SR 46 Bridge Over the Eel River
Categorical Exclusion – Level 4

Clay County, Indiana | Des. No. 0800910 | July 2015

PREPARED BY

PARSONS

101 W. Ohio Street
Suite 2121
Indianapolis, IN 46204

PREPARED FOR

INDIANA DEPARTMENT OF TRANSPORTATION

100 N. Senate Avenue
Room N855
Indianapolis, IN 46204

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Indiana Department of Transportation

County Clay Route SR 46 Des. No. 0800910

FHWA-Indiana Environmental Document

CATEGORICAL EXCLUSION / ENVIRONMENTAL ASSESSMENT FORM

GENERAL PROJECT INFORMATION

Road No./County:	State Road (SR) 46; Clay County
Designation Number:	0800910
Project Description/Termini:	SR 46 Bridge Project over Eel River; 4.84 miles east of SR 59, at reference post 22+05 (Bridge Number: 046-11-01316C), from approximately 0.25 mile east of the bridge to approximately 0.5 mile west of the bridge

After completing this form, I conclude that this project qualifies for the following type of Categorical Exclusion (FHWA must review/approve if Level 4 CE):

	Categorical Exclusion, Level 2 – The proposed action meets the criteria for Categorical Exclusion Manual Level 2 - table 1, CE Level Thresholds. Required Signatories: ESM (Environmental Scoping Manager)
	Categorical Exclusion, Level 3 – The proposed action meets the criteria for Categorical Exclusion Manual Level 3 - table 1, CE Level Thresholds. Required Signatories: ESM, ES (Environmental Services Division)
✓	**Categorical Exclusion, Level 4** – The proposed action meets the criteria for Categorical Exclusion Manual Level 4 - table 1, CE Level Thresholds. Required Signatories: ESM, ES, FHWA
	Environmental Assessment (EA) – EAs require a separate FONSI. Additional research and documentation is necessary to determine the effects on the environment. Required Signatories: ES, FHWA

Note: For documents prepared by or for Environmental Services Division, it is not necessary for the ESM of the district in which the project is located to release for public involvement or sign for approval.

Approval _____ _____ _____ _____
ESM Signature Date ES Signature Date

_____ _____
FHWA Signature Date

Release for Public Involvement

_____ _____ REB July 20, 2015
ESM Initials Date ES Initials Date

Certification of Public Involvement _____ _____
Office of Public Involvement Date

Note: Do not approve until after Section 106 public involvement and all other environmental requirements have been satisfied.

INDOT ES/District Env.
Reviewer Signature: _____ Date: _____

Name and Organization of CE/EA Preparer: Alan K. Ball, Parsons Transportation Group

Part I - PUBLIC INVOLVEMENT

Every Federal action requires some level of public involvement, providing for early and continuous opportunities throughout the project development process. **The level of public involvement should be commensurate with the proposed action.**

	Yes	No
Does the project have a historic bridge processed under the Historic Bridges PA*?	✓	
If No, then:		
Opportunity for a Public Hearing Required?		

**A public hearing is required for all historic bridges processed under the Historic Bridges Programmatic Agreement between INDOT, FHWA, SHPO, and the ACHP.*

Discuss what public involvement activities (legal notices, letters to affected property owners and residents (i.e. notice of entry), meetings, special purpose meetings, newspaper articles, etc.) have occurred for this project.

Remarks:

Notice of Entry (NOE) letters were mailed to potentially affected property owners on May 7, 2013 and again on August 11, 2014 (see Appendix G, pages 1 and 3, respectively).

Bridge Number 046-11-01316C is listed in the National Register of Historic Places (NHRP) and was identified in the Indiana Historic Bridge Inventory (August 2009) as a "Select" bridge. Indiana's Historic Bridge Programmatic Agreement (Historic Bridge PA) between the Indiana Department of Transportation (INDOT), the Federal Highway Administration (FHWA), the State Historic Preservation Officer (SHPO), and the Advisory Council on Historic Preservation (ACHP), outlines the project development process for Select bridges. Per the Historic Bridge PA, FHWA will not participate in the demolition of a Select bridge.

During development of the project, which requires alternative screening, INDOT identified a suitable location should the replacement or relocation of the bridge be determined as the preferred alternative. Locations in Brown County would allow for the bridge to be re-used and become part of a multi-use trail network under development by the Indiana Department of Natural Resources (IDNR) and Brown County. A separate Categorical Exclusion (CE) document is being prepared to evaluate impacts at the relocation sites and is proposed to be approved concurrently with this project.
During the consultation process, several Section 106 consulting parties indicated a preference for the bridge to remain in its current location or elsewhere in Clay County. In order to assess the public's interest in retaining the bridge in its current location, INDOT held a public meeting on January 29, 2015 at the Bowling Green Community Building in Bowling Green, approximately one mile east of the bridge. The following steps were taken to notify the public of the meeting:

- Notice posted on INDOT's website;
- Legal notice in *The Brazil Times* on January 14 and January 21, 2015
- Notice emailed to INDOT's public involvement notification list (listserv)
- Notice emailed to Clay County Commissioners
- Notice emailed to applicable State legislators
- Postcard notices mailed to over 400 homes and businesses within the Bowling Green area

The meeting included a presentation made by INDOT and the project team, followed by an opportunity for the public to provide comments on the project and the preliminary preferred alternative. Meeting handouts included a project summary, a copy of the presentation, and a comment form. INDOT explained that it would consider requests to retain the bridge in Clay County if a party (local government or private organization) was willing to take ownership of the bridge and maintain it for public use for a minimum of 25 years. Following the meeting the project team was available to discuss the project with attendees in an informal setting. Approximately 150 people attended the meeting, with 10 persons making statements during the comment period. Comments could also be submitted via the comment forms, fax, or email. An additional 14 comments were received through these means. A summary of the public meeting, including the

presentation and comments received both during and following the meeting, is provided in Appendix G (starting at page 5).

Comments received at and following the public meeting varied widely. Some commenters supported retaining the bridge at its existing location as a park or other public space. Others raised concerns over the potential financial burden on Clay County if they were to take ownership and responsibility for the bridge. One commenter raised concerns for public safety if people were permitted to climb on the bridge. Several individuals also requested that boat access to the Eel River be provided as part of the project.

On February 2, 2015, INDOT and members of the project team appeared before the Clay County Commission to brief them on the project and respond to questions. Minutes of that meeting are provided in Appendix G (pages 93-94).

A public notice was published in the *Indianapolis Star* and the *Brazil Times* on June 1, 2015, which restated the parameters or conditions that must be met as a result of taking ownership of the bridge and submittal information was provided for firm offers of intent from organizations considering taking ownership of the SR 46 Eel River Bridge. To date there has been no response as a result of the published notices, nor has a party stepped forward to assume ownership in order to retain the bridge in Clay County.

In accordance with the Historic Bridge PA and INDOT's FHWA-approved public involvement guidelines, a public hearing will be held to offer the public an opportunity to comment on this environmental document, the Section 106 documentation (see Appendix D), and the Preliminary Field Check Plans (see Appendix B, page 20). The public hearing will be the last opportunity for a responsible party to step forward and provide the necessary sureties to obtain ownership of the bridge. The availability of the CE document and the hearing will be advertised in a widely circulated project area newspaper, on INDOT's website, and via direct mail to affected property owners. Subsequent to the certification of the public involvement requirements, this Categorical Exclusion (CE) will be revised appropriately and submitted for approval. Any comments received both during the public hearing and after, within the advertised 30 day comment period, will be summarized and included in this CE.

Public Controversy on Environmental Grounds	**Yes**	**No**
Will the project involve substantial controversy concerning community and/or natural resource impacts?		✓

Remarks: The proposed project would address the deteriorated structure and provide a safe and structurally sufficient crossing. Environmental impacts have been addressed through coordination with the U.S. Fish and Wildlife Service (USFWS), the Indiana Department of Natural Resources (IDNR), and other Resource Agencies (see Appendix C). The preferred alternative would require new right-of-way (8 acres) from 7 parcels and no relocations. To date, this project has not generated substantial controversy concerning community or natural resource impacts. As described above, several Section 106 consulting parties indicated a preference to retain the bridge in its current location or elsewhere in Clay County. To date no party has stepped forward to assume ownership in order to retain the bridge in Clay County.

Part II - General Project Identification, Description, and Design Information

Sponsor of the Project: Indiana Department of Transportation INDOT District: Crawfordsville
Local Name of the Facility: SR 46

Funding Source (*mark all that apply*): Federal ✓ State ✓ Local ☐ Other* ☐

*If other is selected, please indentify the funding source: _____

PURPOSE AND NEED:

Describe the transportation problem that the project will address. The solution to the traffic problem should NOT be discussed in this section. (Refer to the CE Manual, Section IV.B.2. Purpose and Need)

The purpose of this project is to provide a safe and structurally sufficient bridge to carry SR 46 over the Eel River.

The primary need for the project is to provide a safe and structurally sufficient bridge to carry SR 46 over the Eel River, one that meets legal structural requirements for an arterial route on the National Truck Network. The existing bridge was designed to carry vehicles up to 20 tons; due to the structure's deterioration, current loads are limited to 14 tons. The nature and volume of existing and proposed traffic on SR 46 necessitates that the bridge be capable of safely carrying modern highway loadings (36 ton vehicles) including commercial vehicles, grain haulers, school buses, and emergency vehicles. The SR 46 bridge has been closed to traffic twice, once in 2011 and once in 2012, due to an 'imminent failure' condition of fracture critical components discovered during inspections by INDOT and Parsons. Expedited repairs were made on both occasions sufficient to reopen the bridge to traffic; however much more extensive reconstruction would be needed for the bridge to remain in long-term service. In its current condition, the bridge is considered structurally deficient and has a sufficiency rating of 7.0 out of 100.

A secondary need for the project is for improvements to the hydraulic capacity of the bridge and implementation of scour countermeasures. The high velocity of the river has caused it to migrate to the west, eroding and destabilizing the channel bank; over time scour could undermine the bridge abutment. Additionally, the bridge does not meet freeboard requirements, placing it at risk for damage from debris.

In addition to these needs, other desired outcomes of the project include:

- A bridge that provides standard lane widths and shoulders and can safely accommodate agricultural equipment;
- An improved intersection at CR 475 East that provides sufficient sight distance;
- Guardrail transitions and end treatments that meet current standards; and
- A bridge that is not subject to frequent or long-term closures for construction, maintenance, or inspection due to the lack of safe, efficient alternative routes and high user costs.

Alternatives meeting this purpose and need will be weighed based on their ability to balance feasibility, cost-effectiveness, and environmental impacts.

PROJECT DESCRIPTION (PREFERRED ALTERNATIVE):

County: Clay Municipality: N/A

Limits of Proposed Work: From approximately 0.25 mile east of the bridge to approximately 0.5 mile west of the bridge.

Total Work Length: 0.75 Mile(s) Total Work Area: 10.3 Acre(s)

	Yes[1]	No
Is an Interchange Modification Study / Interchange Justification Study (IMS/IJS) required?		✓
If yes, when did the FHWA grant a conditional approval for this project?	Date:	

[1]*If an IMS or IJS is required; a copy of the approved CE/EA document must be submitted to the FHWA with a request for final approval of the IMS/IJS.*

In the remarks box below, describe existing conditions, provide in detail the scope of work for the project, including the preferred alternative. Include a discussion of logical termini. Discuss any major issues for the project and how the project will improve safety or roadway deficiencies if these are issues.

This project is located on SR 46 over Eel River, approximately 4.84 miles east of SR 59, in Clay County (see Appendix B, Figure 1). SR 46 is functionally classified as a Rural Minor Arterial. It is not part of the National Highway System or the National Truck Network. SR 46 is on Indiana's 3R system. The speed limit across the structure and on SR 46 west of the bridge is 55 mph, but it is reduced east of the bridge as SR 46 nears the small town of Bowling Green. Specifically, this project is located in Sections 13 and 24 of Township 11 North, Range 6 West and Section 19 of Township 11 North, Range 5. The project is located in Washington Township in Clay County, which can be seen on the USGS Center Point Quadrangle Map (see Appendix B, Figure 3).

Current Conditions

The current steel Parker through truss bridge (Bridge No. 46-11-01316C/NBI No. 017050) was constructed in 1933 and repaired in 1977, 2011 and 2012. Each of the two spans is 198 feet long, with a clear roadway width of 24 feet. The bridge is fracture critical, structurally deficient, and has a sufficiency rating of 7.0 out of 100. The low rating is largely due to deterioration of the superstructure, which was given a condition rating of 3 (serious condition) in the latest inspection report (INDOT, May 1, 2014, see Appendix I). The substructure and approaches were given a rating of 7 (good condition), the deck was given a 6 (satisfactory condition), and the channel condition was rated at 5 (fair).

The deteriorated condition of the superstructure has required two closures of the bridge in the past three years. During an inspection of the bridge by INDOT in November 2011, failed gusset plates and a close-to-failure floor beam were identified, resulting in a rating of 1 (imminent failure) and closure of the bridge. In December 2011, INDOT completed an expedited repair that allowed the structure to reopen, although it still had an overall rating of 4 (poor) and required a more permanent repair. On July 31 and August 1, 2012, Parsons performed an inspection to determine the scope of the rehabilitation effort. During that inspection, Parsons identified additional concerns regarding the condition of the bridge and requested the bridge be closed until additional repairs could be designed and implemented. The bridge was closed July 31, 2012, and reopened November 2, 2012, after the repair was complete.

Following these repairs, the condition of the bridge has been reevaluated. The stringers are in Fair condition with minor section loss and continued rusting. Most of the floor beams have some section loss, with individual beams exhibiting section loss ranging from 10-50%. Several of the lower bracing laterals have section loss of 50% or more. Vertical truss members have minor section loss, and several members have been damaged by collision. Nearly all steel members show some amount of rusting and/or minor section loss. The lower portion of all sway bracing was removed due to continued collision damage. Every gusset plate shows some section loss, while some exhibit significant or complete section loss resulting in a condition rating of 1 (imminent failure). The most serious of these gusset plate deficiencies were addressed by the temporary repair, which left the gusset plates in place, but secured the structure through a temporary retrofit. The paint is failing in many areas and was rated as poor. Photos of these details can be found in Parsons' inspection report, which is an attachment to the Section 4(f) Alternatives Analysis (Appendix I).

The 2012 repair designed by Parsons is anticipated to have a service life of a minimum of 5 years (2017). Following that repair, and based on the findings of Parsons' 2012 inspection, the superstructure condition was given a rating of 3 in its 2013 inspection. INDOT continues to inspect this bridge annually to monitor its condition.

The lowest point of the existing bridge is located at approximately elevation 574.05 feet above sea level. The Q_{100}, the elevation at which there is a 1% chance of a storm event of that magnitude in any given year, for this bridge is 573.00 feet above sea level. The *Indiana Design Manual* requires a minimum of 2 feet of freeboard, clearance between the Q_{100} and the bottom of the bridge, to allow for passage of ice and debris. The existing SR 46 bridge over the Eel River does not meet that standard.

The 2011 and 2012 inspections identified structural deficiencies that were far more serious than those identified previously. During each of the closures numerous complaints from the public and businesses were received due to the long (21.9 miles) detour route. This bridge carries more than 3,300 vehicles per day and is an arterial route and part of the National Truck Network. Based on the public's negative response to the detour during those closures INDOT

determined that it would be prudent to select an option that requires no (or very limited) closure. The severity of the deterioration and need to minimize closures led INDOT to reconsider the appropriateness of rehabilitation and reevaluate all alternatives, which is the purpose of this document.

Preferred Alternative (Alternative 5C-S): Bridge Replacement on New Alignment to the South/Relocation of Historic Bridge

Alternative 5C-S would construct a new bridge over the Eel River approximately 20 feet to the south of the existing bridge and permanently realign the SR 46 roadway (Appendix B, Figures 4 and 5b). The new bridge would be a 3-span, 435-foot long structure composed of 4 hybrid bulb-tee beams with a reinforced concrete deck. Bents 1 and 4 would be integral abutments supported on piles with 2:1 riprap spill slopes. Piers 2 and 3 would be supported with embedded piles into concrete footings. To allow for the additional structure depth of a new bridge and to provide a minimum 2 feet of freeboard, the profile of the existing roadway would need to be raised approximately 8 feet at the new bridge. The alignment of SR 46 would need to be adapted to access this new structure. Starting about 0.5 mile west of the bridge, SR 46 would diverge to the south of the existing alignment and require a reverse curve formation in order to merge back into the existing roadway alignment on the other side of the bridge. The new alignment would be tied into the existing SR 46 roadway approximately 0.25 mile to the east of the river. As part of the SR 46 reconstruction, the CR 475 E intersection would be relocated approximately 200 feet to the west in order to improve the sight distance for vehicles entering from CR 475 E.

During development of the project, INDOT identified a suitable location in Brown County for the bridge to be re-used as part of a multi-use trail network under development by the Indiana Department of Natural Resources (IDNR) and Brown County and identified this as the preliminary preferred alternative. After the new bridge is complete and open to traffic, the current 2-span steel truss bridge would be rehabilitated and relocated to Brown County, where a 2.5-mile multi-use trail connecting Nashville, Indiana to Brown County State Park is under development. The two independent truss spans that comprise the bridge would be separated and located at separate crossings, approximately 0.7 mile apart from one another, of Salt Creek in Brown County. One of the spans would be located within Brown County State Park and owned by IDNR; the other would be located outside the park and would be owned by Brown County, which is developing the trail project.

Section 4(f) Evaluation

The project meets the requirements of FHWA's *Programmatic Section 4(f) Evaluation and Approval for FHWA Projects that Necessitate the Use of Historic Bridges* (Nationwide Programmatic Section 4(f) Evaluation; see http://www.environment.fhwa.dot.gov/4f/4fbridge.asp). The bridge will be rehabilitated and preserved in accordance with the Historic Bridge PA and the Nationwide Programmatic Section 4(f) Evaluation. FHWA is seeking a determination from the Keeper of the National Register within the National Park Service to determine if the bridge would remain eligible for the NRHP after it has been rehabilitated and relocated. If it is determined that the bridge would remain eligible for the NRHP, and Interlocal agreements are executed to ensure their continued maintenance, FHWA would find that there is no use of the Section 4(f) resource (see FHWA's Section 4(f) Policy Paper, Question 8C, at http://www.environment.fhwa.dot.gov/4f/4fpolicy.asp).
It would be possible to design and build the preferred alternative; therefore, **it is a feasible alternative**.

The preferred alternative would construct a safe, reliable structure to carry all traffic in the SR 46 corridor, thus **meeting the project's purpose and need**. The existing bridge would be relocated to the Salt Creek Trail, where there is a strong demand for a pedestrian facility and the truss spans can be installed to meet all hydraulic requirements.

Impacts associated with the preferred alternative would not be considered severe and the costs are comparable to those of the other alternatives. In accordance with INDOT's *Historic Bridge Programmatic Agreement Project Development Process* (Historic Bridge PA PDP), the required alternatives were evaluated to ensure the preferred alternative is prudent (see Other Alternatives Considered below). All of the alternatives were determined to be either not prudent (Alternatives 1, 2 and 3), or not prudent pending the identification of a responsible party to take ownership of the bridge (Alternative 4). Therefore, the replacement alternative, which cost-effectively addresses the project purpose and need, **is a prudent alternative** and FHWA has identified it as the **preferred alternative**. The Historic Bridge Alternatives Analysis, which

provides the full analysis of alternatives, is provided in Appendix I.

Right of Way (ROW): Just over 7 acres of new, permanent ROW would be required for the preferred alternative. An additional 1.25 acres of temporary ROW would be required for the realignment of CR 475 E and drive reconstruction.

Maintenance of Traffic (MOT): During construction of the new bridge and approaches traffic would be maintained on the existing SR 46 roadway and bridge. No disruption to SR 46 traffic is anticipated except at the location where the new road is tied into the existing one. At no time is it anticipated that SR 46 would be completely closed to traffic.

Estimated Cost:
Alternative 5C-S would cost $9,594,088 to construct and would have user costs, resulting from time and operating expenses associated with reduced speeds through the construction zone of $81,081, for a total cost of $9,675,169.

Environmental Impacts: As described above and in Part III of this CE, the relocation of the existing bridge may result in the use of a Section 4(f) resource. The preferred alternative would potentially impact wetlands and streams (described below in Part III). Impacts to these resources will be addressed through coordination and permitting with the United States Army Corps of Engineers (USACE) and the Indiana Department of Environmental Management (IDEM). Part III also details a small amount of tree clearing that may be required, some of which would take place within the Eel River floodplain. All other environmental impacts are minimal and have been addressed through coordination with the US Fish and Wildlife Service (USFWS), the Indiana Department of Natural Resources (IDNR), and other resource agencies (see Appendix C). Environmental impacts are described in detail below in Part III of this document.

OTHER ALTERNATIVES CONSIDERED:

Describe all discarded alternatives, including the Do-Nothing Alternative and an explanation of why each discarded alternative was not selected.

Alternatives for this project were developed in accordance the Historic Bridge PA PDP and FHWA's Nationwide Programmatic Section 4(f) Evaluation. The description below is a summary of the analysis presented in the Historic Bridge Alternatives Analysis (Appendix I).

Alternative 1: No Build
The No Build alternative would make no improvements to this bridge at this time. INDOT would continue its current inspection program to identify structural deficiencies and would address issues as required. As described in Section III above, the expedited repair implemented by INDOT in 2012 has an anticipated minimum lifespan of five years. Therefore, it is anticipated that sometime in 2017 or later, the bridge would require a permanent solution or would need to be closed to traffic. INDOT would continue to monitor the structure to ensure the safety of motorists.

The No Build Alternative would make no modifications to the existing bridge; therefore **it would avoid a use of the Section 4(f) resource**. However, it is possible that, should no improvements be made and the bridge fall into such disrepair that it loses its historic integrity, a use could occur at that time.

The No Build Alternative requires no design or construction; therefore, **it is a feasible alternative**. It would, however, retain the non-standard features identified above and the hydraulic capacity would remain insufficient. Further, this alternative does not provide a safe, reliable transportation facility for the SR 46 corridor. **It does not, therefore, meet the project's purpose and need** and is **not a prudent alternative**. It will, however, be retained throughout the project's development for comparison purposes as required by the National Environmental Policy Act.

Alternative 2: Rehabilitation for Continued Vehicular Use
The scope of the rehabilitation described here is based on visual inspection and engineering judgment only. This alternative would undertake a major rehabilitation of the existing bridge including:

- Replacement of approximately 80% of lower chord members;

- Replacement of all gusset plates at the end bents and center pier;
- Replacement of approximately 50% of other gusset plates;
- Replacement of approximately 75% of splice plates, cover plates, and batten plates;
- Replacement of approximately 50% of the lower lateral cross bracing and corner support angles;
- Replacement of approximately 25% of vertical members;
- Replacement of the floor beams at each end bent and pier;
- Replacement of the existing bridge deck;
- Replacement of exterior stringers (once the deck is removed additional stringers may be identified for replacement);
- Reinstallation of portal and sway bracing (will be thicker, more compact section to allow vertical clearance requirement to be met);
- Replacement of all bridge railing;
- Replacement of rivets with round-headed bolts where members are replaced;
- Cleaning and painting of the entire bridge; and
- Patching of concrete on the abutments and center pier.

This alternative would be expected to extend the life of the structure by approximately 25 years. If the work was completed in 2017, the bridge would require additional rehabilitation in or around 2042, when major remaining elements would be 109 years old.

On the east side of the bridge, the approach roadway would be reconstructed for a length of approximately 300 feet to provide wider shoulders, add guardrail, and modify the driveway entrance to improve sight distance. On the west side, the reconstruction would also include relocating the intersection of CR 475 E and SR 46 approximately 200 feet to the west in order to improve the sight distance for vehicles entering from CR 475 E.

This alternative would be designed to meet 3R standards as defined in the Indiana Design Manual. Due to the nature of truss bridges, it is not possible to address deficiencies related to the width of the structure without completely reconstructing the bridge. As such, design exceptions for lane, shoulder, and clear roadway width would be required. The bridge was originally designed with an H-20 structural capacity (20-ton truck) and the rehabilitation would restore this capacity. However, current design standards require accommodation for HS-20 structural capacity (36 ton truck); therefore, this alternative would require a Level 1 design exception from INDOT and FHWA. Based on this bridge's location on a National Truck Route and the number of heavy trucks known to use the bridge, INDOT and FHWA have indicated that this design exception would not be approved. Alternative 2 would make no changes to the elevation of the bridge, the substructure, or the channel. As such, this alternative would not meet the 2-foot freeboard requirement.

No formal determination has been made as to whether the improvements described above would meet the *Secretary of the Interior's Standards for Rehabilitation*. However, it is anticipated that structural materials would be replaced in-kind and the integrity of the truss would be retained. Rivets would be replaced with round-headed bolts to retain visual similarity. Sway bracing would be re-installed, with some modifications so as to not recreate the clearance issues that led to its removal.

Rehabilitation of the existing bridge would require the full closure of SR 46 for approximately 9 months. During this time, the posted detour would use SR 59 and SR 246, adding 7 miles to a through trip. This is the same detour route used during the closure in 2011. SR 246 is a narrow, winding rural roadway not well suited to large trucks, resulting in numerous complaints from the public when this was used as a detour route during the 2011 repair project.

Alternative 2 would cost approximately $4,838,780 to construct and would have user costs, resulting from time and operating expenses associated with the longer, slower detour of $4,848,363, for a total project cost of $9,687,143.

Pending a formal assessment of whether the extent of the rehabilitation would degrade the integrity of the historic structure, **this alternative would avoid a use of the Section 4(f) resource**.

It would be possible to design and build Alternative 2; therefore, **it is a feasible alternative**.

Alternative 2 would rehabilitate the existing bridge, but the bridge's H-20 load rating would not meet the structural capacity needs of the corridor. The alternative would also fail to address the secondary need; the freeboard would remain insufficient, and the location of the west abutment would leave it subject to scour and the need for countermeasure maintenance. Therefore, **this alternative does not meet the project's purpose and need**. The Individual Review for this bridge as part of the Historic Bridge Inventory Select/Non-Select analysis recognized that this bridge could not be rehabilitated to meet current applicable design standards and that design exceptions would not be appropriate for this bridge. As a result, the Individual Review designated the bridge Select for Non-Vehicular Use, indicating it may be better suited for bicycle and/or pedestrian use than for vehicles.

The Historic Bridge PA PDP establishes that if the cost of rehabilitation is equal to or greater than 80% of the replacement cost, it may not be suitable for rehabilitation. Alternative 2 exceeds this threshold when compared to several of the replacement alternatives.

Based on this evaluation, Alternative 2 is **not a prudent alternative**.

Alternative 3: Rehabilitation for Continued Vehicular Use/One-Way Pair
This alternative would construct a new bridge parallel to the existing bridge and rehabilitate the existing bridge, with each structure carrying a single lane of traffic. This alternative includes constructing a new bridge approximately 20 feet to the south of the existing structure to carry eastbound traffic, retaining westbound traffic on the existing structure. To accommodate this directional split, the eastbound SR 46 roadway would shift to the south starting approximately 0.5 mile west of the bridge, travel across the new bridge over the Eel River, and re-join the existing SR 46 alignment approximately 0.25 mile east of the river. Due to hydraulic requirements, the new bridge would be a 2-span, 400-foot long structure, likely utilizing steel beams in order to accommodate the span lengths, with an estimated service life of 75 years. In accordance with the Historic Bridge PA PDP, the new bridge would be constructed to accommodate future 2-way travel, for the time when the existing bridge can no longer be maintained. To allow for the additional structure depth of a new bridge and to provide a minimum 2 feet of freeboard, the profile of the existing roadway would need to be raised approximately 8 feet. The existing bridge would be rehabilitated in the same way described above for Alternative 2, with the same service life expectations (25 years).

The new bridge would meet all applicable design criteria. With only one lane utilizing the 24-foot wide bridge, the rehabilitated existing bridge would meet design standards for lane width and shoulders. The existing bridge was originally designed with an H-20 structural capacity (20-ton truck) and the rehabilitation would restore this capacity. However, current design standards require accommodation for HS-20 structural capacity (36 ton truck); therefore, this alternative would require a Level 1 design exception from INDOT and FHWA. Based on this bridge's location on a National Truck Route and the number of heavy trucks known to use the bridge, INDOT and FHWA have indicated that this design exception would not be approved.

The new bridge would be constructed with a low elevation of 576.00 feet above sea level, providing more than 3 feet of freeboard above the Q100 elevation (573.00 feet above sea level). Alternative 3, however, would make no changes to the elevation of the existing bridge, its substructure, or the channel. As such, the rehabilitated existing bridge would not meet the 2-foot freeboard requirement. Further, while a detailed hydraulic analysis has not been completed, preliminary evaluation indicates that the new bridge's west abutment would be required to line up with the existing bridge's abutment. Therefore, it would be subject to the same scour issues experienced by the existing bridge and would require regular maintenance of the installed countermeasures (likely riprap). As per the Historic Bridge PA, the existing bridge would be maintained for a minimum of 25 years; however, should it be removed after that time, the new bridge would remain in its hydraulically undesirable location for the rest of its service life (75 years).

No formal determination has been made as to whether the improvements described above would meet the *Secretary of the Interior's Standards for Rehabilitation*. However, it is anticipated that structural materials would be replaced in-kind and

the integrity of the truss would be retained. Rivets would be replaced with round-headed bolts to retain visual similarity. Sway bracing would be re-installed, with some modifications, so as to not recreate the clearance issues that led to its removal.

During construction of the new bridge and approaches, traffic would be maintained on the existing SR 46 roadway and bridge. All traffic would then be shifted to the new bridge during the rehabilitation of the existing bridge. No disruption to SR 46 traffic is anticipated except at the location where the new road is tied into the existing one. At no time is it anticipated that SR 46 would be completely closed to traffic.

Alternative 3 would cost $11,311,843 to construct and would have user costs, resulting from time and operating expenses associated with reduced speeds through the construction zone of $81,081, for a total project cost of $11,392,924. Due to its fracture critical nature, the bridge would continue to be inspected at one-year intervals (instead of the typical two-year interval for non-fracture-critical bridges), requiring expenditures not captured above.

Pending a formal assessment of whether the extent of the rehabilitation would degrade the integrity of the historic structure, **this alternative would avoid a use of the Section 4(f) resource**.

It would be possible to design and build Alternative 3; therefore, **it is a feasible alternative**.

Alternative 3 would rehabilitate the existing bridge, but the bridge's H-20 load rating would not meet the structural capacity needs of the corridor. The project would also fail to address the secondary need; freeboard would remain insufficient, and the location of the west abutment would leave it subject to scour and the need for countermeasure maintenance. Further, the new bridge's west abutment would be located in a manner that would, even after the existing bridge was removed, leave it subject to continued scour maintenance for its life, likely 50 or more additional years. Therefore, **this alternative does not meet the project's purpose and need**. The Individual Review for this bridge as part of the Historic Bridge Inventory Select/Non-Select analysis recognized that this bridge could not be rehabilitated to meet current applicable design standards and that design exceptions would not be appropriate for this bridge. As a result, the Individual Review designated the bridge Select for Non-Vehicular Use, indicating it may be better suited for bicycle and/or pedestrian use than for vehicles.

Based on this evaluation, Alternative 3 is **not a prudent alternative**.

Alternative 4: Bypass/Non-vehicular Use

This alternative includes constructing a new bridge approximately 20 feet to the south of the existing structure. The alignment of SR 46 would need to be adapted to access this new structure. Starting about 0.5 mile west of the bridge, SR 46 would diverge to the south of the existing alignment and require a reverse curve formation in order to merge back into the existing roadway alignment on the other side of the bridge. The new alignment would be tied into the existing SR 46 roadway approximately 0.25 mile to the east of the river. To allow for the additional structure depth of a new bridge and to provide a minimum 2 feet of freeboard, the profile of the existing roadway would need to be raised approximately 8 feet. Due to hydraulic requirements, the new bridge would be a 2-span, 400-foot long structure, likely utilizing steel beams in order to accommodate the span lengths, with an estimated service life of 75 years.

Once complete, all SR 46 traffic would utilize the new structure. The existing bridge would be retained for non-vehicular (pedestrian) use. Given the decreased loading associated with pedestrian use, the extent of rehabilitation would not be quite as extensive as required for vehicular use. The scope of the rehabilitation described here is based on visual inspection and engineering judgment only. A detailed three-dimensional model could be used to refine the extent of improvements if this alternative was to be investigated further. Based on the visual inspection, the following improvements are proposed:

- Replacement of approximately 25% of lower chord members;
- Replacement of all gusset plates at the end bents and center pier;
- Replacement of approximately 50% of other gusset plates;
- Replacement of approximately 25% of splice plates, cover plates, and batten plates;

- Replacement of approximately 10% of the lower lateral cross bracing and corner support angles;
- Replacement of approximately 10% of vertical members;
- Replacement of the floor beams at each end bent and pier;
- Replacement of the existing bridge deck;
- Replacement of exterior stringers (once the deck is removed additional stringers may be identified for replacement);
- Reinstallation of portal and sway bracing;
- Replacement of bridge railing;
- Replacement of rivets with round-headed bolts where members are replaced; and
- Cleaning and painting of the entire bridge.

The existing roadway approaches would provide an area for vehicles to pull-off SR 46 and park in order to access the existing bridge. While not included in the current design, a sidewalk or multi-use path could be provided from Bowling Green as well. The unincorporated town of Bowling Green, located approximately 0.25 mile to the east of the existing bridge with a population of approximately 250, is the closest population center and does not commonly draw visitors from other areas.

The new bridge would meet all applicable design criteria. The approach roadways would meet all design criteria, except for maximum grade at the eastern end of the project as the roadway approaches Bowling Green. The steep grade exists today; therefore, INDOT would likely approve a design exception allowing the existing grade to be perpetuated.

The new bridge would be constructed with a low elevation of 576.00 feet above sea level, providing more than 3 feet of freeboard above the Q_{100} elevation (573.00 feet above sea level). Alternative 4, however, would make no changes to the elevation of the existing bridge, its substructure, or the channel. As such, the existing bridge, repurposed for pedestrian use, would not meet the 2-foot freeboard requirement. Further, while a detailed hydraulic analysis has not been completed, preliminary evaluation indicates that the new bridge's west abutment would be required to line up with the existing bridge's abutment in order to avoid the same forces that are eroding the west bank of the river downstream of the existing bridge. Therefore, it would be subject to the same scour issues experienced by the existing bridge and would require regular maintenance of the installed countermeasures (likely riprap). As per the Historic Bridge PA, the existing bridge would be maintained for a minimum of 25 years; however, should it be removed after that time, the new bridge would remain in its hydraulically undesirable location for the rest of its service life (75 years).

No formal determination has been made as to whether the improvements described above would meet the *Secretary of the Interior's Standards for Rehabilitation*. However, it is anticipated that structural materials would be replaced in-kind and the integrity of the truss would be retained. Rivets would be replaced with round-headed bolts to retain visual similarity and sway bracing would be re-installed.

During construction of the new bridge and approaches traffic would be maintained on the existing SR 46 roadway and bridge. No disruption to SR 46 traffic is anticipated except at the location where the new road is tied into the existing one. At no time is it anticipated that SR 46 would be completely closed to traffic. Alternative 4 would cost $10,180,451 to construct and would have user costs, resulting from time and operating expenses associated with reduced speeds through the construction zone of $81,081, for a total cost of $10,261,532.

Pending a formal assessment of whether the extent of the rehabilitation would degrade the integrity of the historic structure, **Alternative 4 would avoid a use of the Section 4(f) resource**.

It would be possible to design and build Alternative 4; therefore, **it is a feasible alternative**.

Alternative 4 would address the project's structural need through the construction of a new bridge to carry vehicular traffic and the existing bridge's rehabilitation. The bridge and roadway would meet nearly all design criteria, with a design exception required only for the grade approaching Bowling Green. It would not, however, address the project's secondary need regarding hydraulic capacity and scour. The existing bridge, repurposed for pedestrian use, would retain its

insufficient freeboard, leaving it at risk for damage due to ice or debris, and the location of the west abutment would leave it subject to scour and the need for countermeasure maintenance. Further, the new bridge's west abutment would be located in a manner that would, even after the existing bridge was removed, leave it at risk for continued scour for its life, likely 50 or more additional years. Therefore, **this alternative does not meet the project's purpose and need**.

Because the bridge is located in a sparsely populated area, INDOT and FHWA believe that pedestrian use of the existing bridge would be minimal and provide little value to the general public as a historic site compared to its potential use at other locations. As such the agencies do not believe that maintaining it in that location for the next 25 years is a good use of Federal and State funds. After 25 years, when the preservation requirements of the Historic Bridge PA would be satisfied, the bridge would likely be removed. INDOT and FHWA feel that a higher-use location, where a responsible party has the ability and desire to maintain it far beyond 25 years would be a better use of funds.

INDOT and FHWA held a public meeting on January 29, 2015 to update the community on the project and provide the opportunity for a responsible party to assume responsibility for the bridge at its existing location. A six month period has been provided to allow parties to step forward, however, to date, none have done so. If a responsible party is not identified, prior to approval of this CE document, FHWA will conclude that this alternative is **not prudent** in accordance with finding 2d of the Nationwide Programmatic Section 4(f) Evaluation.

Alternative 5: Bridge Replacement/Relocation of Historic Bridge

This alternative includes the construction of a new bridge over the Eel River and relocation of the existing bridge to a new location for use as a pedestrian/bicycle facility. As is the case in any bridge replacement project, there are several options for construction methods and alignment. Five options – or subalternatives – were developed for consideration under this alternative:

- 5A – Bridge Replacement on Existing Alignment – Full Detour
- 5B-S – Bridge Replacement on Existing Alignment – Temporary Bridge to South
- 5B-N – Bridge Replacement on Existing Alignment – Temporary Bridge to North
- 5C-S – Bridge Replacement on New Alignment to South (Preferred Alternative)
- 5C-N – Bridge Replacement on New Alignment to North

Each option would provide a new bridge that would provide a safe, reliable, cost-effective structure for vehicles in the SR 46 corridor. The new bridge would be a 3-span, 435-foot long structure with an estimated service life of 75 years. Each would also relocate the existing historic bridge to a new location, where it would be highly utilized and maintained for a minimum of 25 years. The primary differences are in the location of the new bridge, the approach to maintaining traffic during construction, and potential user costs.

This alternative would require the identification of a suitable location for the structure, as well as an organization willing to commit to taking ownership and maintenance responsibility. It would also require INDOT, as the bridge's current owner, to pay for the cost to rehabilitate and relocate the structure. The IDNR Division of Outdoor Recreation maintains an email list of individuals and organizations involved in the development and improvement of recreational trails. At INDOT's request, information regarding the existing SR 46 bridge, including dimensions, conditions, and adoption requirements, was distributed to more than 300 people.

Three interested parties responded to IDNR's solicitation. Details regarding the outreach conducted and the proposals received are provided in Appendix I (see Section V.E.) INDOT and FHWA reviewed the three requests and determined that the Salt Creek Trail option was the best option for preserving the bridge and in the best interest of the State. The Salt Creek Trail project has been under development for approximately 10 years and, as of this year, one segment is open and three of its four remaining segments (including the one where the bridges would be placed) are fully funded. A CE document was completed in 2007 for the entire trail; due to some alignment changes, a portion of the trail will be re-evaluated in a new CE document within the next year. The anticipated high usage (10,000 people per year) and the location of one of the bridge spans immediately adjacent to SR 46 at Eagle Park would provide a high level of visibility for the spans. While using the bridge for the Salt Creek Trail project would require separation of the bridge into its two component spans, based on the other responses received and INDOT's past experience with bridge relocation for

recreational trails, any other proposal to relocate the bridge would likely do the same.

Since selecting the Salt Creek Trail location as the proposed relocation option, additional investigations and analyses have been conducted in the areas where the two spans would be placed. A hydraulic analysis has been conducted to confirm the requirements for span lengths and location, and preliminary field investigations have been conducted to identify potential environmental resources. An approach that would keep the two spans together as part of the Salt Creek Trail was evaluated; however, the topography, hydraulic conditions, and presence of wetlands in the area, make that option impractical. These preliminary investigations confirmed that using the spans at two separate locations was the only practical option.

While a formal agreement will be developed later in the project process, it is currently anticipated that INDOT, which is obligated under the Historic Bridge PA to ensure the bridge is preserved, will pay to dismantle the existing bridge, replace or rehabilitate any elements that require it, construct new foundations, and install the truss spans in their new locations. It is anticipated that the span to be located adjacent to SR 46 at Eagle Park would be owned and maintained by Brown County, while the span located within Brown County State Park would be owned and maintained by IDNR. IDNR and Brown County have each submitted a letter of intent to take responsibility for the bridge spans (see Appendix J, pages 1-3). INDOT has prepared draft Interlocal Agreements to be executed with IDNR and Brown County that will dictate the terms of their obligation to maintain the bridges (see Appendix D, pages 146 and 159). These agreements are still being reviewed by all parties involved and may be revised before execution. Agreements with each of the receiving parties must be executed prior to the final approval of this CE document by FHWA.

Each of the Alternative 5 options would be designed to meet 4R standards as defined in the *Indiana Design Manual*. None of the options would address the maximum grade on the approach into Bowling Green, and a design exception would be required to maintain the existing grade. Under each Alternative 5 option, the new bridge would be constructed with a low elevation of 576.00 feet above sea level, providing more than 3 feet of freeboard above the Q100 elevation (573.00 feet above sea level). The west abutment of the new, longer structure would be located such that scour would not be a concern.

No formal determination has been made as to whether the improvements described above would meet the *Secretary of the Interior's Standards for Rehabilitation*. However, it is anticipated that structural materials would be replaced in-kind and the integrity of the trusses would be retained. Rivets would be replaced with round-headed bolts to retain visual similarity and sway bracing would be re-installed. In accordance with Attachment B of the Historic Bridge PA, the rehabilitation plans will be reviewed by SHPO to ensure compliance with the Secretary of Interior's Standards for Rehabilitation and to incorporate context sensitive design features, where practicable. Based on coordination with SHPO, there is concern that relocation of the trusses would result in their immediate removal from the NRHP. There is also concern that, because the bridge is listed under Criterion A for its transportation significance in the settlement and development of Clay County, that its relocation to another county would make it ineligible for continued listing. SHPO has requested that INDOT initiate a request that the bridge also be considered under Criterion C based on its engineering significance as well as its continued listing during and following any relocation. That request has been initiated and is currently under review.

The project meets the requirements of FHWA's *Programmatic Section 4(f) Evaluation and Approval for FHWA Projects that Necessitate the Use of Historic Bridges* (Nationwide Programmatic Section 4(f) Evaluation; see http://www.environment.fhwa.dot.gov/4f/4fbridge.asp). The bridge will be rehabilitated and preserved in accordance with the Historic Bridge PA and the Nationwide Programmatic Section 4(f) Evaluation. FHWA is seeking a determination from the Keeper of the National Register within the National Park Service to determine if the bridge would remain eligible for the NRHP after it has been rehabilitated and relocated. If it is determined that the bridge would remain eligible for the NRHP, FHWA would find that there is **no use of the Section 4(f) resource** (see FHWA's Section 4(f) Policy Paper, Question 8C, at http://www.environment.fhwa.dot.gov/4f/4fpolicy.asp).

It would be possible to design and build each of the Alternative 5 options; therefore, **each is a feasible alternative**.

Each of the Alternative 5 options would construct a safe, reliable structure to carry all traffic in the SR 46 corridor, thus **meeting the project's purpose and need**. Under each, the existing bridge would be relocated to the Salt Creek Trail,

where there is a strong demand for a pedestrian facility and the truss spans can be installed to meet all hydraulic requirements.

Impacts associated with each of the Alternative 5 options vary; however, none would be considered severe. Long-term operation and maintenance costs would be similar for each and, while construction and user costs vary, none are of an extraordinary magnitude. Based on this evaluation, **each is a prudent alternative**.

The sections below provide additional details about each Alternative 5 option and provide the basis for the selection of the preliminary preferred alternative.

Alternative 5A: Bridge Replacement on Existing Alignment – Full Detour
Alternative 5A would require the full closure of SR 46 for approximately 9 months. During this time, the posted detour would use SR 59 and SR 246, adding 7 miles to a through trip. This is the same detour route used during the closure in 2011. As noted previously, SR 246 is a narrow, winding rural roadway not well suited to large trucks, resulting in numerous complaints from the public when this was used as a detour route during the 2011 repair project.

Alternative 5A would cost $7,924,297 to construct and would have user costs, resulting from time and operating expenses associated with the longer, slower detour of $4,848,363, for a total cost of $12,772,660.

Alternative 5B-S: Bridge Replacement on Existing Alignment – Temporary Bridge to South
A single-lane temporary bridge would be in place throughout construction, with temporary signals at either end controlling traffic. While vehicles would experience some delay associated with the signals, reduced speeds, and roadway curvature, SR 46 would remain open to all traffic.

Alternative 5B-S would cost $10,759,552 to construct and would have user costs, resulting from time and operating expenses associated with the construction zone of $576,445, for a total cost of $11,335,997.

Alternative 5B-N: Bridge Replacement on Existing Alignment – Temporary Bridge to North
A single-lane temporary bridge would be in place throughout construction, with temporary signals at either end controlling traffic. While vehicles would experience some delay associated with the signals, reduced speeds, and roadway curvature, SR 46 would remain open to all traffic.

Alternative 5B-N would cost $10,762,580 to construct and would have user costs, resulting from time and operating expenses associated with the construction zone of $576,445, for a total cost of $11,339,025.

Alternative 5C-S: Bridge Replacement on New Alignment to South (Preferred Alternative)
During construction of the new bridge and approaches traffic would be maintained on the existing SR 46 roadway and bridge. No disruption to SR 46 traffic is anticipated except at the location where the new road is tied into the existing one. At no time is it anticipated that SR 46 would be completely closed to traffic.

Alternative 5C-S would cost $9,594,088 to construct and would have user costs, resulting from time and operating expenses associated with reduced speeds through the construction zone of $81,081, for a total cost of $9,675,169.

Additional detail regarding Alternative 5C-S is provided in the Project Description section of this CE document.

Alternative 5C-N: Bridge Replacement on New Alignment to North
During construction of the new bridge and approaches traffic would be maintained on the existing SR 46 roadway and bridge. No disruption to SR 46 traffic is anticipated except at the location where the new road is tied into the existing one. At no time is it anticipated that SR 46 would be completely closed to traffic.

Alternative 5C-N would cost $9,759,993 to construct and would have user costs, resulting from time and operating expenses associated with reduced speeds through the construction zone of $81,081, for a total cost of $9,841,074.

Alternative 5 Evaluation

While the project cost of Alternative 5A is the lowest of these options, it would cause substantial user costs ($4.8 million) as a result of the closure of SR 46 for approximately 9 months. Based on the response to the previous closures, both of which were much shorter, INDOT has determined that this alternative is not in the interest of the traveling public and eliminated it from consideration.

Alternatives 5B-N and 5B-S would each utilize a temporary bridge and signal to construct a new bridge on the existing alignment. Either alternative would reduce the user costs compared to Alternative 5A, with only a couple short term closures required. However, the temporary bridge's low elevation would introduce a risk that it would be overtopped requiring additional closures. Finally, these options would cost more than $1 million more than Alternative 5C-S or 5C-N.

Alternatives 5C-N and 5C-S would each maintain traffic on the existing bridge and roadway throughout construction, minimizing user costs associated with delay or detours. Project costs are similar for each, as are environmental and right-of-way impacts. Both would require a Level 1 design exception for the maximum grade approaching Bowling Green, but Alternative 5C-N, would introduce a horizontal curve on its approach to Bowling Green that would require an additional Level 1 design exception. Eliminating this non-standard curve would require impacts to several residential properties. Based on the analysis above, INDOT has identified Alternative 5C-S as the preferred alternative.

The Do Nothing Alternative is not feasible, prudent or practicable because (*Mark all that apply*):

It would not correct existing capacity deficiencies;	✓
It would not correct existing safety hazards;	✓
It would not correct the existing roadway geometric deficiencies;	✓
It would not correct existing deteriorated conditions and maintenance problems; or	✓
It would result in serious impacts to the motoring public and general welfare of the economy.	
Other (Describe)	

ROADWAY CHARACTER:

Functional Classification:	Rural Minor Arterial			
Current ADT:	3,240	VPD (2017)	Design Year ADT: 3,620	VPD (2047)
Design Hour Volume (DHV):	305	Truck Percentage (%)	4.5% DHV, 13.85% ADT	
Designed Speed (mph):	55	Legal Speed (mph):	55	

	Existing		Proposed	
Number of Lanes:	2		2	
Type of Lanes:	Through		Through	
Pavement Width:	24	ft.	24	ft.
Shoulder Width:	1	ft.	2	ft.
Median Width:	N/A	ft.	N/A	ft.
Sidewalk Width:	N/A	ft.	N/A	ft.

Setting:		Urban		Suburban	✓	Rural
Topography:		Level	✓	Rolling		Hilly

If the proposed action has multiple roadways, this section should be filled out for each roadway.

DESIGN CRITERIA FOR BRIDGES:

Structure/NBI Number(s): 046-11-01316C (NBI #: 017050)

Sufficiency Rating: 7.0 out of 100, per INDOT Bridge Inspection Report (05/01/2014)
(Rating, Source of Information)

	Existing		Proposed	
Bridge Type:	Steel Parker Through Truss		Concrete Hybrid Bulb-Tee Beam	
Number of Spans:	2		3	
Weight Restrictions:	14	ton	N/A	ton
Height Restrictions:	14.67	ft.	N/A	ft.
Curb to Curb Width:	24	ft.	37.33	ft.
Outside to Outside Width:	25	ft.	40.33	ft.
Shoulder Width:	1	ft.	6.67	ft.
Length of Channel Work:			92	ft.

Describe bridges and structures; provide specific location information for small structures.

Remarks: Bridge No. 46-11-01316C/NBI No. 017050 carries SR 46 over the Eel River, approximately 4.84 miles east of SR 59, in Clay County (see Appendix B, Figure 1). The bridge is a steel Parker through truss comprised of two spans that are each 198 feet long. It was constructed circa 1933 and repaired in 1977, 2011 and 2012. The bridge is fracture critical, structurally deficient, and has a sufficiency rating of 7.0, due in large part to deterioration in the superstructure. See the Purpose and Need for full details.

Two culverts will be replaced as part of this project. The first is an 18-inch clay pipe, which carries the stream UNT 1 under an access drive in the southeast quadrant of the bridge. Located at Station 629+70, this pipe will be replaced by a 30-inch pipe when the access drive is reconstructed.

The second culvert to be replaced is a 2' by 3' four-sided concrete box culvert east of the bridge under SR 46. The culvert conveys roadside drainage (UNT 3) from the north side of SR 46 to the south side of SR 46, where it joins UNT 1. Located at Station 635+41, this pipe will be replaced by a 36-inch pipe when SR 46 is reconstructed.

No other bridges or small structures exist within the project limits.

	Yes	No	N/A
Will the structure be rehabilitated or replaced as part of the project?	✓		

If the proposed action has multiple bridges or small structures, this section should be filled out for each structure.

