structure Rte. Signing Prefix 5B: 3 State Hwy
 Level of Service 5C: 1 Mainline Rte. Number 5D: 00007
 Directional Suffix 5E: 0 N/A (NBI) % Responsibility: Unknown
 SHD District 2: District 10 County Code 3: Morgan (088)
 Place Code 4: FIPS 0000 Mile Post 11: 9.698 mi
 Feature Intersected 6: ROAD FORK
 Latitude 16: 38d 01' 52" Longitude 17: 083d 14' 38"
 Border Bridge Code 98: Unknown (P)
 Border Bridge Number 99:

INSPECTION

Frequency 91: 24 months Inspection Date 90: 10/2/2012 Next Inspection: 10/02/2014
 FC Frequency 92A: NA FC Inspection Date 93A: NA Next FC Inspection: NA
 UW Frequency 92B: NA UW Inspection Date 93B: NA Next UW Inspection: NA
 SI Frequency 92C: NA SI Date 93C: NA Next SI: NA
 Element Frequency: 24 months Element Inspection Date: 10/02/2012 Next Elem. Insp. Due: 10/02/2014

CLASSIFICATION

Defense Highway 100: 0 Not a STRAHNET hwy Parallel Structure 101: No || bridge exists
 Direction of Traffic 102: 2 2-way traffic Temporary Structure 103: Unknown (NBI)
 Highway System 104: 0 Not on NHS NBIS Length 112: Long Enough
 Toll Facility 20: 3 On free road Functional Class 26: 06 Rural Minor Arterial
 Defense Hwy 110: 0 Not a STRAHNET hwy Historical Significance 37: 5 Not eligible for NRHP
 Owner 22: 01 State Highway Agency
 Custodian 21: 01 State Highway Agency

STRUCTURE TYPE AND MATERIALS

Number of Approach Spans 46: 0 Number of Spans Main Unit 45: 2
 Main Span Material/Design 43A/B:
 1 Concrete 19 Culvert
 Deck Type 107: N N/A (NBI)
 Wearing Surface 108A: N N/A (no deck (NBI))
 Membrane 108B: N N/A (no deck (NBI))
 Deck Protection 108C: N N/A (no deck (NBI))

CONDITION

Deck 58: N N/A (NBI) Super 59: N N/A (NBI) Sub 60: N N/A (NBI)
 Culvert 62: 6 Deterioration Channel/Channel Protection 61: 7 Minor Damage

LOAD RATING AND POSTING

Inventory Rating Method 65: 1 LF Load Factor Operating Rating Method 63: 1 LF Load Factor
 Inventory Rating 66: HS8.3 Operating Rating 64: HS13.9
 Design Load 31: 2 M 13.5 (H 15) Posting 70: 1 30.0-39.9%below
 Posting status 41: A Open, no restriction

AGE AND SERVICE

Year Built 27: 1934 Year Reconstructed 106: 0
 Type of Service on 42A: 1 Highway
 Type of Service under 42B: 5 Waterway
 Lanes on 28A: 2 Lanes Under 28B: 0 Detour Length 19: 16.8 mi
 ADT 29: 1,250 Truck ADT 109: 7 % Year of ADT 30: 2012

APPRAISAL

Bridge Rail 36A: N N/A or not required Approach Rail 36C: N N/A or not required
 Transition 36B: N N/A or not required Approach Rail Ends 36D: N N/A or not required
 Str. Evaluation 67: 4 Deck Geometry 68: N Not applicable (NBI)
 Underclearance, Vertical and Horizontal 69: N Not applicable (NBI)
 Waterway Adequacy 71: 8 Equal Desirable Approach Alignment 72: 8 Equal Desirable Crit
 Scour Critical 113: 8 Stable Above Footing