MAINTENANCE OF TRAFFIC (MOT) DURING CONSTRUCTION:

	Yes	No
Is a temporary bridge proposed?		✓
Is a temporary roadway proposed?		✓
Will the project involve the use of a detour or require a ramp closure? (describe in remarks)		✓
Provisions will be made for access by local traffic and so posted.		

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Provisions will be made for through-traffic dependent businesses.		
Provisions will be made to accommodate any local special events or festivals.		
Will the proposed MOT substantially change the environmental consequences of the action?		✓
Is there substantial controversy associated with the proposed method for MOT?		✓

Remarks: During construction of the new bridge and approaches traffic would be maintained on the existing SR 46 roadway and bridge. All traffic would then be shifted to the new bridge during the rehabilitation and disassembly of the existing bridge. No disruption to SR 46 traffic is anticipated except at the location where the new road is tied into the existing one. At no time is it anticipated that SR 46 would be completely closed to traffic, and therefore substantial controversy associated with the proposed MOT is not expected.

ESTIMATED PROJECT COST AND SCHEDULE:

Engineering: $ 932,000[3] (2015-2016) Right-of-Way: $ 274,000 (2016; includes utiltities) Construction: $ 9,320,088 (2016)

Anticipated Start Date of Construction: October 2016

Date project incorporated into STIP July 1, 2015 (see Appendix H)

Is the project in an MPO Area? Yes [ ] No [✓]

If yes,

Name of MPO

Location of Project in TIP

Date of incorporation by reference into the STIP

This project is reflected in the 2016-2019 Statewide Transportation Improvement Program (STIP) through three related projects:

Des	Description	Phase	Fiscal Year	Cost
0800910	SR 46 Bridge Replacement	Engineering	2016	$72,000*
0800910	SR 46 Bridge Replacement	Right-of-Way	2016	$250,000
0800910	SR 46 Bridge Replacement	Construction	2017	$7,804,000
1400311	Span 1 over Salt Creek	Construction	2017	$1,657,000
1400311	Span 2 over Salt Creek	Construction	2017	$1,657,000

* Does not include funds allocated in prior fiscal years.

The cost estimates shown in the STIP are based on additional engineering analysis conducted following completion of the Historic Bridge Alternatives Analysis discussed above. While the total construction cost shown in the STIP, $11,118,000, is greater than that presented in the CE, for consistency in the comparison of the alternatives, the Alternatives Analysis value is used throughout this document.

[3] Based on 10% of construction cost.

RIGHT OF WAY:

Land Use Impacts	Amount (acres)	
	Permanent	Temporary
Residential	0.186	0.00
Commercial	0.00	0.00
Agricultural	3.29	0.75
Forest	2.05	0.50
Wetlands	0.91	0.00
Other: Stream (Eel River)	0.289	0.00
Other: Grassy roadside	0.335	0.00
TOTAL	**7.06**	**1.25**

Describe both Permanent and Temporary right-of-way and describe their current use. Typical and Maximum right-of-way widths (existing and proposed) should also be discussed. Any advance acquisition or reacquisition, either known or suspected, and there impacts on the environmental analysis should be discussed.

Remarks:

The existing ROW varies throughout the project area. At the bridge and to the west of the bridge, the total width of existing ROW is about 125 feet, centered on the SR 46 centerline. East of the bridge, the total width of the existing ROW tapers to 100 feet (centered on the SR 46 centerline) at the project's eastern limits.

The permanent ROW required for the project is all along the south side of SR 46, and the width is variable. At the west end of the project, an additional 35 feet of permanent ROW would be acquired on the south side of SR 46 (making the total ROW width about 160 feet). This ROW flares to a maximum of 260 feet (135 feet of additional ROW width) near the proposed new CR 475 E / SR 46 intersection. At the new bridge over the Eel River, approximately 80 feet of additional permanent ROW would be acquired (making the total ROW width 205 feet), but the ROW acquisition tapers to 50 feet (total ROW width of 150 feet) at the east end of the project.

Approximately 7.06 acres of permanent ROW and 1.25 acres of temporary ROW would be acquired for the preferred alternative. The permanent ROW includes 0.186 acre of residential land from an empty lot at the west edge of Bowling Green, 3.29 acres of agricultural land, 2.05 acres of upland forest, 0.91 acre of wetland, 0.289 acre of Eel River and 0.335 acre of grassy roadside. The maintenance of traffic plan for CR 475 E would require 0.75 acre of temporary ROW from agricultural land. An additional 0.50 acre of forested land would be acquired as temporary ROW for drive reconstruction and culvert placement. Preliminary Right-of-Way limits are shown on the Preliminary Field Check plans located in Appendix B (page B20).

Part III – Identification and Evaluation of Impacts of the Proposed Action

SECTION A – ECOLOGICAL RESOURCES

	Presence	Impacts	
		Yes	No
Streams, Rivers, Watercourses & Jurisdictional Ditches	✓	✓	
Federal Wild and Scenic Rivers			
State Natural, Scenic or Recreational Rivers			

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Nationwide Rivers Inventory (NRI) listed			
Outstanding Rivers List for Indiana			
Navigable Waterways	✓		✓

Remarks:

Parsons prepared a Red Flag Investigation (RFI) on March 7, 2014, which was approved by INDOT on the same day (see Appendix E). The RFI indicates that there are 4 rivers or streams within a half mile radius of the project limits. Only the Eel River will be impacted as discussed below. The other 3, Jordan Creek and two UNTs to Jordan Creek, are outside of the project area and would not be impacted.

A waters determination was conducted on September 4 and November 10, 2014, by Parsons to determine the presence of jurisdictional streams and wetlands within the project area. A Waters of the U.S. Determination Report is in progress.

As previously stated, Bridge No. 46-11-01316C is located on SR 46 over the Eel River. The Eel River is a perennial stream and exhibited an ordinary high-water mark (OHWM). It is listed on the Roster of Indiana Waters Declared Navigable or Non-navigable as a navigable stream. Therefore, it is a jurisdictional Water of the U.S. Three other likely jurisdictional Waters of the U.S. were identified within the project area, though they are not shown on the USGS topographic map (Appendix B, Figure 3). Stream 1 is an unnamed tributary (UNT) to the Eel River, and is located in the southeast quadrant of the project area. Stream 1 is an ephemeral stream, exhibits an OHWM, and has a confluence with the Eel River just downstream of the project area. Therefore, it is likely a Water of the U.S. Streams 2 and 3 are both unnamed tributaries to Stream 1. They are both ephemeral streams with an OHWM, located in the southeast quadrant of the project area. Because of their connection via Stream 1 to the Eel River, both Streams 2 and 3 are likely jurisdictional Waters of the U.S.

The Eel River and Streams 1-3 are not listed as *Federal Wild and Scenic Rivers* or *State Natural, Scenic and Recreational Rivers*, nor are they on the Indiana Register's listing of *Outstanding Rivers and Streams* or the *National Rivers Inventory*. No other streams, rivers, watercourses or jurisdictional ditches are present within the project area, although there are some emergent wetlands contained within roadside ditches. These wetlands are detailed in the Wetland section below. For more details, see the Waters of the U.S. Delineation Report in Appendix F.

The preferred alternative would impact approximately 92 feet of the Eel River below the OHWM due to a construction of the piers near each bank of the river. Both spill slopes below the eastern and western abutments would be graded and covered with riprap for scour protection. Tree clearing along the river may extend the full width of the ROW (245 feet) along the Eel River. Based on the Stage 1 plans, approximately 699 feet of the three ephemeral streams would be impacted, due to the proposed relocation of SR 46 to the south of the existing alignment. These small ephemeral streams would be relocated away from the proposed alignment of SR 46 and restored as required by IDEM and USACE based on coordination during the waterway permitting process.

The U.S. Fish and Wildlife Service (USFWS), the Indiana Department of Natural Resources (IDNR), and the U.S. Army Corps of Engineers (USACE) were coordinated with on August 11, 2014 (see Appendix C, page 1). IDNR responded on September 3, 2014, (see Appendix C, page 25) and the USFWS responded on May 7, 2015 (see Appendix C, page 37). No response to the early coordination letter was received from the USACE. Applicable commitments from the IDNR and USFWS are included in "Section J: Environmental Commitments".

Due to the impacts expected, a USACE 404 permit and an Indiana Department of Environmental Management (IDEM) 401 Water Quality Certification (WQC) permit would be required for this project.

Indiana Department of Transportation

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Other Surface Waters	**Presence**	**Impacts Yes**	**Impacts No**
Reservoirs			
Lakes	✓		✓
Farm Ponds			
Detention Basins			
Storm Water Management Facilities			
Other:			

Remarks: Parsons prepared a Red Flag Investigation (RFI) on March 7, 2014, which was approved by INDOT on the same day (see Appendix E). The RFI indicates that there are 10 lakes within a half mile radius of the project limits. No lakes were identified within the project limits during the course of ecological field work and none of the 10 lakes from the RFI are within the project limits. Of the 4 rivers or streams highlighted by the RFI, only the Eel River will be impacted as discussed above. The other 3, Jordan Creek and two UNTs to Jordan Creek, are outside of the project area and would not be impacted. No other surface waters are located in or near the project limits.

	Presence	**Impacts Yes**	**Impacts No**
Wetlands	✓	✓	

Total wetland area: 1.63 acre(s) Total wetland area impacted: 0.91 acre(s)

(If a determination has not been made for non-isolated/isolated wetlands, fill in the total wetland area impacted above.)

Wetland No.	Classification	Total Size (Acres)	Impacted Acres	Comments
1	PEM	0.62	0.17	This emergent wetland is in a roadside ditch west of the Eel River and 0.17 acre would be impacted by the realigned SR 46.
2	PEM	0.02	N/A	This emergent wetland is in a roadside ditch west of the Eel River. It is north of existing SR 46 and would not be impacted by the proposed project.
3	PEM	0.08	0.01	This emergent wetland is in a roadside ditch west of the Eel River and 0.01 acre would be impacted by the realigned SR 46.
4	PFO	0.72	0.54	This forested wetland is east of the Eel River and 0.30 acre would be impacted by the realigned SR 46 and relocation of an overhead utility.
5	PEM	0.02	0.02	This emergent wetland is in a roadside ditch east of the Eel River and 0.02 acre would be impacted by the realigned SR 46.
Vernal Pool 1	PUS3C	0.17	0.17	This vernal pool (described below) is in a scour hole near the east abutment. It would be impacted by construction of the new east abutment and by the grading and riprap armoring of the spill slopes to prevent future scour.

Wetlands (*Mark all that apply*)	**Documentation**	**ES Approval Dates**
Wetland Determination	✓	Pending
Wetland Delineation	✓	Pending
USACE Isolated Waters Determination		

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Mitigation Plan

Improvements that will not result in any wetland impacts are not practicable because such avoidance would result in (Mark all that apply and explain):

Substantial adverse impacts to adjacent homes, business or other improved properties;	✓
Substantially increased project costs;	✓
Unique engineering, traffic, maintenance, or safety problems;	✓
Substantial adverse social, economic, or environmental impacts, or	
The project not meeting the identified needs.	

Measures to avoid, minimize, and mitigate wetland impacts need to be discussed in the remarks box.

Remarks:

A wetland delineation was conducted on September 4 and November 10, 2014, by Parsons to determine the presence of wetlands within the project area. A Waters of the U.S. Determination Report is in progress. Wetlands were delineated using the three-parameter approach described in the *1987 Corps Manual*. Vegetation, soil and hydrology data were collected using the methodologies described in Version 2.0 of the *Midwest Regional Supplement*. As shown in the table above, six wetland features, totaling 1.63 acres, were identified within or near the project limits. A total of approximately 0.91 acre of wetlands would be permanently filled by this project.

Parsons staff identified a wetland resource (Vernal Pool 1) under the east span of the existing bridge. After consultation with IDEM, it was determined that calling this feature a "vernal pool"(instead of an emergent or forested wetland) would best describe its function within the landscape. In this case, "vernal pool" is meant to describe a type of open water habitat that is a seasonally-flooded basin of the palustrine system. Vernal pools are flooded by precipitation during a portion of the growing season, which is followed by a period when they are dry and contain no water and usually very little vegetation. This vernal pool appears to receive water during precipitation events and bank-full flows in the Eel River, and then retains the water for many months afterwards. It is likely that it formed as a result of scour during repeated high volume, high velocity flows over the land under the east abutment. Vernal Pool 1 is about 0.17 acre in size and all of it will be impacted by grading and/or scour protection for the new bridge.

As discussed in the "Other Alternatives Considered" section, only the group of Alternative 5 options meet the project's purpose and need, and are both feasible and prudent. Alternative 5A (new bridge on existing alignment) would likely have minimal impacts to streams or wetlands, but due to substantial user costs resulting from a full detour, this option was not selected as the preferred. Alternative 5C-N (new bridge alignment to the north) would reduce impacts to many of the wetlands described above, but it would require an additional Level 1 design exception a substandard horizontal curve. Eliminating 5C-N's substandard curve would require at least one residential relocation.

As the design of Alternative 5C-S has progressed, several elements, including steeper fill slopes, guardrail, and designing to minimum standards have minimized the impacts to delineated wetlands from nearly 1.5 acres to 0.91 acre.

Permits may be required for this project. A USACE Regional General Permit (RGP) and an IDEM Section 401 Water Quality Certification would be required due to impacts to Eel River, Streams 1, 2, and 3, the vernal pool, and the forested and emergent wetlands described previously. These permits may require mitigation, but the quantities, types and mechanism of mitigation would be determined through further consultation with the appropriate resource agency during the permitting process.

This project is in compliance with the most current version of the wetland finding portion of the Categorical Exclusion Programmatic Agreement between the Federal Highway Administration and INDOT.

	Presence	Impacts Yes	Impacts No
Terrestrial Habitat	✓	✓	
Unique or High Quality Habitat			

Use the remarks box to identify each type of habitat and the acres impacted (i.e. forested, grassland, farmland, lawn, etc).

Remarks: The land in the northwest and southwest quadrants is primarily used for row-crop agriculture, while the eastern quadrants are primarily forested. Terrestrial habitat in the project area primarily consists of the forests east of the river, a narrow wooded riparian corridor along the west bank of the river, grassy roadside, and the farmland. The project area supports a variety of flora and fauna typical to these habitats.

As previously stated, approximately 7.06 acres of permanent ROW and 1.25 acres of temporary ROW would be required for the preferred alternative. Construction limits within the project area have been reduced to the extent practical. The preferred alternative would include tree clearing, which may extend the entire width of the ROW in some locations, to accommodate the relocation of an overhead power line which currently runs along the south side of the existing ROW. The preferred alternative will result in impacts to approximately 2 acres of floodplain forest. This impact will be mitigated at a 2:1 ratio by planting new floodplain forests on excess right-of-way at the project location. The majority of the remaining impacts would occur to land used for row-crop agriculture, which provides minimal habitat value.

The proposed new bridge over the Eel River would have a minimum of about 10 feet of vertical clearance over the east and west banks of the river. There would be some riprap placed around the new abutments, but there would be sufficient native soil and vegetation between the riprap and the river to allow for wildlife passage under the new bridge. Because the old bridge and approaches would be removed, this project would not create any long-term additional habitat fragmentation.

The appropriate resource agencies were sent coordination letters on August 11, 2014 (see Appendix C). The IDNR responded on September 3, 2014 and the USFWS responded on May 7, 2015. Both agencies included comments to help reduce potential impacts in the project area (see Appendix C). Commitments from the agency responses are located in "Section J: Environmental Commitments".

If there are high incidences of animal movements observed in the project area, or if bridges and other areas appear to be the sole corridor for animal movement, consideration of utilizing wildlife crossings should be taken.

Karst	Yes	No
Is the proposed project located within or adjacent to the potential Karst Area of Indiana?		✓
Are karst features located within or adjacent to the footprint of the proposed project?		✓
If yes, will the project impact any of these karst features?		

Use the remarks box to identify any karst features within the project area. (Karst investigation must comply with the Karst MOU, dated October 13, 1993)

Remarks: This project is located outside of the designated karst area of the state as identified in the October 13, 1993 Memorandum of Understanding (MOU) between INDOT, IDNR, the Indiana Department of Environmental Management (IDEM), and USFWS. The RFI did not show any karst features within the project area (Appendix E). No karst features are known to exist within or adjacent to the proposed project area.

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Threatened or Endangered Species	Presence	Impacts Yes	Impacts No
Within the known range of any federal species	✓		✓
Any critical habitat identified within project area			
Federal species found in project area (based upon informal consultation)			
State species found in project area (based upon consultation with IDNR)	✓		✓

	Yes	No
Is Section 7 formal consultation required for this action?		✓

Remarks:

This project is within the range of the Federally endangered Indiana bat (*Myotis sodalis*) and the federally threatened northern long-eared bat (*Myotis septentrionalis*). USFWS and IDNR were sent coordination letters on August 11, 2014 (see Appendix C). USFWS did not respond to the initial request, so follow-up coordination was initiated on April 30, 2015. On May 7, 2015, USFWS responded, recommending that tree clearing be avoided from April 1 through September 30. If this measure is implemented, then USFWS concurs that the proposed project is not likely to adversely affect the Indiana bat or the northern long-eared bat (see page 37 of Appendix C).

On September 3, 2014, IDNR responded, "The Natural Heritage Program's data have been checked. The state endangered Round Hickorynut (*Obovaria subrotunda*) has been documented in the Eel River within the project area. The Round Hickorynut is no longer found live in the Eel River; therefore, we do not foresee any impacts to this mussel species resulting from the project" (see Appendix C, page 25).

During a site visit on September 4, 2014, a plant species called rose turtlehead (*Chelone obliqua*) was identified near the project area. This perennial forb is listed on the IDNR, Division of Nature Preserves' list of "Endangered, Threatened, Rare and Extirpated Plants of Indiana" (IDNR, 2013). On this list, rose turtlehead has a Global Rank (GRANK) score of "G4" (widespread and abundant globally but with long term concerns) and a State Rank (SRANK) of "S3" (rare or uncommon in state) and is categorized as "WL" (watch list) within the state. However, rose turtlehead is not listed on the list of endangered, threatened, and rare species by county. Parsons contacted the staff at the IDNR Division of Nature Preserves and notified them that rose turtlehead was found within Clay County, and was near the project limits of this project. The Nature Preserves staff responded that they would add this species to the Clay County list, but had no other comments regarding the project or its potential impacts to rose turtlehead (see pages 28-33 of Appendix C).

SECTION B – OTHER RESOURCES

Drinking Water Resources	Presence	Impacts Yes	Impacts No
Wellhead Protection Area			
Public Water System(s)			
Residential Well(s)			
Source Water Protection Area(s)			
Sole Source Aquifer (SSA)			

If a SSA is present, answer the following:

	Yes	No
Is the Project in the St. Joseph Aquifer System?		
Is the FHWA/EPA SSA MOU Applicable?		
Initial Groundwater Assessment Required?		
Detailed Groundwater Assessment Required?		

Remarks: This project is not located within the St. Joseph Aquifer System, the only legally designated SSA in Indiana.

The Indiana Department of Environmental Management (IDEM), Groundwater Section was sent a coordination letter on August 11, 2014 (see Appendix C). No response was received. The Indiana Department of Environmental Management's Wellhead Proximity Determinator website (http://idemmaps.idem.in.gov/whpa2/) was accessed on (May 1, 2015) by Parsons. The required project location data was provided and it was determined that this project is not located within a Wellhead Protection Area.

No other known drinking water resources are known to occur within the project area.

Flood Plains	**Presence**	**Impacts** Yes	**Impacts** No
Longitudinal Encroachment			
Transverse Encroachment	✓	✓	
Project located within a regulated floodplain	✓	✓	
Homes located in floodplain within 1000' up/downstream from project	✓		

Discuss impacts according to classification system described in the "Procedural Manual for Preparing Environmental Studies".

Remarks: This project lies within a regulatory floodplain (see Figure 2 in the Waters of the U.S. Delineation Report in Appendix F). This project qualifies as a Category 4 project involving the replacement of an existing drainage structure on essentially the same alignment. No homes are located within the base floodplain within 1,000 feet upstream, and five homes are located within the base floodplain within 1,000 feet downstream. The proposed structure would have an effective capacity such that backwater surface elevations are not expected to substantially increase. As a result, there will be no substantial adverse impacts on natural and beneficial floodplain values, there would be no substantial change in flood risks, and there would be no substantial increase in potential for interruption or termination of emergency service or emergency evacuation routes. Therefore, it has been determined that this encroachment is not substantial. A hydraulic design study that addresses various structure size alternates was completed during the preliminary design phase. A summary of this study will be included with the field check plans.

With a contributing drainage area of approximately 830 square miles, this project would not meet the "Rural Bridge Exemption" and would therefore require an IDNR Construction in a Floodway (CIF) permit.

Farmland	**Presence**	**Impacts** Yes	**Impacts** No
Agricultural Lands	✓	✓	
Prime Farmland (per NRCS)	✓	✓	

Total Points (from Section VII of CPA-106/AD-1006* 114

**If 160 or greater, see CE Manual for guidance.*

See CE Manual for guidance to determine which NRCS form is appropriate for your project.

Remarks: Farmland Conversion Impacts: As is required by the Farmland Protection Policy Act, the Natural Resources Conservation Service (NRCS) has been coordinated with and the Form NRCS-CPA-106 has been completed (Appendix C, page 36). Since this project received a total point value of less than 160 points, this site will receive no further consideration for farmland protection. The CPA-106 for was returned to the NRCS on June 26, 2015. No other alternatives other than those already discussed in this document will be considered without a re-evaluation of the project's potential impacts upon farmland. This project will not have a significant impact to farmland.

Approximately 7.06 acres of farmland would be converted to highway use as a result of this project, which

represents a reduction from the 13.9 acres originally stated on the CPA-106 form. This acreage is largely in the form of narrow strips along the south side of the existing SR 46 roadway.

SECTION C – CULTURAL RESOURCES

	Category	Type	INDOT Approval Dates	N/A
Minor Projects PA Clearance				✓

Results of Research

	Eligible and/or Listed Resource Present
Archaeology	
NRHP Buildings/Site(s)	
NRHP District(s)	
NRHP Bridge(s)	✓

Project Effect

No Historic Properties Affected ✓ No Adverse Effect ☐ Adverse Effect ☐

Documentation (mark all that apply)	Documentation Prepared	ES/FHWA Approval Date(s)	SHPO Approval Date(s)
Historic Properties Short Report			
Historic Property Report	✓	August 2010; November 19, 2014 (addendum)	September 28, 2010; December 22, 2014 (addendum)
Archaeological Records Check/ Review	✓	August 5, 2010	September 28, 2010
Archaeological Phase Ia Survey Report	✓	October 9, 2014	October 21, 2014
Archaeological Phase Ic Survey Report	✓	July 19, 2011	August 17, 2011
Archaeological Phase II Investigation Report			
Archaeological Phase III Data Recovery			
APE, Eligibility and Effect Determination	✓	June 26, 2015	Pending
800.11 Documentation	✓	June 26, 2015	Pending

		MOA Signature Dates (List all signatories)
Memorandum of Agreement (MOA)		

Describe all efforts to document cultural resources, including a detailed summary of the Section 106 process, using the categories outlined in the remarks box. The completion of the Section 106 process requires that a Legal Notice be published in local newspapers. Please indicate the publication date, name of paper(s) and the comment period deadline. Likewise include any further Section 106 work which must be completed at a later date, such as mitigation or deep trenching.

Remarks: **Area of Potential Effect (APE):** The APE is the area in which the proposed project may cause alterations in the character or use of historic resources. The original APE for this project, based on the original scope of rehabilitation, ranges from 1,500 ft west of the bridge to 1,700 feet east of the bridge, and from a maximum of 1,800 feet north of the bridge to a maximum of 2,000 feet south of the bridge. When the project scope was revised to consider additional alternatives, the APE was expanded. The revised APE ranges from 4,000 feet west of the bridge to 2,100 feet east of the bridge; the north and south limits of the APE did not change. See

Appendix D, page 12, for a map of the original and revised APEs.

Coordination with Consulting Parties: Early Coordination was initiated on August 24, 2010, with a letter inviting organizations and individuals to become consulting parties (see Appendix D, page 35). If no response was received after 30 days, it was assumed the parties involved did not wish to act as consulting parties. The following is a list of the organizations and individuals formally invited to become a consulting party (those who indicated they wished to be consulting parties are in bold):

- **Robert E. Carter, Jr., State Historic Preservation Officer (SHPO)**
- **Patrick Carpenter, INDOT Cultural Resources Office (CRO)**
- **Federal Highway Administration (FHWA)**
- Tommy Kleckner, Indiana Landmarks, Western Regional Office
- Evelyn Brown, Preservation Association of Clay County
- Wilmadean Baker, Poland Historical Chapel Society
- Merv Nolot, West Central Indiana Economic Development District
- Patricia Wilkinson, Clay County Genealogical Society of Indiana
- Jeffrey Koehler, Clay County Historian
- Mary Moore, Clay County Historical Society
- Paul Brandenburg, Indiana Historic Spans Task Force
- Dr. James L. Cooper
- Clay County Commission

In 2014, when the project was re-scoped to consider a wider range of alternatives, additional outreach to consulting parties was conducted. The following additional individuals were invited to a consulting party meeting on December 4, 2014 (see Appendix D, page 50); those who attended or provided a response (shown in bold) were designated as consulting parties:

- **Mitchell Zoll, State Historic Preservation Officer (SHPO)**
- Vickie Mace, Clay County Historical Society
- Bryan Allender, Clay County Commissioner
- **Mark Dollase, Indiana Landmarks, Central Regional Office**
- Julia Pearson, Brown County Historical Society
- **Dr. Michael Thompson, Brown County Administrator**
- **Bob Kirlin, Salt Creek Trail**
- **Paul Brandenburg, Indiana Historic Spans Task Force**
- **Jeffrey Koehler, Clay County Historian**
- **Tommy Kleckner, Indiana Landmarks, Western Regional Office**

SHPO, FHWA and INDOT CRO are automatically consulting parties.

The 2010 Historic Property Report (HPR) was included as part of an early coordination package sent to state and local agencies and organizations, including DHPA, requesting comments relative to the recommendations of the HPR. These parties were invited to be consulting parties and participate in the development of the project in accordance with the provisions of Section 106 of the National Historic Preservation Act.

On September 28, 2010, DHPA had concurred with the findings of the original HPR performed by INDOT Cultural Resources Office. On November 3, 2010, DHPA accepted INDOT Cultural Resource Office's request to perform a Phase 1c Subsurface Reconnaissance survey for belowground resources. The DHPA concurred with the findings of INDOT Cultural Resources Office's report Phase 1c Subsurface Reconnaissance survey in a letter dated August 17, 2011. When the scope of the original project was changed, the project footprint also changed, and required further review of aboveground and belowground resources.

After the project was re-scoped, review of cultural resources continued, resulting in an addendum letter to the original HPR and an updated Phase 1 archaeological reconnaissance survey.

On November 19, 2014, consulting parties were invited to a consulting parties meeting to be held December 4, 2014 in Indianapolis. The invitation included a draft copy of the project's Historic Bridge Alternatives Analysis document and an update to the HPR to address the expanded APE (see Appendix D, page 50). Comments were requested on the materials within 30 days. Minutes of that meeting are included in Appendix D (starting at page 51).

During the meeting, it was requested that local agencies in Clay County should have had an opportunity to claim ownership and responsibility of this bridge. At that time, the project team was not aware of any contact with Clay County regarding the bridge. Following the meeting, however, the team learned that the Clay County Commissioners were indeed contacted in 2009 by the previous INDOT project manager. Their response at that time indicated that they had no interest in maintaining the bridge for park use. Based on the length of time that had elapsed, INDOT re-initiated coordination with the Commissioners to determine their interest. A public meeting was also requested to determine the level of support for the community for retaining the bridge in Clay County.

A public meeting was held on January 29, 2015, in Bowling Green and attended by representatives of INDOT, SHPO/DHPA, Parsons, FHWA, and members of the public to discuss the bridge. A summary of that meeting is provided in Part I of this CE document.

In a letter dated December 9, 2014, DHPA concurred with the findings of the HPR addendum and recommended that a dual review of projects, as suggested by INDOT, was necessary for the project. In the same letter, DHPA provided notification of the commencement of the Dual Review to interested persons and members of the Indiana Historic Preservation Review Board.

On March 5, 2015, SHPO submitted a letter to INDOT (see Appendix D, page 64) expressing concern that relocation and separation of the two trusses of the bridge would result in its removal from the NRHP. The bridge's current listing under Criterion A (only), for its transportation significance in the settlement and development of Clay County, increases the likelihood that it would be removed from the NRHP. SHPO requested that INDOT prepare documentation necessary to have the bridge reviewed for its eligibility under Criterion C, for engineering significance, as well. They further requested that INDOT submit a request that the bridge retain its listing on the NRHP throughout and following its relocation to Brown County. This request requires review by the Indiana Historic Preservation Review Board and the SHPO and, if it receives approval from both, approval by the Keeper of the National Register within the National Park Service. INDOT initiated this process by submitting the necessary documentation to SHPO on May 29, 2015 (see Appendix D, page 68). The matter will be reviewed by the Indiana Historic Preservation Review Board at their July 22, 2015 meeting.

The public notice announcing the public hearing will include notice of the APE and No Historic Properties Affected finding. A 30-day comment period will be given.

Archaeology: An Archaeological Short Report was completed by INDOT Cultural Resources staff on August 5, 2010. That report concluded that, while it located no archaeological resources in the project area, the Phase Ia reconnaissance identified landforms conducive to buried archaeological deposits and that a Phase Ic survey be conducted. In a letter dated September 28, 2010, SHPO (see Appendix D, page 39) concurred with the findings of the Archaeological Short Report and that Phase Ic reconnaissance was warranted. In a letter dated November 3, 2010 (see Appendix D, page 42), SHPO concurred with the Phase Ic reconnaissance plan submitted by INDOT.

INDOT, Cultural Resources personnel conducted a Phase Ic subsurface reconnaissance on April 26, 2011 following the measures outlined in the approved Phase Ic proposal (see Appendix D, page 25). Based upon the results of the Phase Ia reconnaissance (Miller 2010a) and Phase Ic subsurface reconnaissance, the project area does not appear to contain significant cultural resources eligible for inclusion in the IRHSS or NRHP. INDOT submitted the Phase Ic Subsurface Reconnaissance to SHPO July 21, 2011. In a letter dated August 17, 2011 (see Appendix D, page 45) SHPO stated that based upon the documentation provided, they had not identified any archaeological resources listed in or eligible for inclusion in the NRHP in the proposed project area.

Due to the change in scope and the expanded APE, ASC Group, Inc. conducted an additional Phase 1a archaeological survey in the fall of 2014. The fieldwork involved visual inspection, surface survey, shovel probing, and auger probing. Plowed agricultural fields and lightly to densely wooded areas were examined. Two newly identified archaeological sites (12Cy597 and 12Cy598) were recorded and one previously identified site (12Cy145) was resurveyed. Site 12Cy597 yielded no archaeologically recovered artifacts, and is defined only by structural remains of an old bridge. It appears that a pier and abutment are all that remain of the former bridge. Because of this, and for its lack of architectural and historical significance, 12Cy597 is recommended not eligible for the NRHP. Site 12Cy598 is a historic scatter, portions of which extend beyond the currently defined project area and is recommended not eligible for the NRHP. Site 12Cy145, a site identified during the records check, could not be relocated by ASC group during their 2014 field investigation. In a letter dated October 21, 2014 (see Appendix D, page 48) SHPO stated that based upon the documentation provided, they had not identified any archaeological resources listed in or eligible for inclusion in the NRHP in the proposed project area and that no subsurface archaeological reconnaissance will be required.

The following is a firm commitment concerning archaeological resources:
If any archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, state law (Indiana Code 14-21-1-27 and 29) requires that the discovery must be reported to the Department of Natural Resources within two business days. In that event, please call (317) 232-1646. Be advised that adherence to Indiana Code 14-21-1-27 and 29 does not obviate the need to adhere to applicable federal statutes and regulations.

Above-Ground Properties: A Historic Properties Report (HPR) was completed by INDOT for this project in August 2010 (see Appendix D, page 23). Several properties more than 50 years of age were identified in the APE. The SR 46 bridge over the Eel River (Bridge No. 046-11-01316C/NBI No. 17050) is a 2-span Parker pony through-truss measuring 396 feet long, constructed in 1934. The superstructure consists of eight continuous wide-flange steel beams, supported by a substructure consisting of two abutments and one intermediate pier. Reinforced concrete wing walls flank the end of each abutment. The structure was rehabilitated in 1977; this rehabilitation consisted of bridge-floor slab replacement, removal and replacement of mud walls, installation of new abutment and pier pedestals and guardrail replacement. The bridge is listed on the NRHP, under Criterion A, for its importance in the history of transportation on the local level.

One other property, a Queen Anne/Free Classic house constructed ca. 1910 located at 260 Jackson Street, met the requisite age and/or conditions criteria for National Register eligibility assessment. The house is a good example of the the type and architectural styles that were typical in the late 19th and early 20th centuries in rural Indiana. Over time, however, numerous physical alterations made to 260 Jackson Street have served collectively to obviate its architectural and material integrity. These deficiencies also combine with the resource's lack of historical significance, as Queen Anne/Free Classic houses were not (and are not) uncommon in Clay County or in the State of Indiana. Therefore, 260 Jackson Street was not recommended NR-eligible under Criterion C: Architecture.

When the project was re-scoped, a letter addendum to the HPR was prepared by ASC Group, Inc. to evaluate properties in the expanded APE (see Appendix D, page 50). Two properties, located on SR 46 in Bowling

Green, were not in the original APE, but are located in the additional APE.

5102 SR 46 is a minimal traditional-style house built ca. 1940. The one-story sidegabled house has vinyl siding and sheet metal roofing. The building retains its integrity of location, design, workmanship, feeling, setting, and association. Alterations to its historic materials include replacement windows, doors, and siding, and it does not retain its integrity of materials. Nevertheless, the property looks similar to its original form and appearance and retains its overall integrity. Despite this, 5102 SR 46 lacks significance under Criteria A, B, C, and D and is recommended as not eligible for the NRHP.

5141 SR 46 is a ranch-style house built ca. 1955. The building retains its integrity of location, design, workmanship, feeling, setting, and association. Alterations to its historic materials include replacement doors and siding, and it does not retain integrity of materials. Nevertheless, the property looks similar to its original form and appearance and retains its overall integrity. Despite this, 5141 SR 46 lacks significance under Criteria A, B, C, and D and is recommended as not eligible for the NRHP.

Although the town of Bowling Green is one of the oldest established towns in the county, and at one time its county seat, there are few properties on the town's west end that are architecturally significant and have good integrity. Therefore, the area of the town that is located inside the APE lacked the significance needed for potential eligibility as an HRHP historic district.

In a letter dated December 22, 2014, SHPO concurred that there are no additional, historic above-ground properties within the expanded APE (see Appendix D, page 60).

Documentation, Findings: Per the terms of the Historic Bridge PA, FHWA will satisfy its Section 106 responsibilities regarding the Eel River bridge through Stipulation III.A of the Historic Bridge PA PDP. Therefore, the finding for this project only applies to other resources located within the APE and not the Eel River bridge. A finding of No Historic Properties Affected was signed by FHWA on June 30, 2015 (see Appendix D, page 2). The finding and 800.11(e) document was transmitted to consulting parties, including the SHPO, for their review on July 8, 2015. Notice of the finding was published on July 8, 2015, in the Brown County Democrat with comments requested by August 6, 2015 (see Appendix D, page 173). No comments have been received to date. SHPO's concurrence with the No Historic Properties Affected finding must be received before final approval of this environmental document.

Per the conditions established in the Historic Bridge PA, the bridge owner will consult with Indiana SHPO to determine if photo documentation of the bridge is needed.

Public Involvement: Initial steps taken to identify a responsible party included outreach to trail groups across the state via an email list maintained by IDNR Division of Outdoor Recreation. That solicitation resulted in three responses, with the Salt Creek Trail determined by INDOT to be the best option. At a December 4, 2014 meeting with Consulting Parties, a request was made to INDOT to conduct outreach to Clay County and the public to determine the level of interest in retaining the bridge in its current location. On January 29, 2015, INDOT held a public meeting in Bowling Green to provide an overview of the project, including the bridge's condition, the alternatives under consideration, and the potential to relocate the bridge to Brown County. A summary of the public meeting, including the presentation and comments received both during and following the meeting is provided in Appendix G.

During the public meeting, INDOT explained that it would consider requests to retain the bridge in Clay County if a party (local government or private organization) was willing to take ownership of the bridge and maintain it for public use for a minimum of 25 years. The presentation also included the requirements for a party seeking to take ownership of the bridge for use either at its current location or another location in Clay County. The deadline for a party to step forward was originally set as March 30, 2015; however, based on comments received at the meeting and during the comment period, INDOT extended this deadline to the time

of the public hearing, currently anticipated for the first week of August 2015, a period of more than six months from the date of the public meeting.

INDOT has prepared draft Interlocal Agreements to be executed with IDNR and Brown County that will dictate the terms of their obligation to maintain the bridges (see Appendix D, pages 146 and 159). These agreements are still being reviewed by all parties involved and may be revised before execution. Agreements with each of the receiving parties must be executed prior to the final approval of this CE document by FHWA.

In accordance with the Historic Bridge PA and INDOT's FHWA-approved public involvement guidelines, a public hearing will be held to offer the public an opportunity to comment on this environmental document, the Section 106 documentation (see Appendix D), and the Preliminary Field Check plans (see Appendix B). The public hearing will be the last opportunity for a responsible party to step forward and provide the necessary sureties to obtain ownership of the bridge. The availability of the CE document and the hearing will be advertised in a widely circulated project area newspaper, on INDOT's website, and via direct mail to affected property owners. Subsequent to the certification of the public involvement requirements, this Categorical Exclusion (CE) will be revised appropriately and submitted for approval. Any comments received both during the public hearing and after, within the advertised 30 day comment period, will be summarized and included in this CE.

Indiana Code § 14-21-1-18 requires that historic sites owned by the state, such as the SR 46 bridge, that are to be altered, demolished, or removed using state funds must obtain a Certificate of Approval (COA) from the Indiana Historic Preservation Review Board. INDOT has requested "Dual Review" of this project by SHPO, allowing the project to be reviewed under Section 106 and state law simultaneously. Following SHPO's concurrence with the finding, SHPO will notify interested persons and members of the Review Board of their intention to issue a letter of clearance. Any member of the Review Board may request review of the project by the Review Board, in which case it will considered at their next meeting.

SECTION D – SECTION 4(f) RESOURCES/ SECTION 6(f) RESOURCES

Section 4(f) Involvement (mark all that apply)

Parks & Other Recreational Land	**Presence**	**Use: Yes**	**Use: No**
Publicly owned park			
Publicly owned recreation area			
Other (school, state/national forest, bikeway, etc.)			

	Evaluations Prepared	**FHWA Approval date**
Programmatic Section 4(f)*		
"De minimis" Impact*		
Individual Section 4(f)		

Wildlife & Waterfowl Refuges	**Presence**	**Use: Yes**	**Use: No**
National Wildlife Refuge			
National Natural Landmark			
State Wildlife Area			
State Nature Preserve			

Indiana Department of Transportation

County Clay Route SR 46 Des. No. 0800910

	Evaluations Prepared	FHWA Approval date
Programmatic Section 4(f)*		
"De minimis" Impact*		
Individual Section 4(f)		

Historic Properties	Presence	Use: Yes	Use: No
Sites eligible and/or listed on the NRHP	✓	✓	

	Evaluations Prepared	FHWA Approval date
Programmatic Section 4(f)*	✓	
"De minimis" Impact*		
Individual Section 4(f)		

**FHWA approval of the environmental document also serves as approval of any Section 4f Programmatic and/or De minimis evaluation(s) discussed below.*

Discuss Programmatic Section 4(f) and "de minimis" Section 4(f) impacts in the remarks box below. Individual Section 4(f) documentation must be separate Draft and Final documents. For further discussions on Programmatic, "de minimis" and Individual Section 4(f) evaluations please refer to the "Procedural Manual for the Preparation of Environmental Studies". Discuss proposed alternatives that satisfy the requirements of Section 4(f).

Remarks:

The Eel River bridge (Bridge Number 046-11-01316C) is the only Section 4(f) resource located within the project limits. As previously stated the bridge is listed on the NRHP and was identified in the Indiana Historic Bridge Inventory as "Select for Nonvehicular Use".

Alternatives for this project were developed in accordance with INDOT's Historic Bridge PA PDP and include no build, rehabilitation, and replacement options, with and without relocation of the existing bridge. This analysis also meets the requirements of FHWA's *Programmatic Section 4(f) Evaluation and Approval for FHWA Projects that Necessitate the Use of Historic Bridges* (Nationwide Programmatic Section 4(f) Evaluation). Like the Historic Bridge PA PDP, this national agreement provides a framework for the evaluation of alternatives that avoid the use of the historic bridge; alternatives to be evaluated include: do nothing (i.e., no build), build on new location without using the old bridge, and rehabilitation without affecting the historic integrity of the bridge.

As stipulated in the Historic Bridge PA, an Alternatives Analysis was developed in accordance with INDOT's *Historic Bridge Alternatives Analysis Layout* (see Appendix I). Those alternatives satisfy the requirements of the Nationwide Programmatic Section 4(f) Evaluation as follows:

Nationwide Programmatic Alternative	Historic Bridge PA PDP Alternative
Do Nothing	No Build (Alternative 1)
Build on new location without using the old bridge	One Way Pair (Alternative 3) Bypass (Alternative 4)
Rehabilitation without affecting historic integrity	Rehabilitation (Alternative 2)

Do Nothing: The Do Nothing (No Build) alternative would make no improvements to the existing bridge. It is anticipated that sometime in 2017 or later, the bridge would require a permanent solution or would need to be closed to all traffic. This alternative would not address the structural capacity or hydraulic needs of the project; therefore, it is not a prudent alternative.

Build on New Location Without Using the Old Bridge: Alternatives 3 and 4 would both provide a new bridge and retain the existing one. Alternative 3 would create a one-way pair, continuing to use the existing bridge for one lane of vehicular traffic. This alternative would not address the structural capacity or hydraulic needs of the project; therefore, it is not a prudent alternative. Alternative 4 would meet the project's structural needs through the construction of a new bridge to carry vehicular traffic and the existing bridge's rehabilitation, but would not address the project's hydraulic needs. Because the bridge is located in a sparsely populated area, INDOT and FHWA believe that pedestrian use of the existing bridge would be minimal and provide little value to the general public as a historic site compared to its potential use at other locations. As such the agencies do not believe that maintaining it in that location for the next 25 years is a good use of Federal and State funds. If a responsible party that is willing to maintain the bridge in its existing location is not identified prior to approval of this CE document, FHWA will conclude that this alternative is not prudent in accordance with finding 2d of the Nationwide Programmatic Section 4(f) Evaluation.

Rehabilitation Without Affecting Historic Integrity: Alternative 2 would rehabilitate the existing bridge, but, due to the design the bridge, its structural capacity would be limited to an H-20 load rating. Due to the bridge's location on the National Truck Network a design exception for this condition would not be granted and, under finding 3a of the Nationwide Programmatic Section 4(f) Evaluation, this alternative is not feasible and prudent.

Measures to Minimize Harm: In accordance with the requirements of the Nationwide Programmatic Section 4(f) Evaluation, the project will include all possible planning to minimize harm to the Section 4(f) resource:

1. Alternative 5 would, to the extent possible, preserve the historic integrity of the relocated existing bridge.
2. Because the bridge will be moved from its original location, INDOT and FHWA will ensure that, in accordance with the Historic American Engineering Record (HAER) standards, or other suitable means developed through consultation, fully adequate records of the bridge will be made.
3. INDOT and FHWA have identified a new location for the bridge that will ensure its continued use and preservation. Prior to approval of this CE document and the application of the Nationwide Programmatic Section 4(f) Evaluation, INDOT and FHWA will execute Interlocal agreements with the agencies taking responsibility for the bridge that establish the requirements of its preservation.
4. INDOT and FHWA will consult with SHPO and ACHP to obtain agreement on the measures to minimize harm.

Determination: FHWA has:

1. Determined that the project meets the applicability criteria set forth above;
2. Determined that all of the alternatives set forth in the Findings section have been fully evaluated;
3. Determined that use of the findings in this document that there are no feasible and prudent alternatives to the use of the historic bridge is clearly applicable;
4. Determined that the project complies with the Measures to Minimize Harm section of this document;
5. Assured that implementation of the measures to minimize harm is completed; and
6. Documented the project file that the programmatic Section 4(f) evaluation applies to the project on which it is to be used.

As requested by SHPO, INDOT and FHWA have submitted a request to the Indiana Historic Preservation Review Board to modify the NRHP listing of the SR 46 bridge by adding NRHP-eligibility under Criterion C and that it continue to be listed on the NRHP during and after the relocation, pursuant to the procedures established under 36 CFR 60.14(b). INDOT initiated this process by submitting the necessary documentation to SHPO on May 29, 2015 (see Appendix D, page 68). This request will be considered at the July 22, 2015 meeting of the Review Board. If the Review Board concurs with the request, it will be forward

to the Keeper of the Register for final determination. If it is determined that the bridge would remain eligible for the NRHP, and Interlocal agreements are executed to ensure their continued maintenance, FHWA would find that there is no use of the Section 4(f) resource (see FHWA's Section 4(f) Policy Paper, Question 8C, at http://www.environment.fhwa.dot.gov/4f/4fpolicy.asp).

FHWA's final approval of the CE will affirm that all Historic Bridge PA requirements have been fully addressed and serve as FHWA approval of the Nationwide Programmatic Section 4(f) Evaluation.

Section 6(f) Involvement	**Presence**	**Use**	
		Yes	**No**
Section 6(f) Property			

Discuss proposed alternatives that satisfy the requirements of Section 6(f). Discuss any Section 6(f) involvement.

Remarks: No Section 6(f) resources were identified during a check of the National Park Service's Land and Water Conservation Fund website (http://www.nps.gov/ncrc/programs/lwcf/history.html) or observed during field investigations by Parsons on January 18, 2013, September 4, 2014 and November 10, 2014. The project will not involve any properties acquired by or improved with the Land and Water Conservation Fund.

SECTION E – Air Quality

Air Quality

Conformity Status of the Project	**Yes**	**No**
Is the project in an air quality non-attainment or maintenance area?		✓
If YES, then:		
Is the project in the most current MPO TIP?		
Is the project exempt from conformity?		
If the project is NOT exempt from conformity, then:		
Is the project in the Transportation Plan (TP)?		
Is a hot spot analysis required (CO/PM)?		

Level of MSAT Analysis required?

Level 1a ✓ Level 1b ☐ Level 2 ☐ Level 3 ☐ Level 4 ☐ Level 5 ☐

Remarks: This project is located in Clay County. Clay County is currently in attainment for all criteria pollutants and this project is not of regional significance. Therefore, the conformity procedures of 40 CFR Part 93 do not apply.

Because this project is in attainment for carbon monoxide (CO) and as this type of project is exempt from conformity, a CO hot spot analysis is not required.

This project is of a type qualifying as a categorical exclusion (Group 1) under 23 CFR 771.117(c), or exempt under the Clean Air Act conformity rule under 40 CFR 93.126, and as such, a Mobile Source Air Toxics analysis is not required.

SECTION F – NOISE

Noise	Yes	No
Is a noise analysis required in accordance with FHWA regulations and INDOT's traffic noise policy?		✓

	No	Yes/ Date
ES Review of Noise Analysis		

Remarks: This project is a Type III project. In accordance with 23 CFR 772 and the INDOT Traffic Noise Policy, this action does not require a formal noise analysis.

SECTION G – COMMUNITY IMPACTS

Regional, Community & Neighborhood Factors	Yes	No
Will the proposed action comply with the local/regional development patterns for the area?	✓	
Will the proposed action result in substantial impacts to community cohesion?		✓
Will the proposed action result in substantial impacts to local tax base or property values?		✓
Will construction activities impact community events (festivals, fairs, etc.)?		✓
Does the community have an approved transition plan?		✓
If No, are steps being made to advance the community's transition plan?		✓
Does the project comply with the transition plan? (explain in the remarks box)	✓*	

Remarks: No significant economic or community impacts are expected to develop as a result of this project. This project is necessary to address the deteriorating conditions of the structure which could otherwise result in road closure or motorist injury. The project should have minimal impacts to community cohesion, the local tax base, or property values as it would not relocate any properties, it would not alter traffic capacity or traffic patterns, and it would not substantially change access to properties within the community. As stated above, the MOT would maintain traffic on the existing bridge until the new bridge and its approaches are constructed. This MOT will have minimal impacts and should not affect community events.

This project is located in a rural part of Clay County, which does not currently have an ADA transition plan. INDOT's 2013 Self-Evaluation and Updated ADA Transition Plan examined "INDOT's current facilities, policies and practices to identify and correct those items that create artificial access barriers for persons with disabilities." There are no sidewalks or trails within or adjacent to the project area, or any Level 1 or Level 2 roadway segments as defined by the plan. Therefore, there are no facilities in the project area that require ADA compliance.

Indirect and Cumulative Impacts	Yes	No
Will the proposed action result in substantial indirect or cumulative impacts?		✓

Remarks: There will be no substantial indirect or cumulative impacts as a result of this project.

Public Facilities & Services	Yes	No
Will the proposed action result in substantial impacts on health and educational facilities, public and private utilities, emergency services, religious institutions, airports, public transportation or pedestrian and bicycle facilities? *Discuss how the maintenance of traffic will affect public facilities and services.*		✓

Remarks: As stated above, the MOT would maintain traffic on the existing bridge until the new bridge and its approaches are constructed. This MOT will have minimal impacts and should not impact public facilities or services. The bridge currently has a 14 ton load limit, prohibiting the use of the bridge by some commercial truck traffic, farm equipment, and other large vehicles. The preferred alternative would have positive impacts on public services by providing a safe and structurally sufficient crossing of the Eel River with a service life of 75 years while eliminating geometric deficiencies. Should temporary closing be required when shifting traffic from the existing SR 46 roadway onto the new roadway and bridge, schools and local emergency facilities, such as the police and fire departments, would be coordinated with prior to construction.

Environmental Justice (EJ) (Presidential EO 12898)	**Yes**	**No**
During the development of the project were EJ issues identified?		✓
Does the project require an EJ analysis?	✓	
If YES, then:		
Are any EJ populations located within the project area?		✓
Will the project result in adversely high or disproportionate impacts to EJ populations?		✓

Remarks: This project would require the acquisition of approximately 7.06 acres of new permanent right-of-way, which exceeds the acreage threshold (0.5 acre or greater) requiring environmental justice (EJ) analysis. Therefore, in an attempt to identify minority and low income populations in the project area, demographic data from the U.S. Census Bureau's 2010 Census was compiled.

The project area is located in Census Tract 405 in Clay County. Thus, Census Tract 405 (the Affected Community (AC)) was reviewed and compared to data from Clay County (the Community of Comparison (COC)) to evaluate potential EJ populations in the project area (see Appendix J, page 5).

As shown in the table below, 12.49 percent of the population of Clay County, the COC, meets the criteria for low-income populations. 14.01 percent of Census Tract 405, the AC, consists of low-income populations. The AC is not greater than 50 percent low income, nor is the AC 125 percent of the COC percentage of low-income populations (15.62 percent). Therefore, a low-income EJ population does not exist within the project area.

Location	Total Population	Population Below Poverty Level	Percentage of Total Population Below Poverty Level	125% COC Threshold	
Community of Comparison (COC)					
Clay County, Indiana	26,472	3,307	12.49%	15.62%	
Affected Community (AC)					**EJ Population**
Census Tract 405	3,513	492	14.01%	-	No

Source: U.S. Census Bureau, 2006-2010 American Community Survey

As shown in the table below, 2.70 percent of the population of Clay County, the COC, meets the criteria for minority populations. 2.67 percent of Census Tract 405, the AC, consists of minority populations. The AC is not greater than 50 percent minority, nor is the AC 125 percent of the COC (3.38 percent) for minority populations. Therefore, a minority EJ population does not exist within the project area.

Location	Total Population	Minority Population	Minority Population Percentage	125% COC Threshold	
Community of Comparison (COC)					
Clay County, Indiana	26,983	729	2.70%	3.38%	
Affected Community (AC)					**EJ Population**
Census Tract 405	3,672	98	2.67%	-	No

Source: U.S. Census Bureau, 2006-2010 American Community Survey

Based on this analysis, there were no EJ populations identified within the project area. Furthermore, this project will benefit the community as a whole by perpetuating safe travel along SR 46 over the Eel River. Therefore, there will be no disproportionate negative effects on any EJ population.

Relocation of People, Businesses or Farms

	Yes	No
Will the proposed action result in the relocation of people, businesses or farms?		✓
Is a Business Information Survey (BIS) required?		✓
Is a Conceptual Stage Relocation Study (CSRS) required?		✓
Has utility relocation coordination been initiated for this project?	✓	

Number of relocations: Residences: 0 Businesses: 0 Farms: 0 Other: 0

If a BIS or CSRS is required, discuss the results in the remarks box.

Remarks: No relocations of people, businesses, or farms would take place as a result of this project.

Utility coordination has been initiated by Parsons. Overhead electric and telephone, as well as buried fiber optic telecommunications may require relocation as a result of this project.

SECTION H – HAZARDOUS MATERIALS & REGULATED SUBSTANCES

Hazardous Materials & Regulated Substances (Mark all that apply)	**Documentation**
Red Flag Investigation	✓
Phase I Environmental Site Assessment (Phase I ESA)	
Phase II Environmental Site Assessment (Phase II ESA)	
Design/Specifications for Remediation required?	

	No	Yes/ Date
ES Review of Investigations		✓ / March 7, 2014

Include a summary of findings for each investigation.

Remarks: A Red Flag Investigation (RFI) was completed on March 7, 2014, by Parsons. No hazardous materials items of concern were located within a half-mile radius of the project limits (see Appendix E). One IDEM 303d listed stream, Jordan Creek, is located approximately 140 feet north of the project limits; the cause of impairment is E. Coli. A site investigation on September 4 and November 10, 2014, identified no items of concern within the project limits. INDOT, Environmental Services approved the RFI on March 7, 2014. Further investigation for hazardous materials is not required at this time.

SECTION I – PERMITS CHECKLIST

Permits (mark all that apply)	**Likely Required**
Army Corps of Engineers (404/Section10 Permit)	
Individual Permit (IP)	
Nationwide Permit (NWP)	
Regional General Permit (RGP)	✓
Pre-Construction Notification (PCN)	✓
Other	
Wetland Mitigation required	✓
Stream Mitigation required	✓
IDEM	
Section 401 WQC	✓
Isolated Wetlands determination	✓
Rule 5	✓
Other	
Wetland Mitigation required	✓
Stream Mitigation required	✓
IDNR	
Construction in a Floodway	✓
Navigable Waterway Permit	
Lake Preservation Permit	
Other	
Mitigation Required	✓
US Coast Guard Section 9 Bridge Permit	
Others (Please discuss in the remarks box below)	

Remarks: Permits may be required for this project. It will be the responsibility of the designer to submit plans to ES to process permits. A USACE Regional General Permit (RGP) and an IDEM Section 401 WQC would be required due to impacts to Eel River, Streams 1, 2, and 3, the vernal pool, and the forested and emergent wetlands described previously. An IDEM Rule 5 permit would be required as more than one acre of land would be disturbed. The project would occur within a regulatory floodplain and does not meet the "Rural Bridge Exemption" and would therefore require an IDNR Construction in a Floodway (CIF) permit. Each of these permits may require mitigation, but the quantities, types and mechanism of mitigation would be determined through further consultation with the appropriate resource agency during the permitting process.

A separate CE document will be prepared for any off-site mitigation.

SECTION J- ENVIRONMENTAL COMMITMENTS

The following information should be provided below: List all commitments, name of agency/organization requesting the commitment(s), and indicating which are firm and which are for further consideration. The commitments should be numbered.

Remarks:

Firm:	
1.	If permanent and/or temporary right-of-way increases beyond what is covered in this environmental document, the environmental section of the INDOT Crawfordsville District's Capital Programming Division and INDOT, Environmental Services must be contacted immediately. (INDOT)
2.	If any archaeological artifacts or human remains are uncovered during construction, demolition, or

	earthmoving activities, state law (Indiana Code 14-21-1-27 and 29) requires that the discovery must be reported to the Department of Natural Resources within two (2) business days. In the event, please call 317-232-1646. Be advised that adherence to Indiana Code 14-21-1-27 and 29 does not obviate the need to adhere to applicable federal statutes and regulations. (INDOT)
3.	If any potential hazardous materials are discovered during construction, the IDEM Spill Line should be notified with details of the discovery within 24 hours. IDEM Spill Line: 1-888-233-7745, INDOT ES HAZMAT Unit: 1-317-232-5113. (INDOT)
4.	Any work in a wetland area within INDOT's right-of-way or borrow/waste areas is prohibited unless specifically allowed in the US Army Corps of Engineers or IDEM permit. (INDOT)
5	Permits will be required for construction of this project. The following permits should be anticipated: USACE 404 RGP, IDEM 401 WQC, IDEM Rule 5 NOI, and IDNR CIF. Mitigation may be a condition of these permits. It is the responsibility of the designer to submit plans to ES to process permits. (INDOT)
6.	Delineate all identified water resources from the Waters of the U.S. Report on the plans; mark any jurisdictional resources as "Water of the U.S." Any resource, or part thereof, not permitted by the appropriate agencies to be impacted shall be labeled as "Do Not Disturb". (INDOT)
7.	To avoid an incidental take of an Indiana bat or a northern long-eared bat, avoid tree clearing during the period of April 1 - September 30. (USFWS)
8.	Per Attachment B of the Historic Bridges PA, Standard Treatment Approach for Historic Bridges, rehabilitation plans that are in accordance with the Secretary of the Interior's Standards for Rehabilitation, or as close to the Standards as is practicable, must be provided to the Indiana SHPO when final design is complete. The Indiana SHPO will have thirty (30) days to review. If comments are not received within thirty (30) days, agreement from the Indiana SHPO on the plans submitted can be assumed. A written response to Indiana SHPO comments must be provided. The Indiana SHPO comments must be addressed. (INDOT)
9.	Property owners, local officials, school corporations, and emergency services shall be notified at least 48 hours in advance of construction that would block or limit access. (INDOT)
For Further Consideration:	
10.	Implement temporary erosion and sediment control methods within areas of disturbed soil. All disturbed soil areas upon project completion must be vegetated following INDOT's standard specifications. (USFWS)
11.	Do not clear trees or understory vegetation outside the construction zone boundaries. (USFWS)
12.	Restrict below low-water work in streams to placement piers, pilings and/or footings, shaping of the spill slopes around the bridge abutments, and placement of riprap. (USFWS)
13.	If rip rap is utilized for bank stabilization, extend it below low-water elevation to provide aquatic habitat. (USFWS)
14.	Avoid all work within the inundated part of the stream channel during the fish spawning season (April 1 through June 30); except for work within sealed structures such as caissons or cofferdams that were installed prior to the spawning season. No equipment shall be operated below Ordinary High Water Mark during this time unless the machinery is within the caissons or on the cofferdams. (USFWS)
15.	Riparian Habitat: We recommend a mitigation plan be developed (and submitted with the permit application) if habitat impacts will occur to forested habitat (wetland or non-wetland) resulting from the bridge replacement project. The DNR's Floodway Habitat Mitigation guidelines (and plant lists) can be found online at: http://www.in.gov/legislative/iac/20120801-1R-312120434NRA.xml.pdf. (IDNR)
16.	Impacts to non-wetland forested habitat under one acre should be mitigated at a 1:1 ratio. Impacts to non-wetland forest habitat over one acre should be mitigated at a minimum 2:1 ratio. Impacts to wetland habitat should also be mitigated at the appropriate ratio according to the 1991 INDOT/IDNR/USFWS Memorandum of Understanding. (IDNR)
17.	Stream crossings/Wildlife Passage: The new, replacement, or rehabbed structure, and any bank stabilization under the structure, should not create conditions that are less favorable for wildlife passage under the structure compared to the current conditions. A level area of natural ground under

	the structure is ideal for wildlife passage. If channel clearing will result in a flat bench area above the normal water level under the structure, this area should allow wildlife passage and should remain free of riprap and other similar materials that can impair wildlife passage. If hard armoring is needed, wildlife passage can be facilitated by using a smooth-surfaced armoring material instead of riprap, such as articulated concrete block mats, fabric-formed concrete mats, or other similar smooth-surfaced material. (IDNR)
18.	Minimize the use of riprap and use alternative erosion protection materials whenever possible. Where riprap must be used, we recommend placing only enough riprap to provide stream bank toe protection, such as from the toe of the bank up to the ordinary high water mark (ohwm). From the ohwm to the top of the bank, we recommend using bioengineered bank stabilization methods instead of riprap. This will allow a natural, vegetated stream bank to develop and will allow wildlife passage along the creek's banks and riparian corridor. Information about bioengineering techniques can be found at: http://www.in.gov/Jegislative/iac/20120404-JR-312120154NRA.xml.pdf. Also, the following is a USDA/NRCS document that outlines many different bioengineering techniques for stream-bank stabilization: http://directives.sc.egov.usda.gov/17553.wba. (IDNR)
19.	Revegetate all bare and disturbed areas in the floodway with a mixture of native grasses, wildflowers, and native shrub and hardwood tree species as soon as possible upon completion. Do not use any varieties of Tall Fescue or other non-native plants (e.g. crown-vetch). (IDNR)
20	Minimize and contain within the project limits in-channel disturbance and the clearing of trees and brush. (IDNR)
21.	Do not work in the waterway from April 1 through June 30 without the prior written approval of the Division of Fish and Wildlife. (IDNR)
22.	Do not cut any trees suitable for Indiana bat roosting (greater than 3 inches dbh, living or dead, with loose hanging bark) from April 1 through September 30. (IDNR)
23.	Do not construct any temporary runarounds or causeways. (IDNR)
24.	Use minimum average 6 inch graded riprap stone extended below the normal water level to provide habitat for aquatic organisms in the voids. (IDNR)
25.	Post "Do Not Mow or Spray" signs along the right-of-way. (IDNR)
26.	Appropriately designed measures for controlling erosion and sediment must be implemented to prevent sediment from entering the stream or leaving the construction site; maintain these measures until construction is complete and all disturbed areas are stabilized. (IDNR)
27.	Seed and protect all disturbed slopes that are 3: 1 or steeper with heavy duty biodegradable erosion control blankets (follow manufacturer's recommendations for selection and installation; seed and apply mulch on all other disturbed areas). (IDNR)

SECTION K- EARLY COORDINATION

Please list the date coordination was sent and all agencies that were contacted as a part of the development of this Environmental Study. Also, include the date of their response or indicate that no response was received. INDOT and FHWA are automatically considered early coordination participants and should only be listed if a response is received.

Remarks: Early coordination was initiated on August 11, 2014 with applicable federal, state, and local agencies (see Appendix C, page 1). A re-coordination e-mail was sent to USFWS on April 30, 2015 (see Appendix C, page 44). Review comments from those agencies that returned a reply have been incorporated into this study, as appropriate. The resource agencies and dates of their responses are listed below.

Agency	Response	Appendix
IDEM- Roadway Construction Letter (online submittal)	June 6, 2015	C, pg 18
IDEM-Groundwater Section (Wellhead Protection)	No Response; Self-Service site accessed May 1, 2015	N/A
IDNR-Division of Fish and Wildlife	September 3, 2014	C, pg 25
IDNR-Division of Nature Preserves	September 15, 2014	C, pg 28
INDOT-Office of Aviation	No Response	N/A
INDOT- Office of Public Involvement	September 11, 2014	N/A
Indiana Geological Survey	September 19, 2014	C, pg 34
Natural Resources Conservation Service	August 14, 2014	C, pg 35
U.S. Fish and Wildlife Service • Letter • E-mail follow-up coordination	 • No Response • May 5, 2015	 N/A C, pg 37
U.S. Dept. of Housing and Urban Development	August 26, 2014 (Response E-mail)	C, pg 46
National Park Service	No Response	N/A
U.S. Army Corps of Engineers	No Response	N/A
Clay County Commissioners	No Response	N/A
Clay County Redevelopment Commission	No Response	N/A
Clay County Highway Department	No Response	N/A
West Central Indiana Economic Development Dist.	No Response	N/A

APPENDIX A – INDOT SUPPORTING DOCUMENTATION

- Threshold Chart

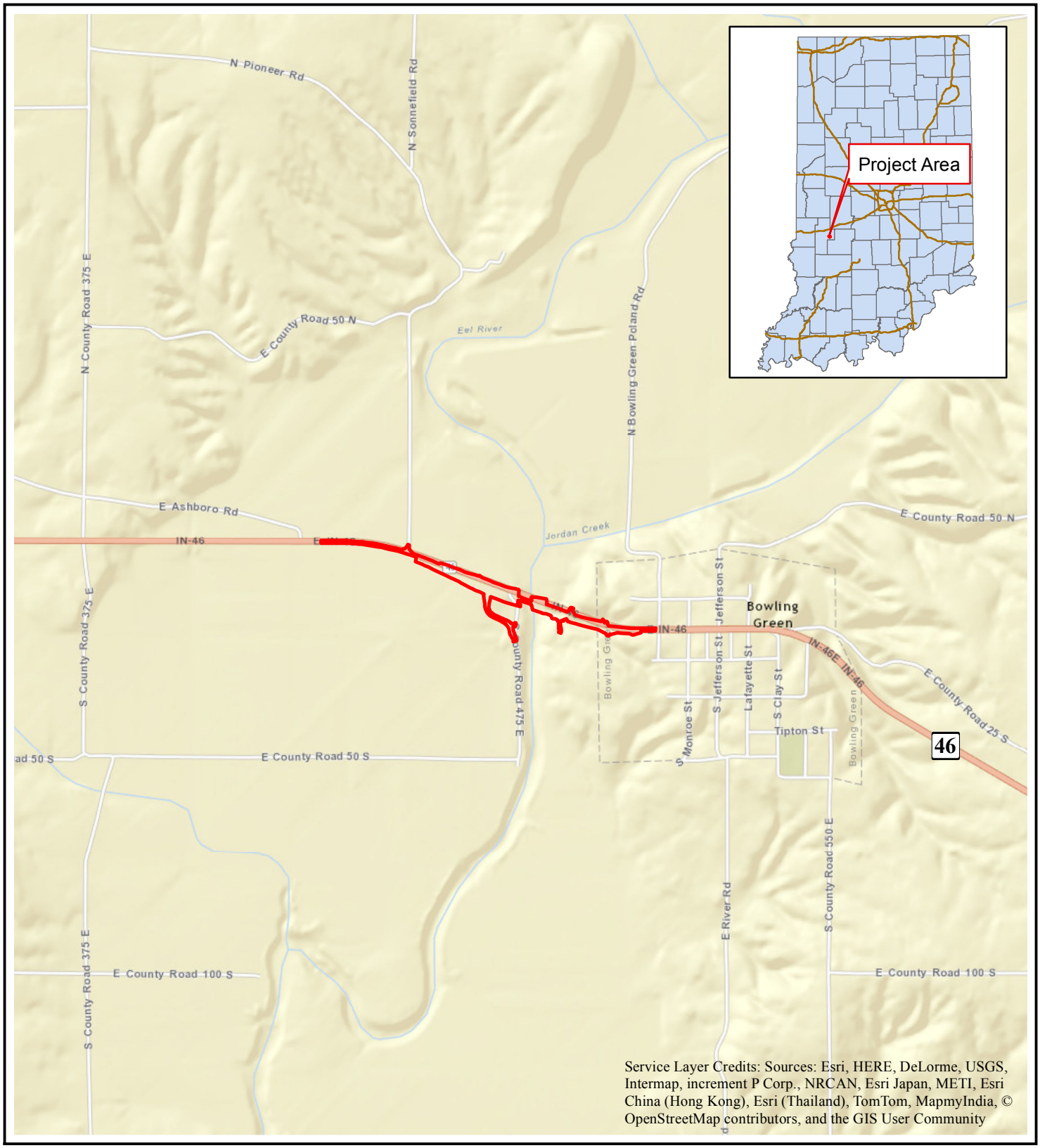
Categorical Exclusion Level Thresholds

	Level 1	Level 2	Level 3	Level 4
Relocations	None	≤ 2	> 2	> 10
Right-of-Way[1]	< 0.5 acre	< 10 acres	≥ 10 acres	≥ 10 acres
Length of Added Through Lane	None	None	Any	Any
Permanent Traffic Pattern Alteration	None	None	Yes	Yes
New Alignment	None	None	< 1 mile	≥ 1 mile[2]
Wetlands	< 0.1 acre	< 1 acre	< 1 acre	≥ 1 acre
Stream Impacts*	≤ 300 linear feet of stream impacts, no work beyond 75 feet from pavement	> 300 linear feet impacts, or work beyond 75 feet from pavement	N/A	N/A
Section 4(f)	None	None	None	Any impacts
Section 6(f)	None	None	Any impacts	Any impacts
Section 106*	"No Historic Properties Affected" or falls within guidelines of Minor Projects PA	"No Adverse Effect" or "Adverse Effect"	N/A	If ACHP involved Or Historic Bridge Involvement[7]
Noise Analysis Required	No	No	Yes[3]	Yes[3]
Threatened/Endangered Species	"Not likely to Adversely Affect", or Falls within Guidelines of USFWS 9/8/93 Programmatic Response	N/A	N/A	"Likely to Adversely Affect"[4]
Sole Source Aquifer Groundwater Assessment	Detailed Assessment Not Required	Detailed Assessment Not Required	Detailed Assessment Not Required	Detailed Assessment Required
Approval Level • **ESM**[5] • **ES**[6] • **FHWA**	Yes	Yes	Yes Yes	Yes Yes Yes

*These thresholds have changed from the March 2011 Manual.
[1]Permanent and/or temporary right-of-way.
[2]If the length of the new alignment is equal to or greater than one mile, contact the FHWA's Air Quality/Environmental Specialist.
[3]In accordance with INDOT's Noise Policy.
[4] If the project is considered Likely to Adversely Affect Threatened and/or Endangered Species, INDOT and the FHWA should be consulted to determine whether a higher class of document is warranted.
[5]Environmental Scoping Manager
[6]Environmental Services Division
[7] Any involvement with a bridge processed under the Historic Bridge Programmatic Agreement

APPENDIX B – GRAPHICS

- Project Overview Map
- Aerial and Road Map
- Topographic Map
- Bridge Realignment Detail Map
- Photo Location Maps
- Photographs of the project area
- Preliminary Field Check Plans



Legend

Preliminary Construction Limits

0 750 1,500 3,000 Feet

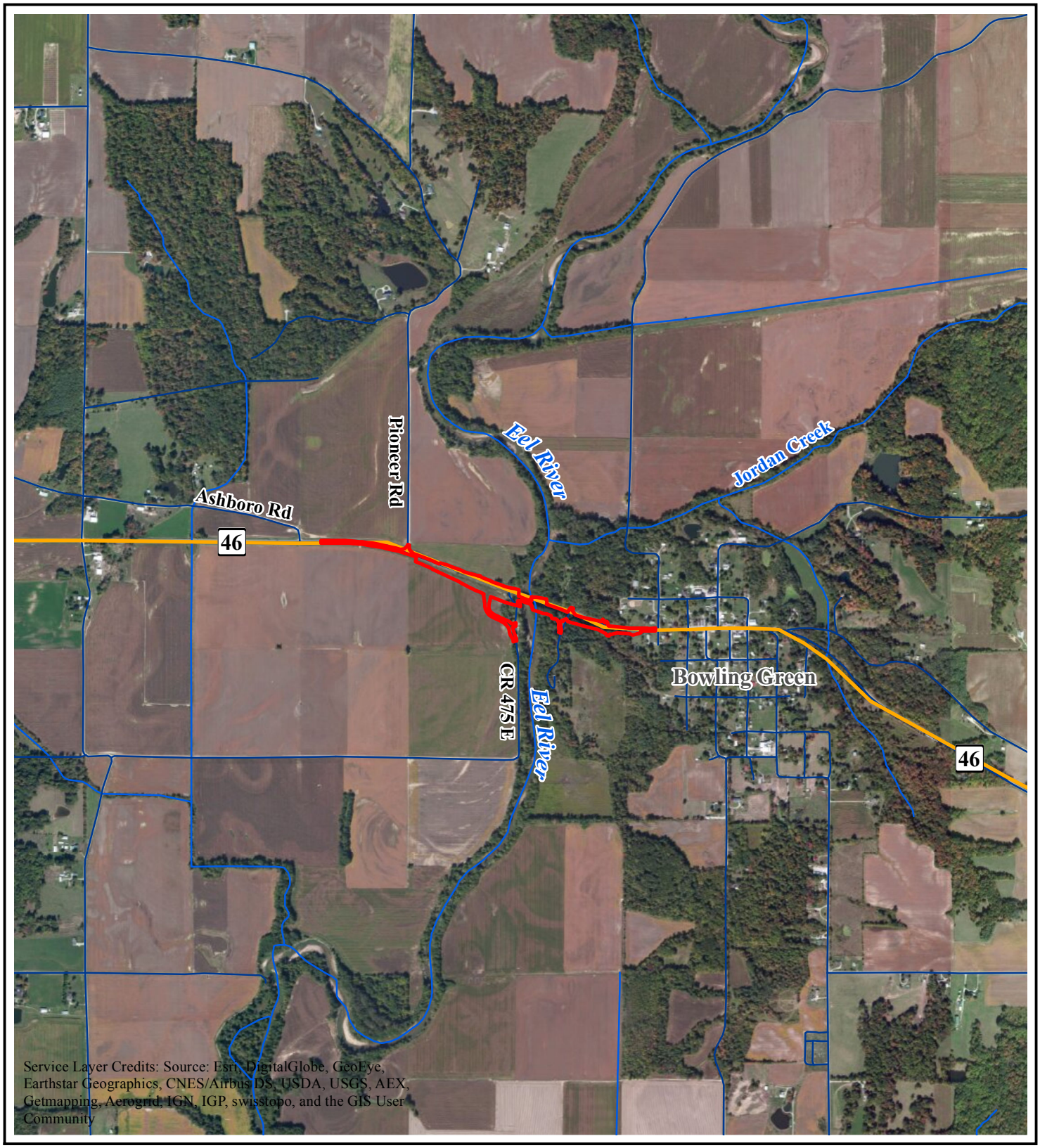
N

SR 46 over Eel River

Des. No. 0800910

Figure 1 - Project Location

PARSONS



Legend

Preliminary Construction Limits

0 750 1,500 3,000 Feet

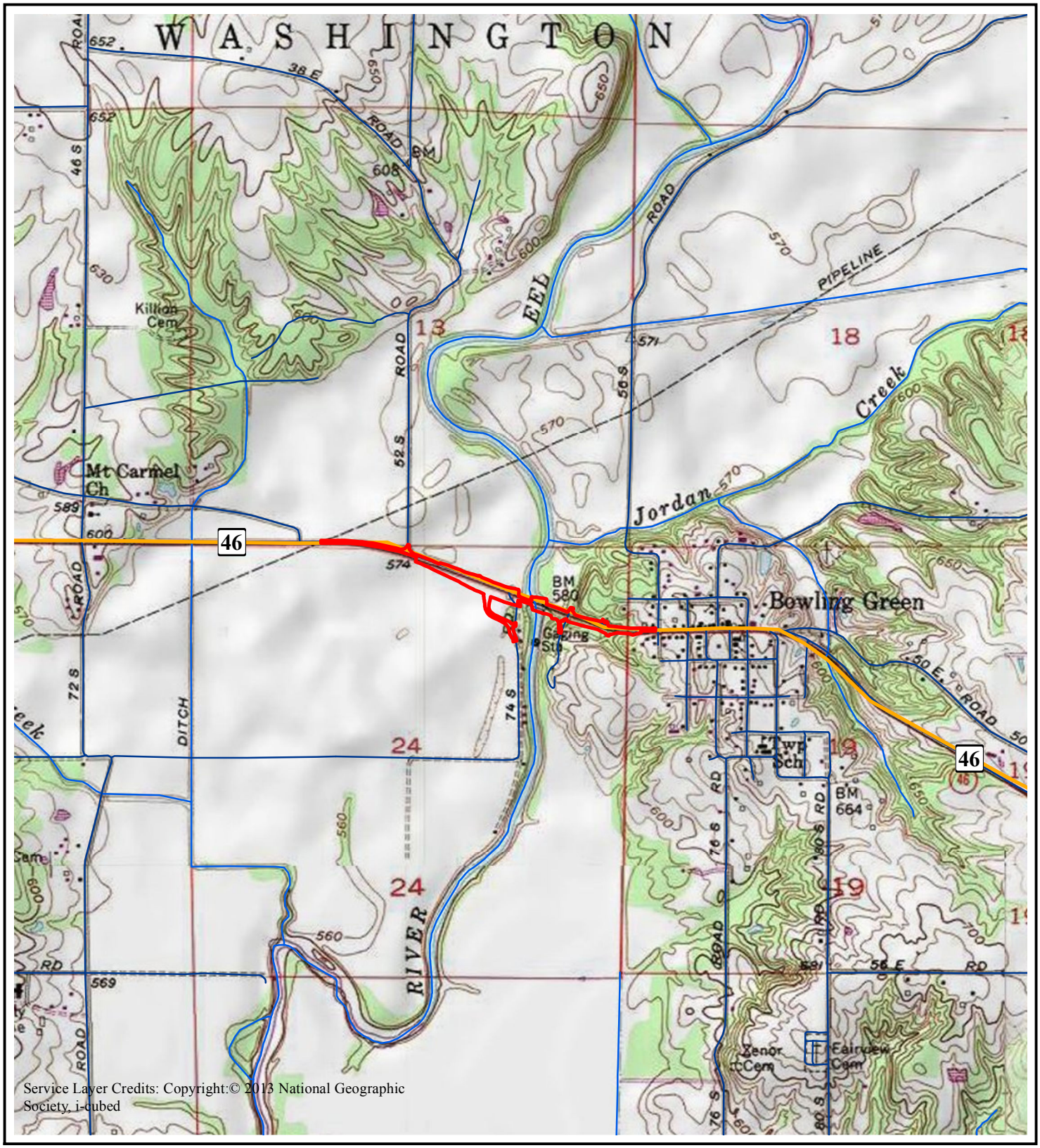
N

SR 46 over Eel River

Des. No. 0800910

Figure 2 - Aerial Imagery

PARSONS



Legend

Preliminary Construction Limits

0 750 1,500 3,000 Feet

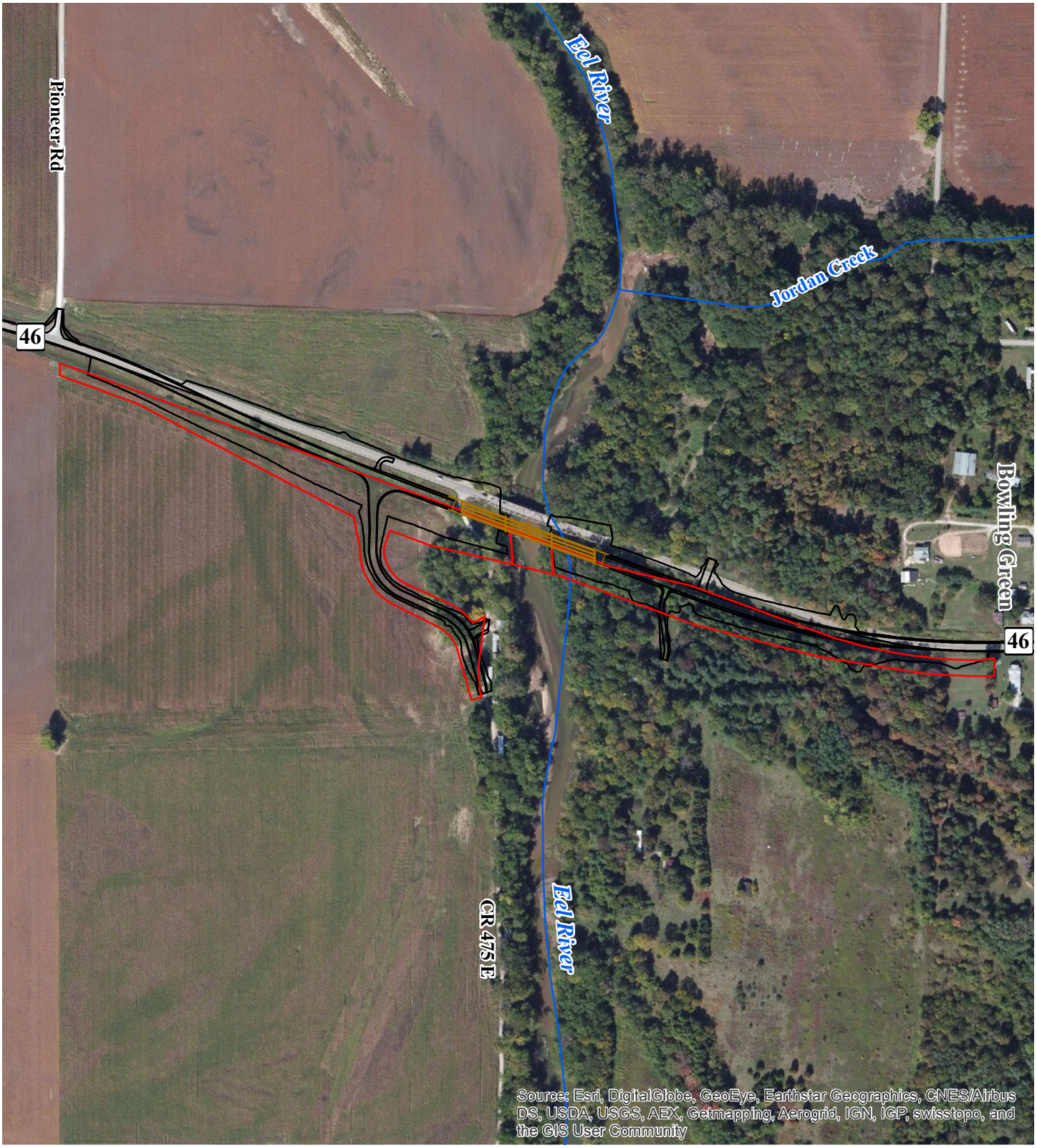
N

SR 46 over Eel River

Des. No. 0800910

Figure 3 - USGS Topographic Map

PARSONS



Legend

- Proposed new right-of-way
- Proposed SR 46 realignment
- Proposed realigned bridge

N

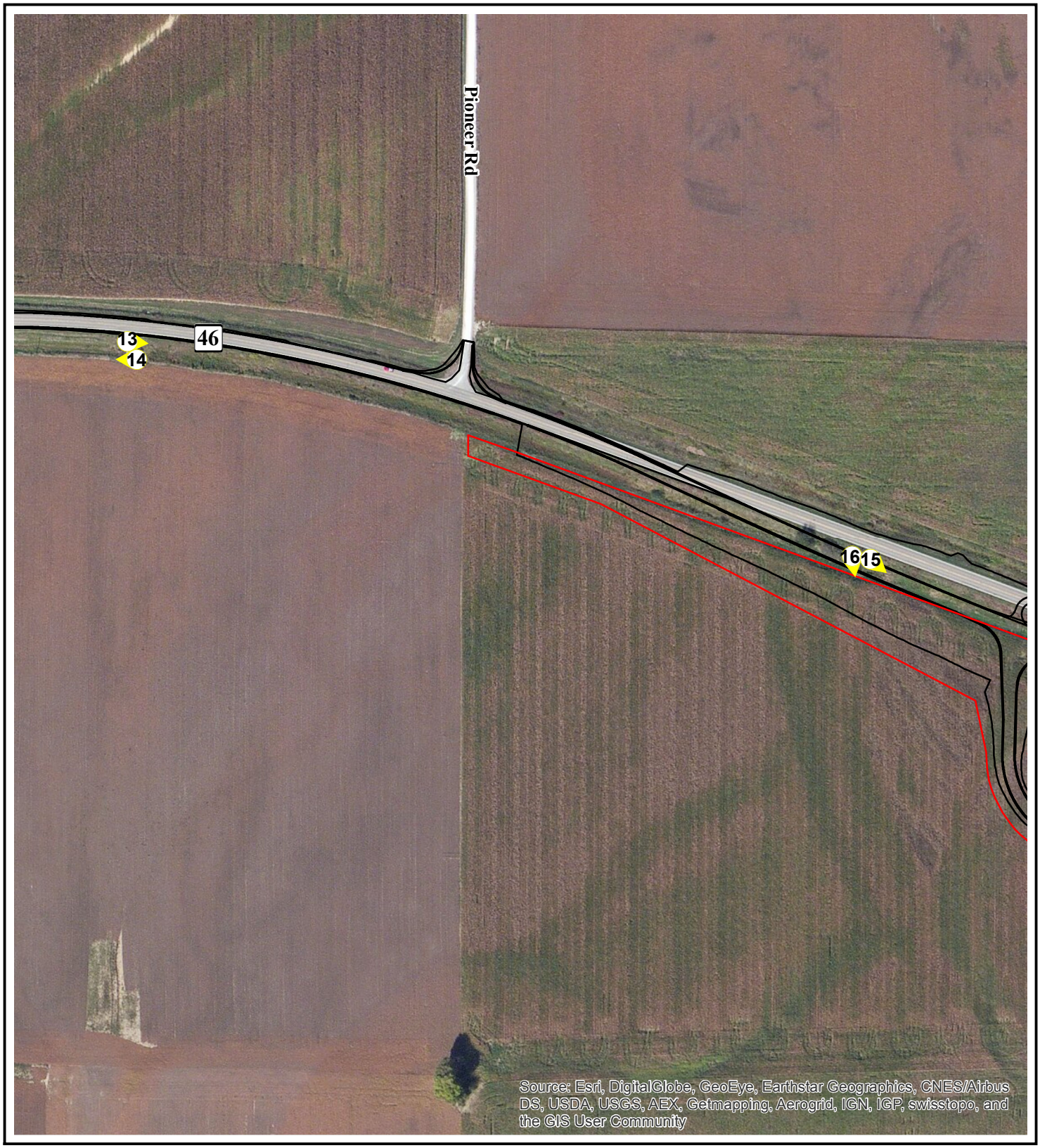
0 200 400 800 Feet

SR 46 over Eel River

Des. No. 0800910

Figure 4 - Realignment Details

PARSONS



Legend

Proposed new right-of-way

Proposed SR 46 realignment

N

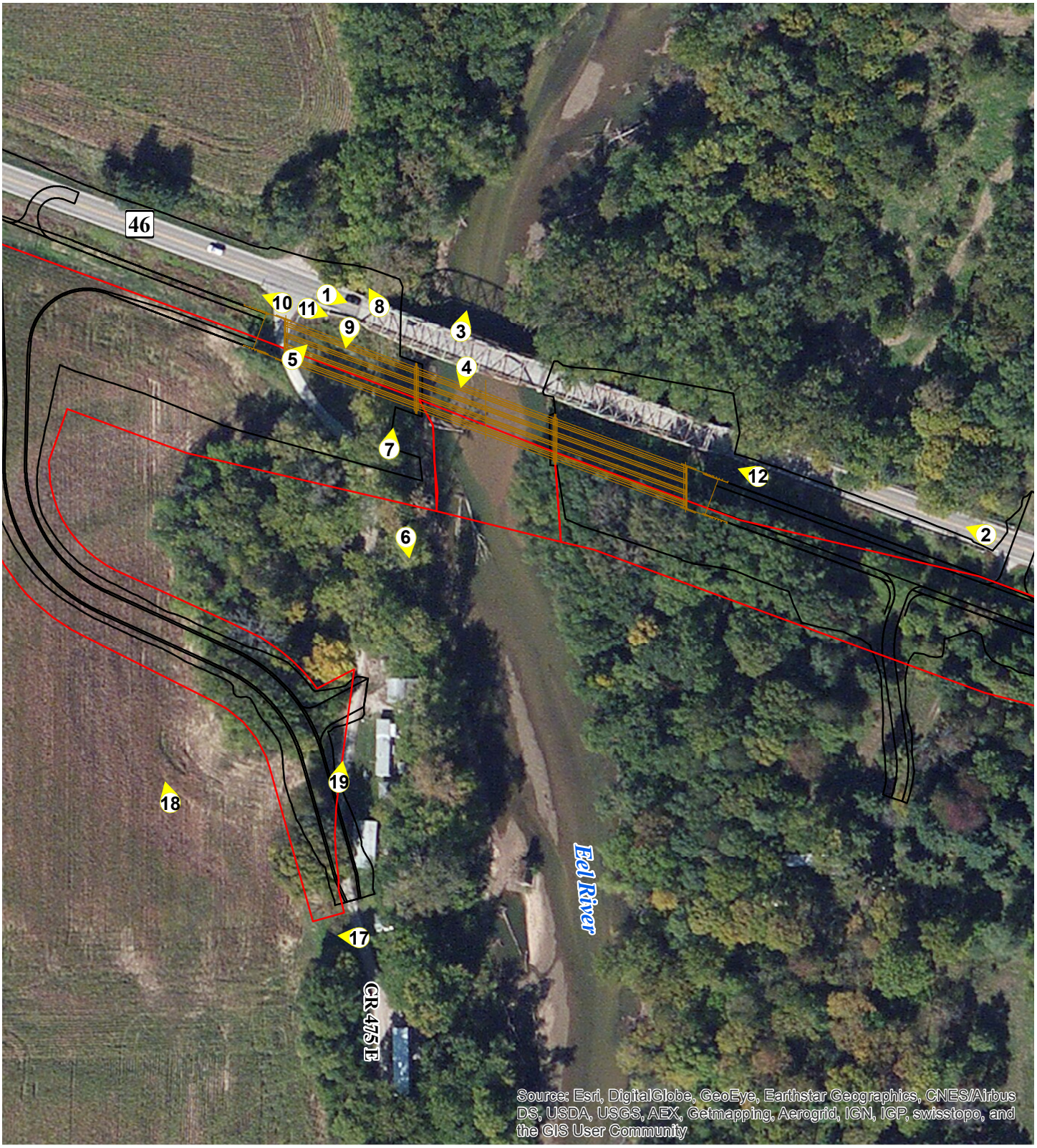
0 125 250 500 Feet

SR 46 over Eel River

Des. No. 0800910

Figure 5a - Photo Location Map, West

PARSONS



Legend

Proposed new right-of-way

Proposed SR 46 realignment

Proposed realigned bridge

N

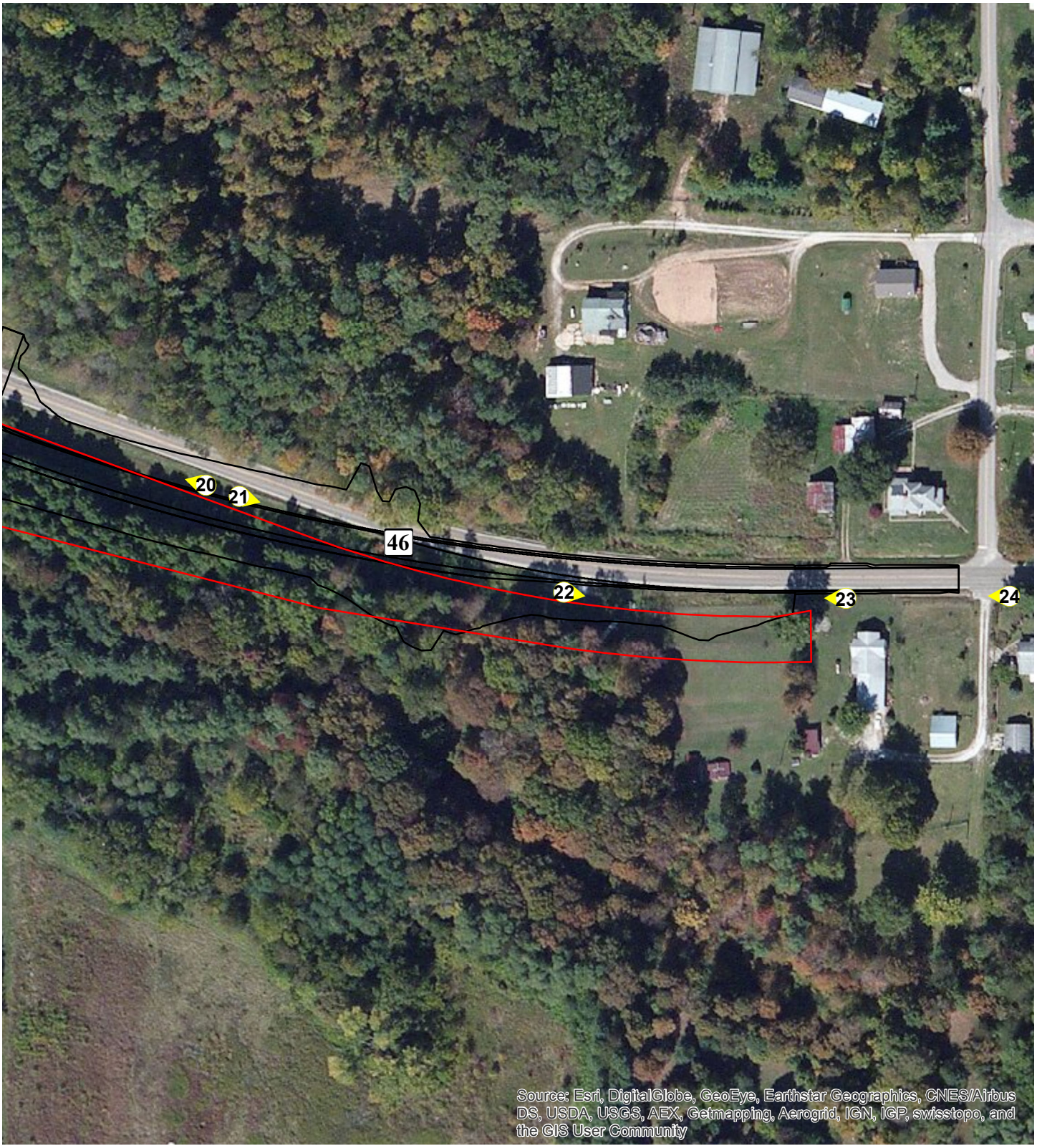
0 75 150 300 Feet

SR 46 over Eel River

Des. No. 0800910

Figure 5b - Photo Location Map, Middle

PARSONS



Legend

Proposed new right-of-way

Proposed SR 46 realignment

N

0 75 150 300 Feet

SR 46 over Eel River

Des. No. 0800910

Figure 5c - Photo Location Map, East

PARSONS

Photo 1: Looking east along SR 46 at west approach to the existing bridge (1/18/13)

Photo 2: Looking west along SR 46 from about 300 feet east of the bridge (1/18/13)

Photo 3: Looking north (upstream) at the Eel River from the existing bridge (1/18/13)

Photo 4: Looking south (downstream) at the Eel River from the existing bridge (1/18/13)

Photo 5: Looking northeast at the existing bridge from just south of the west abutment (1/18/13)

Photo 6: Looking south (downstream) along the west bank of the Eel River from about 100 south of the existing bridge (1/18/13)

Photo 7: Looking north (upstream) at the existing bridge from about 100 feet south on the west bank (1/18/13)

Photo 8: Looking northwest from the west end of the existing bridge (1/18/13)

Photo 9: Looking south at the west bank of the Eel River and CR 475E from the west abutment of the existing bridge (1/18/13)

Photo 10: Looking west along SR 46 from CR 47E (5/4/12)

Photo 11: Looking east along the south side of the existing bridge from CR 475E (5/4/12)

Photo 12: Looking west along the south side of the existing bridge from the east abutment (5/16/13)

Photo 13: (11/10/14)

Photo 14: (11/10/14)

Photo 15: (11/10/14)

Photo 16: (11/10/14)

Photo 17: (11/10/14)

Photo 18(11/10/14)

Photo 19: (11/10/14)

Photo 20: (11/10/14)

Photo 21: (11/10/14)

Photo 22: (9/4/14)

Photo 23: (11/10/14)

Photo 24: (11/10/14)

PROJECT	DESIGNATION
0800910	0800910
CONTRACT	BRIDGE FILE
B-36390	46-11-10070

INDIANA DEPARTMENT OF TRANSPORTATION

BRIDGE PLANS

FOR SPANS OVER 20 FEET

SR 46 OVER EEL RIVER

PROJECT NO. 0800910 P.E.
0800910 R/W
0800910 CONST.

RP 22+05
Bridge Replacement on SR 46 over Eel River Located Approximately 4.84 Miles East of SR 59
In Section 24, T-11-N, R-6-W, Washington Township, Clay County, Indiana

STRUCTURE INFORMATION

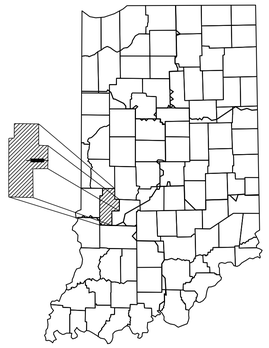
STRUCTURE	TYPE	SPAN AND SKEW	OVER	STATION
46-11-10070	CONTINUOUS COMPOSITE PRESTRESSED CONCRETE BULB-TEE BEAM BRIDGE	3 Spans: 142'-0", 151'-0" & 142'-0" Skew: 20° LT.	EEL RIVER	625+07.01 "PR-A"

TRAFFIC DATA / SR 46

A.A.D.T.	(2017)	3240 V.P.D.
A.A.D.T.	(2047)	3620 V.P.D.
D.H.V		305 V.P.H.
DIRECTIONAL DISTRIBUTION		50 % / 50 %
TRUCKS		13.85 % A.A.D.T.
		4.50 % D.H.V.

DESIGN DATA / SR 46

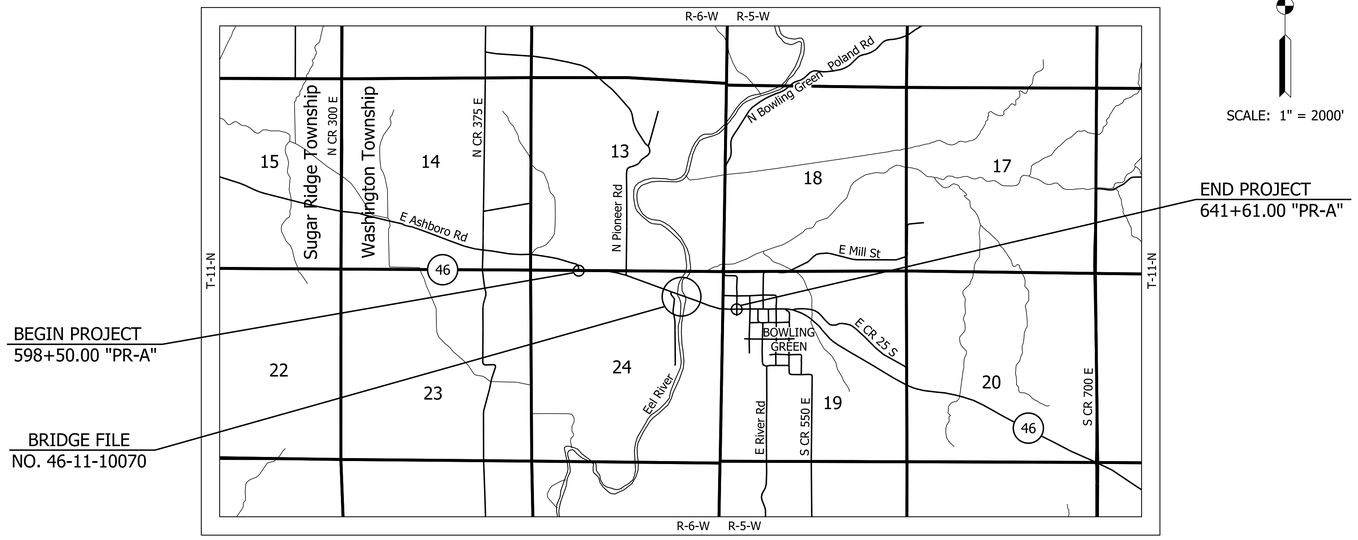
DESIGN SPEED	55 M.P.H.
PROJECT DESIGN CRITERIA	NEW CONSTRUCTION (NON-FREEWAY)
FUNCTIONAL CLASSIFICATION	MINOR ARTERIAL
RURAL/URBAN	RURAL
TERRAIN	ROLLING
ACCESS CONTROL	NONE



PROJECT LOCATION SHOWN BY

LATITUDE: 39° 23' 02" N LONGITUDE: 87° 01' 14" W

BRIDGE LENGTH:	0.083	MI.
ROADWAY LENGTH:	0.733	MI.
TOTAL LENGTH:	0.816	MI.
MAX. GRADE:	6.65	%



SCALE: 1" = 2000'

LOCATION MAP
CLAY COUNTY

PRELIMINARY FIELD CHECK PLANS
APRIL 9, 2015

INDIANA DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS DATED 2014
TO BE USED WITH THESE PLANS.

PARSONS
101 W. Ohio St., Suite 2121
Indianapolis, IN 46204
Bus (317) 616-1000
Fax (317) 616-1033

IP_PWP:dms01952\SR46_SHT TITLE.01.dgn
09-APR-2015

PLANS PREPARED BY: PARSONS 317-616-1000 PHONE NUMBER

CERTIFIED BY: _____ DATE

APPROVED FOR LETTING: _____ INDIANA DEPARTMENT OF TRANSPORTATION DATE

BRIDGE FILE
46-11-10070
DESIGNATION
0800910

SURVEY BOOK	SHEETS		
ELECTRONIC	1	of	70
CONTRACT	PROJECT		
B-36390	0800910		

UTILITIES

TELEPHONE:

CLAY COUNTY RURAL TELEPHONE
P.O. BOX 237
2 S. WEST STREET
CLOVERDALE, IN 46120-023

MCI
2400 N. GLENDVILLE
RICHARDSON, TX 75082
DEAN BOYERS
(972) 729-6016

ELECTRIC:

DUKE
P.O. BOX 1642
5444 WESTHEIMER
HOUSTON, TX 77251-164
JAMES MESSMAN
(713) 989-2228

UTILITIES DISTRIBUTION OF
WESTERN INDIANA REMC
P.O. BOX 427
SR 54 WEST
BLOOMFIELD, IN 47424
ROGER DAVIS
(812) 384-4446

FIBER OPTIC:

∗ ENDEAVOR
NO INFORMATION

Indiana811 Know what's below. Call before you dig.