GEOMETRIC DATA

Length Max Span 48: 9.8 ft Structure Length 49: 32.2 ft
 Curb/Sdwk Width L 50A: 0.0 ft Curb/Sidewalk Width R 50B: 0.0 ft
 Width Curb to Curb 51: 0.0 ft Width Out to Out 52: 0.0 ft
 Approach Roadway Width 32: 19.0 ft Median 33: 0 No median (w/ shoulders)
 Deck Area: . sq. ft
 Skew 34: 0.00 ° Structure Flared 35: 0 No flare
 Vertical Clearance 10: 99.99 ft Horiz. Clearance 47: 24.93 ft
 Minimum Vertical Clearance Over Bridge 53: 328.1 ft
 Minimum Vertical Underclearance Reference 54A: N Feature not hwy or RR
 Minimum Vertical Underclearance 54B: 0.0 ft
 Minimum Lateral Underclearance Reference R 55A: N Feature not hwy or RR
 Minimum Lateral Underclearance R 55: 0.0 ft
 Minimum Lateral Underclearance L 56: 0.0 ft

PROPOSED IMPROVEMENTS

Bridge Cost 94: \$ 0 Type of Work 75: Unknown (P)
 Roadway Cost 95: \$ 0 Length of Improvement 76: 0.0 ft
 Total Cost 96: \$ 0 Future ADT 114: 1,862
 Year of Cost Estimate 97: 2000 Year of Future ADT 115: 2032

NAVIGATION DATA

Navigation Control 38: 0 Permit Not Required
 Vertical Clearance 39: 0.0 ft Horizontal Clearance 40: 0.0 ft
 Pier Protection 111: Not Applicable (P) Lift Bridge Vertical Clearance 116:

ELEMENT CONDITION STATE DATA

Str Unit	Elm/Env	Description	Units	Total Qty	% in 1	Qty. St. 1	% in 2	Qty. St. 2	% in 3	Qty. St. 3	% in 4	Qty. St. 4	% in 5	Qty. St. 5
1	241/1	Concrete Culvert	(LF)	54	100 %	54	0 %	0	0 %	0	0 %	0	0 %	0
1	500/1	RC Culv Wing	(LF)	35	80 %	28	20 %	7	0 %	0	0 %	0	0 %	0
1	501/1	RC Culv Head	(LF)	64	42 %	27	8 %	5	50 %	32	0 %	0	0 %	0
1	812/1	Chan Algn	(EA)	1	100 %	1	0 %	0	0 %	0	0 %	0	0 %	0
1	813/1	Vegetation	(EA)	1	100 %	1	0 %	0	0 %	0	0 %	0	0 %	0

VI. Tables and Exhibits (cont.)

Structure Inventory and Appraisal Sheet (English Units)

Str Unit	Elm/Env	Description	Element Notes
1	241/1	Reinforced Concrete Culvert	There is a small crack in Barrel 2.
1	500/1	Reinforced Concrete Culvert Wing	Light to moderate cracking, light efflorescence.
1	501/1	Reinforced Concrete Culvert Head	Inlet end headwall has extensive scaling, spalling of the concrete. Several small sections of exposed re-bar with moderate deterioration. Outlet end headwall has two areas with minor spalling, no exposed steel.
1	612/1	Channel Alignment	< none >
1	613/1	Vegetation	< none >

BRIDGE NOTES

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PAST INSPECTION

Inspection Date: 10/02/2012 Type: 2 Standard (24 months)
 Inspector: JSHEFFELL Pontis User Key: JSHEFFELL - Jere
 Scope:
 NBI: Other: Element:
 Underwater: Fracture Critical:

INSPECTION NOTES

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PAST INSPECTION

Inspection Date: 11/01/2010 Type: 2 Standard (24 months)
 Inspector: SHERALD Pontis User Key: SHERALD - Sam I
 Scope:
 NBI: Other: Element:
 Underwater: Fracture Critical:

INSPECTION NOTES

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VI. Tables and Exhibits (cont.)



VI. Tables and Exhibits (cont.)



VI. Tables and Exhibits (cont.)



VI. Tables and Exhibits (cont.)