∗ Survey Requested a Locate, but Endeavor Failed to Comply with the Request. Further Coordination shall be Required.

GENERAL NOTES

XX	All earth shoulders, median areas, cut and fill slopes shall be plain or mulch seeded except where sodding is specified.
	The final cross sections of the grading contract will be the original cross sections of the paving contract. However, partial or complete cross sections shall be taken if necessary to determine the actual excavation quantities.
	Paper relocation is to be cross sectioned by the engineer before construction.
	Existing asphalt located outside the construction limits, between Station _____ and Station _____ shall be removed as directed.
	The quantity of peat excavation shown on the plans has been estimated on the basis of theoretical cross sections by using treatment of existing fills, treatment by removal, or treatment by displacement, where each treatment applies.
xx	Required General Notes

INDEX

SHEET NO.	SUBJECT
1	TITLE
2	INDEX
3-4	TYPICAL SECTIONS
5-6	PLAT SHEET
7-17	MAINTENANCE OF TRAFFIC
18-28	PLAN & PROFILE
29-31	SUPERELEVATION DETAIL
32	TEMPORARY TRAFFIC CONTROL
33	LAYOUT
34-35	GENERAL PLAN
36	BRIDGE SUMMARY
37	APPROACH TABLE
38-70	CROSS SECTIONS Omitted from CE document. Available upon request.

REVISIONS

SHEET NO.	DATE	REVISED

ABBREVIATIONS

R/W	Right-of-Way
L.A. R/W	Limited Access Right-of-Way
A.C.L.	Access Control Line
C.L.T.F.	Chain Link Type Fence
F.F.T.F.	Farm Field Type Fence
APP. P.L.	Apparent Property Line
APP. EXIST. R/W	Apparent Existing Right-of-Way
B	Beginning L.A.R/W
E	Ending L.A.R/W
N.E.P.L.	No Evidence of Property Line
SE	Superelevation
P.G.	Profile Grade

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: RAM DRAWN: ALF
CHECKED: MJK CHECKED: MJK

INDIANA
DEPARTMENT OF TRANSPORTATION

INDEX SHEET

HORIZONTAL SCALE	BRIDGE FILE
NONE	46-11-10070
VERTICAL SCALE	DESIGNATION
NONE	0800910
SURVEY BOOK	SHEETS
ELECTRONIC	2 of 70
CONTRACT	PROJECT
B-36390	0800910

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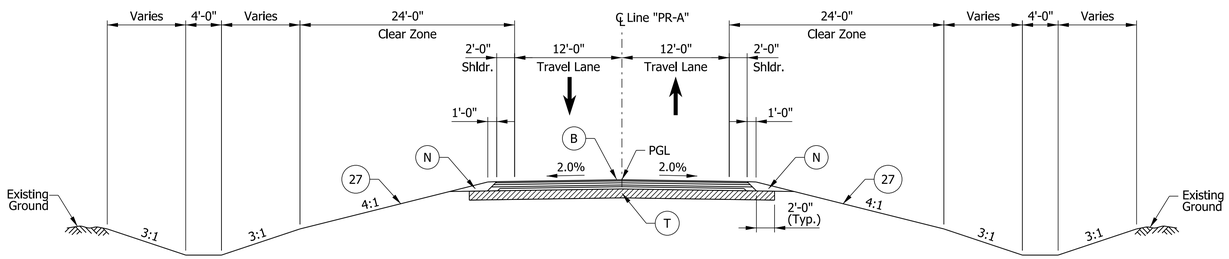
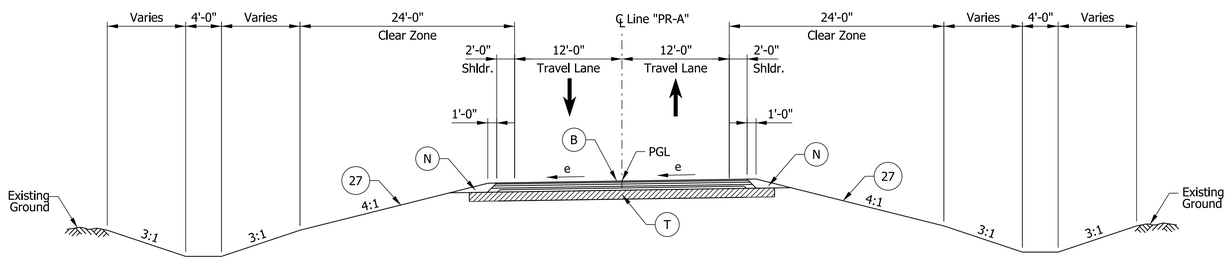
09-APR-2015



TYPICAL SECTION SR 46 FOR TANGENT
FULL DEPTH REPLACEMENT
Sta. 614+76.24 Line "A" to Sta. 629+32.00 Line "PR-A"

Paving Exception
Sta. 622+61.02 to Sta. 627+53.00 "PR-A"



TYPICAL SECTION SR 46 FOR SUPERELEVATION
FULL DEPTH REPLACEMENT
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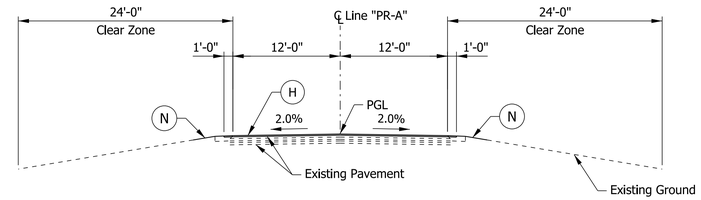

TYPICAL SECTION SR 46 FOR TANGENT (OVERLAY ONLY)
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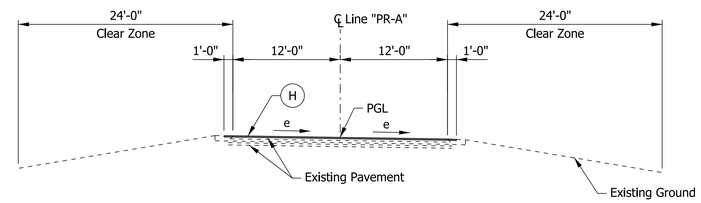

TYPICAL SECTION SR 46 FOR SUPERELEVATION (OVERLAY ONLY)
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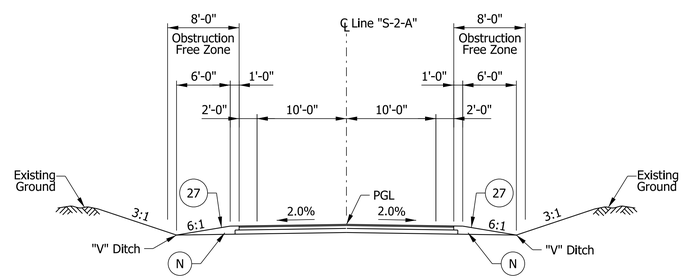
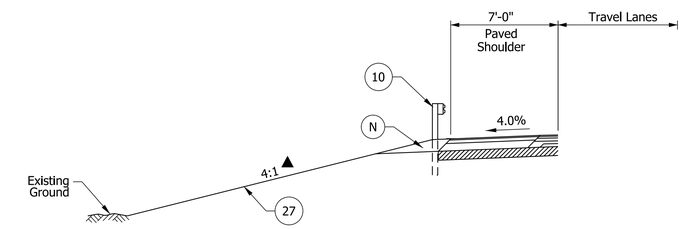
Sta. 639+82.56 Line "A" to Sta. 641+61.00 Line "PR-A"



TYPICAL SECTION CR 475E FOR TANGENT
FULL DEPTH REPLACEMENT



▲ 2:1 From
Sta. 627+56.45 to Sta. 635+00.00
Slope Transitions From 2:1 to 4:1
at Sta. 635+00.00 to Sta. 636+00.00
Riprap Slope From Sta. 627+56.45
to Sta. 635+00.00

10:1 From
Sta. 613+50.00 to Sta. 617+00.00 Lt
Transitions From 10:1 to 6:1 From
Sta. 617+00.00 to Sta. 618+00.00 Lt.
6:1 From Sta. 618+00.00 to
Sta. 622+50.00 Lt.

TYPICAL SECTION SR 46 FOR TANGENT
FULL DEPTH REPLACEMENT W/GUARDRAIL
Sta. 620+49.21 Line "PR-A" to Sta. 622+37.08 Lt. Line "PR-A"
Sta. 620+98.09 Line "PR-A" to Sta. 622+50.73 Rt. Line "PR-A"
Sta. 627+63.31 Line "PR-A" to Sta. 630+25.81 Lt. Line "PR-A"
Sta. 627+76.90 Line "PR-A" to Sta. 629+40.00 Rt. Line "PR-A"
Sta. 629+95.00 Line "PR-A" to Sta. 636+47.13 Rt. Line "PR-A"

(B) Full Depth HMA Pavement
(H) Resurfacing HMA Pavement
(N) Compacted Aggregate, No. 53
(T) Subgrade Treatment, Type 1C
(10) Guardrail, W-Beam, 6'-3" Spacing
(27) Seed Mixture, R

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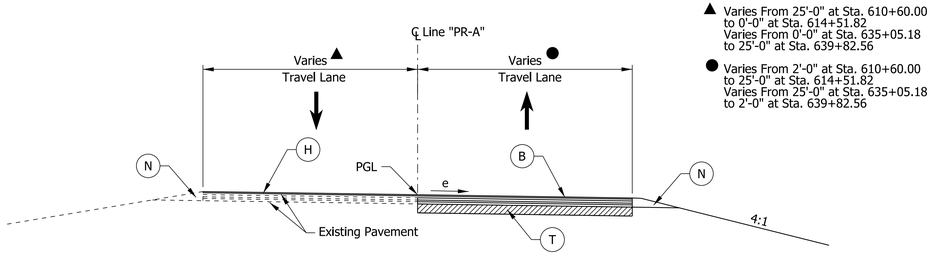
RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE 1" = 8'	BRIDGE FILE 46-11-10070
		VERTICAL SCALE 1" = 8'	DESIGNATION 0800910
DESIGNED: DCK DRAWN: DH	TYPICAL SECTIONS	SURVEY BOOK ELECTRONIC	SHEETS 3 of 70
CHECKED: BSC CHECKED: DCK		CONTRACT B-36390	PROJECT 0800910



TYPICAL SECTION SR 46 FOR SUPERELEVATION
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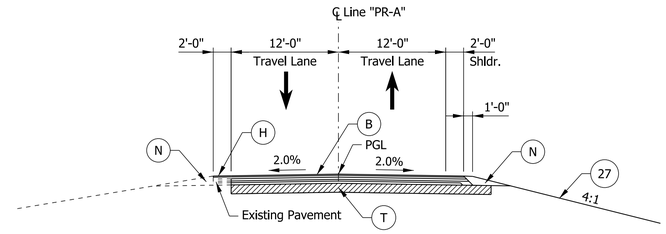
Sta. 635+05.18 Line "A" to Sta. 639+82.56 Line "A"



TYPICAL SECTION SR 46 FOR TANGENT
Sta. 614+56.00 Line "A" to Sta. 614+76.24 Line "A"

(B) Full Depth HMA Pavement
(H) Resurfacing HMA Pavement
(N) Compacted Aggregate, No. 53
(T) Subgrade Treatment, Type 1C
(10) Guardrail, W-Beam, 6'-3" Spacing
(27) Seed Mixture, R

RECOMMENDED FOR APPROVAL
DESIGN ENGINEER DATE

DESIGNED: DCK DRAWN: DH
CHECKED: BSC CHECKED: DCK

INDIANA
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS

HORIZONTAL SCALE	BRIDGE FILE
1" = 8'	46-11-10070
VERTICAL SCALE	DESIGNATION
1" = 8'	0800910
SURVEY BOOK	SHEETS
ELECTRONIC	4 of 70
CONTRACT	PROJECT
B-36390	0800910

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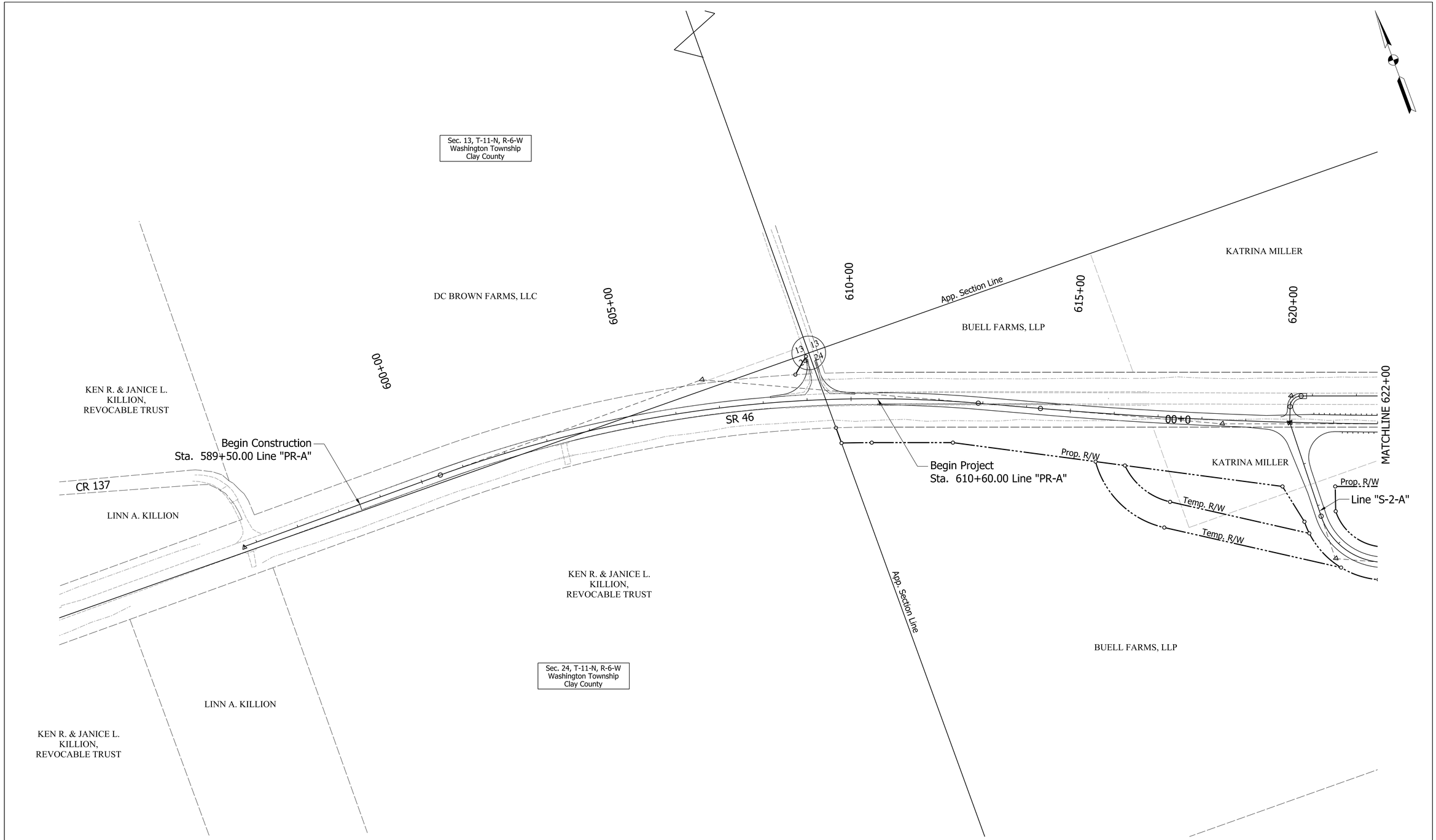

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE: 1" = 100'	BRIDGE FILE: 46-11-10070
		VERTICAL SCALE	DESIGNATION: 0800910
DESIGNED: DCK / DRAWN: DH	PLAT NO. 1 SHEET	SURVEY BOOK	SHEETS
CHECKED: BSC / CHECKED: DCK		ELECTRONIC	5 of 70
		CONTRACT: B-36390	PROJECT: 0800910

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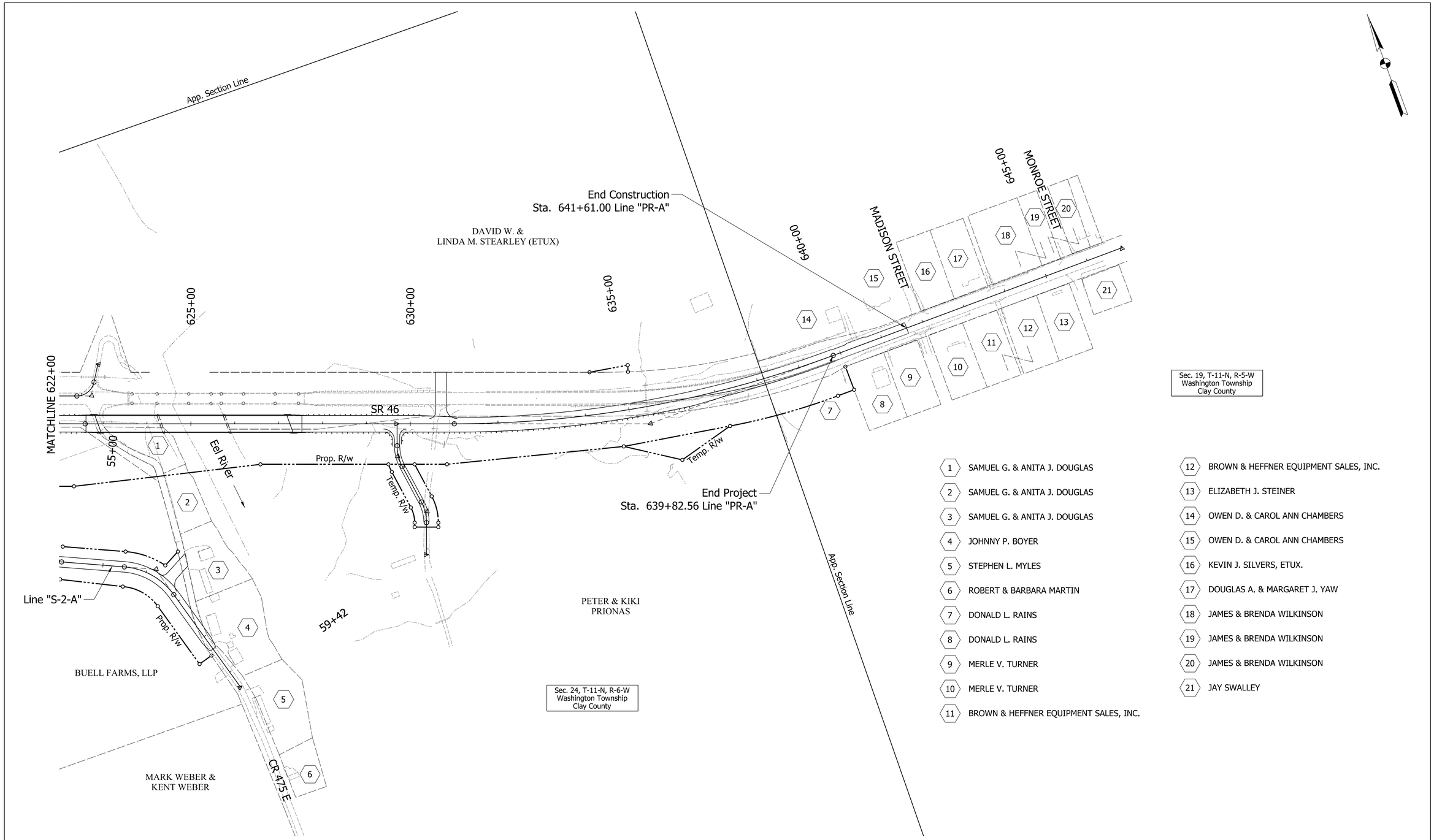

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE 1" = 100'	BRIDGE FILE 46-11-10070
		VERTICAL SCALE	DESIGNATION 0800910
DESIGNED: DCK / DRAWN: DH	PLAT NO. 1 SHEET	SURVEY BOOK ELECTRONIC	SHEETS 6 of 70
CHECKED: BSC / CHECKED: DCK		CONTRACT B-36390	PROJECT 0800910

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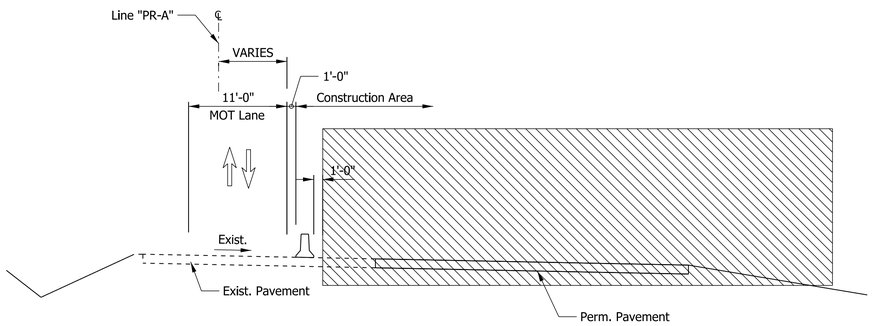

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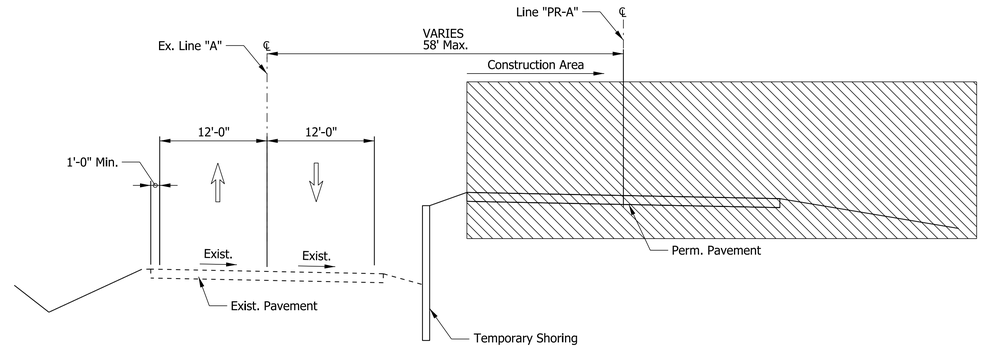
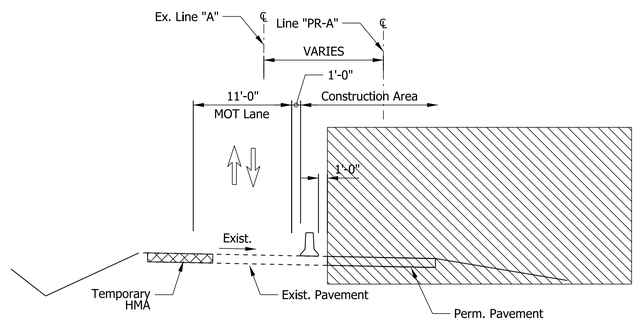


PHASE 1 - SR 46



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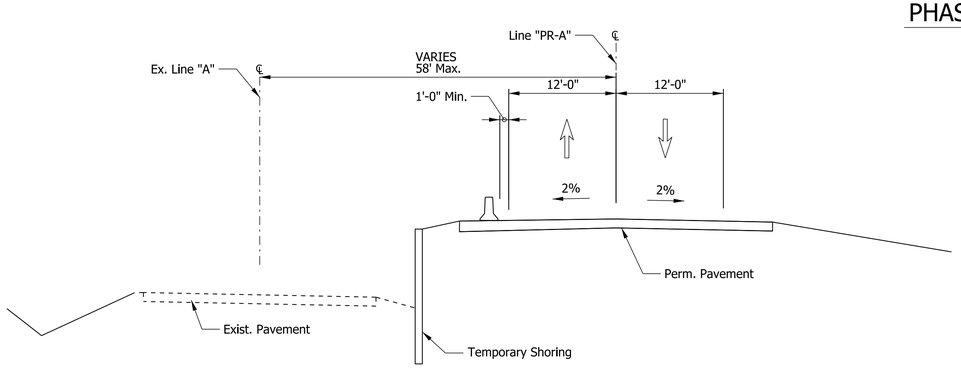
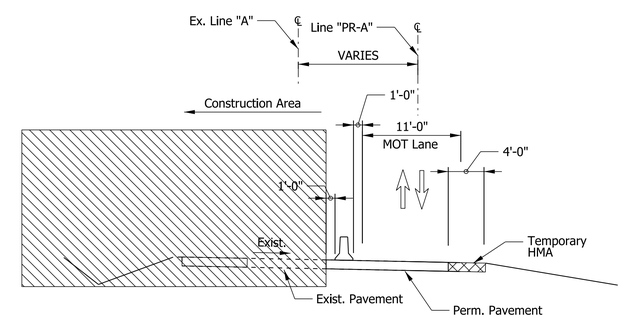


PHASE 3 - SR 46



PHASE 3 - SR 46

(B) Full Depth HMA Pavement
(H) Resurfacing HMA Pavement
(N) Compacted Aggregate, No. 53
(T) Subgrade Treatment, Type 1C
(10) Guardrail, W-Beam, 6'-3" Spacing
(27) Seed Mixture, R

IP_PWP:dms01950\Sht_MOT_Typ_01.dgn

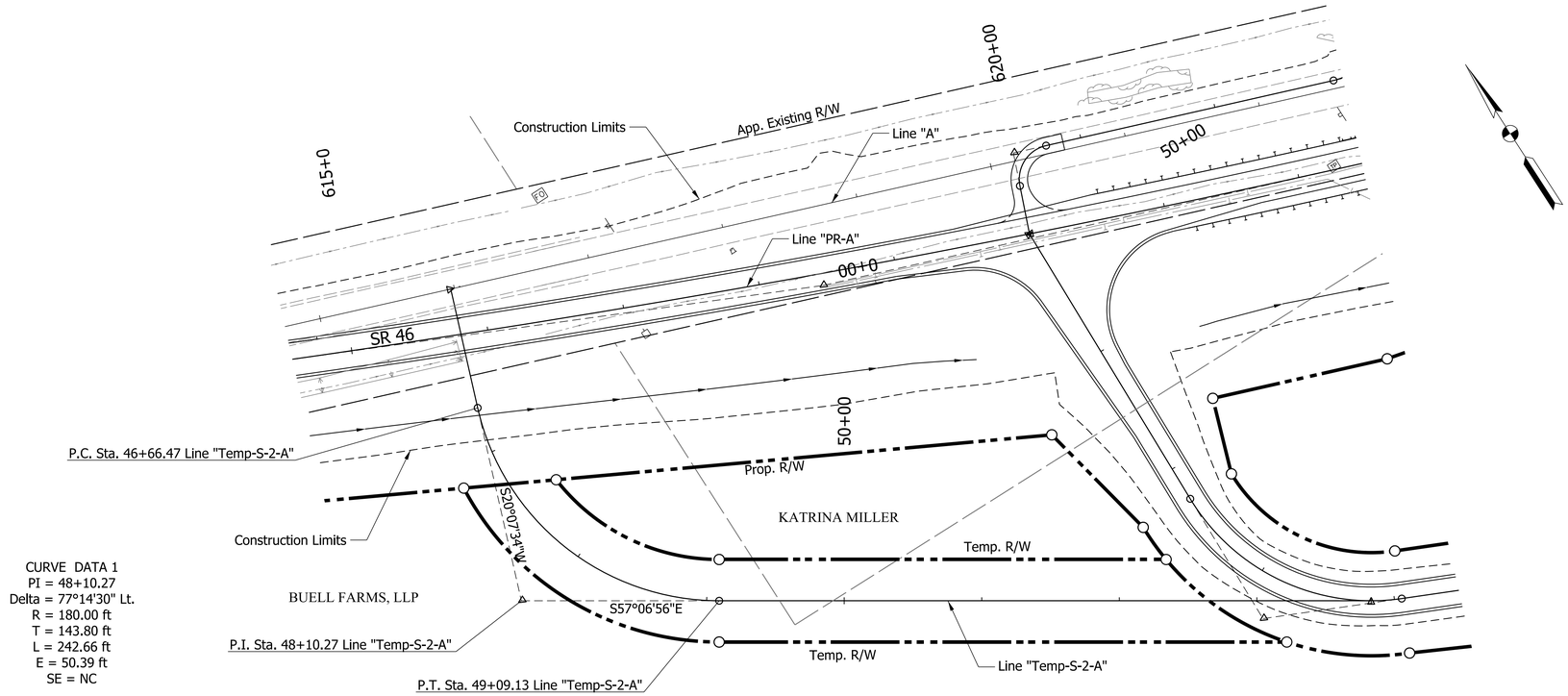
RECOMMENDED FOR APPROVAL
DESIGN ENGINEER DATE

DESIGNED: DCK DRAWN: DH
CHECKED: BSC CHECKED: DCK

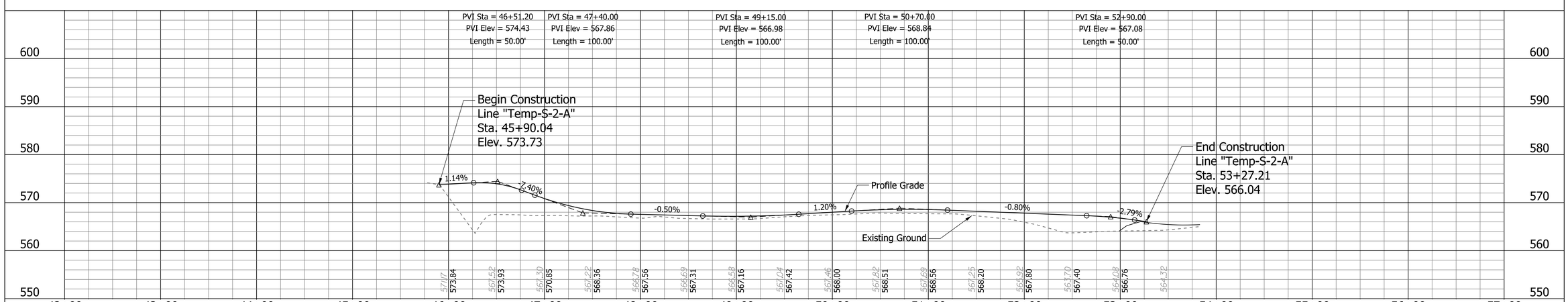
INDIANA
DEPARTMENT OF TRANSPORTATION

MOT TYPICAL SECTIONS

HORIZONTAL SCALE	BRIDGE FILE
1" = 8'	46-11-10070
VERTICAL SCALE	DESIGNATION
1" = 8'	0800910
SURVEY BOOK	SHEETS
ELECTRONIC	7 of 70
CONTRACT	PROJECT
B-36390	0800910



CURVE DATA 1
PI = 48+10.27
Delta = 77°14'30" Lt.
R = 180.00 ft
T = 143.80 ft
L = 242.66 ft
E = 50.39 ft
SE = NC



RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE: 1" = 50'	BRIDGE FILE: 46-11-10070
		VERTICAL SCALE	DESIGNATION: 0800910
DESIGNED: DCK / DRAWN: DH	MOT "TEMP-S-2-A" PLAN & PROFILE	SURVEY BOOK	SHEETS: 8 of 70
CHECKED: BSC / CHECKED: DCK		ELECTRONIC	
		CONTRACT: B-36390	PROJECT: 0800910

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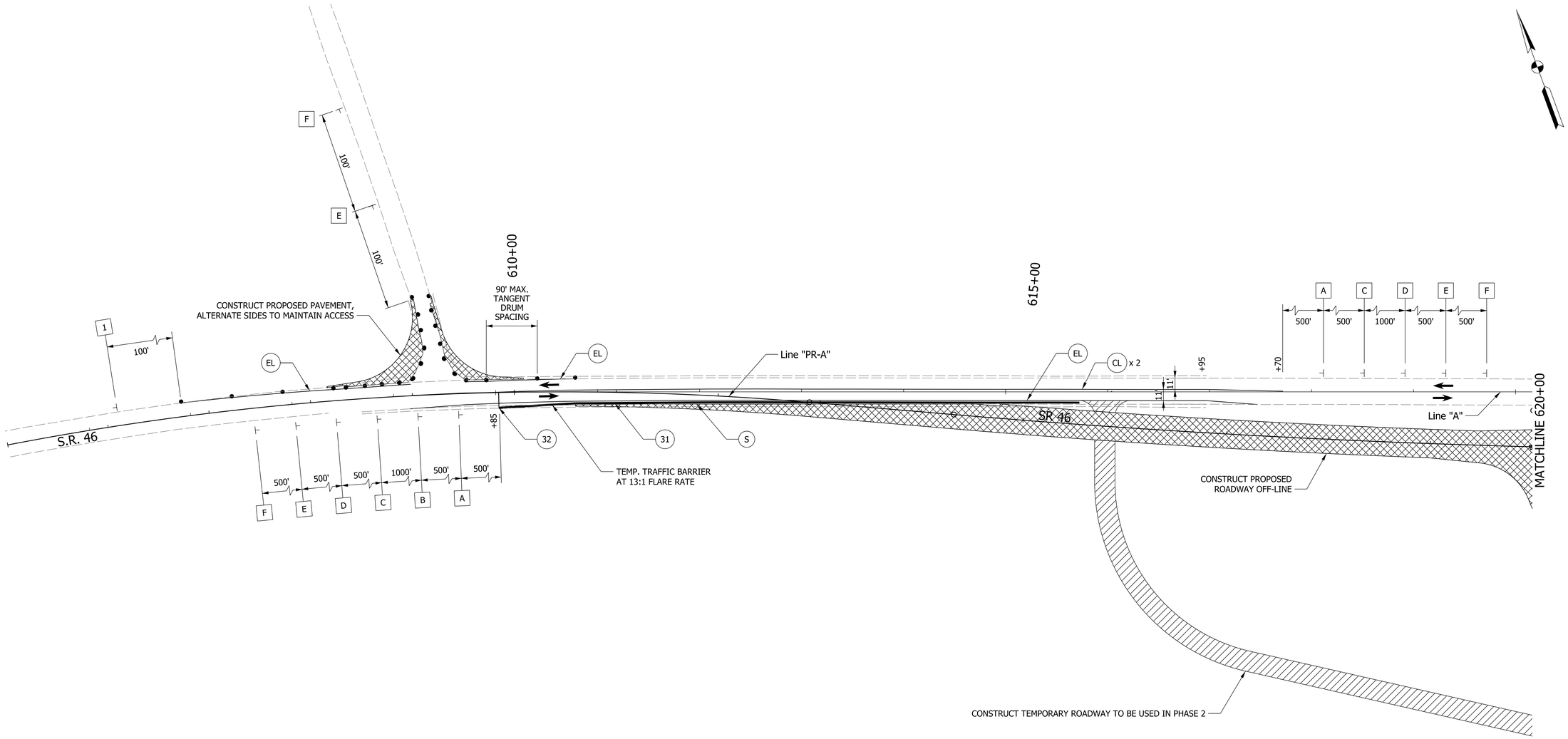
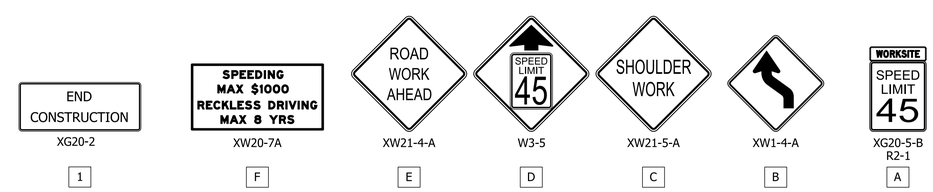




NOTES:

1. Construction Zone Design Speed = 45 m.p.h.
2. Contractor shall maintain access to driveways at all times.
3. Traffic in Phase 1 shall be maintained on existing roadway pavement, unless otherwise noted.

Construction Area	(31) Temp. Traffic Barrier, Type 2	(CL) Temp. Pavement Marking, Removable, 4 in, Yellow, Solid	• Standard Drum
Temp. Pavement	(32) Impact Attenuator, CZ, Type 2	(EL) Temp. Pavement Marking, Removable, 4 in, White, Solid	← Direction of Traffic
	(S) Sawcut		

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: JFM DRAWN: DH

CHECKED: DCK CHECKED: DCK

INDIANA
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC
PHASE 1

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	46-11-10070
VERTICAL SCALE	DESIGNATION
	0800910
SURVEY BOOK	SHEETS
ELECTRONIC	9 of 70
CONTRACT	PROJECT
B-36390	0800910

IP_PWP:dms01950\Sht_MOT_PH1_02.dgn

620+00

625+00

630+00

635+00

MATCHLINE 620+00

MATCHLINE 635+00

50+00

55+00

59+42

Line "A"

Line "PR-A"

90' MAX. TANGENT DRUM SPACING

SR 46

SR 46

WIDEN TEMPORARY DRIVEWAY ACCESS TO EXISTING SR 46.

CONSTRUCT PROPOSED ROADWAY OFF-LINE (TYP.)

MAINTAIN DRIVEWAY ACCESS DURING CONSTRUCTION

CONSTRUCT TEMPORARY ROADWAY

PLACE SIGNS PRIOR TO OPENING TO TRAFFIC

100'

100'

F

E

SPEEDING
MAX $1000
RECKLESS DRIVING
MAX 8 YRS

XW20-7A

E

ROAD
WORK
AHEAD

XW21-4-A

F

NOTES:

1. Construction Zone Design Speed = 45 m.p.h.
2. Contractor shall maintain access to driveways at all times.
3. Traffic in Phase 1 shall be maintained on existing roadway pavement, unless otherwise noted.

Construction Area

Temp. Pavement

Standard Drum

Direction of Traffic

RECOMMENDED FOR APPROVAL

DESIGN ENGINEER DATE

DESIGNED: JFM DRAWN: DH

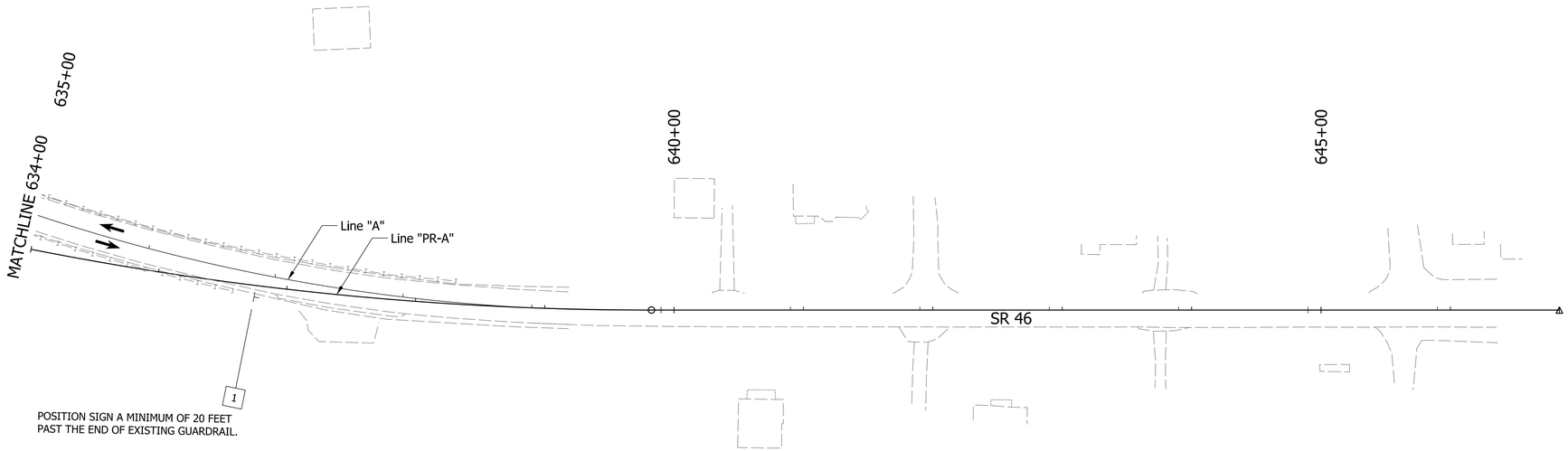
CHECKED: DCK CHECKED: DCK

INDIANA
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC
PHASE 1

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	46-11-10070
VERTICAL SCALE	DESIGNATION
	0800910
SURVEY BOOK	SHEETS
ELECTRONIC	10 of 70
CONTRACT	PROJECT
B-36390	0800910

IP_PWP:dms01950\Sht_MOT_PH1_03.dgn



NOTES:

1. Construction Zone Design Speed = 45 m.p.h.
2. Contractor shall maintain access to driveways at all times.
3. Traffic in Phase 1 shall be maintained on existing roadway pavement, unless otherwise noted.

END
CONSTRUCTION
XG20-2
1

← Direction of Traffic

RECOMMENDED FOR APPROVAL
DESIGN ENGINEER DATE

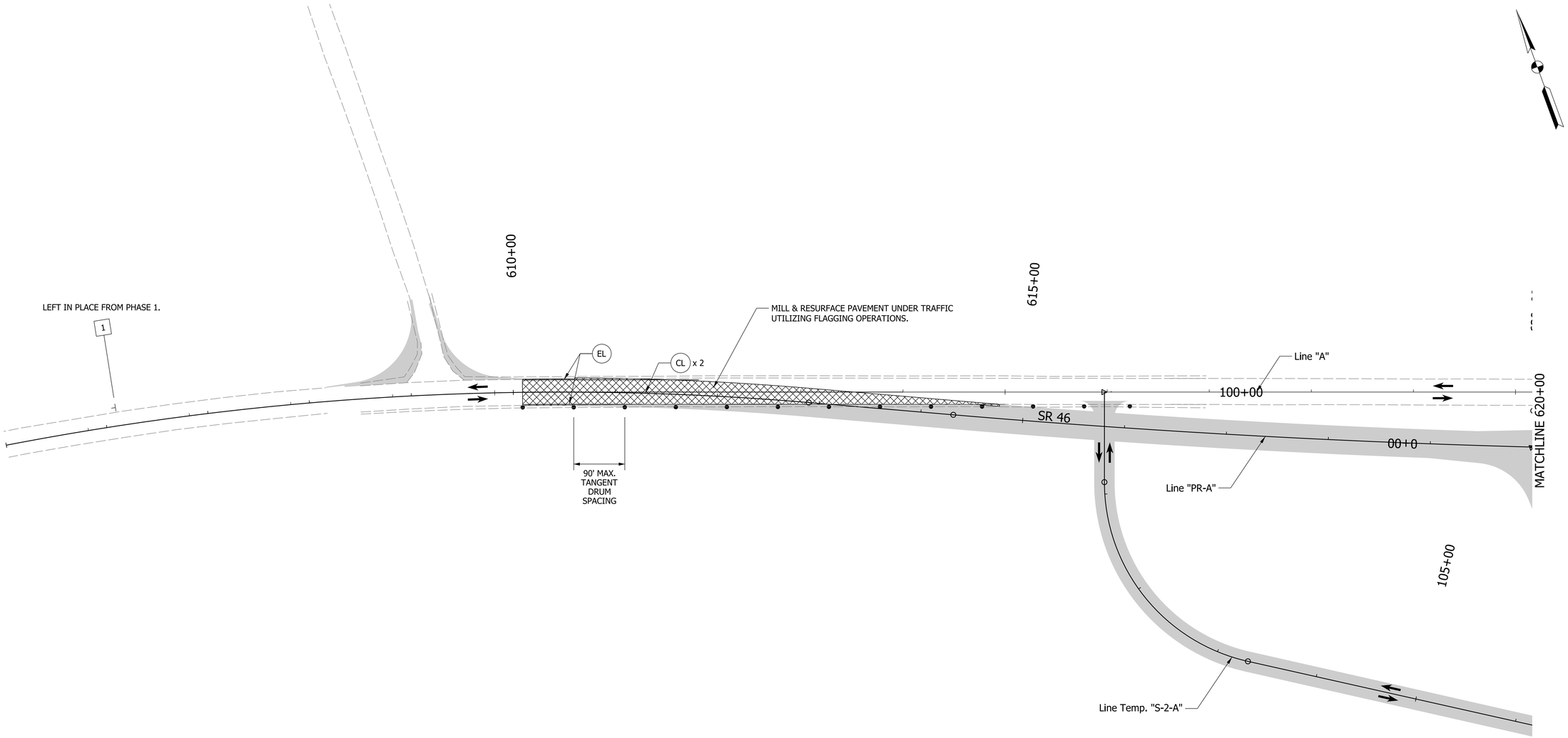
DESIGNED: JFM DRAWN: DH
CHECKED: DCK CHECKED: DCK

INDIANA
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC
PHASE 1

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	46-11-10070
VERTICAL SCALE	DESIGNATION
	0800910
SURVEY BOOK	SHEETS
ELECTRONIC	11 of 70
CONTRACT	PROJECT
B-36390	0800910

IP_PWP:dms01950\Sht_MOT_PH1_04.dgn



NOTES:

1. Construction Zone Design Speed = 45 m.p.h.
2. Contractor shall maintain access to driveways at all times.
3. Traffic in Phase 2 shall be maintained on existing roadway pavement, unless otherwise noted.
4. Contractor shall perform resurfacing work from Sta. 598+50.00 to Sta. 610+60.00 during or after Stage 3.

END
CONSTRUCTION
XG20-2

1

Construction Area

Completed Construction

CL Temp. Pavement Marking, Removable, 4 in, Yellow, Solid

EL Temp. Pavement Marking, Removable, 4 in, White, Solid

• Standard Drum

← Direction of Traffic

RECOMMENDED FOR APPROVAL

DESIGN ENGINEER DATE

DESIGNED: JFM DRAWN: DH

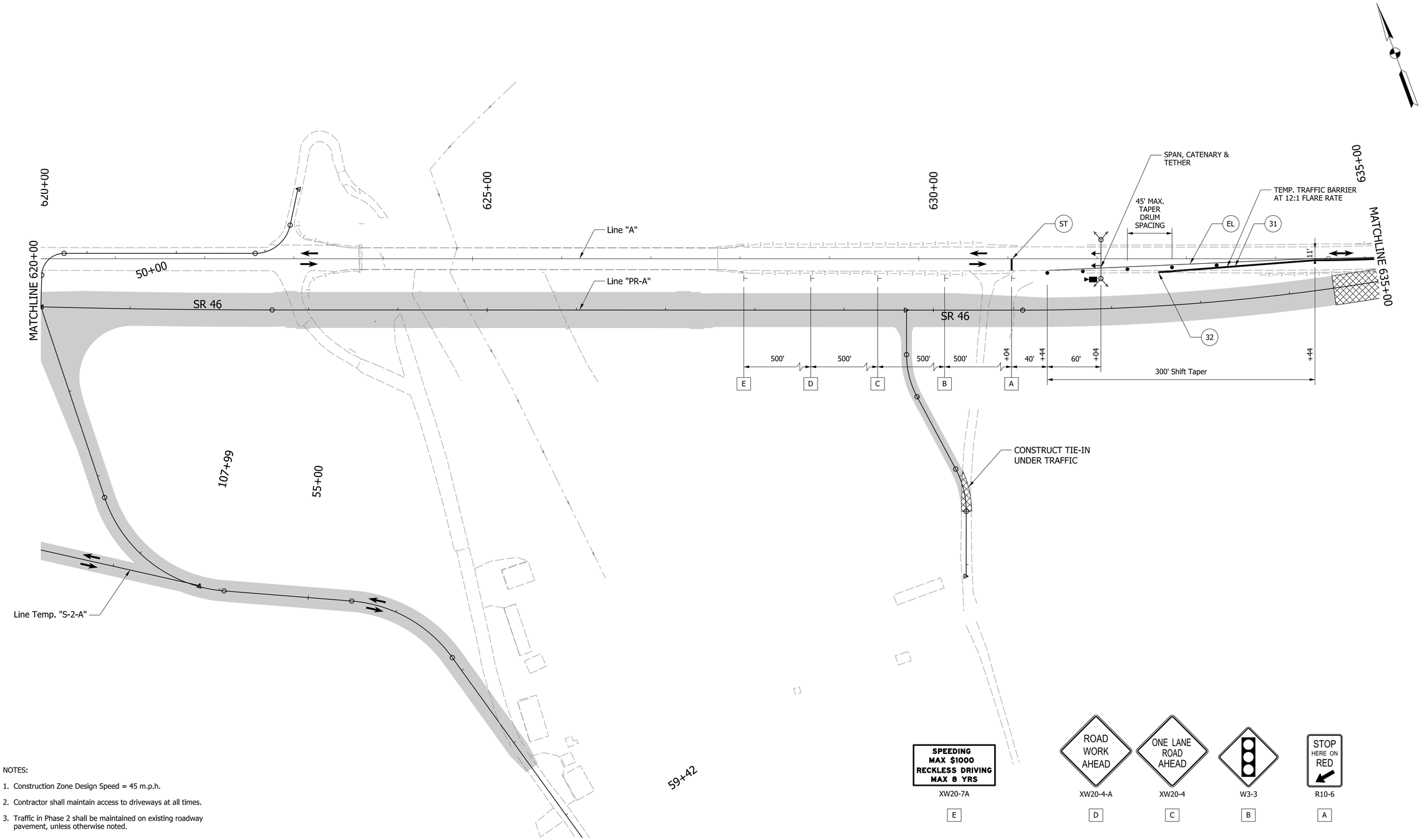
CHECKED: DCK CHECKED: DCK

INDIANA
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC
PHASE 2

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	46-11-10070
VERTICAL SCALE	DESIGNATION
	0800910
SURVEY BOOK	SHEETS
ELECTRONIC	12 of 70
CONTRACT	PROJECT
B-36390	0800910

IP_PWP:dms01950\Sht_MOT_PH2_02.dgn



NOTES:

1. Construction Zone Design Speed = 45 m.p.h.
2. Contractor shall maintain access to driveways at all times.
3. Traffic in Phase 2 shall be maintained on existing roadway pavement, unless otherwise noted.

Construction Area	(31) Temp. Traffic Barrier, Type 2	(EL) Temp. Pavement Marking, Removable, 4 in, White, Solid	• Standard Drum
Completed Construction	(32) Impact Attenuator, CZ, Type 2	(ST) Temp. Pavement Marking, Removable, 24", White, Solid	← Direction of Traffic
	►■ Video Detection	Wood Pole & Down Guy	← Temp Signal Head

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: JFM DRAWN: DH

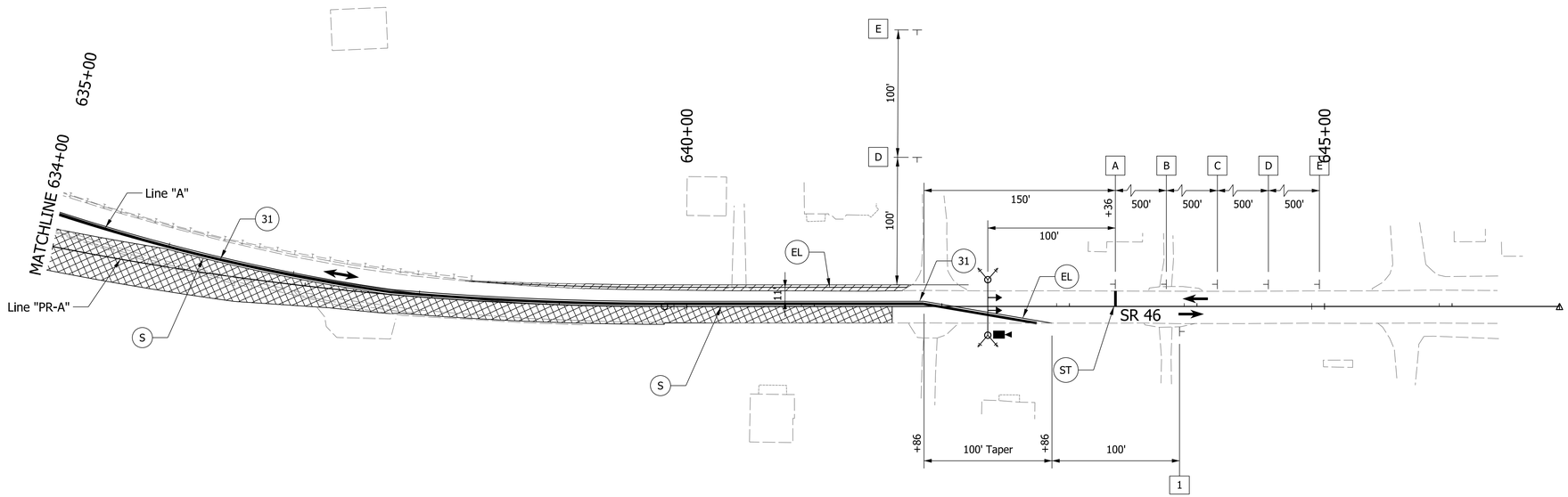
CHECKED: DCK CHECKED: DCK

INDIANA
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC
PHASE 2

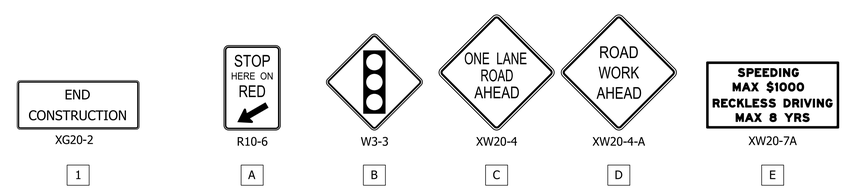
HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	46-11-10070
VERTICAL SCALE	DESIGNATION
	0800910
SURVEY BOOK	SHEETS
ELECTRONIC	13 of 70
CONTRACT	PROJECT
B-36390	0800910

IP_PWP:dms01950\Sht_MOT_PH2_03.dgn



NOTES:

1. Construction Zone Design Speed = 45 m.p.h.
2. Contractor shall maintain access to driveways at all times.
3. Traffic in Phase 2 shall be maintained on existing roadway pavement, unless otherwise noted.



Construction Area
Temp. Pavement
31 Temp. Traffic Barrier, Type 2
S Sawcut
Video Detection
EL Temp. Pavement Marking, Removable, 4 in, White, Solid
ST Temp. Pavement Marking, Removable, 24", White, Solid
Wood Pole & Down Guy
Standard Drum
Direction of Traffic
Temp Signal Head

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

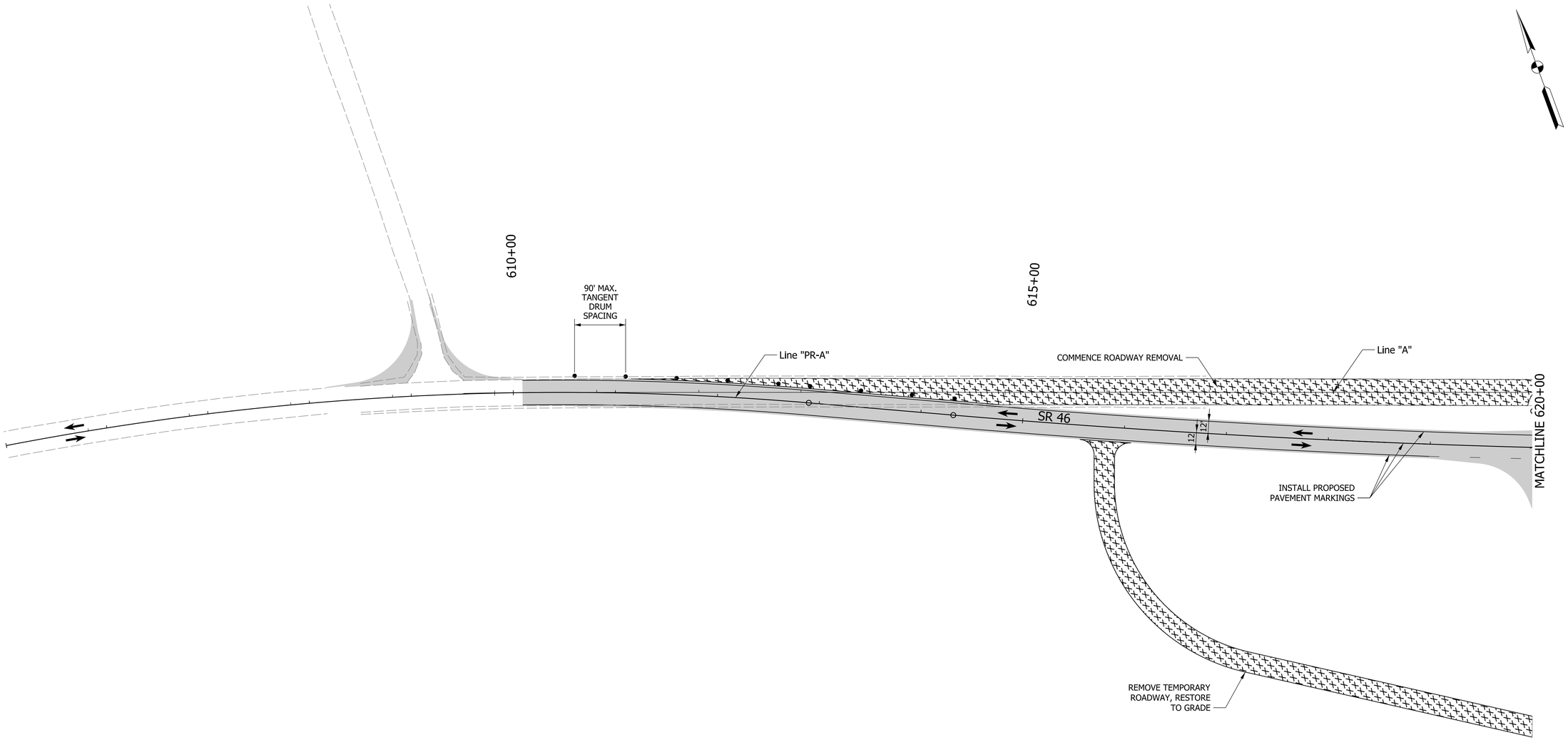
DESIGNED: JFM DRAWN: DH
CHECKED: DCK CHECKED: DCK

INDIANA
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC
PHASE 2

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	46-11-10070
VERTICAL SCALE	DESIGNATION
	0800910
SURVEY BOOK	SHEETS
ELECTRONIC	14 of 70
CONTRACT	PROJECT
B-36390	0800910

IP_PWP:dms01950\Sht_MOT_PH2_04.dgn



NOTES:

1. Construction Zone Design Speed = 45 m.p.h.
2. Contractor shall maintain access to driveways at all times.
3. Traffic in Phase 3 shall be maintained on proposed roadway pavement, unless otherwise noted.

Completed Construction
Roadway Removal
Standard Drum
Direction of Traffic

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

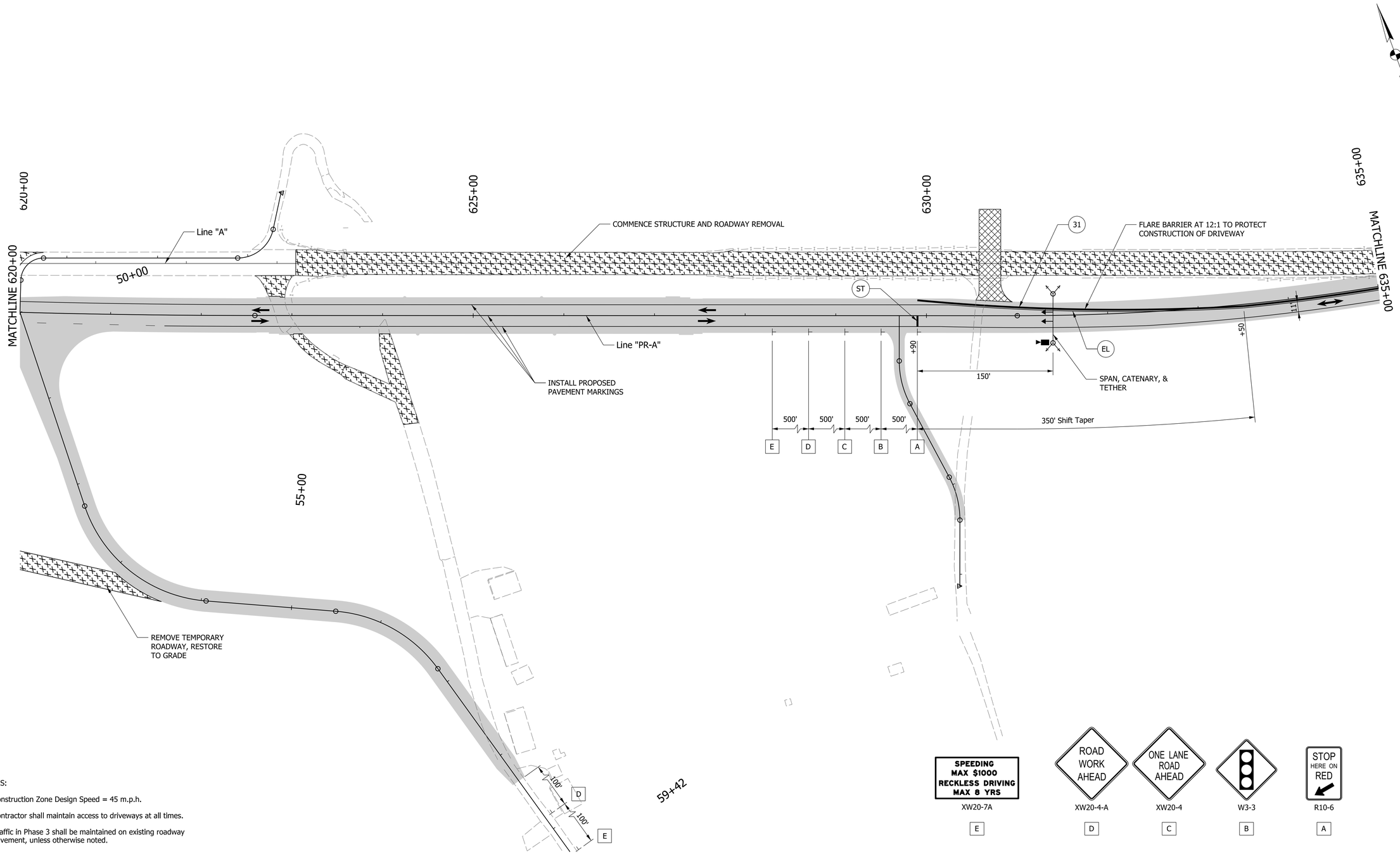
DESIGNED: JFM DRAWN: DH
CHECKED: DCK CHECKED: DCK

INDIANA
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC
PHASE 3

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	46-11-10070
VERTICAL SCALE	DESIGNATION
	0800910
SURVEY BOOK	SHEETS
ELECTRONIC	15 of 70
CONTRACT	PROJECT
B-36390	0800910

IP_PWP:dms01950\Sht_MOT_PH3_02.dgn



NOTES:

1. Construction Zone Design Speed = 45 m.p.h.
2. Contractor shall maintain access to driveways at all times.
3. Traffic in Phase 3 shall be maintained on existing roadway pavement, unless otherwise noted.

Construction Area	(31) Temp. Traffic Barrier, Type 2	(EL) Temp. Pavement Marking, Removable, 4 in, White, Solid	• Standard Drum
Completed Construction		(ST) Temp. Pavement Marking, Removable, 24", White, Solid	← Direction of Traffic
Roadway Removal	▶■ Video Detection	Wood Pole & Down Guy	← Temp Signal Head

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: JFM DRAWN: DH

CHECKED: DCK CHECKED: DCK

INDIANA
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC
PHASE 3

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	46-11-10070
VERTICAL SCALE	DESIGNATION
	0800910
SURVEY BOOK	SHEETS
ELECTRONIC	16 of 70
CONTRACT	PROJECT
B-36390	0800910

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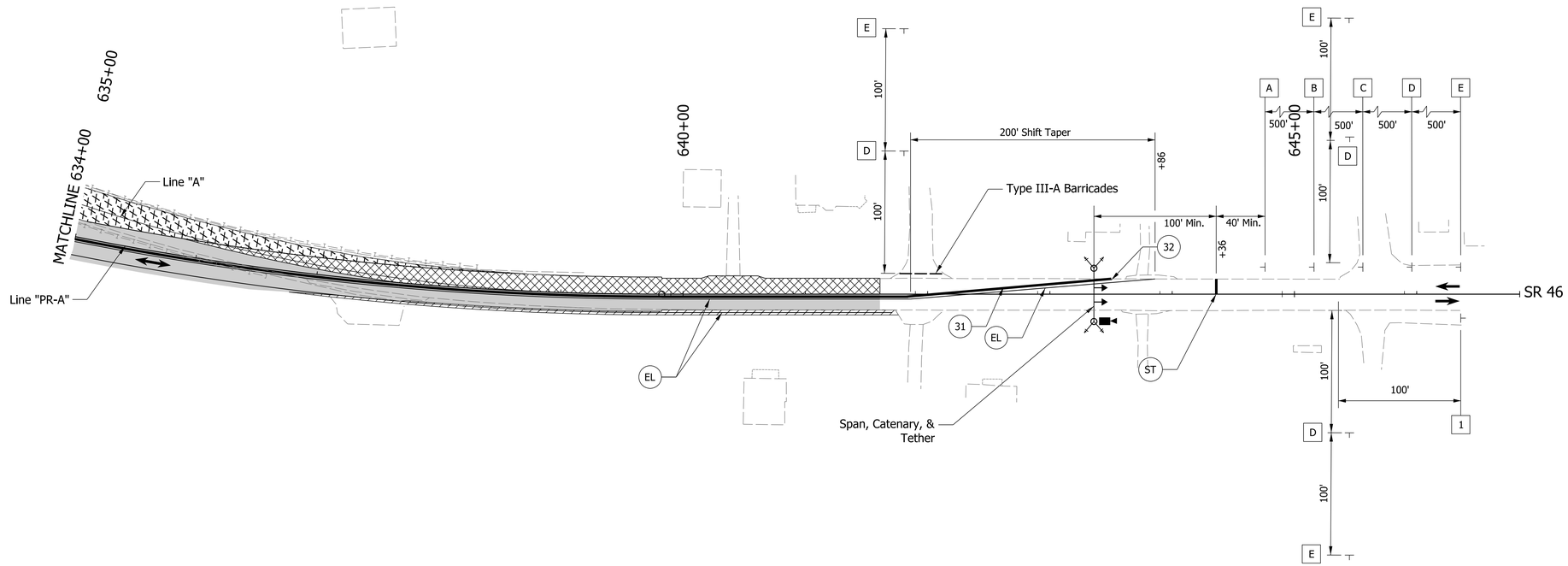
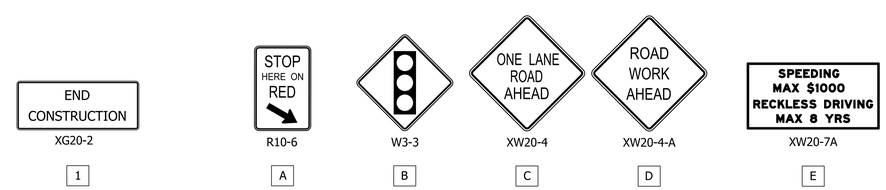




NOTES:

1. Construction Zone Design Speed = 45 m.p.h.
2. Contractor shall maintain access to driveways at all times.
3. Traffic in Phase 3 shall be maintained on existing roadway pavement, unless otherwise noted.

Construction Area	(31) Temp. Traffic Barrier, Type 2	(EL) Temp. Pavement Marking, Removable, 4 in, White, Solid	Type III-A Barricades
Temp. Pavement	(32) Impact Attenuator, CZ, Type 2	(ST) Temp. Pavement Marking, Removable, 24", White, Solid	Standard Drum
Completed Construction	Roadway Removal	Wood Pole & Down Guy	Direction of Traffic
			Temp Signal Head
			Video Detection

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: JFM DRAWN: DH

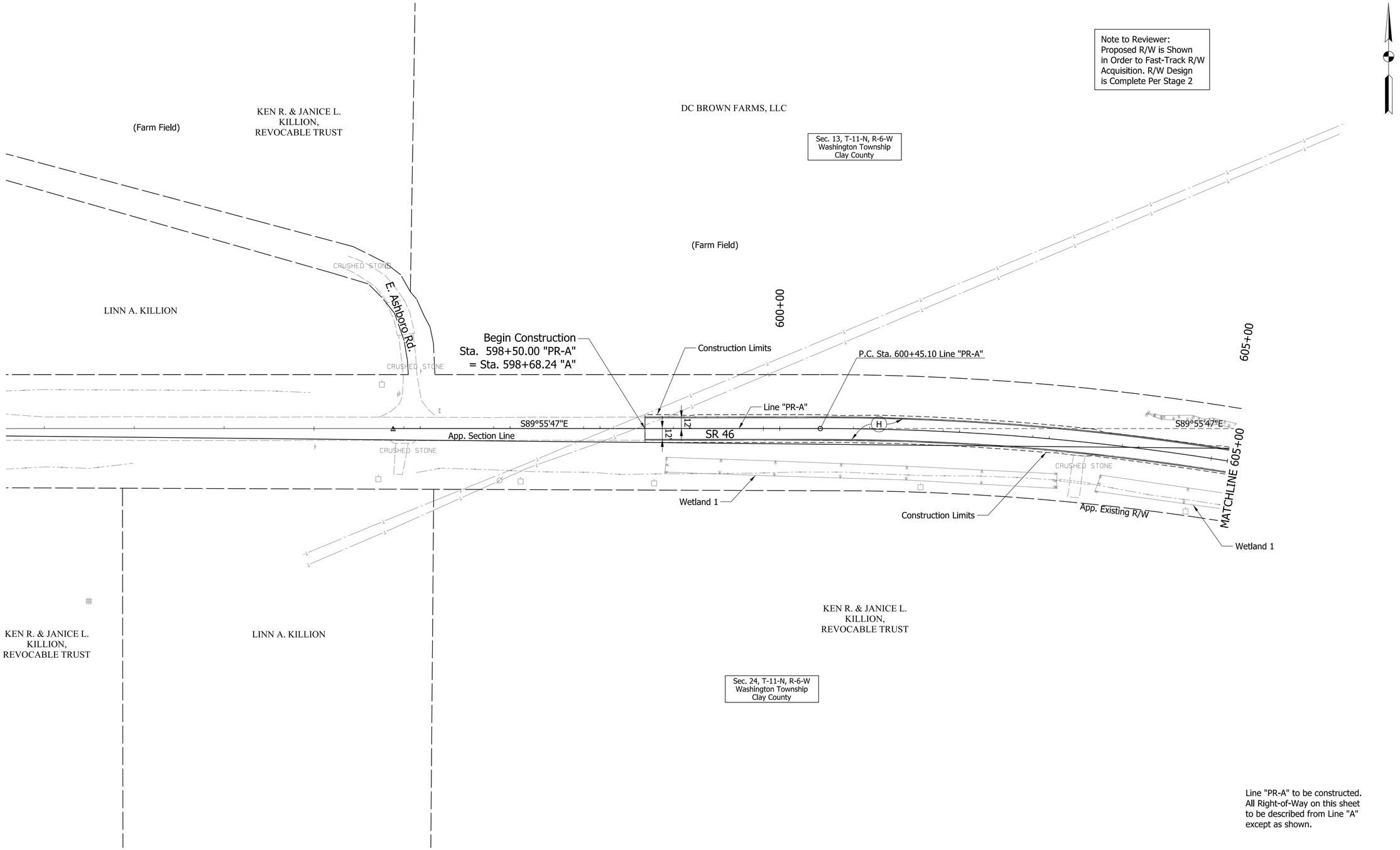
CHECKED: DCK CHECKED: DCK

INDIANA
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC
PHASE 3

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	46-11-10070
VERTICAL SCALE	DESIGNATION
	0800910
SURVEY BOOK	SHEETS
ELECTRONIC	17 of 70
CONTRACT	PROJECT
B-36390	0800910

IP_PWP:dms01950\Sht_MOT_PH3_04.dgn



Line "PR-A" to be constructed.
All Right-of-Way on this sheet
to be described from Line "A"
except as shown.

(B) Full Depth HMA Pavement

(H) Resurfacing HMA Pavement

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: DCK DRAWN: DH

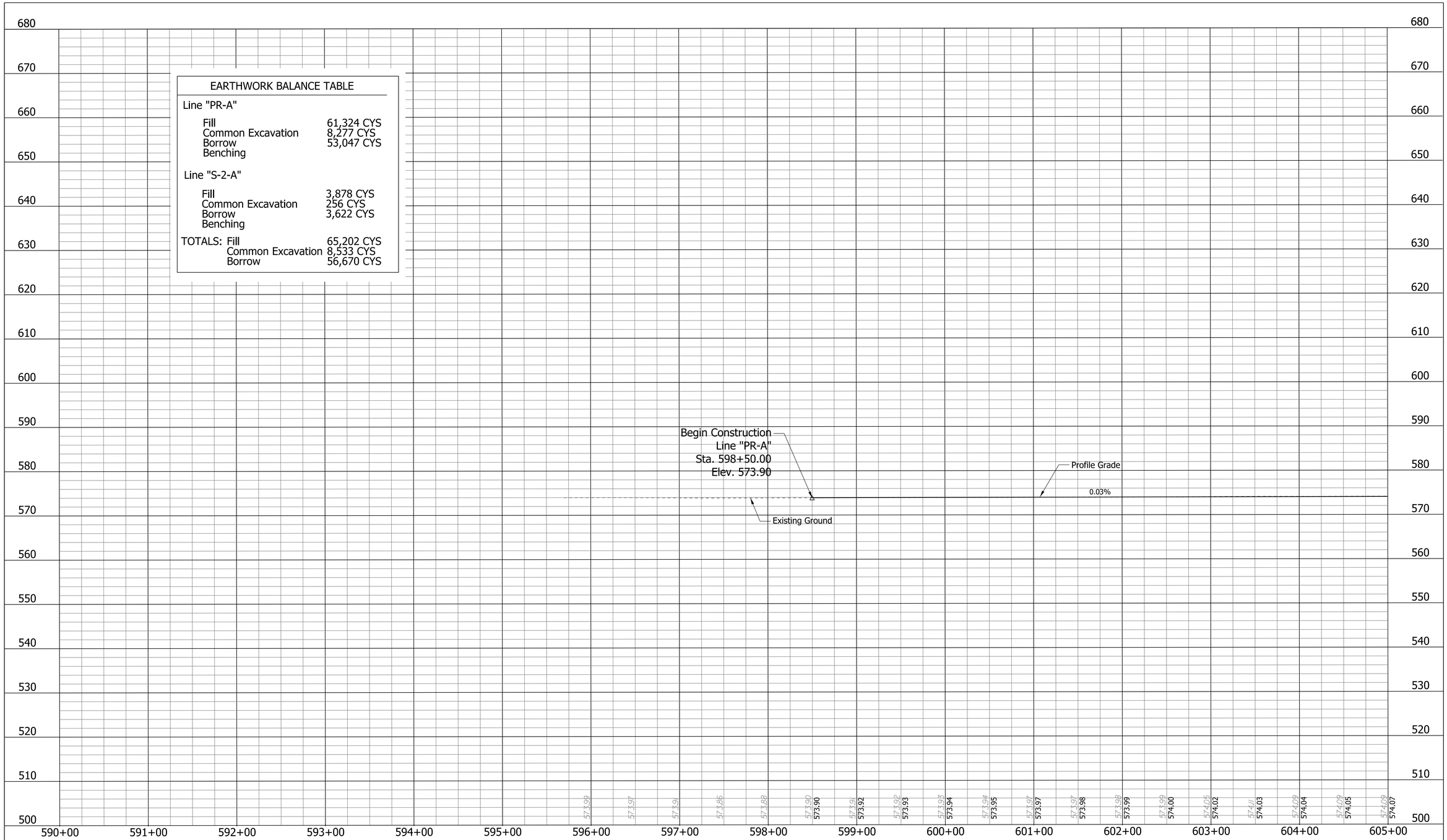
CHECKED: BSC CHECKED: DCK

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN SHEET
STA. 596+25 TO STA. 605+00 Line "PR-A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	46-11-10070
VERTICAL SCALE	DESIGNATION
	0800910
SURVEY BOOK	SHEETS
ELECTRONIC	18 of 70
CONTRACT	PROJECT
B-36390	0800910

IP_PWP:dms01950\Sht_Plan_01.dgn



EARTHWORK BALANCE TABLE

Line "PR-A"		
	Fill	61,324 CYS
	Common Excavation	8,277 CYS
	Borrow	53,047 CYS
	Benching	
Line "S-2-A"		
	Fill	3,878 CYS
	Common Excavation	256 CYS
	Borrow	3,622 CYS
	Benching	
TOTALS:	Fill	65,202 CYS
	Common Excavation	8,533 CYS
	Borrow	56,670 CYS

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: DCK DRAWN: DH

CHECKED: BSC CHECKED: DCK

INDIANA
DEPARTMENT OF TRANSPORTATION

PROFILE SHEET
STA. 596+25 TO STA. 605+00 Line "PR-A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	46-11-10070
VERTICAL SCALE	DESIGNATION
	0800910
SURVEY BOOK	SHEETS
ELECTRONIC	19 of 70
CONTRACT	PROJECT
B-36390	0800910

IP_PWP:dms01950\Sht_Profile_01.dgn

Sec. 13, T-11-N, R-6-W
Washington Township
Clay County

Note to Reviewer:
Proposed R/W is Shown
in Order to Fast-Track R/W
Acquisition. R/W Design
is Complete Per Stage 2

CURVE DATA 1
PI = 606+77.40 "PR-A"
Delta = 24°53'34" Rt.
R = 2864.79 ft
T = 632.30 ft
L = 1244.64 ft
E = 68.95 ft
SE = 4.6%

DC BROWN FARMS, LLC

KATRINA MILLER

BUELL FARMS, LLP

N. Pioneer Rd.

App. Section Line

610+00

615+00

+76.24
End
Widening

+ ℄
100.00'

Public Road
Approach, Type A Mod.

+95
℄

P.I. Sta. 606+77.40 Line "PR-A"
Curve 1

Construction Limits

R=65'

R=65'

Wetland 3

P.T. Sta. 612+89.74 Line "PR-A"

Begin Project
Sta. 610+60.00 "PR-A"

P.C. Sta. 614+31.81 Line "PR-A"

Construction Limits

App. Existing R/W

Line "PR-A"

Line "A"

Wetland 2

S89°55'47"E

S65°02'13"E

S65°02'13"E

SR 46

12'

12'

2'

+46.21

2'

+99.15

00+0

MATCHLINE 605+00

MATCHLINE 620+00

App. Existing R/W

+ ℄
℄

+ ℄
100.00'

+ P.C.
100.00'

+60.00
Begin
Widening

Wetland 1

+ 50.00
100.00'

Prop. R/W

Construction Limits

P.I. Sta. 618+45.73 Line "PR-A"
Curve 2

R=60'

+ 74.53
143.27'

+ 41.42
152.19'

KATRINA MILLER
Sta. 50+54.54 "S-2-A"
77.75' Rt.
4.1 Tons of Revetment Riprap
10 Sys of Geotextile Req'd.

+ 00.00
200.00'

+18 Str. No.
620+18
138 LFT of
24" Dia. Pipe

KEN R. & JANICE L.
KILLION,
REVOCABLE TRUST

Temp. R/W for Temp. Access

+ P.T. "Temp S-2-A"
30.00'

+ P.T. "Temp S-2-A"
30.00'

Temp. R/W for Temp. Access

BUELL FARMS, LLP

App. Section Line

Sec. 24, T-11-N, R-6-W
Washington Township
Clay County

Sec. 24, T-11-N, R-6-W
Washington Township
Clay County

CURVE DATA 2
PI = 618+45.73 "PR-A"
Delta = 4°50'14" Lt.
R = 9800.00 ft
T = 413.92 ft
L = 827.35 ft
E = 8.74 ft
SE = NC

Line "PR-A" to be constructed.
All Right-of-Way on this sheet
to be described from Line "A"
except as shown.

(B) Full Depth HMA Pavement
(H) Resurfacing HMA Pavement
(S) Sawcut

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

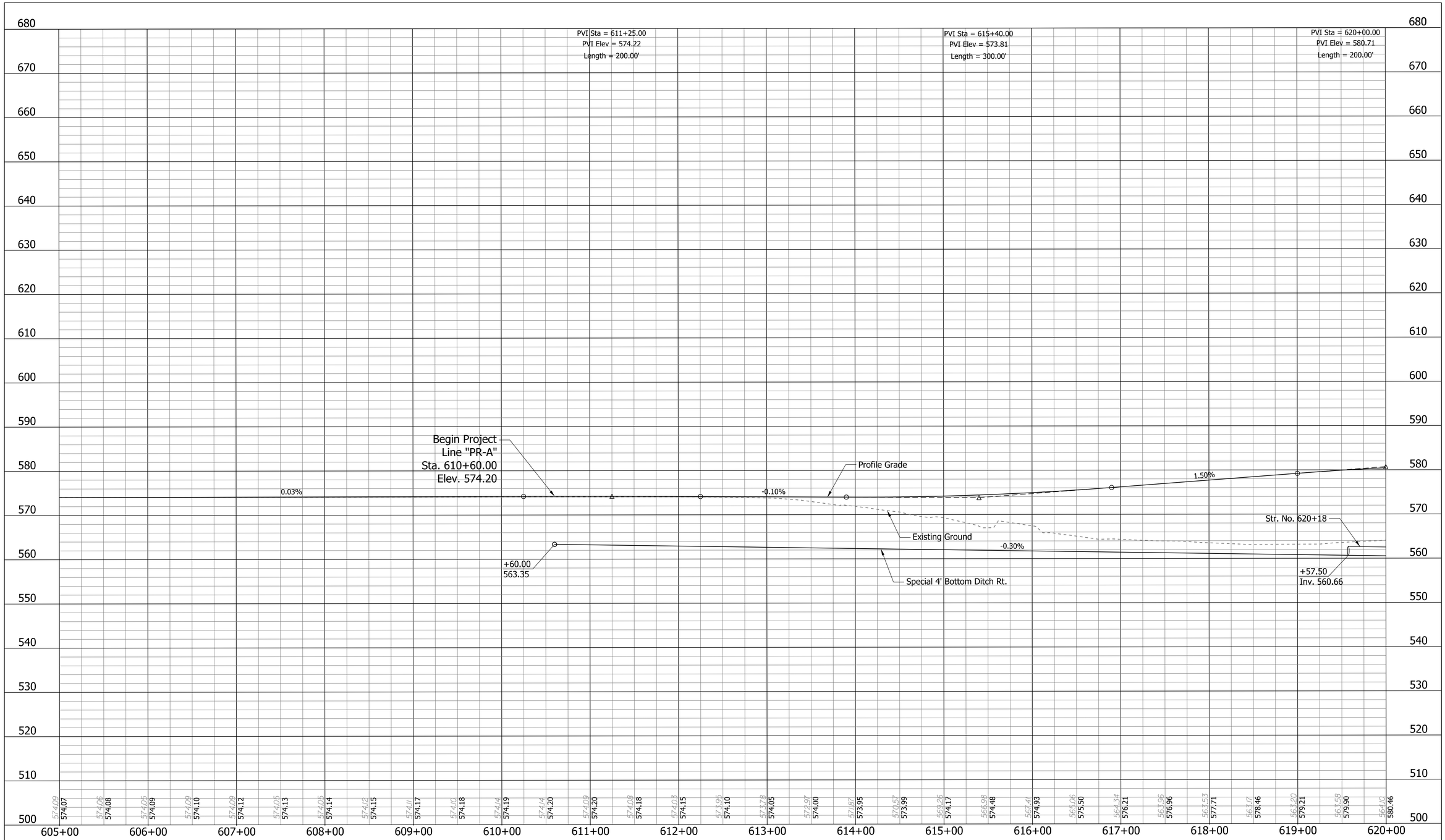
DESIGNED: DCK DRAWN: DH
CHECKED: BSC CHECKED: DCK

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN SHEET
STA. 605+00 TO STA. 620+00 Line "PR-A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	46-11-10070
VERTICAL SCALE	DESIGNATION
	0800910
SURVEY BOOK	SHEETS
ELECTRONIC	20 of 70
CONTRACT	PROJECT
B-36390	0800910

IP_PWP:dms01950\Sht_Plan_02.dgn



RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE 1" = 50'	BRIDGE FILE 46-11-10070
		VERTICAL SCALE	DESIGNATION 0800910
DESIGNED: DCK DRAWN: DH	PROFILE SHEET STA. 605+00 TO STA. 620+00 Line "PR-A"	SURVEY BOOK	SHEETS
CHECKED: BSC CHECKED: DCK		ELECTRONIC	21 of 70
		CONTRACT B-36390	PROJECT 0800910

IP_PWP:dms01950\Sht_Profile_02.dgn

Note to Reviewer:
Proposed R/W is Shown
in Order to Fast-Track R/W
Acquisition. R/W Design
is Complete Per Stage 2

Sec. 24, T-11-N, R-6-W
Washington Township
Clay County

KATRINA MILLER

DAVID W. &
LINDA M. STEARLEY (ETUX)

+00.00
Mod. Class V
Drive Req'd.
W = 12'
L = 70'
Aggregate

P.O.C. Sta. 602+00.00 Line "PR-A" =
P.O.T. 50+00.00 Line "S-2-A"

App. Existing R/W

Existing Sign
to be Removed

Guardrail, Transition
Type TGB

Sta. 622+61.02 "PR-A"
Begin Paving Exception

Str. No. 046-11-10070

Construction Limits

Existing Sign
to be Removed

Vernal Pool 1

Guardrail, Transition
Type TGB

TMB #503

Sta. 627+53.00 "PR-A"
End Paving Exception

Remove Existing Guardrail

Guardrail, W-Beam

Type OS Guardrail
End Treatment

+70.00 Class V
Drive Req'd.
W = 24'
L = 93'
Aggregate

Temp. R/W for Grading

+25.00
℄

App. Existing R/W

MATCHLINE 620+00

MATCHLINE 635+00

620+00

625+00

630+00

635+00

+49.21

Guardrail

50+00

Existing Sign
to be Removed

Line "PR-A"

+25.81

+25.81

SR 46

SR 46

S69°52'26"E

Unnamed Tributary 2

Unnamed Tributary 3

Prop. R/W

Unnamed Tributary 1

+13.49

+69.83

Guardrail

SAMUEL G &
ANITA DOUGLAS

Guardrail,
Transition
Type TGB

Existing Sign
to be Removed

Guardrail

+40

+95

63

63

Public Road
Approach,
Type A Mod.

R=60'

Sta. 51+07.37 "S-2-A"
70.80' Lt.

Guardrail,
Transition
Type TGB

Construction Limits

Prop. R/W

+18 Str. No.
620+18
138 LFT of
24" Dia. Pipe

5.7 Tons of Revetment Riprap
13 Sys of Geotextile Req'd.

+20.00
200.00'

Prop. R/W

+50.00
200.00'

Eel River

+75.00
150.00'

26.1 Tons of Class 2 Riprap
37 Sys of Geotextile Req'd.

+65.00
150.00'

+00.00
150.00'

+00.00
150.00'

P.C. Sta. 631+00.23 Line "PR-A"

Wetland 4

+00.00
110.00'

Remove Existing
Structure

10.4 Tons of Class 2 Riprap
18 Sys of Geotextile Req'd.

C.R. 475 E

S1°38'29"W

P.T. Sta. 622+59.16 Line "PR-A"

P.C. Sta. 52+25.32 Line "S-2-A"

+P.C. "S-2-A"
35.00'

55+00

Ex. C.R. 475 E.

WOODS

Line "S-2-A"

SAMUEL
& ANITA
DOUGLAS

+P.C. "S-2-A"
40.00'

Construction Limits

+P.C. "S-2-A"
35.00'

+31.99 "S-2-A"
℄

+50.00
Class V
Drive Req'd.
W = 24'
L = 65'
Aggregate

+18 Str. No. 629+70
117 LFT of 30" Dia. Pipe

+70.00
Class II
Drive Req'd.
W = 12'
L = 240'
HMA

Temp. R/W for
Drive Construction

Temp. R/W

+48.13 "S-2-A"
40.00'

+P.T. "S-2-A"
35.00'

K

Prop. R/W

+27.92 "S-2-A"
35.00'

Line "Drive"

+25.00
295.00'

+80.00
295.00'

Unnamed Tributary 1

PETER & KIKI
PRIONAS

CURVE DATA 3
PI = 635+46.15 "PR-A"
Delta = 20°28'02" Lt.
R = 2470.00 ft
T = 445.92 ft
L = 882.33 ft
E = 39.93 ft
SE = 5.0%

S65°21'01"E

Temp. R/W

SAMUEL G &
ANITA DOUGLAS

P.I. Sta. 53+27.23 Line "S-2-A"

+35.58 "S-2-A"
40.00'

Prop. R/W

P.T. Sta. 54+05.38 Line "S-2-A"

+P.T. "S-2-A"
40.00'

P.C. Sta. 55+48.88 Line "S-2-A"

+P.C. "S-2-A"
45.00'

+P.T. "S-2-A"
45.00'

P.I. Sta. 56+20.13 Line "S-2-A"

P.T. Sta. 56+82.32 Line "S-2-A"

S15°41'40"E

JOHNNY P. BOYER

End Construction
Sta. 58+35.00 "S-2-A"

CURVE DATA 1
PI = 53+27.23 "S-2-A"
Delta = 66°59'30" Lt.
R = 154.00 ft
T = 101.91 ft
L = 180.06 ft
E = 30.67 ft
SE = 6.0%

CURVE DATA 2
PI = 56+20.13 "S-2-A"
Delta = 49°39'21" Rt.
R = 154.00 ft
T = 71.25 ft
L = 133.47 ft
E = 15.68 ft
SE = 6.0%

Construction Limits

+45.00 "S-2-A"
45.00'

59+42

BUELL FARMS, LLP

+45.00 "S-2-A"
℄

STONE

STEPHEN L. MYLES

Line "PR-A" to be constructed.
All Right-of-Way on this sheet
to be described from Line "A"
except as shown.

(B) Full Depth HMA Pavement

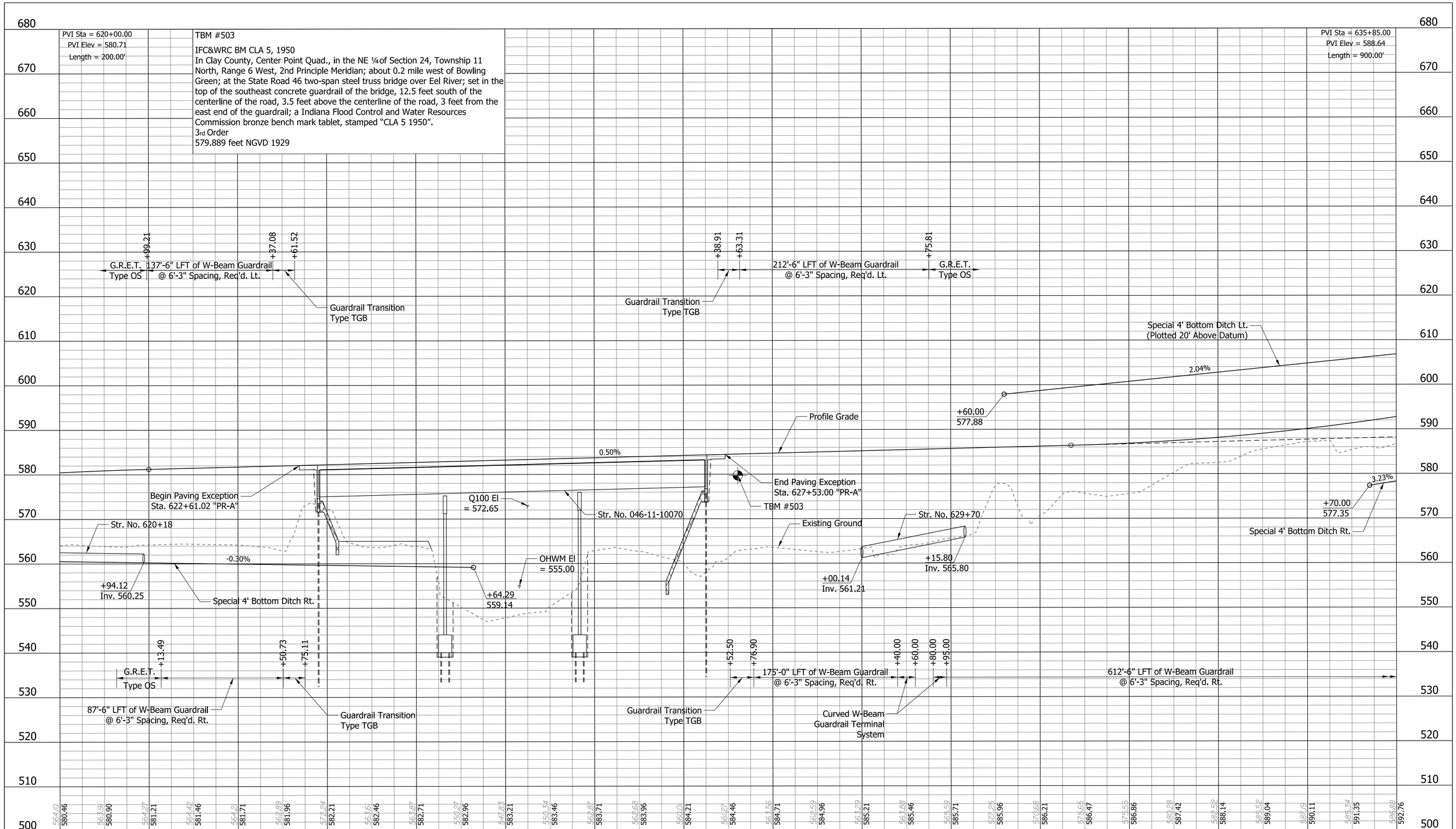
(H) Resurfacing HMA Pavement

(K) Full Depth HMA Pavement, S-Line

Roadway Removal

RECOMMENDED FOR APPROVAL ____ DESIGN ENGINEER DATE		INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE: 1" = 50' / VERTICAL SCALE:	BRIDGE FILE: 46-11-10070 / DESIGNATION: 0800910
DESIGNED: DCK	DRAWN: DH	PLAN SHEET STA. 620+00 TO STA. 635+00 Line "PR-A"	SURVEY BOOK: ELECTRONIC	SHEETS: 22 of 70
CHECKED: BSC	CHECKED: DCK		CONTRACT: B-36390	PROJECT: 0800910

IP_PWP:dms01950\Sht_Plan_03.dgn



RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE: 1" = 50'	BRIDGE FILE: 46-11-10070
		VERTICAL SCALE:	DESIGNATION: 0800910
DESIGNED: DCK / DRAWN: DH	PROFILE SHEET STA. 620+00 TO STA. 635+00 Line "PR-A"	SURVEY BOOK: ELECTRONIC	SHEETS: 23 of 70
CHECKED: BSC / CHECKED: DCK		CONTRACT: B-36390	PROJECT: 0800910

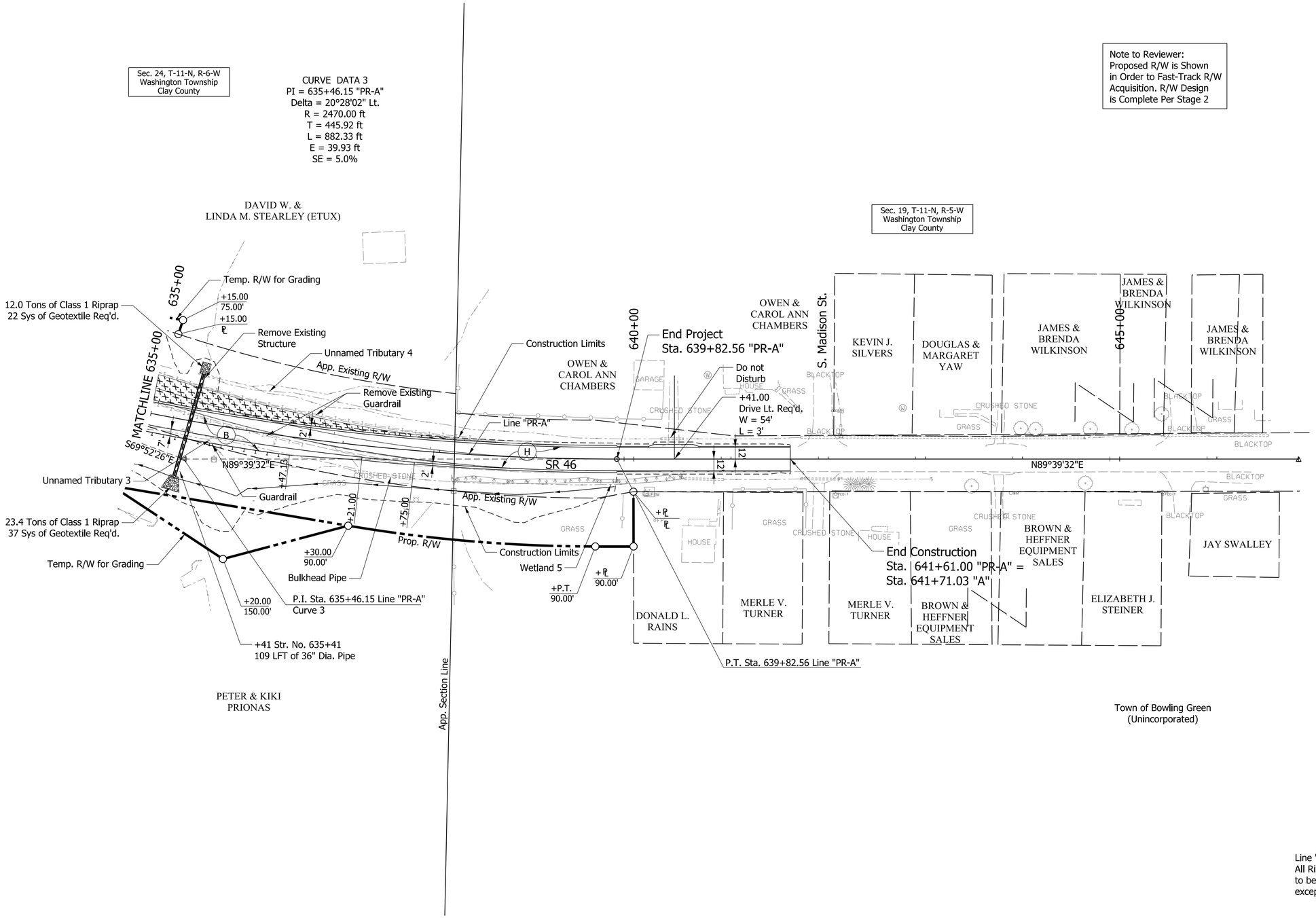
IP_PWP:dms01950\Sht_Profile_03.dgn

Sec. 24, T-11-N, R-6-W
Washington Township
Clay County

CURVE DATA 3
PI = 635+46.15 "PR-A"
Delta = 20°28'02" Lt.
R = 2470.00 ft
T = 445.92 ft
L = 882.33 ft
E = 39.93 ft
SE = 5.0%

Note to Reviewer:
Proposed R/W is Shown in Order to Fast-Track R/W Acquisition. R/W Design is Complete Per Stage 2

Sec. 19, T-11-N, R-5-W
Washington Township
Clay County

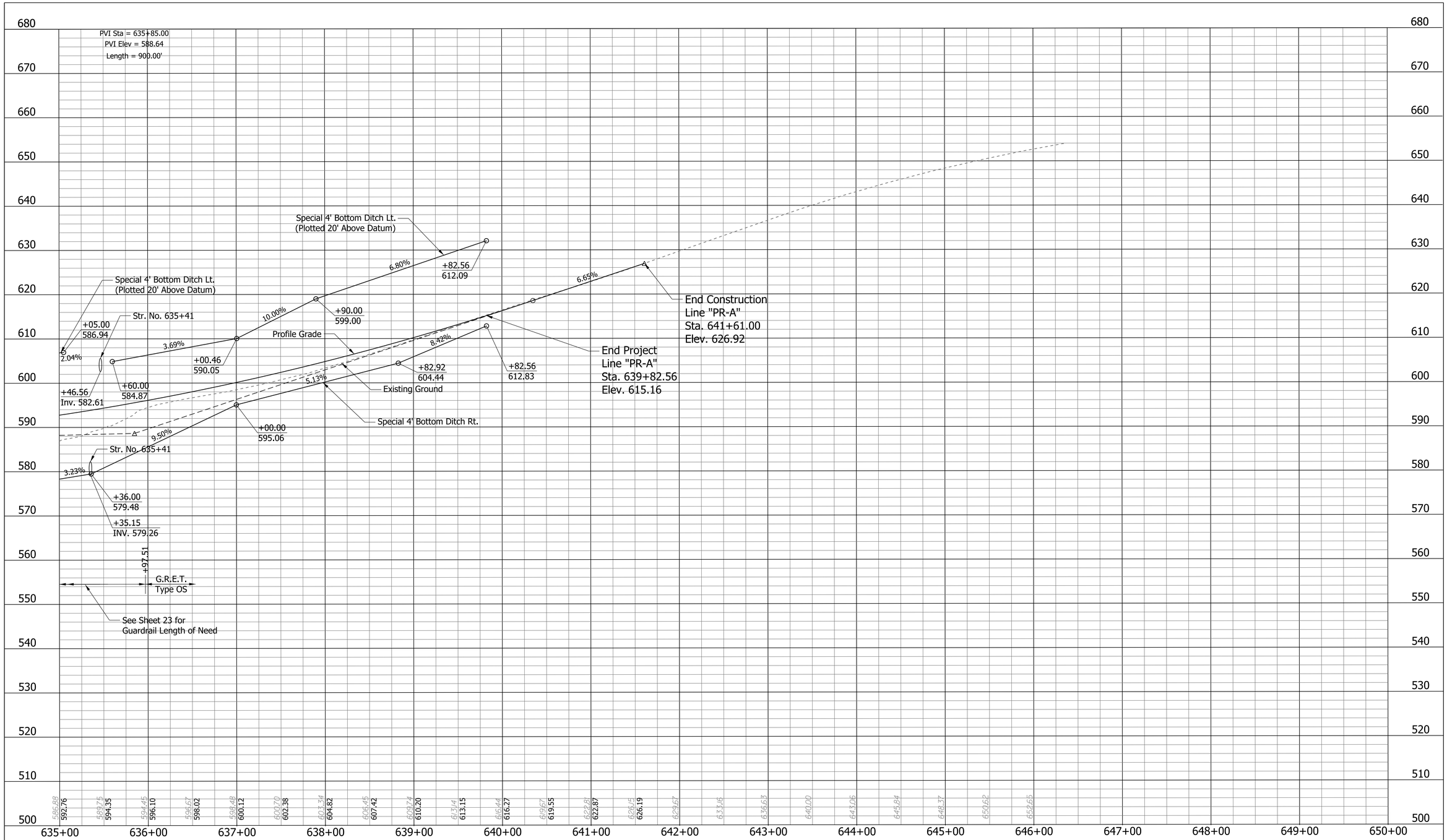


Line "PR-A" to be constructed.
All Right-of-Way on this sheet to be described from Line "A" except as shown.

(B) Full Depth HMA Pavement
(H) Resurfacing HMA Pavement
Roadway Removal

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE: 1" = 50' / BRIDGE FILE: 46-11-10070
		VERTICAL SCALE / DESIGNATION: 0800910
DESIGNED: DCK / DRAWN: DH	PLAN SHEET STA. 635+00 TO STA. 645+00 Line "PR-A"	SURVEY BOOK / SHEETS
CHECKED: BSC / CHECKED: DCK		ELECTRONIC: 24 of 70
		CONTRACT: B-36390 / PROJECT: 0800910

IP_PWP:dms01950\Sht_Plan_04.dgn

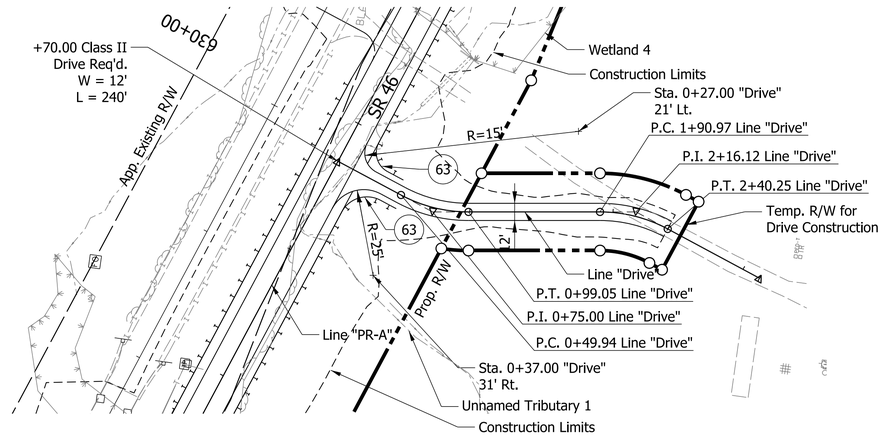


RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE 1" = 50'	BRIDGE FILE 46-11-10070
		VERTICAL SCALE	DESIGNATION 0800910
DESIGNED: DCK DRAWN: DH	PROFILE SHEET STA. 635+00 TO STA. 645+00 Line "PR-A"	SURVEY BOOK	SHEETS
CHECKED: BSC CHECKED: DCK		ELECTRONIC	25 of 70
		CONTRACT B-36390	PROJECT 0800910

IP_PWP:dms01950\Sht_Profile_04.dgn

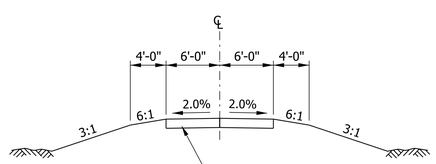
Note to Reviewer:
Proposed R/w is Shown in Order Fast-Track R/W Acquisition. R/W Design is Complete Per Stage 2

Sec. 24, T-11-N, R-6-W
Washington Township
Clay County



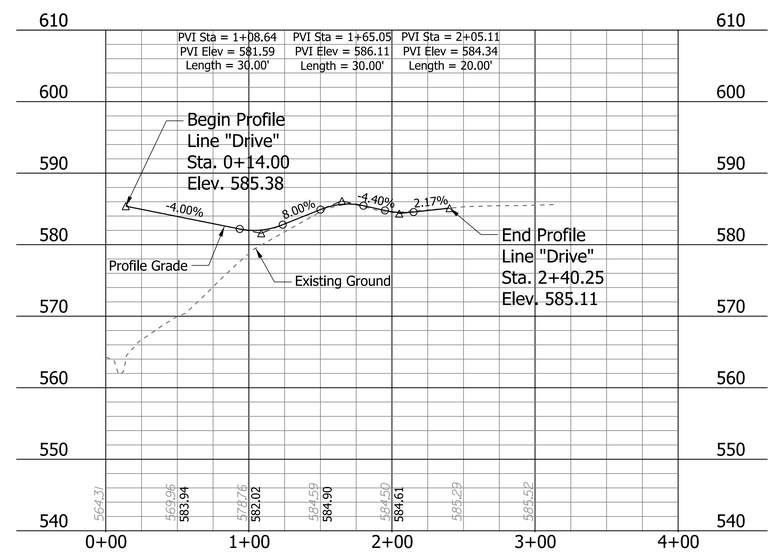
CURVE DATA 1
PI = 0+75.00
Delta = 28°08'28" Lt.
R = 100.00 ft
T = 25.06 ft
L = 49.12 ft
E = 3.09 ft
SE = NA

CURVE DATA 2
PI = 2+16.12
Delta = 28°14'15" Rt.
R = 100.00 ft
T = 25.15 ft
L = 49.28 ft
E = 3.11 ft
SE = NA



165#/Syd, HMA, Surface, Type D on
385#/Syd, HMA, Intermediate, Type D on
6" Compacted Aggregate, No. 53 Base on
Subgrade Treatment Type III

Sta. 0+12.00 to Sta. 0+93.78
Per Std. Dwg. E 610-DRIV-02.
Sta. 0+93.78 to Sta. 2+40.25 to
be 6" Compaced Aggregate, No. 53, Base.



(63) Guardrail, Terminal System, W-Beam, Curved, 1

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

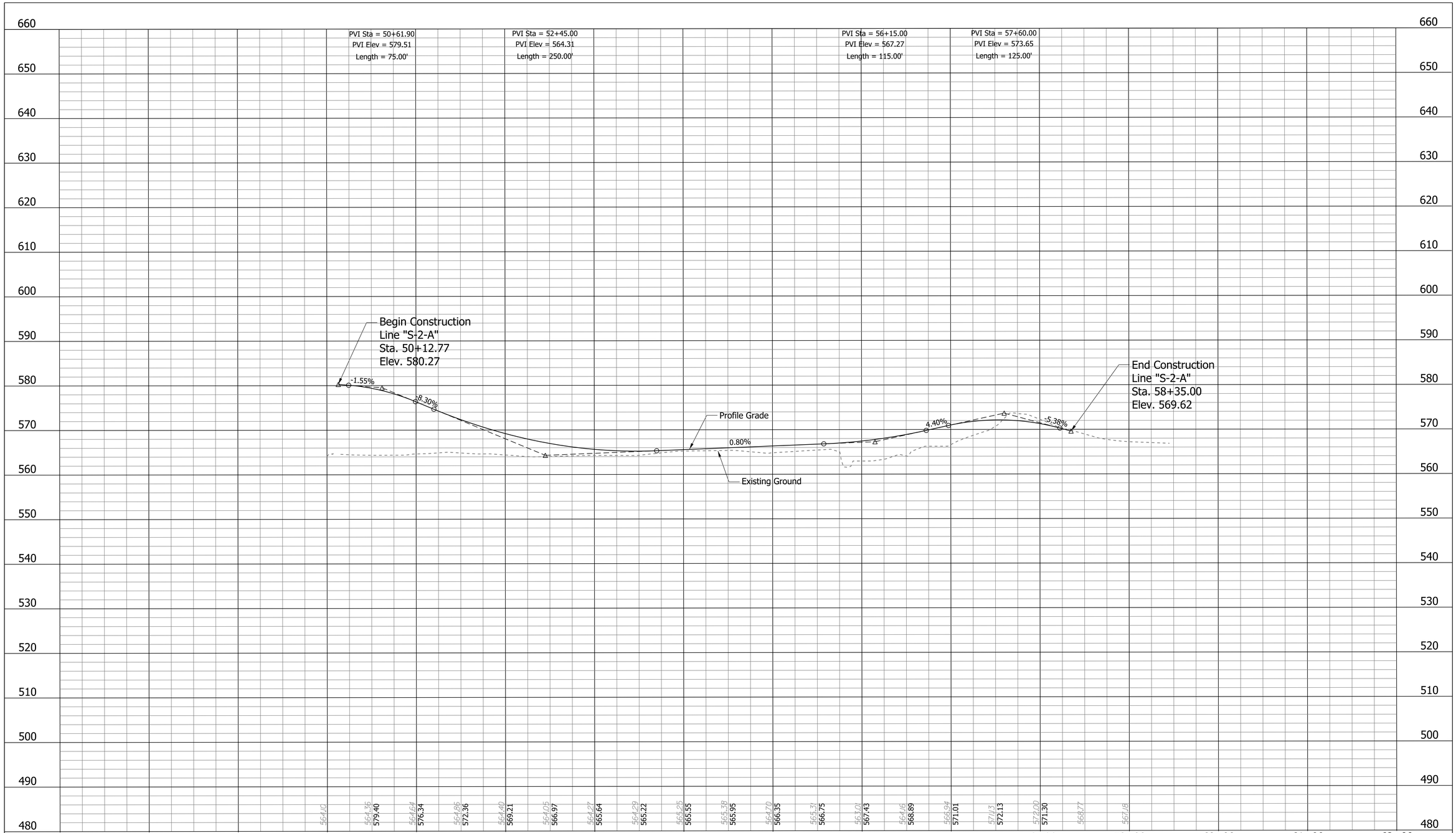
DESIGNED: DCK DRAWN: DH
CHECKED: BSC CHECKED: DCK

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN & PROFILE SHEET
Line "Drive"

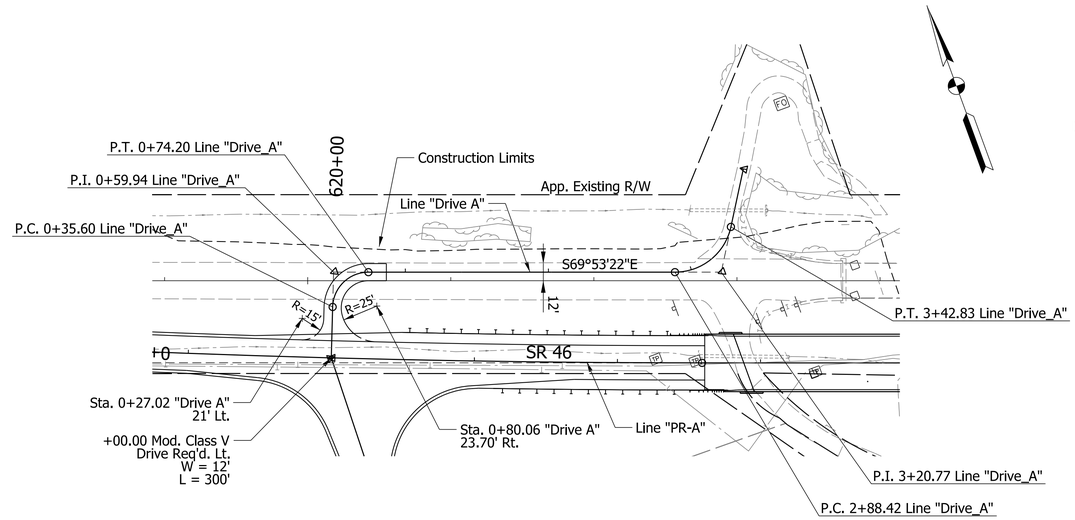
HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	46-11-10070
VERTICAL SCALE	DESIGNATION
	0800910
SURVEY BOOK	SHEETS
ELECTRONIC	26 of 70
CONTRACT	PROJECT
B-36390	0800910

IP_PWP:dms01950\Sht_Plan_05.dgn



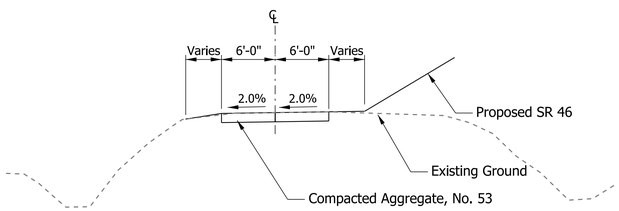
RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE 1" = 50'	BRIDGE FILE 46-11-10070
		VERTICAL SCALE	DESIGNATION 0800910
DESIGNED: DCK DRAWN: DH	PROFILE SHEET STA. 50+00 TO STA. 59+00 Line "S-2-A"	SURVEY BOOK	SHEETS
CHECKED: BSC CHECKED: DCK		ELECTRONIC	27 of 70
		CONTRACT B-36390	PROJECT 0800910

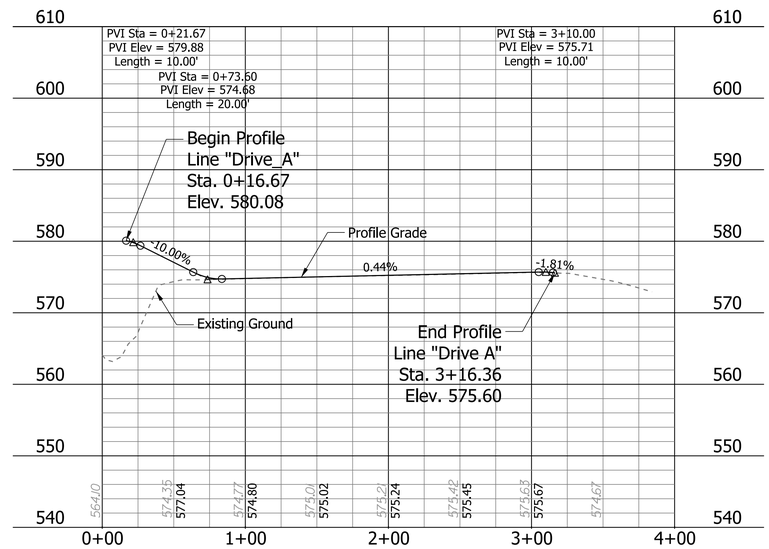
IP_PWP:dms01950\Sht_Profile_05.dgn



CURVE DATA 1
PI = 0+59.94
Delta = 88°28'09" Rt.
R = 25.00 ft
T = 24.34 ft
L = 38.60 ft
E = 9.89 ft
SE = NA

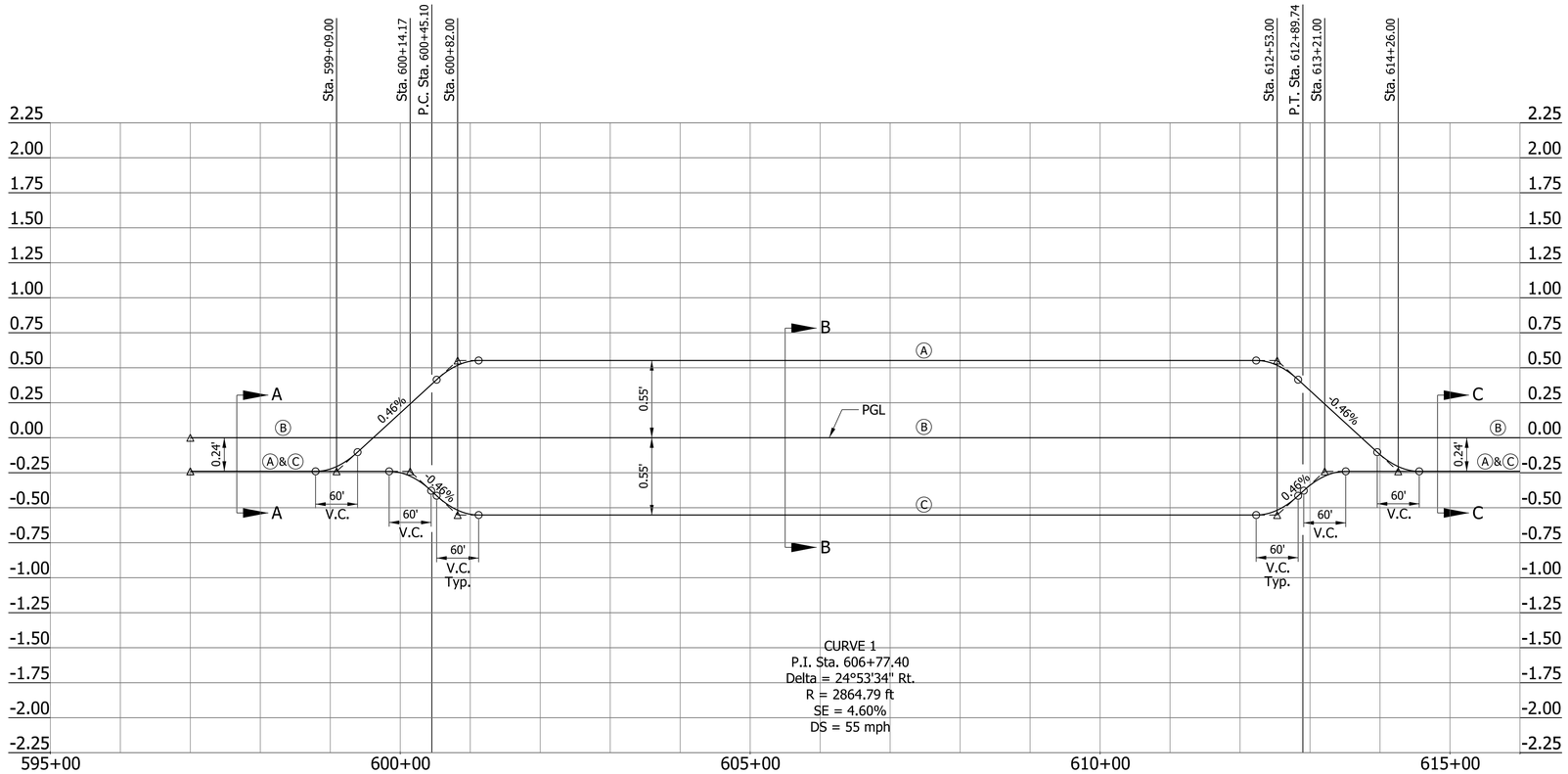
CURVE DATA 2
PI = 3+20.77
Delta = 77°55'31" Lt.
R = 40.00 ft
T = 32.35 ft
L = 54.40 ft
E = 11.44 ft
SE = NA

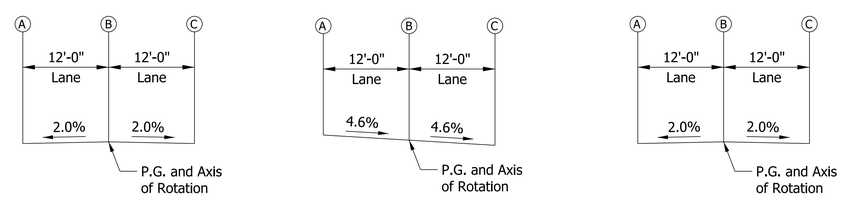




RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE 1" = 50'	BRIDGE FILE 46-11-10070
		VERTICAL SCALE	DESIGNATION 0800910
DESIGNED: DCK / DRAWN: DH	PLAN & PROFILE SHEET Line "Drive_A"	SURVEY BOOK ELECTRONIC	SHEETS 28 of 70
CHECKED: BSC / CHECKED: DCK		CONTRACT B-36390	PROJECT 0800910

IP_PWP:dms01950\Sht_Plan_06.dgn





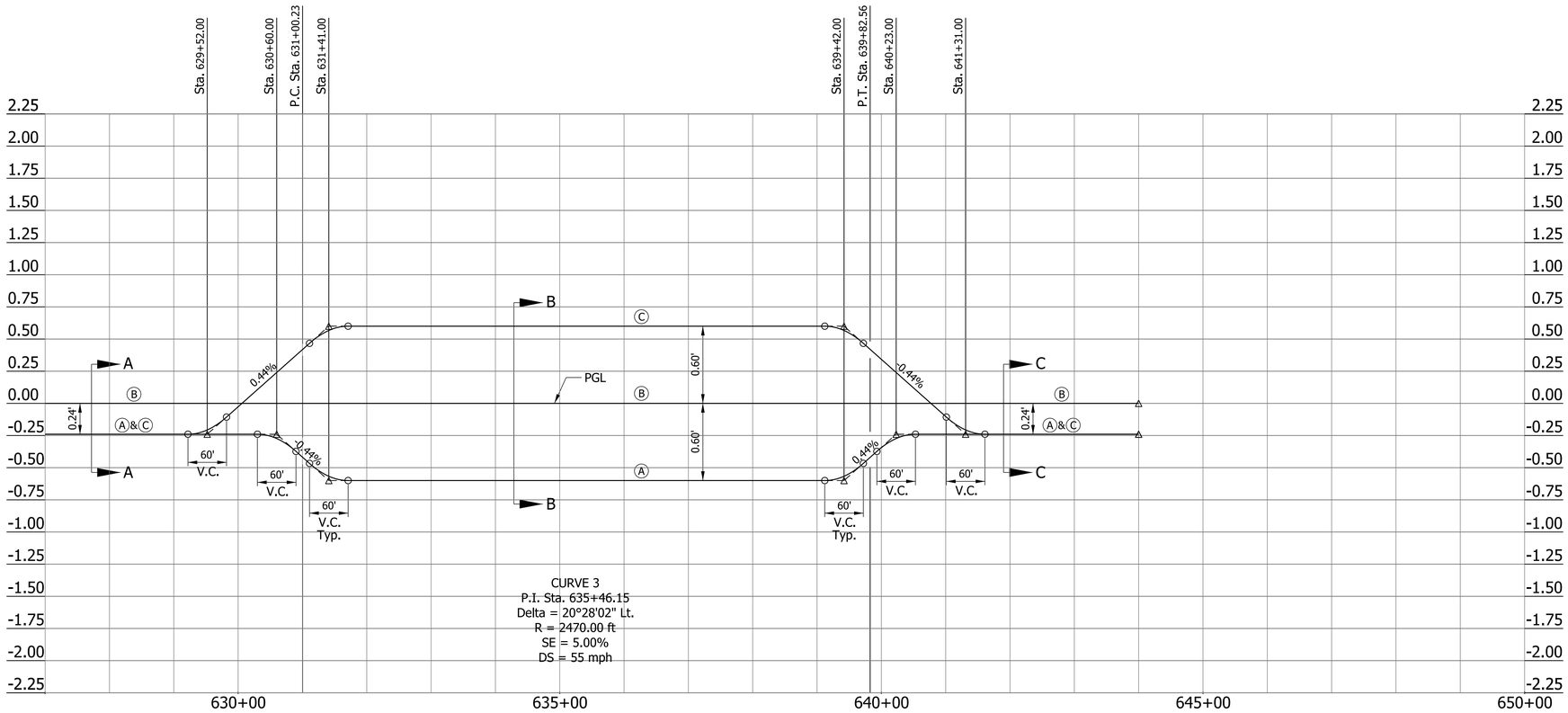
SECTION A-A

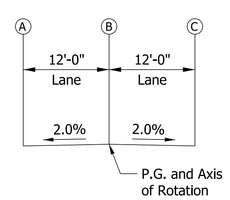
SECTION B-B

SECTION C-C

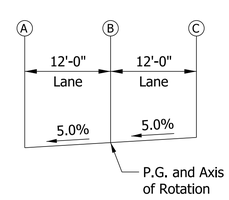
RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE 1" = 100'	BRIDGE FILE 46-11-10070
		VERTICAL SCALE	DESIGNATION 0800910
DESIGNED: DCK / DRAWN: DH	SUPERELEVATION DETAIL Line "PR-A"	SURVEY BOOK ELECTRONIC	SHEETS 29 of 70
CHECKED: BSC / CHECKED: DCK		CONTRACT B-36390	PROJECT 0800910

IP_PWP:dms01950\Sht_Super_01.dgn

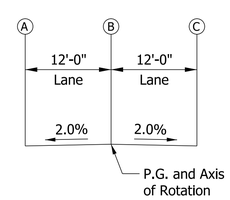




SECTION A-A



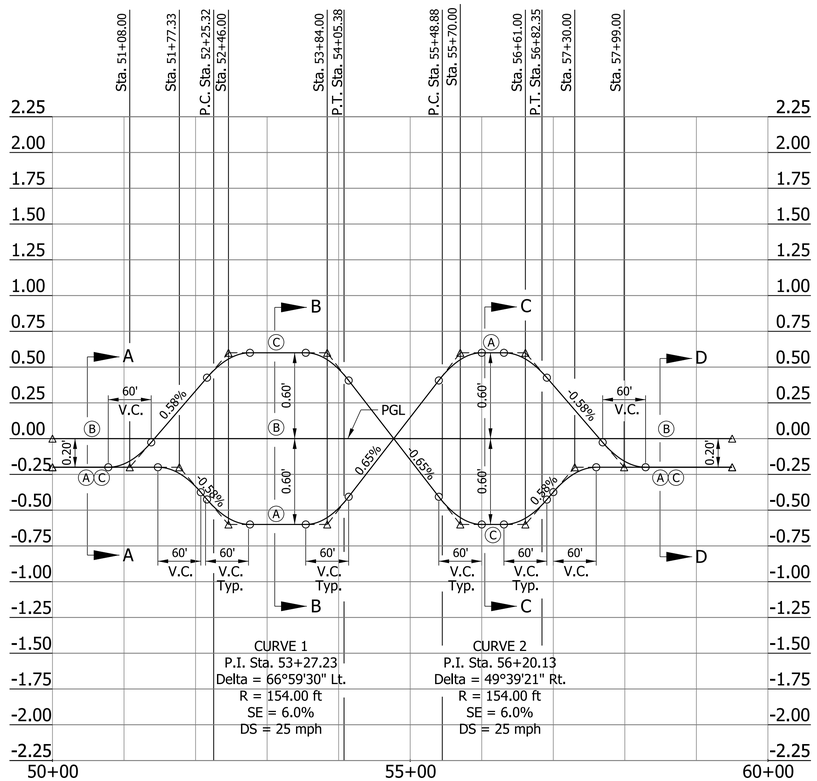
SECTION B-B

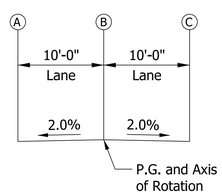


SECTION C-C

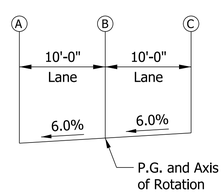
RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE: 1" = 100'	BRIDGE FILE: 46-11-10070
		VERTICAL SCALE:	DESIGNATION: 0800910
DESIGNED: DCK / DRAWN: DH	SUPERELEVATION DETAIL Line "PR-A"	SURVEY BOOK: ELECTRONIC	SHEETS: 30 of 70
CHECKED: BSC / CHECKED: DCK		CONTRACT: B-36390	PROJECT: 0800910

IP_PWP:dms01950\Sht_Super_02.dgn

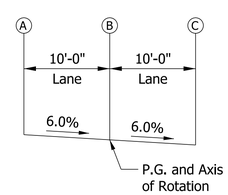




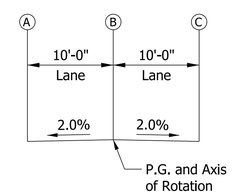
SECTION A-A



SECTION B-B



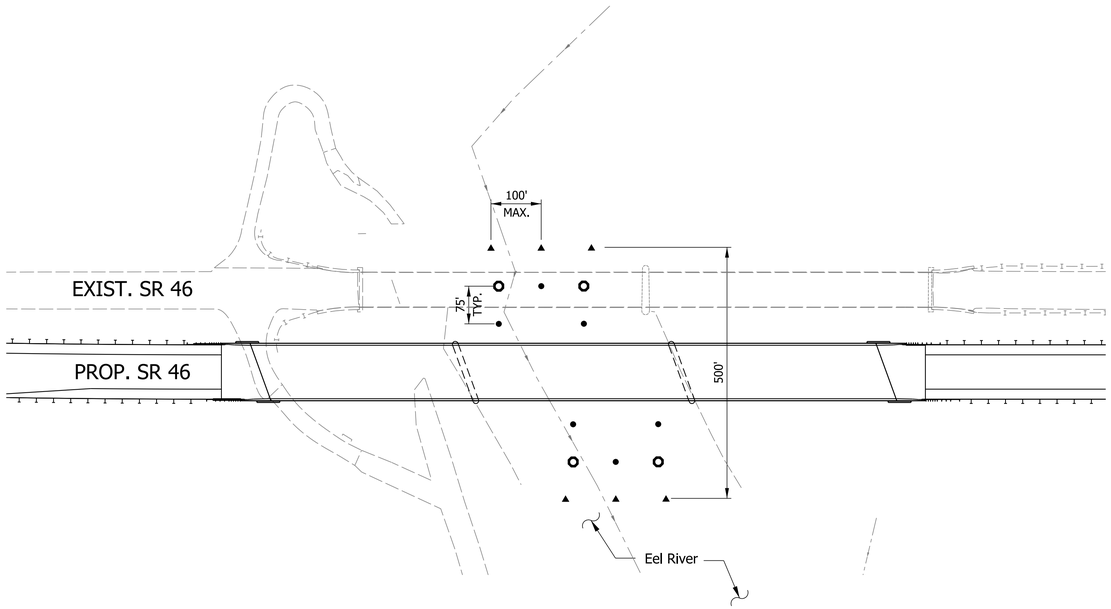
SECTION C-C



SECTION D-D

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE: 1" = 100'	BRIDGE FILE: 46-11-10070
		VERTICAL SCALE	DESIGNATION: 0800910
DESIGNED: DCK / DRAWN: DH	SUPERELEVATION DETAIL Line "S-2-A"	SURVEY BOOK	SHEETS
		ELECTRONIC	31 of 70
CHECKED: BSC / CHECKED: DCK		CONTRACT: B-36390	PROJECT: 0800910

IP_PWP:dms01950\Sht_Super_03.dgn



General notes:

Information shown is schematic only. Final location and number of signs and buoys is subject to approval of Indiana State Water Patrol.

The details shown are for bidding purposes only. All materials and labor necessary to install and remove.

Signs shall be incidental to other items.

The contractor is responsible for buoy maintenance throughout construction and for determining anticipated water levels during construction. Each sign and buoy shall be anchored to bottom of river.

Signs shall be double faced.

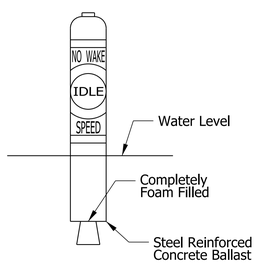
Each sign shall be equipped with two (2) flashing light units with amber lens. Flashing light units shall be furnished and maintained by the contractor.

All lettering to be black in color in block form.

For other information and location of signs and buoys see special provisions.

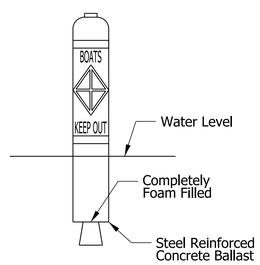
Schematic shown is for one navigational span. For work on other spans move appropriate signs with no direct pay.

Color:
Background - White
Legend - Black
2" Reflective band and symbol - International orange



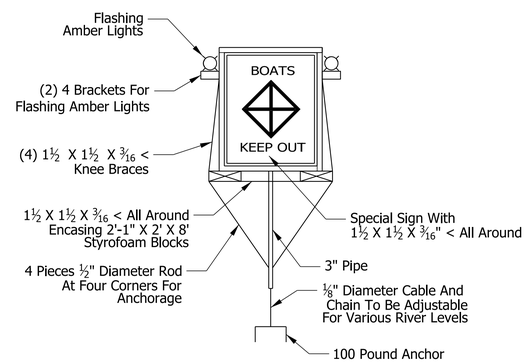
51 Pound Anchor
Tackle Permitter

RESTRICTED AREA BUOY
("NO WAKE")
(8 REQUIRED - ROADWAY ITEM)



51 Pound Anchor
Tackle Permitter

CONTROLLED AREA BUOY
("BOATS KEEP OUT")
(8 REQUIRED - ROADWAY ITEM)



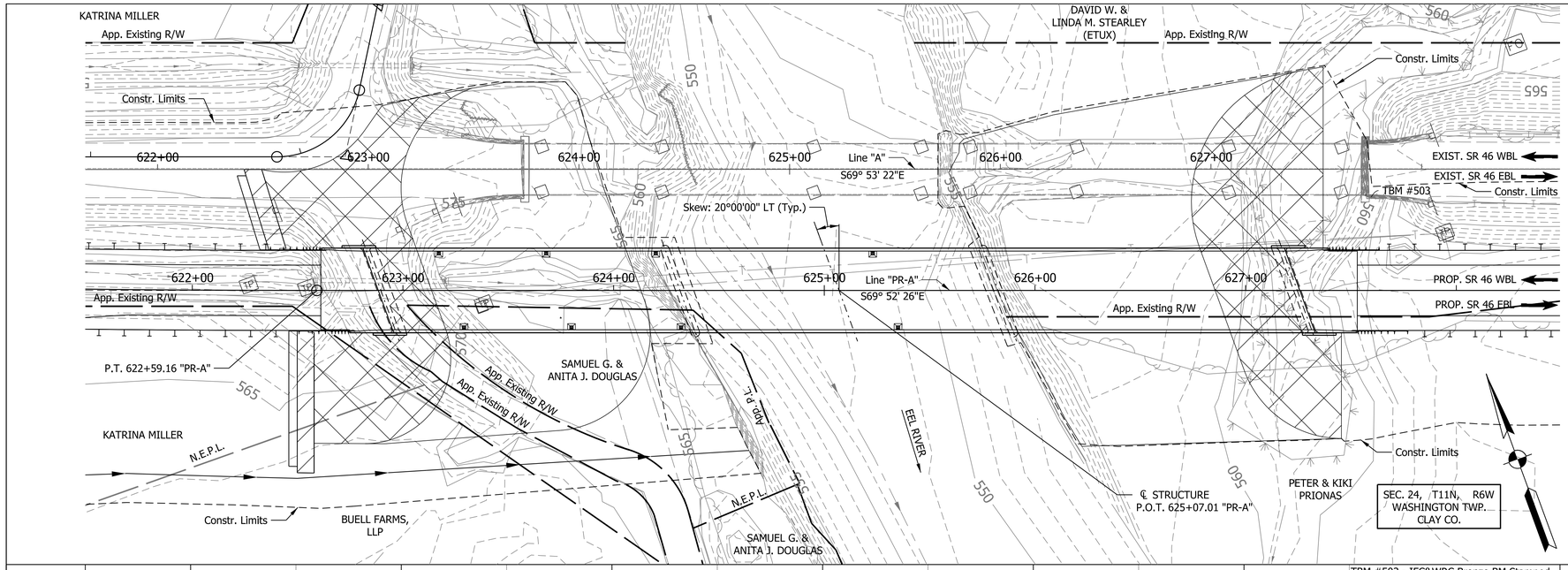
SPECIAL SIGN ASSEMBLY
("BOATS KEEP OUT")
(4 REQUIRED - ROADWAY ITEM)

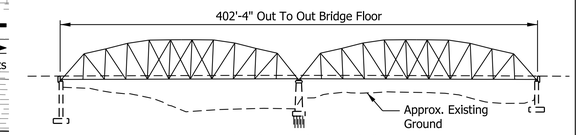
LEGEND

- O - Boats Keep Out (Sign)
- ● - Boats Keep Out (Buoy)
- ▲ - No Wake (Buoy)

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE: N/A	BRIDGE FILE: 46-11-10070
		VERTICAL SCALE	DESIGNATION: 0800910
DESIGNED: DCK / DRAWN: DH	TEMPORARY TRAFFIC CONTROL DEVICES	SURVEY BOOK: ELECTRONIC	SHEETS: 32 of 70
CHECKED: BSC / CHECKED: DCK		CONTRACT: B-36390	PROJECT: 0800910

IP_PWP:dms01950\Sht_Temp_Traffic_Control_01.dgn

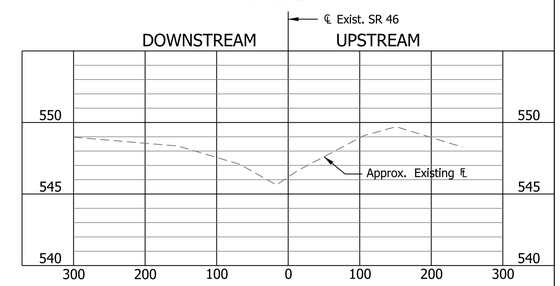




Existing Clear Roadway = 24'-0"

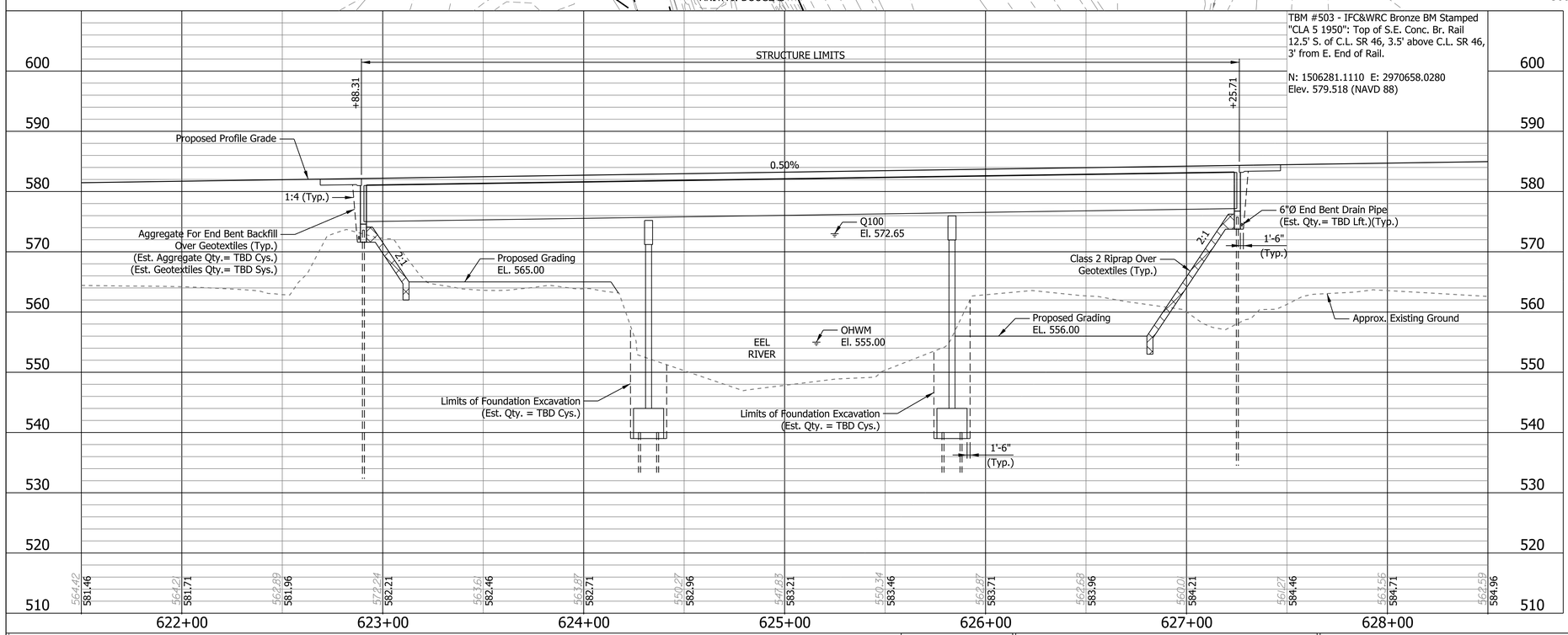
EXISTING STEEL TRUSS STRUCTURE

(To Be Removed, Steel Trusses To Be Salvaged)
Not To Scale



STREAM PROFILE ALONG ℄ CHANNEL

Scale: 1" = 100' Horizontal, 1" = 5' Vertical



TBM #503 - IFC&WRC Bronze BM Stamped "CLA 5 1950": Top of S.E. Conc. Br. Rail 12.5' S. of C.L. SR 46, 3.5' above C.L. SR 46, 3' from E. End of Rail.

N: 1506281.1110 E: 2970658.0280
Elev. 579.518 (NAVD 88)

HYDRAULIC DATA

Drainage Area	= 830.00 Sq. Mi.
Discharge (Q100)	= 48500 Cfs.
Q100 High Water Elev. (Natural Channel)	= 572.65 Ft. (NAVD 88)
Q100 Headwater Elev. (@ Proposed Structure)	= 573.32 Ft.
Back Water @ Q100	= 1.11 Ft.
Velocity @ Q100	= 6.99 Ft./Sec.
Waterway Opening Required (Below Elev. 572.65)	= 6159 Sft.
Waterway Opening Provided (Below Elev. 572.65)	= 6159 Sft.
Min. Low Structure Elev.	= 574.65 Ft.
Q100 Scour Elevation	= 506.63 Ft.
Q500 Scour Elevation	= 499.14 Ft.

NOTES:
All Stations Described From Line "PR-A", Unless Noted Otherwise.

For Utility Contacts, see Index Sheet No.2.

Cross-Hatched areas Indicate Limits of Class 2 Riprap over Geotextiles.
(Est. Riprap Qty.= TBD Tons)(Est. Geotextiles Qty.= TBD Sys.)

Hatched areas indicate limits of Revetment Riprap over Geotextiles for Drainage Turnouts. (Est. Riprap Qty.= TBD Tons)
(Est. Geotextiles Qty.= TBD Sys.)

S.R. 46 OVER EEL RIVER
CONTINUOUS COMPOSITE
PRESTRESSED CONCRETE BULB-TEE BEAM BRIDGE
3 SPANS: 142'-0", 151'-0", 142'-0"
SKEW: 20°00'00" LT
37'-4" CLEAR ROADWAY

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: RAM DRAWN: ALF
CHECKED: MJK CHECKED: MJK

INDIANA
DEPARTMENT OF TRANSPORTATION

LAYOUT

HORIZONTAL SCALE	BRIDGE FILE
1" = 30'	46-11-10070
VERTICAL SCALE	DESIGNATION
1" = 10'	0800910
SURVEY BOOK	SHEETS
ELECTRONIC	33 of 70
CONTRACT	PROJECT
B-36390	0800910

IP_PWP:dms01952\SR46_SHT LAYOUT.01.dgn
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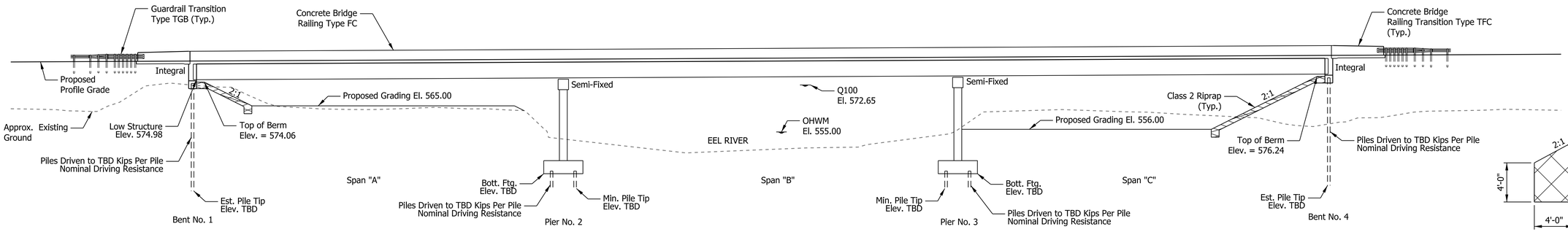
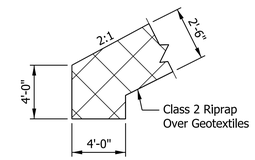
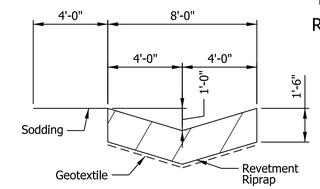
STRUCTURE TO BE BUILT TO A 0.50% GRADE



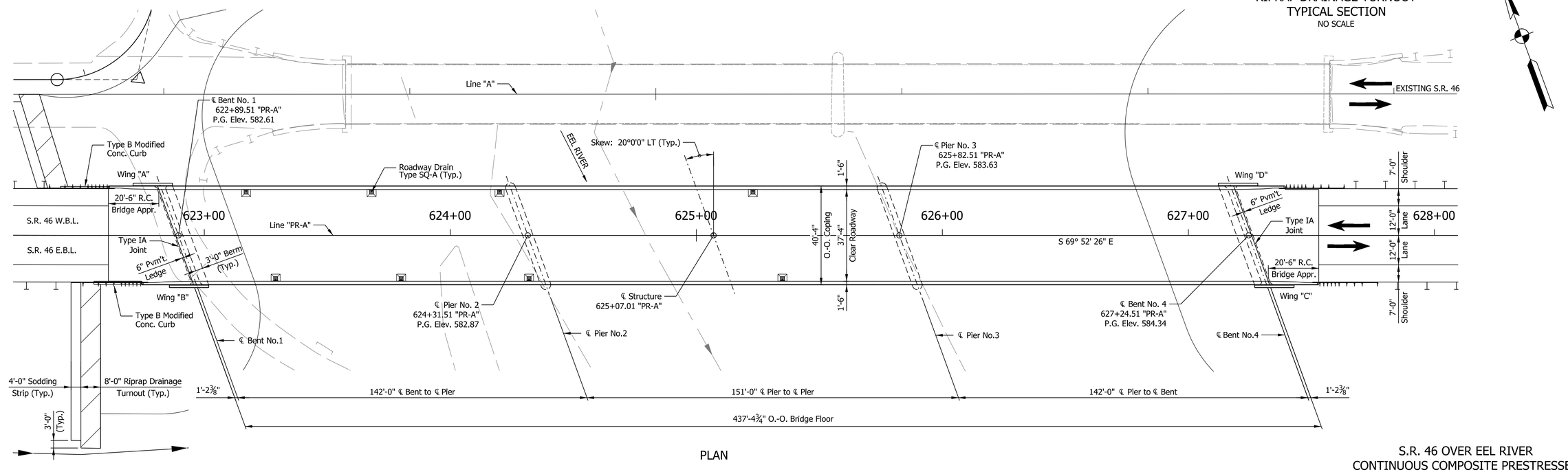
ELEVATION



RIPRAP KEY DETAIL
No Scale



RIPRAP DRAINAGE TURNOUT TYPICAL SECTION
NO SCALE



PLAN

S.R. 46 OVER EEL RIVER
CONTINUOUS COMPOSITE PRESTRESSED
CONCRETE BULB-TEE BEAM BRIDGE
3 SPANS: 142'-0", 151'-0", 142'-0"
SKEW: 20°00'00" LT
37'-4" CLEAR ROADWAY

NOTE TO REVIEWER: Geotechnical Analysis has not yet Been Performed.
Pile Types will be Updated at the Next Submittal.

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE 1" = 20'	BRIDGE FILE 46-11-10070
		VERTICAL SCALE 1" = 20'	DESIGNATION 0800910
DESIGNED: RAM / DRAWN: ALF	GENERAL PLAN	SURVEY BOOK / ELECTRONIC	SHEETS 34 of 70
CHECKED: MJK / CHECKED: MJK		CONTRACT B-36390	PROJECT 0800910

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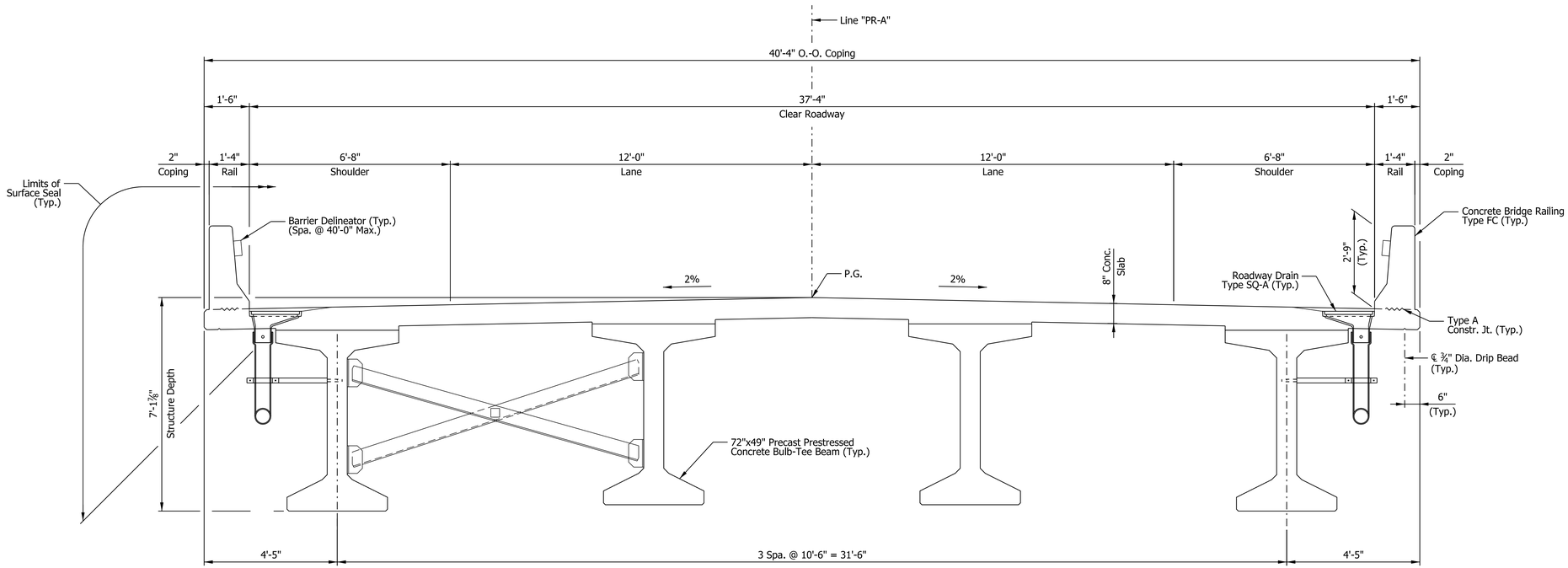
09-APR-2015



TYPICAL SECTION

Scale: ½" = 1'-0"

GENERAL NOTES

Reinforcing steel covering shall be 2½" in Top and 1" min.
In bottom of floor slabs, 3" in footing except bottom steel which shall be 4", and 2" in all other parts, unless noted.

DESIGN DATA

Superstructure & Substructure Designed for HL-93 Loading in accordance with AASHTO LRFD Bridge Design Specifications Sixth Edition, 2012, and Its Subsequent Interims.
Designed for actual dead load plus 35 psf of future wearing surface and 15 psf for SIP Metal deck forms. Slab designed with a 7½" structural depth, and a ½" integral wearing surface.

SEISMIC DESIGN DATA

Seismic Performance Zone = TBD
Acceleration Coefficient (SD_1) = TBD
Seismic Soil Profile Type = TBD

DESIGN STRENGTHS

Prestressed Concrete	f'c = 8,000 p.s.i.
Class "A" Concrete	f'c = 3,500 p.s.i.
Class "B" Concrete	f'c = 3,000 p.s.i.
Class "C" Concrete	f'c = 4,000 p.s.i.
Reinforcing Steel (Grade 60)	fy = 60,000 p.s.i.

CONSTRUCTION LOADING

The exterior girder has been checked for strength, deflection, and overturning using the construction loads shown below. Cantilever overhang brackets were assumed for support of the deck overhang past the edge of the exterior girder. The finishing machine was assumed to be supported 6" outside the vertical coping form. The top overhang brackets were assumed to be located 6" past the edge of the vertical coping form. The bottom overhang brackets were assumed to be braced against the intersection of the girder bottom flange and web.

Deck Falsework Loads:	Designed for 15 lb/Sft for permanent metal stay-in-place deck forms, removable deck forms, and 2-ft exterior walkway.
Construction Live Load:	Designed for 20 lb/Sft extending 2-ft past the edge of coping and 75 lb/ft vertical force applied at a distance of 6 in. outside the face of coping over a 30-ft length of the deck centered with the finishing machine.
Finishing-Machine Load:	4500 lb distributed over 10-ft along the coping.
Wind Load:	Structure Designed for 70 mph horizontal wind loading in accordance with LRFD 3.8.1.

S.R. 46 OVER EEL RIVER
CONTINUOUS COMPOSITE PRESTRESSED
CONCRETE BULB-TEE BEAM BRIDGE
3 SPANS: 142'-0", 151'-0", 142'-0"
SKEW: 20°00'00" LT
37'-4" CLEAR ROADWAY

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: RAM DRAWN: ALF
CHECKED: MJK CHECKED: MJK

INDIANA
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN

HORIZONTAL SCALE	BRIDGE FILE
1/2" = 1'-0"	46-11-10070
VERTICAL SCALE	DESIGNATION
1/2" = 1'-0"	0800910
SURVEY BOOK	SHEETS
ELECTRONIC	35 of 70
CONTRACT	PROJECT
B-36390	0800910

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SUMMARY OF BRIDGE QUANTITIES

ITEM	CONCRETE					SWEDGED ANCHOR BOLT	CONCRETE RAILING CLASS C		PLAIN REINFORCING STEEL	EPOXY COATED REINFORCING STEEL	* STRUCTURAL STEEL	* ANCHOR PLATE AP-1	PILES														DENSE GRADED SUBBASE	PEDESTRIAN FENCE	GRATES, BASINS & FITTINGS, CAST IRON	EXP. CLASS	CONCRETE STR. MEMBERS		BARRIER DELINEATORS	** SURFACE SEAL	CONC. BRIDGE RAILING TRANS. TYPE TFT	R.C. BRIDGE APPROACH 12"
	CLASS C	CLASS A	CLASS B																																	
	SUPER-STRUCTURE	SUB-STRUCTURE	FOOTING										PILE SLEEVES	TEST PILE DYNAMIC RESTRIKE	14" DIA. STEEL PIPE PILE		PILE, STEEL H, HP 14x117		HP 14x117 TEST PILE DYNAMIC PRODUCTION		DYNAMIC PILE LOAD TEST		PILE SHOES HP 14x117		PREDRILLED OVERSIZED PILE HOLES						AASHTO I-BEAM TYPE	BULB-TEE BEAM 72" x 49"				
	CYS	CYS	CYS			EACH	CYS	LFT	LBS	LBS	LBS	EACH	EA.	EA.	NO.	LFT	NO.	LFT	NO.	LFT	EA.		EA.		NO.	LFT	CYS	LFT	LBS	LFT	LFT	LFT	EACH	SFT	EACH	SYS
SUPERSTRUCTURE																																				
END BENT NO. 1																																				
PIER NO. 2																																				
PIER NO. 3																																				
END BENT NO. 4																																				
R.C. BRIDGE APPROACH (Bent No. 1)																																				
R.C. BRIDGE APPROACH (Bent No. 4)																																				
TOTALS																																				

*** Estimated Quantity Cost Included In Concrete Structural**
**** Estimated Quantity, To Be Paid For as "LSum"**

RECOMMENDED FOR APPROVAL
DESIGN ENGINEER DATE

DESIGNED: RAM DRAWN: ALF
CHECKED: MJK CHECKED: MJK

INDIANA
DEPARTMENT OF TRANSPORTATION

BRIDGE SUMMARY

HORIZONTAL SCALE	BRIDGE FILE
NONE	46-11-10070
VERTICAL SCALE	DESIGNATION
NONE	0800910
SURVEY BOOK	SHEETS
ELECTRONIC	36 of 70
CONTRACT	PROJECT
B-36390	0800910

IP_PWP:dms01952\SR46_SHT BSUM.01.dgn
09-APR-2015

PAVEMENT QUANTITIES AND APPROACH TABLE

LOCATION	DESCRIPTION (APPROACH TYPE OR CLASS)	WIDTH	LENGTH	RADII	DISTANCE BEYOND R/W LINE	SURFACE BEYOND R/W LINE: COMPACTED AGGREGATE BASE	SURFACE BEYOND R/W LINE: HMA	SURFACE BEYOND R/W LINE: CONCRETE	GRADE 1	GRADE 2	GRADE 3	GRADE 4	EXCAVATION: CUT	EXCAVATION: FILL	CLEAR ZONE AT DRIVE	HMA FOR APPROACHES, TYPE D (LBS. PER SYD.): 1073	550			HMA MATERIALS (LBS. PER SYD.): QC/QA-HMA, 4, 64, SURFACE, 9.5 mm: 165		QC/QA-HMA, 4, 64, INTERMEDIATE, 9.5 mm: 330		QC/QA-HMA, 4, 64, BASE, 25.0 mm: 605	SUBGRADE TREATMENT, TYPE IC	SUBGRADE TREATMENT, TYPE II	SUBGRADE TREATMENT, TYPE III	HMA MATERIAL FOR: PRIME COAT	TACK COAT	MILLING, APPROACH	MILLING, ASPHALT, 1 1/2 IN.	COMPACTED AGGREGATE, NO. 53, BASE, DEPTH 5.5 IN.				COMPACTED AGGREGATE, NO. 53, DEPTH 6 IN.	JOINT ADHESIVE, SURFACE	JOINT ADHESIVE, INTERMEDIATE	LIQUID ASPHALT SEALANT	REMARKS
		FT	FT	FT	FT	SYS	SYS	SYS	%	%	%	%	TONS	TONS	FT	TONS	TONS	TONS	TONS	TONS	TONS	TONS	TONS	TONS	SYS	SYS	SYS	TONS	TONS	SYS	SYS	TONS	TONS	TONS	TONS	TONS	TONS	LFT	LFT	LFT	
DES. NO. 0800910																																									
LINE "PR-A"													8277	61324																											
598+50.00 - 614+76.24	MAINLINE-RESURF.																			350									3		4209						75		1627		1627	
614+76.24 - 622+61.02	MAINLINE-FULL DEPTH																			259		531		993	3605				3								242		1074	1074	3220	
627+53.00 - 639+82.56	MAINLINE-FULL DEPTH																			286		592		1119	3609				3								379		2214	2214	6636	
639+82.56 - 641+61.00	MAINLINE-RESURF.																			124									3		1487						8		179		179	
APPROACHES																																									
609+20	TYPE A	19	86	65/65												261													1	486											
620+00	TYPE A	20	153	60/60												476											272		1	887											
DRIVES																																									
620+00	MOD. DRIVE CLASS V	12	70	25/15																																		136			
629+70	DRIVE CLASS II	12	227	25/15												22	83										46		2												
630+70	DRIVE CLASS V	24	100	25/15																																		85			
637+45	UNIMPROVED	52	3													10													1												
640+41	UNIMPROVED	52	3													9													1												
LINE "S-2-A"													256	3879																											
51+65.76 - 58+35.00	MAINLINE-FULL DEPTH																			148		306				1179			3			544				31		670	670	1339	
APPROACHES																																									
56+50.00	DRIVE CLASS V	24	65	25/15																																		60			
TOTAL													8533	65203		778	83			1167		1429		2112	7214	1179	318		21	1373	5696	544				736	280	5764	3958	13001	

STRUCTURE DATA

STRUCTURE NUMBER	LOCATION: STATION	LOCATION: LEFT	LOCATION: RIGHT	LOCATION: CROSS	LOCATION: OFFSET	SIZE	DESCRIPTION: PIPE TYPE	DESCRIPTION: MANHOLE, INLET, CATCH BASIN, OR SPECIALTY STRUCTURE AND TYPE	LENGTH	VIDEO INSPECTION LENGTH	SKEW	FLOW LINE: COVER	FLOW LINE: UP STREAM	FLOW LINE: DOWN STREAM	SERVICE LIFE	SITE DESIGNATION	pH	BACKFILL METHOD	STRUCTURE BACKFILL	TYPE	FLOWABLE BACKFILL	TYPE	GEOTEXTILES	REVETMENT RIPRAP	SCOUR PROTECTION: SUMP DEPTH	SCOUR PROTECTION: GEOTEXTILE	SCOUR PROTECTION: RIPRAP		CONCRETE, CLASS A, FOR STR.	VIDEO INSPECTION	PIPE END SECTION	GRATED BOX END SECTION			SAFETY METAL END SECTION			CONNECT TO STR.	REMARKS
					FT	IN.			LFT	LFT		LFT	ELEV.	ELEV.	YRS				CYS		CYS		SYS	TON	IN.	SYS.	TYPE	TONS	CYS	LFT	EA.	TYPE	SLOPE	EA.	TYPE	SLOPE	EA.		
62018	620+18.0		x		85.69	24	1		138.0				560.66	560.25											3	23	Rev	9.8												
62970	629+70.0		x		73.32	30	3		116.0				865.80	561.21											3	55	2	36.5												
63541	635+41.0			x		36	1		109.0				582.86	579.51											3	59	1	35.4												

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: DCK DRAWN: DH

CHECKED: BSC CHECKED: DCK

INDIANA
DEPARTMENT OF TRANSPORTATION

APPROACH TABLE

HORIZONTAL SCALE	BRIDGE FILE
N/A	46-11-10070
VERTICAL SCALE	DESIGNATION
	0800910
SURVEY BOOK	SHEETS
ELECTRONIC	37 of 70
CONTRACT	PROJECT
B-36390	0800910

IP_PWP:dms01950\Sht_Approach_table_01.dgn

APPENDIX C – EARLY COORDINATION

- Sample Early Coordination Letter
- Agency Responses

PARSONS

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August 11, 2014

Ms. Michelle Allen
Federal Highway Administration
575 N. Pennsylvania St.
Room 254, Federal Office Building
Indianapolis, IN 46204

Re: Des. No. 0800910, SR 46 over Eel River Bridge Project
Near Bowling Green, Washington Township, Clay County

Dear Ms. Allen :

The Indiana Department of Transportation (INDOT) intends to proceed with the above bridge project on SR 46. This letter is part of the early coordination phase of the environmental review process. We are requesting comments from your area of expertise regarding any possible environmental effects associated with this project. Please use the above Des. No. and description in your reply.

The proposed project is located on SR 46 over Eel River near the unincorporated town of Bowling Green, Washington Township, Clay County. The purpose of the project is to address the deteriorating condition of the existing structure, which was constructed in 1934. The subject bridge is Structure No.046-11-01316A; NBI No. 17050. It was listed as a "Select" bridge in the National Register of Historic Places in 1999 under Criterion A: Transportation.

In the proposed project area, SR 46 is functionally classified as a Rural Minor Arterial route with a posted speed limit of 55 mph. SR 46 is a two lane facility, consisting of two 11-foot travel lanes and one foot paved shoulders adjacent the travel lanes. Bridge approach guardrail is present on both sides of the roadway east of the subject bridge. The posted speed limit changed to 40 mph east of the bridge heading eastbound (approximately 900 feet east of the river).

The existing structure, a 2-span Parker pony steel-through-truss bridge, measuring 396 feet long (each span 198 feet in length) was constructed in 1934. The superstructure consists of eight (8) continuous wide-flange steel beams, supported by a substructure consisting of two (2) abutments and one intermediate pier. Reinforced concrete wing walls flank the ends of each abutment. The structure was rehabilitated in 1977; this rehabilitation consisted of bridge-floor slab replacement, removal and replacement of mud walls, installation of new abutment and pier pedestals and guardrail replacement. According to INDOT Crawfordsville District, the lower portions of the bridge's sway bracing were cut and removed a few years ago by District maintenance staff because they had been extensively collision-damaged. This bridge was built at the crest of a small vertical curve, so the clearances of the sway bracing were slightly less than at the portals. The overall condition of the existing bridge is poor.

A Section 4(f) Alternatives Analysis, which includes INDOT's preliminary recommendation for a Preferred Alternative, has been drafted to be circulated for review. Once the alternatives have been reviewed by FHWA and SHPO, the Preferred Alternative is subject to change based upon their review and comments.

The preliminary Preferred Alternative 5C-S will construct a new bridge over Eel River approximately 20 feet to the south of the existing bridge and permanently realign the SR 46 roadway. It would require approximately 13.9 acres of new right-of-way from 7 parcels to allow for construction of a new bridge and the realignment of SR 46 and CR 475 E. During construction of the new bridge and approaches, traffic will be maintained on the existing SR 46 roadway and bridge. No disruption to SR 46 traffic is anticipated except at the location where the new road is tied into the existing one. At no time is it anticipated that SR 46 will be completely closed to traffic. The existing "Select" bridge trusses would be relocated to the North Fork of Salt Creek, just south of SR 46, in Nashville, Brown County, Indiana. The relocation project would utilize the two trusses of the bridge as two pedestrian bridges that would provide a safe

crossing over the North Fork of Salt Creek for a proposed multi-use trail that would connect the City of Nashville to Brown County State Park.
Primary land uses in the vicinity of the Eel River bridge include agricultural and residential. The unincorporated town of Bowling Green is just east of the project location, which includes retail and business properties. The proposed bridge would cross over Eel River and likely have temporary impacts to the river during construction. A full wetland delineation and Waters of the U.S. Report will be completed for the project to identify any jurisdictional resources in the area. Environmental permits including IDEM Section 401 permit, USACE Section 404 permit, IDNR CIF permit, and IDEM Rule 5 permit shall be obtained for any impacts to these resources. Resource agencies responsible for issuance of these permits will be contacted to gather additional information regarding sensitive resources and permit or mitigation requirements.

Per the terms of the "Programmatic Agreement Regarding Management and Preservation of Indiana's Historic Bridges" (Historic Bridge PA), FHWA - Indiana Division will *"…satisfy its Section 106 responsibilities involving Select and Non-Select bridges…"* through the Project Development Process of the Historic Bridge PA. Structure No.046-11-01316A; NBI No. 17050 has been classified as a "Select" bridge by the INDOT Historic Bridge Inventory. FHWA - Indiana Division will satisfy its Section 106 responsibilities for other resources located in the project area through coordination with consulting parties. An archaeological report is being prepared and will be submitted upon completion to the office of Indiana DHPA for review.

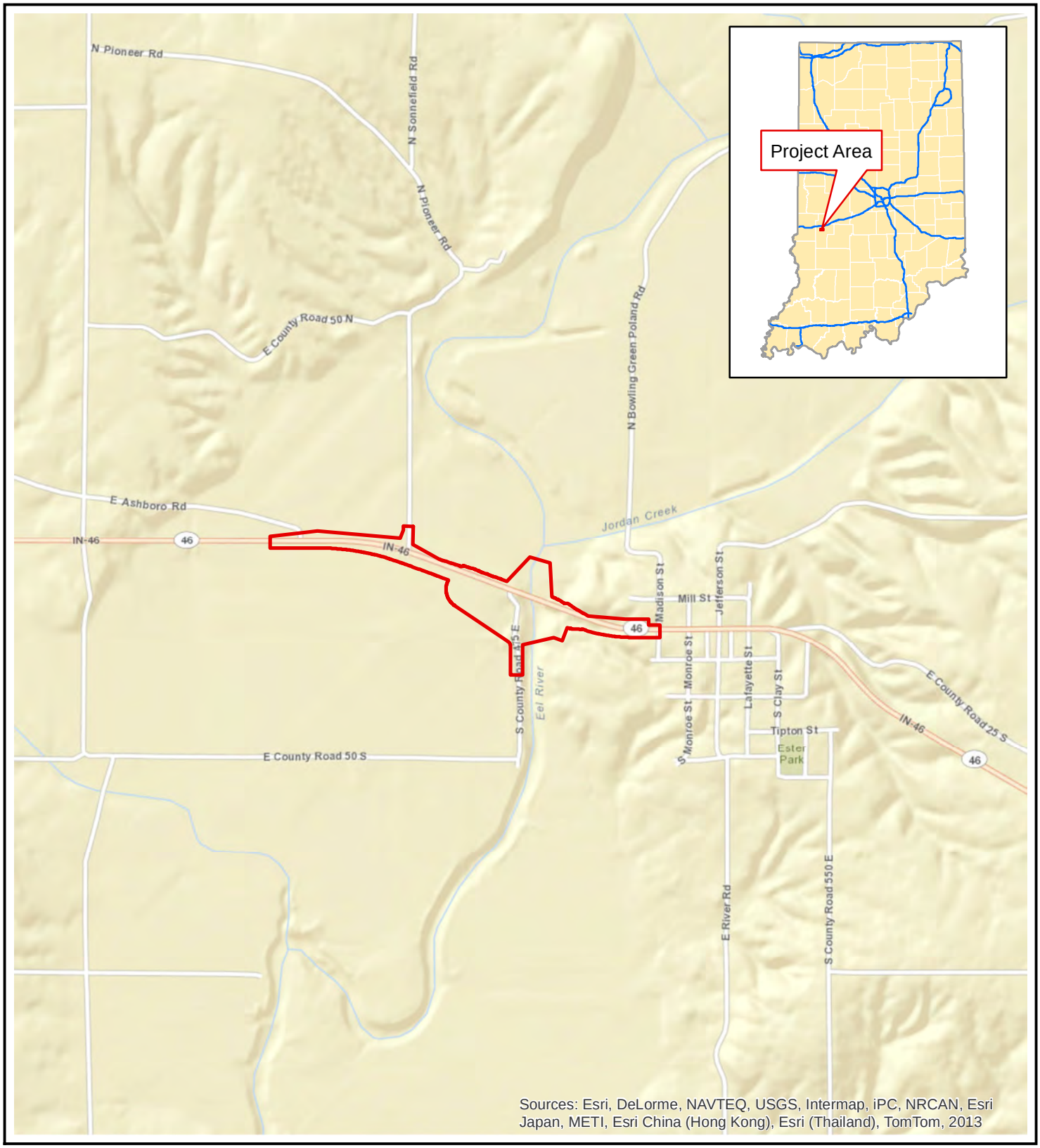
As noted above, we are requesting comments from your area of expertise regarding any possible environmental effects associated with this project. Should we not receive your response **within thirty (30) calendar days** from the date of this letter, it will be assumed that your agency feels that there will be no adverse effects incurred as a result of the proposed project. However, should you find an extension to the response time is necessary, a reasonable amount may be granted upon request. If you have any questions, please contact me at (317) 616-1013. Thank you in advance for your time and cooperation.

Sincerely,

Stephany Stamatis

Stephany Stamatis
Environmental Planner

Cc: Jane Hardisty, NRCS
Nancy Hasenmueller, IGS
Nicholas Chevance, NPS - Indiana Division
Robin McWilliams, USFWS
Christie Stanifer, DNR-F&W
US Department of Housing and Urban Development
Kevin Rector, INDOT-Aviation
James Sullivan, IDEM-Groundwater
US Army Corps of Engineers
Clay County Commissioners
Clay County Redevelopment Commission
Clay County Highway Department
West Central Indiana Economic Development District
Rickie Clark, INDOT- Public Involvement



Preliminary Construction Limits

SR 46 over Eel River

Figure 1 - Project Location

0 750 1,500 3,000 Feet

N

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Preliminary Construction Limits

SR 46 over Eel River

Figure 2 - Aerial

0 750 1,500 3,000 Feet

N

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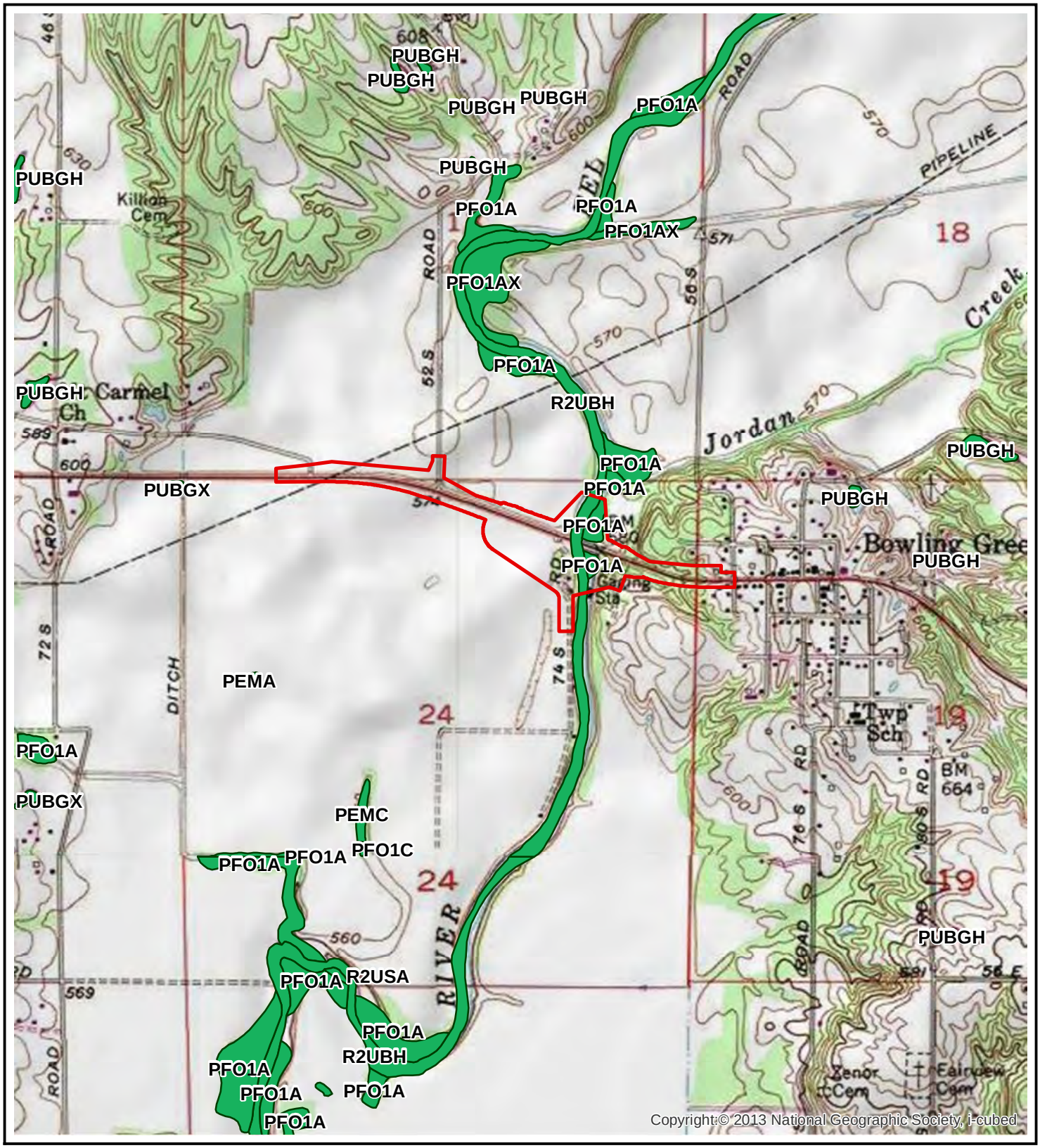

Preliminary Construction Limits

NWI polygons

SR 46 over Eel River

Figure 3 - USGS Topographic and NWI Wetlands

0 750 1,500 3,000 Feet

N

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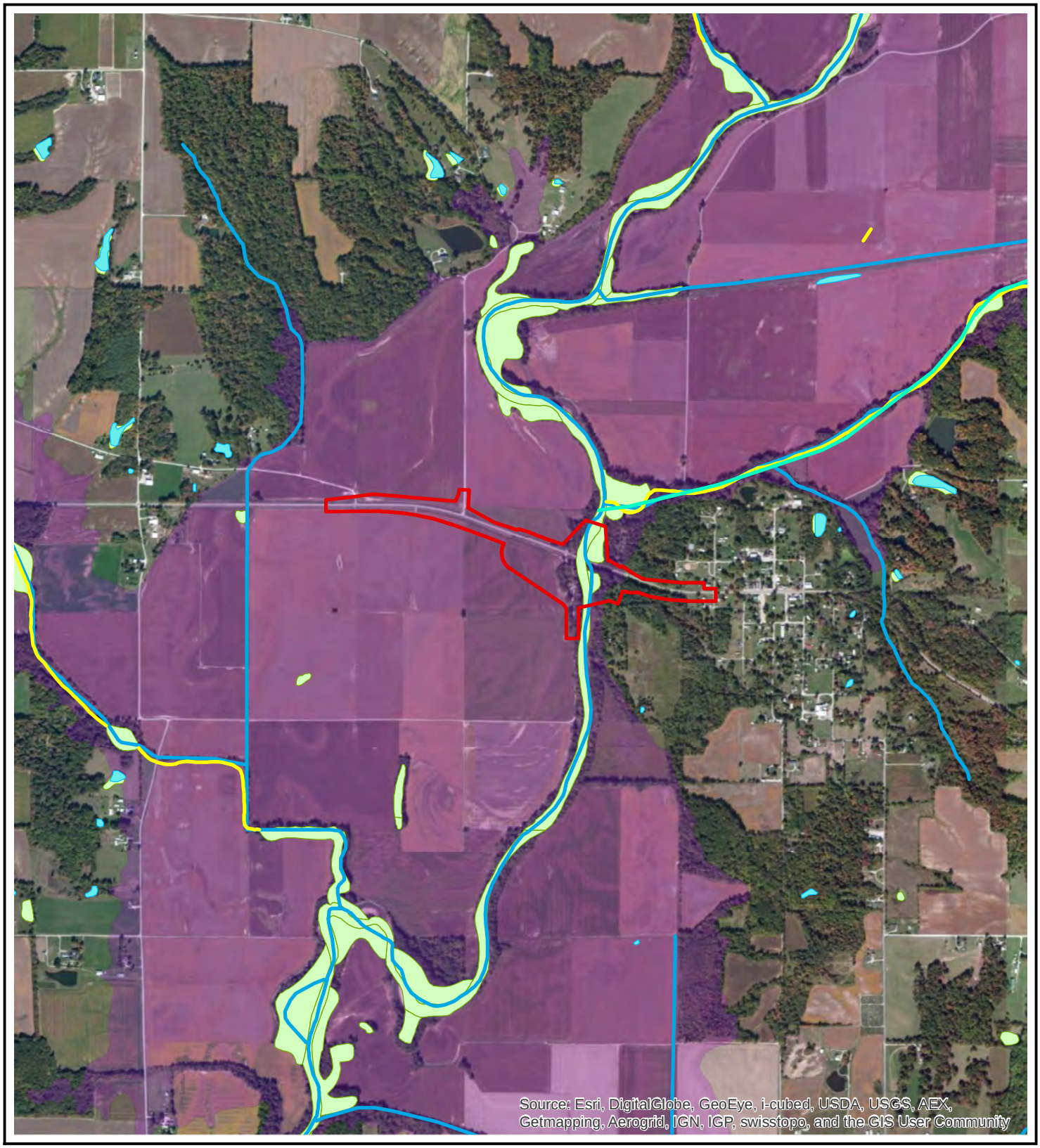

Preliminary Construction Limits
Impaired Streams
NWI Line
Rivers and Streams
Lakes
NWI Polygon
Floodplain-DFIRM

0 750 1,500 3,000 Feet

N

SR 46 over Eel River
Figure 4 - Water Resources

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Looking west along south side of SR 46 from CR 475E (SW quad)

Looking west along south side of SR 46 from CR 475E (SW quad)

Looking west along south side of SR 46 from CR 475E (SW quad)

Looking west along north side of SR 46 from west end of bridge (NW quad)

Looking NE from SW quad

Looking NW at the NW quad

SW quad looking S at CR 475E

Looking south at SE quad

Looking west at SE quad

Looking north at NE quad

Looking NE at NE quad

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MIKE PENCE

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IDEM > Proposed Roadway Letter

Indiana Department of Environmental Management

We make Indiana a cleaner, healthier place to live.

Mike Pence
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis , Indiana 46206

(317) 232-8603
800) 451-6027
www.IN.gov/idem

INDOT
Tony Jones, project manager
100 N Senate Ave
N642
Indianapolis , IN 46204

Parsons
Alan Ball
101 West Ohio Street
Suite 2121
Indianapolis , IN 46204

Date

To Engineers and Consultants Proposing Roadway Construction Projects:

RE: INDOT Des. No. 0800910, SR 46 bridge over the Eel River in Clay County, IN approximately 0.25 mile west of Bowling Green. INDOT proposes to build a new bridge over the Eel River to replace the existing "select" historic 2-span steel Parker truss bridge.

This letter from the Indiana Department of Environmental Management (IDEM) serves as a standardized response to enquiries inviting IDEM comments on roadway construction, reconstruction, or other improvement projects within

existing roadway corridors when the proposed scope of the project is beneath the threshold requiring a formal National Environmental Policy Act-mandated Environmental Assessment or Environmental Impact Statement. As the letter attempts to address all roadway-related environmental topics of potential concern, it is possible that not every topic addressed in the letter will be applicable to your particular roadway project.

For additional information on specific roadway-related topics of interest, please visit the appropriate Web pages cited below, many of which provide contact information for persons within the various program areas who can answer questions not fully addressed in this letter. Also please be mindful that some environmental requirements may be subject to change and so each person intending to include a copy of this letter in their project documentation packet is advised to download the most recently revised version of the letter; found at: http://www.in.gov/idem/5283.htm.

To ensure that all environmentally-related issues are adequately addressed, IDEM recommends that you read this letter in its entirety, and consider each of the following issues as you move forward with the planning of your proposed roadway construction, reconstruction, or improvement project:

WATER AND BIOTIC QUALITY

1. Section 404 of the Clean Water Act requires that you obtain a permit from the U.S. Army Corps of Engineers (USACE) before discharging dredged or fill materials into any wetlands or other waters, such as rivers, lakes, streams, and ditches. Other activities regulated include the relocation, channelization, widening, or other such alteration of a stream, and the mechanical clearing (use of heavy construction equipment) of wetlands. Thus, as a project owner or sponsor, it is your responsibility to ensure that no wetlands are disturbed without the proper permit. Although you may initially refer to the U.S. Fish and Wildlife Service National Wetland Inventory maps as a means of identifying potential areas of concern, please be mindful that those maps do not depict jurisdictional wetlands regulated by the USACE or the Department of Environmental Management. A valid jurisdictional wetlands determination can only be made by the USACE, using the 1987 Wetland Delineation Manual.

   USACE recommends that you have a consultant check to determine whether your project will abut, or lie within, a wetland area. To view a list of consultants that have requested to be included on a list posted by the USACE on their Web site, see USACE Permits and Public Notices (http://www.lrl.usace.army.mil/orf /default.asp) and then click on "Information" from the menu on the right-hand side of that page. Their "Consultant List" is the fourth entry down on the "Information" page. Please note that the USACE posts all consultants that request to appear on the list, and that inclusion of any particular consultant on the list does not represent an endorsement of that consultant by the USACE, or by IDEM.

   Much of northern Indiana (Newton, Lake, Porter, LaPorte, St. Joseph, Elkhart, LaGrange, Steuben, and Dekalb counties; large portions of Jasper, Starke, Marshall, Noble, Allen, and Adams counties; and lesser portions of Benton, White, Pulaski, Kosciusko, and Wells counties) is served by the USACE District Office in Detroit (313-226-6812). The central and southern portions of the state (large portions of Benton, White, Pulaski, Kosciosko, and Wells counties; smaller portions of Jasper, Starke, Marshall , Noble, Allen, and Adams counties; and all other Indiana counties located in north-central, central, and southern Indiana) are served by the USACE Louisville District Office (502-315-6733).

   Additional information on contacting these U.S. Army Corps of Engineers (USACE) District Offices, government agencies with jurisdiction over wetlands, and other water quality issues, can be found at http://www.in.gov/idem/4396.htm. IDEM recommends that impacts to wetlands and other water resources be avoided to the fullest extent.

2. In the event a Section 404 wetlands permit is required from the USACE, you also must obtain a Section 401 Water Quality Certification from the IDEM Office of Water Quality Wetlands Program. To learn more about the Wetlands Program, visit: http://www.in.gov/idem/4384.htm.

3. If the USACE determines that a wetland or other water body is isolated and not subject to Clean Water Act regulation, it is still regulated by the state of Indiana . A State Isolated Wetland permit from IDEM's Office of Water Quality (OWQ) is required for any activity that results in the discharge of dredged or fill materials into isolated wetlands. To learn more about isolated wetlands, contact the OWQ Wetlands Program at 317-233-8488.

4. If your project will involve over a 0.5 acre of wetland impact, stream relocation, or other large-scale alterations to water bodies such as the creation of a dam or a water diversion, you should seek additional input from the OWQ Wetlands Program staff. Consult the Web at: http://www.in.gov/idem/4384.htm for the appropriate staff contact to further discuss your project.

5. Work within the one-hundred year floodway of a given water body is regulated by the Department of Natural Resources, Division of Water. The Division issues permits for activities regulated under the follow statutes:
   - IC 14-26-2 Lakes Preservation Act 312 IAC 11
   - IC 14-26-5 Lowering of Ten Acre Lakes Act No related code
   - IC 14-28-1 Flood Control Act 310 IAC 6-1
   - IC 14-29-1 Navigable Waterways Act 312 IAC 6
   - IC 14-29-3 Sand and Gravel Permits Act 312 IAC 6
   - IC 14-29-4 Construction of Channels Act No related code

   For information on these Indiana (statutory) Code and Indiana Administrative Code citations, see the DNR Web site at: http://www.in.gov/dnr/water/9451.htm . Contact the DNR Division of Water at 317-232-4160 for further information.

   The physical disturbance of the stream and riparian vegetation, especially large trees overhanging any affected water bodies should be limited to only that which is absolutely necessary to complete the project. The shade provided by the large overhanging trees helps maintain proper stream temperatures and dissolved oxygen for aquatic life.

6. For projects involving construction activity (which includes clearing, grading, excavation and other land disturbing activities) that result in the disturbance of one (1), or more, acres of total land area, contact the Office of Water Quality – Watershed Planning Branch (317/233-1864) regarding the need for of a Rule 5 Storm Water Runoff Permit. Visit the following Web page
   - http://www.in.gov/idem/4902.htm

   To obtain, and operate under, a Rule 5 permit you will first need to develop a Construction Plan (http://www.in.gov/idem/4917.htm#constreq), and as described in 327 IAC 15-5-6.5 (http://www.in.gov/legislative/iac/T03270/A00150 [PDF], pages 16 through 19). Before you may apply for a Rule 5 Permit, or begin construction, you must submit your Construction Plan to your county Soil and Water Conservation District (SWCD) (http://www.in.gov/isda/soil/contacts/map.html).

   Upon receipt of the construction plan, personnel of the SWCD or the Indiana Department of Environmental Management will review the plan to determine if it meets the requirements of 327 IAC 15-5. Plans that are deemed deficient will require re-submittal. If the plan is sufficient you will be notified and instructed to submit the verification to IDEM as part of the Rule 5 Notice of Intent (NOI) submittal. Once construction begins, staff of the SWCD or Indiana Department of Environmental Management will perform inspections of activities at the site for compliance with the regulation.

   Please be mindful that approximately 149 Municipal Separate Storm Sewer System (MS4) areas are now being established by various local governmental entities throughout the state as part of the implementation of Phase II federal storm water requirements. All of these MS4 areas will eventually take responsibility for Construction Plan review, inspection, and enforcement. As these MS4 areas obtain program approval from IDEM, they will be added to a list of MS4 areas posted on the IDEM Website at: http://www.in.gov/idem/4900.htm.

If your project is located in an IDEM-approved MS4 area, please contact the local MS4 program about meeting their storm water requirements. Once the MS4 approves the plan, the NOI can be submitted to IDEM.

Regardless of the size of your project, or which agency you work with to meet storm water requirements, IDEM recommends that appropriate structures and techniques be utilized both during the construction phase, and after completion of the project, to minimize the impacts associated with storm water runoff. The use of appropriate planning and site development and appropriate storm water quality measures are recommended to prevent soil from leaving the construction site during active land disturbance and for post construction water quality concerns. Information and assistance regarding storm water related to construction activities are available from the Soil and Water Conservation District (SWCD) offices in each county or from IDEM.

7. For projects involving impacts to fish and botanical resources, contact the Department of Natural Resources - Division of Fish and Wildlife (317/232-4080) for addition project input.

8. For projects involving water main construction, water main extensions, and new public water supplies, contact the Office of Water Quality - Drinking Water Branch (317-308-3299) regarding the need for permits.

9. For projects involving effluent discharges to waters of the State of Indiana , contact the Office of Water Quality - Permits Branch (317-233-0468) regarding the need for a National Pollutant Discharge Elimination System (NPDES) permit.

10. For projects involving the construction of wastewater facilities and sewer lines, contact the Office of Water Quality - Permits Branch (317-232-8675) regarding the need for permits.

AIR QUALITY

The above-noted project should be designed to minimize any impact on ambient air quality in, or near, the project area. The project must comply with all federal and state air pollution regulations. Consideration should be given to the following:

1. Regarding open burning, and disposing of organic debris generated by land clearing activities; some types of open burning are allowed (http://www.in.gov/idem/4148.htm) under specific conditions. You also can seek an open burning variance from IDEM.

However, IDEM generally recommends that you take vegetative wastes to a registered yard waste composting facility or that the waste be chipped or shredded with composting on site (you must register with IDEM if more than 2,000 pounds is to be composted; contact 317/232-0066). The finished compost can then be used as a mulch or soil amendment. You also may bury any vegetative wastes (such as leaves, twigs, branches, limbs, tree trunks and stumps) onsite, although burying large quantities of such material can lead to subsidence problems, later on.

Reasonable precautions must be taken to minimize fugitive dust emissions from construction and demolition activities. For example, wetting the area with water, constructing wind barriers, or treating dusty areas with chemical stabilizers (such as calcium chloride or several other commercial products). Dirt tracked onto paved roads from unpaved areas should be minimized.

Additionally, if construction or demolition is conducted in a wooded area where blackbirds have roosted or abandoned buildings or building sections in which pigeons or bats have roosted for 3-5 years precautionary measures should be taken to avoid an outbreak of histoplasmosis. This disease is caused by the fungus Histoplasma capsulatum, which stems from bird or bat droppings that have accumulated in one area for 3-5 years. The spores from this fungus become airborne when the area is disturbed and can cause infections over an entire community downwind of the site. The area should be wetted down prior to cleanup or demolition of the

project site. For more detailed information on histoplasmosis prevention and control, please contact the Acute Disease Control Division of the Indiana State Department of Health at (317) 233-7272.

2. The U.S. EPA and the Surgeon General recommend that people not have long-term exposure to radon at levels above 4 pCi/L. (For a county-by-county map of predicted radon levels in Indiana, visit: http://www.in.gov/idem/4145.htm.)

   The U.S. EPA further recommends that all homes (and apartments within three stories of ground level) be tested for radon. If in-home radon levels are determined to be 4 pCi/L, or higher, EPA recommends a follow-up test. If the second test confirms that radon levels are 4 pCi/L, or higher, EPA recommends the installation of radon-reduction measures. (For a list of qualified radon testers and radon mitigation (or reduction) specialists visit: http://www.in.gov/isdh/regsvcs/radhealth/pdfs/radon_testers_mitigators_list.pdf.) It also is recommended that radon reduction measures be built into all new homes, particularly in areas like Indiana that have moderate to high predicted radon levels.

   To learn more about radon, radon risks, and ways to reduce exposure visit: http://www.in.gov/isdh/regsvcs/radhealth/radon.htm, http://www.in.gov/idem/4145.htm, or http://www.epa.gov/radon/index.html.

3. With respect to asbestos removal: all facilities slated for renovation or demolition (except residential buildings that have (4) four or fewer dwelling units and which will not be used for commercial purposes) must be inspected by an Indiana-licensed asbestos inspector prior to the commencement of any renovation or demolition activities. If regulated asbestos-containing material (RACM) that may become airborne is found, any subsequent demolition, renovation, or asbestos removal activities must be performed in accordance with the proper notification and emission control requirements.

   If no asbestos is found where a renovation activity will occur, or if the renovation involves removal of less than 260 linear feet of RACM off of pipes, less than 160 square feet of RACM off of other facility components, or less than 35 cubic feet of RACM off of all facility components, the owner or operator of the project does not need to notify IDEM before beginning the renovation activity.

   For questions on asbestos demolition and renovation activities, you can also call IDEM's Lead/Asbestos section at 1-888-574-8150.

   However, in all cases where a demolition activity will occur (even if no asbestos is found), the owner or operator must still notify IDEM 10 working days prior to the demolition, using the form found at http://www.in.gov/icpr/webfile/formsdiv/44593.pdf.

   Anyone submitting a renovation/demolition notification form will be billed a notification fee based upon the amount of friable asbestos containing material to be removed or demolished. Projects that involve the removal of more than 2,600 linear feet of friable asbestos containing materials on pipes, or 1,600 square feet or 400 cubic feet of friable asbestos containing material on other facility components, will be billed a fee of $150 per project; projects below these amounts will be billed a fee of $50 per project. All notification remitters will be billed on a quarterly basis.

   For more information about IDEM policy regarding asbestos removal and disposal, visit: http://www.in.gov/idem/4983.htm.

4. With respect to lead-based paint removal: IDEM encourages all efforts to minimize human exposure to lead-based paint chips and dust. IDEM is particularly concerned that young children exposed to lead can suffer from learning disabilities. Although lead-based paint abatement efforts are not mandatory, any abatement that is conducted within housing built before January 1, 1978 , or a child-occupied facility is required to comply with all lead-based paint work practice standards, licensing and notification requirements. For more information about

lead-based paint removal visit: http://www.in.gov/isdh/19131.htm.

5. Ensure that asphalt paving plants are permitted and operate properly. The use of cutback asphalt, or asphalt emulsion containing more than seven percent (7%) oil distillate, is prohibited during the months April through October. See 326 IAC 8-5-2 , Asphalt Paving Rule (http://www.ai.org/legislative/iac/T03260/A00080.PDF).

6. If your project involves the construction of a new source of air emissions or the modification of an existing source of air emissions or air pollution control equipment, it will need to be reviewed by the IDEM Office of Air Quality (OAQ). A registration or permit may be required under 326 IAC 2 (View at: www.ai.org/legislative/iac/t03260/a00020.pdf.) New sources that use or emit hazardous air pollutants may be subject to Section 112 of the Clean Air Act and corresponding state air regulations governing hazardous air pollutants.

7. For more information on air permits visit: http://www.in.gov/idem/4223.htm, or to initiate the IDEM air permitting process, please contact the Office of Air Quality Permit Reviewer of the Day at (317) 233-0178 or OAMPROD atdem.state.in.us.

LAND QUALITY

In order to maintain compliance with all applicable laws regarding contamination and/or proper waste disposal, IDEM recommends that:

1. If the site is found to contain any areas used to dispose of solid or hazardous waste, you need to contact the Office of Land Quality (OLQ)at 317-308-3103.

2. All solid wastes generated by the project, or removed from the project site, need to be taken to a properly permitted solid waste processing or disposal facility. For more information, visit http://www.in.gov/idem/4998.htm.

3. If any contaminated soils are discovered during this project, they may be subject to disposal as hazardous waste. Please contact the OLQ at 317-308-3103 to obtain information on proper disposal procedures.

4. If PCBs are found at this site, please contact the Industrial Waste Section of OLQ at 317-308-3103 for information regarding management of any PCB wastes from this site.

5. If there are any asbestos disposal issues related to this site, please contact the Industrial Waste Section of OLQ at 317-308-3103 for information regarding the management of asbestos wastes (Asbestos removal is addressed above, under Air Quality).

6. If the project involves the installation or removal of an underground storage tank, or involves contamination from an underground storage tank, you must contact the IDEM Underground Storage Tank program at 317/308-3039. See: http://www.in.gov/idem/4999.htm.

FINAL REMARKS

Should you need to obtain any environmental permits in association with this proposed project, please be mindful that IC 13-15-8 requires that you notify all adjoining property owners and/or occupants within ten days your submittal of each permit application. However, if you are seeking multiple permits, you can still meet the notification requirement with a single notice if all required permit applications are submitted with the same ten day period.

Should the scope of the proposed project be expanded to the extent that a National Environmental Policy Act Environmental Assessment (EA) or Environmental Impact Statement (EIS) is required, IDEM will actively participate in any early interagency coordination review of the project.

Meanwhile, please note that this letter does not constitute a permit, license, endorsement or any other form of approval on the part of the Indiana Department of Environmental Management regarding any project for which a copy of this letter is used. Also note that is it the responsibility of the project engineer or consultant using this letter to ensure that the most current draft of this document, which is located at http://www.in.gov/idem/5284.htm, is used.

Sincerely,

Thomas W. Easterly
Commissioner

Signature(s) of the Applicant

I acknowledge that the following proposed roadway project will be financed in part, or in whole, by public monies.

Project Description

INDOT Des. No. 0800910, SR 46 bridge over the Eel River in Clay County, IN approximately 0.25 mile west of Bowling Green. INDOT proposes to build a new bridge over the Eel River to replace the existing "select" historic 2-span steel Parker truss bridge.

With my signature, I do hereby affirm that I have read the letter from the Indiana Department of Environment that appears directly above. In addition, I understand that in order to complete that project in which I am interested, with a minimum of impact to the environment, I must consider all the issues addressed in the aforementioned letter, and further, that I must obtain any required permits.

Date: 6/10/15

Signature of the INDOT
Project Engineer or Other Responsible Agent Tony Jones

Digitally signed by Tony Jones
DN: cn=Tony Jones, o, ou, email=twjones@indot.in.gov, c=US
Date: 2015.06.10 13:17:14 -04'00'

Tony Jones, project manager

Date: 6/10/15

Signature of the
For Hire Consultant

Alan Ball

Text Reader
(What's this?)
Mobile

Help
Newsroom
Transparency

THIS IS NOT A PERMIT

State of Indiana
DEPARTMENT OF NATURAL RESOURCES
Division of Fish and Wildlife
Early Coordination/Environmental Assessment

DNR #: ER-16253-1 **Request Received:** August 11, 2014

Requestor: Parsons
Stephany Stamatis
101 West Ohio Street, Suite 2121
Indianapolis, IN 46204

Project: SR 46 bridge (# 046-11-01316A) replacement over the Eel River, 4.84 miles east of SR 59 near Bowling Green; Des #0800910

County/Site info: Clay

The Indiana Department of Natural Resources has reviewed the above referenced project per your request. Our agency offers the following comments for your information and in accordance with the National Environmental Policy Act of 1969.

If our agency has regulatory jurisdiction over the project, the recommendations contained in this letter may become requirements of any permit issued. If we do not have permitting authority, all recommendations are voluntary.

Regulatory Assessment: This proposal will require the formal approval for construction in a floodway under the Flood Control Act, IC 14-28-1. Please submit a copy of this letter with the permit application.

Natural Heritage Database: The Natural Heritage Program's data have been checked.
The state endangered Round Hickorynut (Obovaria subrotunda) has been documented in the Eel River within the project area.

Fish & Wildlife Comments: The Round Hickorynut is no longer found live in the Eel River; therefore, we do not foresee any impacts to this mussel species resulting from the project.

Avoid and minimize impacts to fish, wildlife, and botanical resources to the greatest extent possible, and compensate for impacts. The following are recommendations that address potential impacts identified in the proposed project area:

1) Bank Stabilization and Wildlife Passage:
The new, replacement, or rehabbed structure, and any bank stabilization under the structure, should not create conditions that are less favorable for wildlife passage under the structure compared to current conditions. A level area of natural ground under the structure is ideal for wildlife passage. If channel clearing will result in a flat bench area above the normal water level under the structure, this area should allow wildlife passage and should remain free of riprap and other similar materials that can impair wildlife passage. If hard armoring is needed, wildlife passage can be facilitated by using a smooth-surfaced armoring material instead or riprap, such as articulated concrete block mats, fabric-formed concrete mats, or other similar smooth-surfaced material.

Minimize the use of riprap and use alternative erosion protection materials whenever possible. Where riprap must be used, we recommend placing only enough riprap to provide stream bank toe protection, such as from the toe of the bank up to the ordinary high water mark (ohwm). From the ohwm to the top of the bank, we recommend using bioengineered bank stabilization methods instead of riprap. This can provide equal or better erosion control protection than riprap. This will allow a natural, vegetated stream bank to develop and will allow wildlife passage along the creek's banks and riparian corridor. Information about bioengineering techniques can be found at

http://www.in.gov/legislative/iac/20120404-IR-312120154NRA.xml.pdf. Also, the following is a USDA/NRCS document that outlines many different bioengineering techniques for streambank stabilization: http://directives.sc.egov.usda.gov/17553.wba.

2) Riparian Habitat:
We recommend a mitigation plan be developed (and submitted with the permit application) if habitat impacts will occur to forested habitat (wetland or non-wetland) resulting from the bridge replacement project. The DNR's Floodway Habitat Mitigation guidelines (and plant lists) can be found online at:
http://www.in.gov/legislative/iac/20140806-IR-312140295NRA.xml.pdf.

Impacts to non-wetland forested habitat under one (1) acre should be mitigated at a 1:1 ratio. Impacts to non-wetland forest habitat over one (1) acre should be mitigated at a minimum 2:1 ratio. Impacts to wetland habitat should also be mitigated at the appropriate ratio according to the 1991 INDOT/IDNR/USFWS Memorandum of Understanding.

The mitigation site should be located in the floodway, downstream of the one (1) square mile drainage area of that stream (or another stream within the 8-digit HUC, preferably as close to the impact site as possible) and adjacent to existing forested riparian habitat.

The additional measures listed below should be implemented to avoid, minimize, or compensate for impacts to fish, wildlife, and botanical resources:
1. Revegetate all bare and disturbed areas with a mixture of native grasses, wildflowers, and native shrub and hardwood tree species as soon as possible upon completion. Do not use any varieties of Tall Fescue or other non-native plants (e.g. crown-vetch).
2. Minimize and contain within the project limits inchannel disturbance and the clearing of trees and brush.
3. Do not work in the waterway from April 1 through June 30 without the prior written approval of the Division of Fish and Wildlife.
4. Do not cut any trees suitable for Indiana bat roosting (greater than 3 inches dbh, living or dead, with loose hanging bark) from April 1 through September 30.
5. Do not construct any temporary runarounds or causeways.
6. Use minimum average 6 inch graded riprap stone extended below the normal water level to provide habitat for aquatic organisms in the voids.
7. Post "Do Not Mow or Spray" signs along the right-of-way.
8. Appropriately designed measures for controlling erosion and sediment must be implemented to prevent sediment from entering the stream or leaving the construction site; maintain these measures until construction is complete and all disturbed areas are stabilized.
9. Seed and protect all disturbed slopes that are 3:1 or steeper with heavy duty biodegradable erosion control blankets (follow manufacturer's recommendations for selection and installation; seed and apply mulch on all other disturbed areas.

THIS IS NOT A PERMIT

State of Indiana
DEPARTMENT OF NATURAL RESOURCES
Division of Fish and Wildlife

Early Coordination/Environmental Assessment

Contact Staff: Christie L. Stanifer, Environ. Coordinator, Fish & Wildlife
Our agency appreciates this opportunity to be of service. Please contact the above staff member at (317) 232-4080 if we can be of further assistance.

Christie L. Stanifer

Date: September 3, 2014

Christie L. Stanifer
Environ. Coordinator
Division of Fish and Wildlife

From:	Hellmich, Ron
To:	Ball, Alan; Swinford, Tom
Cc:	Homoya, Michael
Subject:	RE: Rose Turtlehead (Chelone obliqua)
Date:	Monday, September 15, 2014 2:03:58 PM
Attachments:	image001.jpg image002.jpg

Alan,

Thanks, we'll get this record added to the database.

Ronald Hellmich
Indiana Natural Heritage Data Center
IDNR Nature Preserves
317-232-8059

From: Ball, Alan [mailto:Alan.Ball@parsons.com]
Sent: Monday, September 15, 2014 1:22 PM
To: Swinford, Tom
Cc: Homoya, Michael; Hellmich, Ron
Subject: RE: Rose Turtlehead (Chelone obliqua)

Photo 1

From: Ball, Alan
Sent: Monday, September 15, 2014 1:21 PM
To: 'Swinford, Tom'
Cc: Homoya, Michael; Hellmich, Ron
Subject: RE: Rose Turtlehead (Chelone obliqua)

Chelone obliqua var. speciosa (Rose turtlehead), previously un-reported in Clay County, Indiana

Found: September 12, 2014 by Alan K. Ball.

Location: just west of Bowling Green, Indiana, south of SR 46, east of the Eel River, within the Eel River floodplain. See attached PDF map.

Habitat: Within a deciduous floodplain forest within the Eel River floodplain. Two small communities were identified. Both are along the stream banks of the same, small ephemeral stream. The mapped soil units in the area are rated as well drained and somewhat excessively drained. Soil pits in the area reveal sandy, loamy sand, to loam soils that do not meet a field indicator for hydric soils. Common in the herbaceous layer was stinging nettle (*Urtica dioica*) and false nettle (*Boehmeria cylindrica*), while the woody canopy layer is mostly silver maple (*Acer saccharinum*). Despite the predominance of wetland vegetation, technically, the area does not delineate as a wetland, as both soils and hydrology are lacking.

Narrative: The south community (see map) consists of approximately 35 stems in a relatively tight cluster (6' by 6' area) along the creek bank. The north community has over 100 individual stems,

most of which are in a tight cluster next to the ephemeral stream, but there are scattered individuals in the woods to the north of the main population. Despite being categorized as an obligate (OBL) in the wetland plant listing for the Midwest Region, the two identified populations of Chelone obliqua appear to be growing in upland conditions upon well drained soils.

The existing twin-span steel truss bridge carrying SR 46 over the Eel River is being proposed for replacement. Although the design of the project is in the very early stages, the preferred option would locate a new bridge immediately to the south of the existing bridge, and realign a short stretch of SR 46 to match up with the new bridge. The project will likely not extend far enough to the south to directly impact the identified populations of Chelone obliqua, but final construction and right-of-way limits have not been determined.

I will send a couple of photographs under separate cover, due to their size.

If I can provide anything else, please let me know.

Alan Ball
Senior Environmental Planner
101 West Ohio Street, Suite 2121
Indianapolis, IN 46204
317-616-1021 (office)
Alan.Ball@parsons.com
www.parsons.com

Please consider the environment before printing this email

From: Swinford, Tom [mailto:tswinford@dnr.IN.gov]
Sent: Monday, September 15, 2014 9:58 AM
To: Ball, Alan
Cc: Homoya, Michael; Hellmich, Ron
Subject: RE: Rose Turtlehead (Chelone obliqua)

Alan,
Thank you for taking the time to report! That's a good find.

Please provide a date, person who performed determination (you), location (as accurate as possible, site name, or nearby roads, we appreciate a map or even an ArcGIS shapefile would be great), also, any estimate of population size and threats to or stability of the population. Then report it to Ron Hellmich, copied here. A clear image would be good as well.

We will likely not visit site, as pretty tied up, all of us here.
Thanks!
Tom

Thomas O. Swinford

Assistant Director
IDNR *NATURE PRESERVES*
402 W. Washington St. W267
Indianapolis IN 46204

desk 317/233-4849
Mobile 317/697-5508

From: Ball, Alan [mailto:Alan.Ball@parsons.com]
Sent: Monday, September 15, 2014 9:40 AM
To: Swinford, Tom
Cc: Homoya, Michael
Subject: Rose Turtlehead (Chelone obliqua)

Tom,

I believe that I have found a population of rose turtle head (*Chelone obliqua var. speciosa*) in Clay County, Indiana. This species is included on the list of Indiana's ETR vascular plants. However, it is not included on the Clay County List (http://www.in.gov/dnr/naturepreserve/files/np_clay.pdf), nor does the USDA Plants Database website show it from Clay County (http://plants.usda.gov/core/profile?symbol=CHOBS).

I found rose turtlehead while performing a waters investigation in support of a proposed INDOT road project. We have already submitted early coordination letters to the Indiana DNR for the project, but because your database does not include rose turtlehead in Clay County, the responses we got from the Indiana DNR does not include this species. I feel that it's important that I make a good faith effort to share information I have on this species with you, so that you can have input into our project if it is warranted.

I have photographs of the rose turtlehead that I can share with you, but I anticipate that you may want to visit the project area and see it for yourself. The rose turtlehead is in bloom now, so a field visit in the next week or so would be best for species identification. Please advise me how to proceed, or what further information I can provide.

Thank you,

Alan Ball
Senior Environmental Planner
101 West Ohio Street, Suite 2121
Indianapolis, IN 46204
317-616-1021 (office)
Alan.Ball@parsons.com
www.parsons.com

Please consider the environment before printing this email

From:	Swinford, Tom
To:	Ball, Alan
Cc:	Homoya, Michael; Hellmich, Ron
Subject:	RE: Rose Turtlehead (Chelone obliqua)
Date:	Monday, September 15, 2014 2:00:23 PM
Attachments:	image001.jpg image002.jpg

Thanks Alan, this is great. Congrats on the county record.
Tom

Thomas O. Swinford
Assistant Director
IDNR *NATURE PRESERVES*
402 W. Washington St. W267
Indianapolis IN 46204

desk 317/233-4849
Mobile 317/697-5508

From: Ball, Alan [mailto:Alan.Ball@parsons.com]
Sent: Monday, September 15, 2014 1:21 PM
To: Swinford, Tom
Cc: Homoya, Michael; Hellmich, Ron
Subject: RE: Rose Turtlehead (Chelone obliqua)

Chelone obliqua var. speciosa (Rose turtlehead), previously un-reported in Clay County, Indiana

Found: September 12, 2014 by Alan K. Ball.

Location: just west of Bowling Green, Indiana, south of SR 46, east of the Eel River, within the Eel River floodplain. See attached PDF map.

Habitat: Within a deciduous floodplain forest within the Eel River floodplain. Two small communities were identified. Both are along the stream banks of the same, small ephemeral stream. The mapped soil units in the area are rated as well drained and somewhat excessively drained. Soil pits in the area reveal sandy, loamy sand, to loam soils that do not meet a field indicator for hydric soils. Common in the herbaceous layer was stinging nettle (*Urtica dioica*) and false nettle (*Boehmeria cylindrica*), while the woody canopy layer is mostly silver maple (*Acer saccharinum*). Despite the predominance of wetland vegetation, technically, the area does not delineate as a wetland, as both soils and hydrology are lacking.

Narrative: The south community (see map) consists of approximately 35 stems in a relatively tight cluster (6' by 6' area) along the creek bank. The north community has over 100 individual stems, most of which are in a tight cluster next to the ephemeral stream, but there are scattered individuals in the woods to the north of the main population. Despite being categorized as an obligate (OBL) in the wetland plant listing for the Midwest Region, the two identified populations of

Chelone obliqua appear to be growing in upland conditions upon well drained soils.

The existing twin-span steel truss bridge carrying SR 46 over the Eel River is being proposed for replacement. Although the design of the project is in the very early stages, the preferred option would locate a new bridge immediately to the south of the existing bridge, and realign a short stretch of SR 46 to match up with the new bridge. The project will likely not extend far enough to the south to directly impact the identified populations of Chelone obliqua, but final construction and right-of-way limits have not been determined.

I will send a couple of photographs under separate cover, due to their size.

If I can provide anything else, please let me know.

Alan Ball
Senior Environmental Planner
101 West Ohio Street, Suite 2121
Indianapolis, IN 46204
317-616-1021 (office)
Alan.Ball@parsons.com
www.parsons.com
Please consider the environment before printing this email

From: Swinford, Tom [mailto:tswinford@dnr.IN.gov]
Sent: Monday, September 15, 2014 9:58 AM
To: Ball, Alan
Cc: Homoya, Michael; Hellmich, Ron
Subject: RE: Rose Turtlehead (Chelone obliqua)

Alan,
Thank you for taking the time to report! That's a good find.

Please provide a date, person who performed determination (you), location (as accurate as possible, site name, or nearby roads, we appreciate a map or even an ArcGIS shapefile would be great), also, any estimate of population size and threats to or stability of the population. Then report it to Ron Hellmich, copied here. A clear image would be good as well.

We will likely not visit site, as pretty tied up, all of us here.
Thanks!
Tom

Thomas O. Swinford
Assistant Director
IDNR *NATURE PRESERVES*
402 W. Washington St. W267
Indianapolis IN 46204

desk 317/233-4849
Mobile 317/697-5508

From: Ball, Alan [mailto:Alan.Ball@parsons.com]
Sent: Monday, September 15, 2014 9:40 AM
To: Swinford, Tom
Cc: Homoya, Michael
Subject: Rose Turtlehead (Chelone obliqua)

Tom,

I believe that I have found a population of rose turtle head (*Chelone obliqua var. speciosa*) in Clay County, Indiana. This species is included on the list of Indiana's ETR vascular plants. However, it is not included on the Clay County List (http://www.in.gov/dnr/naturepreserve/files/np_clay.pdf), nor does the USDA Plants Database website show it from Clay County (http://plants.usda.gov/core/profile?symbol=CHOBS).

I found rose turtlehead while performing a waters investigation in support of a proposed INDOT road project. We have already submitted early coordination letters to the Indiana DNR for the project, but because your database does not include rose turtlehead in Clay County, the responses we got from the Indiana DNR does not include this species. I feel that it's important that I make a good faith effort to share information I have on this species with you, so that you can have input into our project if it is warranted.

I have photographs of the rose turtlehead that I can share with you, but I anticipate that you may want to visit the project area and see it for yourself. The rose turtlehead is in bloom now, so a field visit in the next week or so would be best for species identification. Please advise me how to proceed, or what further information I can provide.

Thank you,

Alan Ball
Senior Environmental Planner
101 West Ohio Street, Suite 2121
Indianapolis, IN 46204
317-616-1021 (office)
Alan.Ball@parsons.com
www.parsons.com

Please consider the environment before printing this email

INDIANA GEOLOGICAL SURVEY
611 N. Walnut Grove Ave., Bloomington, IN 47405-2208 • (812) 855-7636
http://igs.indiana.edu • IGSinfo@indiana.edu

Project No._____ DES No. 0800910

Project Description SR 46 over Eel River

Clay County

Name of Organization requesting early coordination:

INDOT

QUESTIONNAIRE FOR THE INDIANA GEOLOGICAL SURVEY

1) Do unusual and/or problem ( ) geographic, ( ) geological, ( ) geophysical, or ( ) topographic features exist within the project limits? Describe:

NO

2) Have existing or potential mineral resources been identified in this area? Describe:

NO

3) Are there any active or abandoned mineral resources extraction sites located nearby?
Describe: NO

This information was furnished by:

Marni D. Karaffa , Research Geologist
611 N Walnut Grove, Bloomington, IN 47405
(812) 855-7428 / (812) 855-2862
karaffam@indiana.edu

Friday, September 19, 2014

INDIANA UNIVERSITY

USDA
United States Department of Agriculture

Natural Resources Conservation Service
Indiana State Office
6013 Lakeside Boulevard
Indianapolis, IN 46278
317-290-3200

August 14, 2014

Stephany Stamatis
Environmental Planner
Parsons
101 West Ohio Street, Suite 2121
Indianapolis, Indiana 46204

Dear Ms. Stamatis:

The proposed project to replace the Eel River Bridge on SR 46 in Clay County, Indiana, as referred to in your letter received August 12, 2014, will cause a conversion of prime farmland.

The attached packet of information is for your use in completing Parts VI and VII of the AD-1006. After completion, the federal funding agency needs to forward one copy to NRCS for our records.

If you need additional information, please contact Rick Neilson at 317-295-5875.

Sincerely,

Jane E. Hardisty

JANE E. HARDISTY
State Conservationist

Enclosures

Helping People Help the Land.

USDA is an equal opportunity provider and employer.

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*	3. Date of Land Evaluation Request 8/11/15	4. Sheet 1 of 1
1. Name of Project SR 46 Bridge # 0800910	5. Federal Agency Involved Fed. Highway Administration	
2. Type of Project	6. County and State Clay County, Indiana	

PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS 8/12/14	2. Person Completing Form DP
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES ☑ NO ☐		4. Acres Irrigated / Average Farm Size 237 AC
5. Major Crop(s) Corn	6. Farmable Land in Government Jurisdiction Acres: 185144 % 80	7. Amount of Farmland As Defined in FPPA Acres: 16664 % 72
8. Name Of Land Evaluation System Used LESA	9. Name of Local Site Assessment System	10. Date Land Evaluation Returned by NRCS 8/14/14

PART III *(To be completed by Federal Agency)*	Alternative Corridor For Segment _____			
	Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly				
B. Total Acres To Be Converted Indirectly, Or To Receive Services				
C. Total Acres In Corridor				
PART IV *(To be completed by NRCS) Land Evaluation Information*				
A. Total Acres Prime And Unique Farmland	13.90			
B. Total Acres Statewide And Local Important Farmland	0			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.008			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	93			
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*	64			

PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))*	Maximum Points				
1. Area in Nonurban Use	15	14			
2. Perimeter in Nonurban Use	10	10			
3. Percent Of Corridor Being Farmed	20	11			
4. Protection Provided By State And Local Government	20	0			
5. Size of Present Farm Unit Compared To Average	10	10			
6. Creation Of Nonfarmable Farmland	25	0			
7. Availablility Of Farm Support Services	5	5			
8. On-Farm Investments	20	0			
9. Effects Of Conversion On Farm Support Services	25	0			
10. Compatibility With Existing Agricultural Use	10	0			
TOTAL CORRIDOR ASSESSMENT POINTS	160	0 50	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland (From Part V)	100	64	0	0	0
Total Corridor Assessment (From Part VI above or a local site assessment)	160	50	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	114	0	0	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used?
A	3.3 Ac	5/1/15	YES ☐ NO ☑

5. Reason For Selection:

Signature of Person Completing this Part: [signature] DATE 5/1/15

NOTE: Complete a form for each segment with more than one Alternate Corridor

From:	McWilliams, Robin
To:	Ball, Alan
Subject:	Re: FW: Des No 0800910 SR46 over Eel River & Salt Creek Bridge Projects - ECL"s
Date:	Thursday, May 07, 2015 3:59:01 PM
Attachments:	image001.jpg

Dear Alan,

Thank you for the additional information you provided recently regarding the above-mentioned projects. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (l6 U.S.C. 661 et. seq.) and are consistent with the intent of the National Environmental Policy Act of l969, the Endangered Species Act of l973, as amended, and the U. S. Fish and Wildlife Service's Mitigation Policy.

According to information you provided our office, the proposed project will remove the existing historic bridge over the Eel River near Nashville, IN and replace it with a new structure approximately 20 feet south of the current alignment. Subsequently, the historic 2-span Parker pony steel truss bridge would be used for crossings over Salt Creek just south of Nashville, IN as part of a recreation trail system. New right-of-way and tree-clearing will be necessary for both projects.

RECOMMENDATIONS

Based on a review of the information you provided, we recommend the following mitigation measures be included in the final project plans to minimize adverse impacts to fish and wildlife resources:

1. Avoid all work within the inundated part of the stream channel (in perennial streams and larger intermittent streams) during the fish spawning season (April 1 through June 30), except for work within sealed structures such as caissons or cofferdams that were installed prior to the spawning season. No equipment should be operated below Ordinary High Water Mark during this time unless the machinery is within the caissons or on the cofferdams.

2. Restrict below low-water work to placement of piers, pilings and/or footings, shaping of the spill slopes around the bridge abutments, and placement of riprap.

3. Restrict channel work and vegetation clearing to the minimum necessary.

4. Construct new structures with a widened span and benches on one or both sides to provide for wildlife crossing, if practical. The crossing should be above normal high water, relatively flat and with natural substrate suitable for use by a wide variety of wildlife.

5. If riprap is utilized for bank stabilization, extend it below low-water elevation to provide aquatic habitat.

6. Implement temporary erosion and siltation control devices such as placement of riprap check dams in drainage ways and ditches, installation of silt fences, covering exposed areas with erosion control materials, and grading slopes to retain runoff in basins.

7. Re-vegetate all disturbed soil areas immediately upon project completion, using native trees and shrubs in the riparian zone wherever feasible.

8. Post DO NOT DISTURB signs at the construction zone boundaries and do not clear trees or understory vegetation outside the boundaries.

THREATENED AND ENDANGERED SPECIES

The proposed projects are within the range of the federally endangered Indiana bat (*Myotis sodalis*) and the federally threatened northern long-eared bat (*Myotis septentrionalis*) (NLEB). There are numerous records of both species in Brown County.

Indiana bats hibernate in caves then disperse to reproduce and forage in relatively undisturbed forested areas associated with water resources during spring and summer. Recent research has shown that they will inhabit fragmented landscapes with adequate forest for roosting and foraging. Young are raised in nursery colony roosts in trees, typically near drainage-ways in undeveloped areas. Like all other bat species in Indiana, the Indiana bat diet consists exclusively of insects.

The northern long-eared bat was recently listed as threatened under the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*). At this time, no critical habitat has been proposed for the NLEB. The entire state of Indiana is within the known range of the NLEB. During the summer, NLEBs typically roost singly or in colonies in cavities, underneath bark, crevices, or hollows of both live and dead trees and/or snags (typically =3 inches dbh). Males and non-reproductive females may also roost in cooler places, like caves and mines. This bat seems opportunistic in selecting roosts, using tree species based on presence of cavities or crevices or presence of peeling bark. It has also been occasionally found roosting in structures like barns and sheds (particularly when suitable tree roosts are unavailable). They forage for insects in upland and lowland woodlots and tree lined corridors. During the winter, NLEBs predominately hibernate in caves and abandoned mine portals. Additional habitat types may be identified as new information is obtained.

There is suitable summer habitat for **both** of these species present throughout the area surrounding the project site, including wooded areas within the project boundary. The project will not eliminate enough habitat to affect these species, but to avoid incidental take from removal of an occupied roost tree we recommend that tree-clearing be avoided during the period **April 1 - September 30**. If this measure is implemented we concur that the proposed project is not likely to adversely affect the Indiana bat or the northern long-eared bat.

In your recent email you indicated that the SR 46 bridge relocation would result in impacts of over 600 linear feet to a nearby ephemeral stream. The FWS is generally opposed to realignment of stream channels unless there is no other alternative and the purpose involves public safety or protection of the stream itself. Adverse impacts resulting from channel alterations include loss of aquatic habitat, destabilization of the channel hydraulics and accelerated bank erosion. In addition to our general recommendations, the following should be considered for stream relocation projects:

1. Limit the length of channel to be realigned to the minimum necessary for the bridge construction.

2. If the channel reach to be realigned contains good bottom substrates (i.e. gravel, cobbles and boulders), stockpile this material and use it for substrate in the new channel.

3. Minimize the use of riprap and other artificial bank protection. Use bioengineering techniques wherever possible.

4. If riprap is used, extend it below low-water to enhance aquatic habitat.

5. Construct the new channel with bank slopes and bottom elevations equivalent to those in the natural channel.

6. Use best methods to contain soil and sediment runoff during construction. Use silt curtains or other devices at the downstream end of the project to contain bottom sediment in the newly excavated channel and to prevent it from adding to the downstream sediment load. Maintain such devices by removal of accumulated sediment.

7. Plant native hardwood trees and shrubs in a zone at least 50 feet wide on both sides of the new channel.

OTHER CONSIDERATIONS

Wetland and stream impacts may require permits from the US Army Corps of Engineers, the Indiana Department of Environmental Management's Water Quality Certification program and the Indiana Department of Natural Resources. Wetland impacts should be avoided, and any unavoidable impacts should be compensated for in accordance with the Corps of Engineers mitigation guidelines.

If a permit under Section 404 of the Clean Water Act is needed for the proposed project, our recommendations to the U.S. Army Corps of engineers for permit conditions would be consistent with our comments here.

We appreciate the opportunity to comment at this early stage of project planning. If project plans change such that fish and wildlife habitat may be affected, please re-coordinate with our office as soon as possible. If you have any questions about our recommendations, please call Robin McWilliams Munson at (8l2) 334-426l (Ext. 207).

Sincerely,
Robin

Robin McWilliams Munson

U.S. Fish and Wildlife Service
620 South Walker Street
Bloomington, Indiana 46403
812-334-4261 Fax: 812-334-4273

Monday, Tuesday - 7:30a-3:00p
Wednesday, Thursday - telework 8:30a-3:00p

On Tue, May 5, 2015 at 1:38 PM, Ball, Alan <Alan.Ball@parsons.com> wrote:

> In-stream work...
>
> At Eel River, the new bridge will require piers right at the river's edge, but probably below the OHWM. This may require the use of a temporary coffer dam near both banks to allow installation of the piers under dry conditions. The impacts to the Eel River (approximately equal to the width of each pier) will total about 100 feet (50 feet for each pier, but because of the skew, this length is doubled because the two piers are not across from each other in relation to the bank of the river). In addition, the relocated SR 46 to the south will impact 699 feet of ephemeral stream, some of this ephemeral stream length will be re-created on-site, but some length will be lost and potentially require off-site mitigation.
>
> At Salt Creek, we do not anticipate any in-stream work (Salt Creek) nor any impacts to jurisdictional streams.
>
> Why the new alignment at Eel River...
>
> The existing bridge is historic, and per the historic bridge programmatic agreement, we've looked at a range of options, including ones that would replace the bridge on existing alignment, or an alignment to the north. Replacing the bridge on the existing alignment is not desirable because it would cause a complete closure of SR 46 and require a lengthy detour, which would result in very high costs to the users of SR 46. The north alignment was also dismissed due to substandard roadway geometrics that would require the relocation of several homes to correct, or else a design exception from FHWA (which FHWA has said they would not approve). Realigning the road to the south will allow INDOT to maintain traffic on the existing bridge/road while the new one is built.

Good questions! Let me know what else I can provide.

Alan

From: McWilliams, Robin [mailto:robin_mcwilliams@fws.gov]
Sent: Tuesday, May 05, 2015 1:23 PM

To: Ball, Alan
Subject: Re: FW: Des No 0800910 SR46 over Eel River & Salt Creek Bridge Projects - ECL's

Thank you for the information. Will there be instream work at either project? Do you know the reason for a new alignment at the eel River?

Robin

Robin McWilliams Munson

U.S. Fish and Wildlife Service

620 South Walker Street

Bloomington, Indiana 46403

812-334-4261 Fax: 812-334-4273

Monday, Tuesday - 7:30a-3:00p

Wednesday, Thursday - telework 8:30a-3:00p

On Tue, May 5, 2015 at 12:49 PM, Ball, Alan <Alan.Ball@parsons.com> wrote:

It's good to hear from you, Robin. I was just about to e-mail again to ask you about the Salt Creek portion of the project as well (near Nashville), as we sent coordination letters around the same time for that project and didn't hear back. Just for your information, we are preparing two separate environmental documents (one for Eel River, and one for the combined Salt Creek sites). Federal Highway wants them to be approved together, so the two documents will be advanced for approvals under one cover page, but for clarity, will be written as two separate documents. I'll be happy to provide you with as much information as I currently have, and yes, I was assuming a seasonal tree-clearing restriction.

Eel River

The preferred alternative is to build a new bridge on a new alignment to the south. This will require almost .75 mile of SR 46 to be realigned to the south of the existing SR 46 alignment. Right now, the preliminary impact numbers are...

2.62 acres of tree cutting and/or clearing (0.54 acre of this are in a wooded wetland, and the majority of the remainder [2.08 ac] is within the floodplain but not wetland)

Salt Creek

The Salt Creek numbers are a little less firm at the moment, but the total tree clearing will be right around 1.0 acre, all of which is within the mapped floodplain of Salt Creek. A small bit of this acreage (0.09 ac) is a forested wetland. But in addition to the 1 acre of permanent impact to the forest at the Salt Creek locations, we will have some tree cutting in order to gain access to the two bridge locations. The plan is to make our construction access paths the eventual path of the Salt Creek Trail, but for now, construction access looks to add at least an additional 0.5 acre to the total tree cutting at the Salt Creek sites.

If you want any further information, please let me know. I'll be happy to provide maps or any other figures you need in order to respond to the coordination request.

Alan Ball
Senior Environmental Planner
101 West Ohio Street, Suite 2121

Indianapolis, IN 46204
317-616-1021 (office)
Alan.Ball@parsons.com

www.parsons.com

From: McWilliams, Robin [mailto:robin_mcwilliams@fws.gov]
Sent: Tuesday, May 05, 2015 12:14 PM
To: Ball, Alan
Subject: Re: FW: Des No 0800910 SR46 over Eel River & Salt Creek Bridge Projects - ECL's

Hi Alan,

Sorry about that. I did have an email from Stephany and apparently I did not respond. Do you know how many trees are planned to be cut, both for the bridge realignment near Bowling Green and the bridge installations in Nashville? Most likely will request seasonal tree-clearing restrictions.

Robin

Robin McWilliams Munson

U.S. Fish and Wildlife Service

620 South Walker Street

Bloomington, Indiana 46403

812-334-4261 Fax: 812-334-4273

Monday, Tuesday - 7:30a-3:00p

Wednesday, Thursday - telework 8:30a-3:00p

On Thu, Apr 30, 2015 at 10:24 AM, Ball, Alan <Alan.Ball@parsons.com> wrote:

Robin,

We sent you (I hope!) an early coordination letter for a bridge project in Clay County Indiana. It's State Road 46 over the Eel River, just west of Bowling Green. Neither Stephany (who sent the original letter last August) or I have any record of a USFWS response. Could you check and see if you got anything from us (Stephany's message below)? I'm putting together the NEPA document for the project now, and realized that I don't have anything from you. Let me know what you find, and I'll give you an update of the project's progress since August 2014.

Thank you,

Alan Ball
Senior Environmental Planner
101 West Ohio Street, Suite 2121

Indianapolis, IN 46204
317-616-1021 (office)
Alan.Ball@parsons.com
www.parsons.com

From: Stamatis, Stephany
Sent: Thursday, April 30, 2015 10:18 AM
To: Ball, Alan
Subject: FW: Des No 0800910 SR46 over Eel River & Salt Creek Bridge Projects - ECL's

Attachments removed from forwarded message.

From: Stamatis, Stephany
Sent: Monday, August 11, 2014 3:41 PM
To: 'robin_mcwilliams@fws.gov'
Subject: Des No 0800910 SR46 over Eel River & Salt Creek Bridge Projects - ECL's

Dear Ms. McWilliams,

For your review and comment, attached please find Early Coordination Letters for the above referenced projects. Please note that they share the same Des. No., as the Salt Creek Bridge Project will be utilizing the "Select" bridge that will be relocated from the SR46 over Eel River project.

Thank you,

Stephany Stamatis, LEED AP

Environmental Planner

PARSONS

101 West Ohio Street, Suite 2121

Indianapolis, IN 46204

Direct Line: (317) 616-1013

stephany.stamatis@parsons.com

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Illinois State Office, Region V
Ralph Metcalfe Federal Building
77 West Jackson Blvd
Chicago, IL 60604-3507

OFFICE OF COMMUNITY
PLANNING AND DEVELOPMENT
August 26, 2014

PARSONS
101 W Ohio St., Suite 2121
Indianapolis, IN 46204
Attn: Stephany Stamatis

Des. No. 0800910
SR 46 over Eel River Bridge
Near Bowling Green, Washington Twp., Clay Co.
Bridge Relocation/Salt Creek –Nashville, Brown Co.
Ms. Satamatis:

Given the information relating to historic preservation under an existing PA with DHPA this office has no comment or concern with these proposals.

Thank you for the opportunity to review this action.

Steve Vahl

Regional Environmental Officer

APPENDIX D – SECTION 106 OF THE NHPA

- Section 106 Finding Document
- Request to State Historic Preservation Review Board (May 2015)
- Draft Interlocal Agreements
- Section 106 Finding Public Notice Affidavit
- December 4, 2014 Consulting Party Meeting Summary

FEDERAL HIGHWAY ADMINISTRATION'S
SECTION 4(F) COMPLIANCE REQUIREMENTS (for historic properties) AND
SECTION 106 FINDINGS AND DETERMINATIONS
AREA OF POTENTIAL EFFECTS
ELIGIBILITY DETERMINATIONS
EFFECT FINDING
Bridge Project, SR 46 over the Eel River
Bridge No. 046-11-01316C/NBI No. 17050
Bowling Green, Washington Township, Clay County, Indiana
DES. NO.: 0800910

AREA OF POTENTIAL EFFECTS
(Pursuant to 36 CFR Section 800.4(a)(1))

The Area of Potential Effects (APE) for the project is comprised of the land that would be physically and visually impacted by the proposed project. Please refer to Appendix A of the attached documentation for maps of the APE.

ELIGIBILITY DETERMINATIONS
(Pursuant to 36 CFR 800.4(c)(2))

Bridge No. 046-11-01316C/NBI No. 17050, was listed in the National Register of Historic Places (NRHP) in 2000 under Criterion A for its association with events in the settlement and economic development of Clay County, Indiana. Additionally, the NRHP nomination indicates that the bridge is an example of an important, revised, third-generation Indiana State Highway Commission bridge. It is also the work of a major Indiana bridge-builder, the Vincennes Bridge Company. Its period of significance is from 1935 to 1949.

No other resources located within the APE for this project are eligible for or listed in the NRHP.

EFFECT FINDING
(Pursuant to 36 CFR 800.4(d)(1))

Per the terms of the "Programmatic Agreement Regarding Management and Preservation of Indiana's Historic Bridges" (Historic Bridges PA), the Federal Highway Administration—Indiana Division (FHWA) will satisfy its Section 106 responsibilities involving "Select" and "Non-Select" bridges through the Project Development Process (PDP) of the Historic Bridges PA (Stipulation III). Bridge No. 046-11-01316C/NBI No. 17050 has been classified as a "Select" bridge by the INDOT Historic Bridge Inventory and, thus, the procedures outlined in Stipulation III.A. of the Historic Bridges PA will be followed to fulfill FHWA's Section 106 responsibilities for the bridge. Additionally, the standard treatment approach, described in Attachment B of the Historic Bridges PA (Standard Treatment Approach for Historic Bridges) will be followed.

Therefore, the finding for this project only applies to other resources located within the APE and not Bridge No. 046-11-01316C/NBI No. 17050. This document will satisfy the Section 106 responsibilities for other resources located in the project APE. Regarding other resources located in the project area, the INDOT, on behalf of the FHWA, has determined a "no historic properties affected" finding is appropriate because no other properties listed in or eligible for listing in the NRHP are present within the area of potential effects.

INDOT respectfully requests the Indiana State Historic Preservation Officer provide written concurrence with the Section 106 determination of effect.

SECTION 4(F) COMPLIANCE REQUIREMENTS (for historic properties)

With regard to resources within the APE other than Bridge No. 046-11-01316C, this undertaking will not convert property from any Section 4(f) historic property to a transportation use; INDOT, acting on FHWA's behalf, has determined the appropriate Section 106 finding is "No Historic Properties Affected"; therefore no Section 4(f) evaluation is required.

Consulting parties will be provided a copy of the project finding and determinations in accordance with FHWA and INDOT's Section 106 procedures. Comments will be accepted for 30 days upon receipt of finding.

Patrick Carpenter

Patrick Carpenter for FHWA
Manager
INDOT Cultural Resources

6-30-2015

Approved Date

FEDERAL HIGHWAY ADMINISTRATION
DOCUMENTATION OF SECTION 106 FINDING OF
NO HISTORIC PROPERTIES AFFECTED
SUBMITTED TO THE STATE HISTORIC PRESERVATION OFFICER
PURSUANT TO 36 CFR Section 800.4(d)(1)
Bridge Project, SR 46 over the Eel River
Bridge No. 046-11-01316C/NBI No. 17050
Bowling Green, Washington Township, Clay County, Indiana
DES. NO.: 0800910
FEDERAL PROJECT NO.:

1. DESCRIPTION OF THE UNDERTAKING

The project involves Bridge No. 046-11-01316C/NBI No. 17050, a two-span Parker through truss bridge that spans the Eel River west of the village of Bowling Green, in Clay County, Indiana (Appendix A). The purpose of this project is to provide a safe and structurally sufficient bridge to carry SR 46 over the Eel River. The primary need for a project at this location is the advanced deterioration, section loss and fatigue affecting critical load-bearing components of this fracture critical bridge.

Bridge No. 046-11-01316C was evaluated as part of INDOT's Historic Bridge Inventory survey, which was a component of the "Programmatic Agreement Regarding Management and Preservation of Indiana's Historic Bridges" (Historic Bridges PA). Because the bridge was already listed in the NRHP, its historic eligibility was not reevaluated. Each historic bridge was evaluated and given a designation as either "Select" or "Non-Select." According to the Historic Bridges PA, Select bridges are those "that are most suitable for preservation and are excellent examples of a given type of historic bridge." The Historic Bridge Inventory identified Bridge No. 046-11-01316C as "Select for Non-Vehicular Use", indicating it may be better suited for bicycle and/or pedestrian use than for vehicles.

An analysis of alternatives, including rehabilitation, bypass, and relocation options for Bridge No. 046-11-01316C/NBI No. 17050, has been undertaken pursuant to the Historic Bridges PA. Based on its "Select for Non-Vehicular Use" designation, two options are viable at this point in time.

One alternative includes constructing a new bridge approximately 20' to the south of the existing structure and retaining the existing structure for non-vehicular use. The alignment of SR 46 would need to be adapted to access this new structure. The existing bridge would be rehabilitated and retained for non-vehicular (pedestrian) use. Based on the location of the bridge in a sparsely populated area, INDOT believes that the pedestrian usage of the existing bridge would be minimal and provide little value to the general public as a historic site compared to its potential use at other locations. Therefore, this alternative has been identified as not prudent, pending responses to outreach to local stakeholders. The low demand for a pedestrian bridge at this location and the lack of a responsible local party to step forward and take ownership and responsibility of the long-term maintenance of the structure make this alternative not prudent.

The preliminary preferred alternative would construct a new bridge over the Eel River approximately 20 feet to the south of the existing bridge and permanently realign the SR 46 roadway. The existing bridge would be relocated to Brown County, Indiana. It would be relocated and rehabilitated for use on the Salt Creek Trail, a 2.5-mile multi-use trail connecting Nashville, Indiana to Brown County State Park, two heavily visited tourist destinations.

The Area of Potential Effects (APE) for the project is comprised of the land that would be physically and visually impacted by the proposed project. In 2010, when rehabilitation of the bridge for vehicular use was being proposed, a smaller APE was formulated. The original APE from the INDOT-prepared Historic Properties Report (HPR) (2010) has also been included in Appendix A for reference. Please refer to Appendix A for maps of the APEs.

The project area is set in an area immediately west of the town of Bowling Green. Open spaces around the Eel River dominate the western end of the project area. The eastern end of the project area reaches into the town limits of Bowling Green (Appendix B). Surrounding the bridge is a wooded riparian corridor.

Per FHWA-Indiana Division (FHWA-IN) Procedures, Federal-aid highway construction projects qualify as "undertakings" as defined in 36 CFR 800.16(y) and are subject to review under FHWA-IN/INDOT Section 106 Procedures. Federal-aid funds would be used for planning and/or construction of the proposed improvements. Section 106 is thus applicable.

Per the terms of the Historic Bridges PA, the Federal Highway Administration—Indiana Division (FHWA) will satisfy its Section 106 responsibilities involving "Select" and "Non-Select" bridges through the Project Development Process (PDP) of the Historic Bridges PA (Stipulation III). Because Bridge No. 046-11-01316C/NBI No. 17050 has been classified as a "Select" bridge, the procedures outlined in Stipulation III.A. of the Historic Bridges PA will be followed to fulfill FHWA's Section 106 responsibilities for the bridge. Additionally, the standard treatment approach, described in Attachment B of the Historic Bridges PA (Standard Treatment Approach for Historic Bridges) will be followed.

2. EFFORTS TO IDENTIFY HISTORIC PROPERTIES

Efforts to identify historic properties in the APE included a check of records available at the Indiana Department of Natural Resources-Division of Historic Preservation and Archaeology (DHPA), historical/architectural and archaeological fieldwork, and communication with consulting parties. DHPA serves as the staff of Indiana State Historic Preservation Officer (INSHPO).

Sources of information examined at DHPA included National Register of Historic Places (NRHP) listings, Indiana Register of Historic Sites and Structures listings, the *Clay County Interim Report* of the Indiana Historic Sites and Structures Inventory (IHSSI) (Historic Landmarks Foundation of Indiana [HLFI] 1997), the Indiana State Historic Architectural and Archaeological Research Database (SHAARD) listings, the Indiana Historic Bridge Inventory, Cultural Resource Management (CRM) reports in the project vicinity, and archaeological files and maps.

The original historic properties report (HPR), when rehabilitation of the bridge for vehicular use was being proposed, prepared by INDOT (Branigin 8/10) identified four properties more than 50 years of age within the APE, including Bridge No. 046-11-01316C/NBI No. 17050, which was previously listed on the NRHP in 2000. No other properties were recommended as being eligible for listing in the NRHP.

On August 24, 2010, the following parties were invited to be Section 106 consulting parties and to aid in the identification of historic properties:

- INSHPO
- Indiana Landmarks-Western Regional Office
- Clay County Historian
- Preservation Association of Clay County
- Poland Historical Chapel Soc., Inc.

- West Central Indiana Economic Development District (WCIEDD)
- Clay County Historical Society
- Clay County Commissioners
- Indiana Historic Spans Task Force
- Dr. James L. Cooper

The only party to respond was the INSHPO. On September 28, 2010, INSHPO concurred with the findings of the original HPR and requested more information on the project scope of work.

With regard to archaeological resources, INDOT prepared an archaeological short report (Miller 8/5/10), which was submitted to the INSHPO for review on September 15, 2010. The report recommended a Phase Ic subsurface reconnaissance for the project area. On September 15, 2010, INSHPO accepted INDOT Cultural Resource Office's request to perform a Phase 1c subsurface reconnaissance survey for belowground resources. The report of the Phase Ic subsurface investigations (Miller 7/19/11) was submitted to the INSHPO on July 19, 2011. No archaeological deposits were identified and no further work was recommended. The INSHPO concurred with the findings of INDOT CRO's Phase 1c subsurface reconnaissance survey report in a letter dated August 17, 2011.

In 2014, the scope of the original project was changed due to revelations concerning the bridge's overall condition. Subsequently, the project footprint also changed, and required further review of aboveground and belowground resources.

The results of the updated field surveys were reported in an addendum letter to the HPR (Nelson 2014) and a Phase Ia Archaeological Survey (Lautzenheiser et al. Criss 2014) [Appendix C]. Both reports were prepared by ASC Group on INDOT's behalf. There were three architectural properties that were re-identified within the 2010 APE, and two additional architectural properties were also identified in the updated project APE. No additional historic districts or individual properties within the updated APE were recommended as eligible for the NRHP. The Phase 1a archaeological survey identified two newly identified archaeological sites and one previously identified site, and these sites were recommended not eligible for the NRHP. No further archaeological investigation was recommended for any of these sites, and no Phase Ic deep testing was recommended.

The Phase Ia Archaeological Survey was submitted to INSHPO for review on October 10, 2014. In a letter dated October 21, 2014, INSHPO concurred with the findings of the report and agreed that no further work was necessary.

On November 19, 2014, the following individuals and organizations were provided the addendum letter to the HPR for review and comment (Appendix D).

- Indiana Landmarks-Western Regional Office
- Indiana Landmarks-Central Regional Office
- Paul Brandenburg- Indiana Historic Spans Task Force
- Dr. James L. Cooper
- Preservation Association of Clay County
- Clay County Historian
- Clay County Historical Society
- Clay County Genealogical Society of Indiana
- Clay County Commissioners
- Poland Historical Chapel Society, Inc.

- West Central Indiana Economic Development District
- Brown County Historian
- Brown County Historical Society
- Brown County Administrator

The November 19, 2014 letter included an invitation to a consulting parties meeting for the project held at Parsons Transportation Group's office in Indianapolis on December 4, 2014. Of the above-listed parties, the Indiana Landmarks-Western Regional Office responded with comments on the location of the consulting party meeting and James L. Cooper responded requesting a CD of the project information.

It should be noted that Paul Brandenburg, Brown County Administrator Michael Thompson, Bob Bronson from DNR Division of Outdoor Recreation, Bob Kirlin from the Salt Creek Trail group, Clay County Historian Jeff Koehler, Tommy Kleckner of Indiana Landmarks-Western Regional Office and Mark Dollase and Raina Regan of Indiana Landmarks-Central Regional Office all attended the consulting parties meeting of December 4 and, therefore, are considered consulting parties for the project. A consulting party meeting summary can be found in the environmental document that is being prepared as part of the National Environmental Policy Act (NEPA) process. The only issue related to the identification of historic properties that was raised at the meeting was with regard to the sign commemorating Bowling Green's history located at the western edge of the town. Tommy Kleckner asked whether the sign was surveyed as part of the expanded APE. He wondered whether it is over 50 years of age and holds any NRHP eligibility significance. ASC Group responded that they were not able to determine the age of the sign.

INDOT Cultural Resource Office staff visited the project area in January 2015 and photographs were taken of the sign (Appendix B). A display in Bowling Green near a public park indicates that the first sign was installed in 1933 with several subsequent versions installed over the years. The current version was installed in 2007. Properties less than 50 years of age are not usually considered for listing in the NRHP unless they have achieved exceptional importance. Additionally, commemorative properties are not usually considered for listing in the NRHP unless their design, age, tradition, or symbolic value has invested them with their own exceptional significance. This does not appear to be the case for this sign.

The November 19, 2014 letter to the INSHPO proposed a dual review of the project under both Section 106 of the National Historic Preservation Act and under Indiana Code 14-21-1-18 and 312 IAC 20-4. In a letter dated December 9, 2014, INSHPO acknowledged the proposal for a dual review of the project. INSHPO provided notification of the commencement of the Dual Review to interested persons and members of the Indiana Historic Preservation Review Board (Appendix E).

In a letter dated December 22, 2014, INSHPO agreed that no additional above-ground historic properties were present in the expanded APE for the project area (Appendix E).

A small triangular-shaped section of temporary right-of-way was added to the project plans after the Phase I archaeological survey. It was adjacent to a historic site that had been previously investigated by Lautzenheiser and Carson (2014). Because the site materials came from a secondary context, and because survey of an additional adjacent section of the site would most likely only uncover more secondarily-deposited artifacts, it was recommended by ASC Group, Inc. that no additional archaeological survey was needed. INDOT-CRO agreed with this recommendation in a conference call on May 21, 2015 and the DHPA staff agreed with this recommendation in a phone call on May 29, 2015. The project area maps in the appendix reflect this additional right-of-way area. It is located well within the already established APE and does not require an APE expansion.

No other comments have been received regarding the identification of historic properties. No further investigations regarding NRHP eligibility are needed for other properties within the APE.

Regarding the NRHP eligibility of Bridge No. 046-11-01316C/NBI No. 17050 should it be relocated as part of the preferred alternative, in a letter dated March 5, 2015, the INSHPO pointed out that the U.S. Department of the Interior has written in 36 CFR § 60.14 [b][4] that:

> *Properties listed in the National Register should be moved only when there is no feasible alternative for preservation. When a property is moved, every effort should be made to reestablish the historic orientation, immediate setting, and general environment.*

In the March 5, 2015 letter, INSHPO also suggested that the bridge may be eligible under Criterion C for engineering significance and stated that "we think it would be essential for INDOT to make a case for Criterion C significance when it submits the Indiana SHPO the information necessary to attempt to keep the bridge listed in the National Register, if relocation is proven to be the only feasible alternative."

On May 29, 2015, INDOT CRO submitted to INSHPO two sets of documents that address the two aspects of NRHP listing discussed above. The information included NRHP continuation pages that make the case for Criterion C eligibility for the bridge as a multiple-span example of an important, revised, third-generation Indiana State Highway Commission (ISHC) standard plan and as an excellent example of one of the few remaining works of a major Indiana bridge-building firm, the Vincennes Bridge Company. The second set of information included the request to retain NRHP listing of the bridge during and following the proposed relocation to Brown County. This information will be considered by the Indiana Historic Preservation Review Board for approval at their July 22, 2015 meeting to then be forwarded to the Keeper of the National Register in the National Park Service.

Per Stipulation III.A of the Historic Bridges PA, consultation is on-going regarding the proposed preferred alternative for the bridge. A summary of the consultation will be provided in the environmental document as part of the NEPA process.

3. BASIS FOR FINDING

The APE contains one property eligible for listing in the NRHP: Bridge No. 046-11-01316C/NBI No. 17050. However, as mentioned above, FHWA will satisfy its Section 106 responsibilities for the bridge by following the procedures outlined in Stipulation III.A of the Historic Bridges PA and the finding for this project only applies to other resources located within the APE and not Bridge No. 046-11-01316C/NBI No. 17050.

Regarding other resources located in the project APE, the INDOT, on behalf of the FHWA, has determined a "no historic properties affected" finding is appropriate because no other properties listed in or eligible for listing in the National Register are present within the APE.

A public notice regarding the APE and the "no historic properties affected" finding will be issued and will offer a 30-day public comment period. This document will be revised, if necessary, after the comment period to reflect any substantive comments received regarding the "no historic properties affected" finding. Any comments received about the project in general will be addressed appropriately in the environmental document as part of the NEPA process. Per Stipulation III.A. of the Historic Bridges PA, INDOT will hold a public hearing for the project prior to completion of NEPA studies.

APPENDICES

A. MAPS

B. PHOTOGRAPHS

C. ABSTRACTS AND SUMMARIES FROM THE HISTORIC PROPERTY REPORTS AND ARCHAEOLOGICALREPORTS

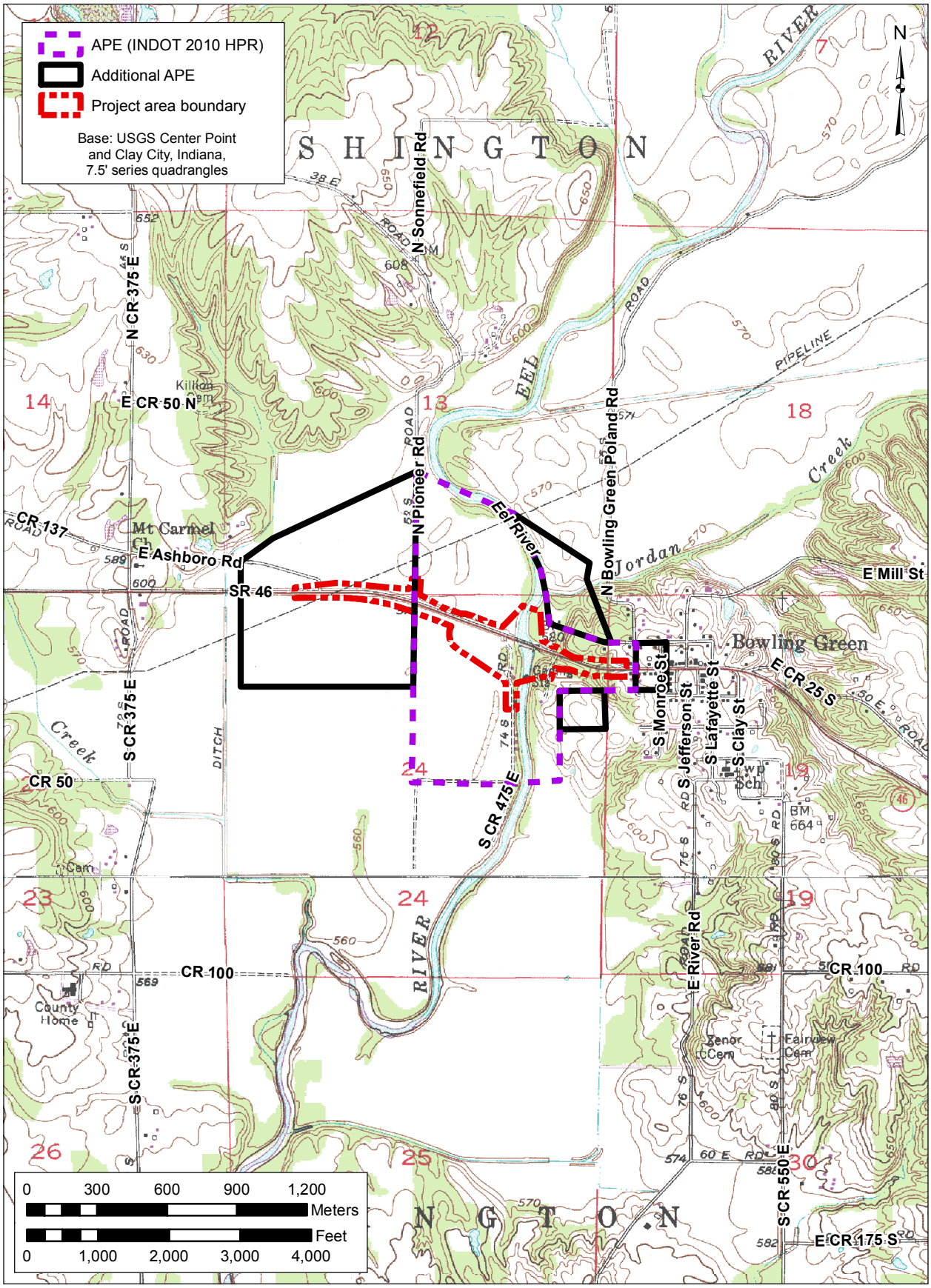
D. LIST OF CONSULTING PARTIES

E. CORRESPONDENCE OF CONSULTING PARTIES

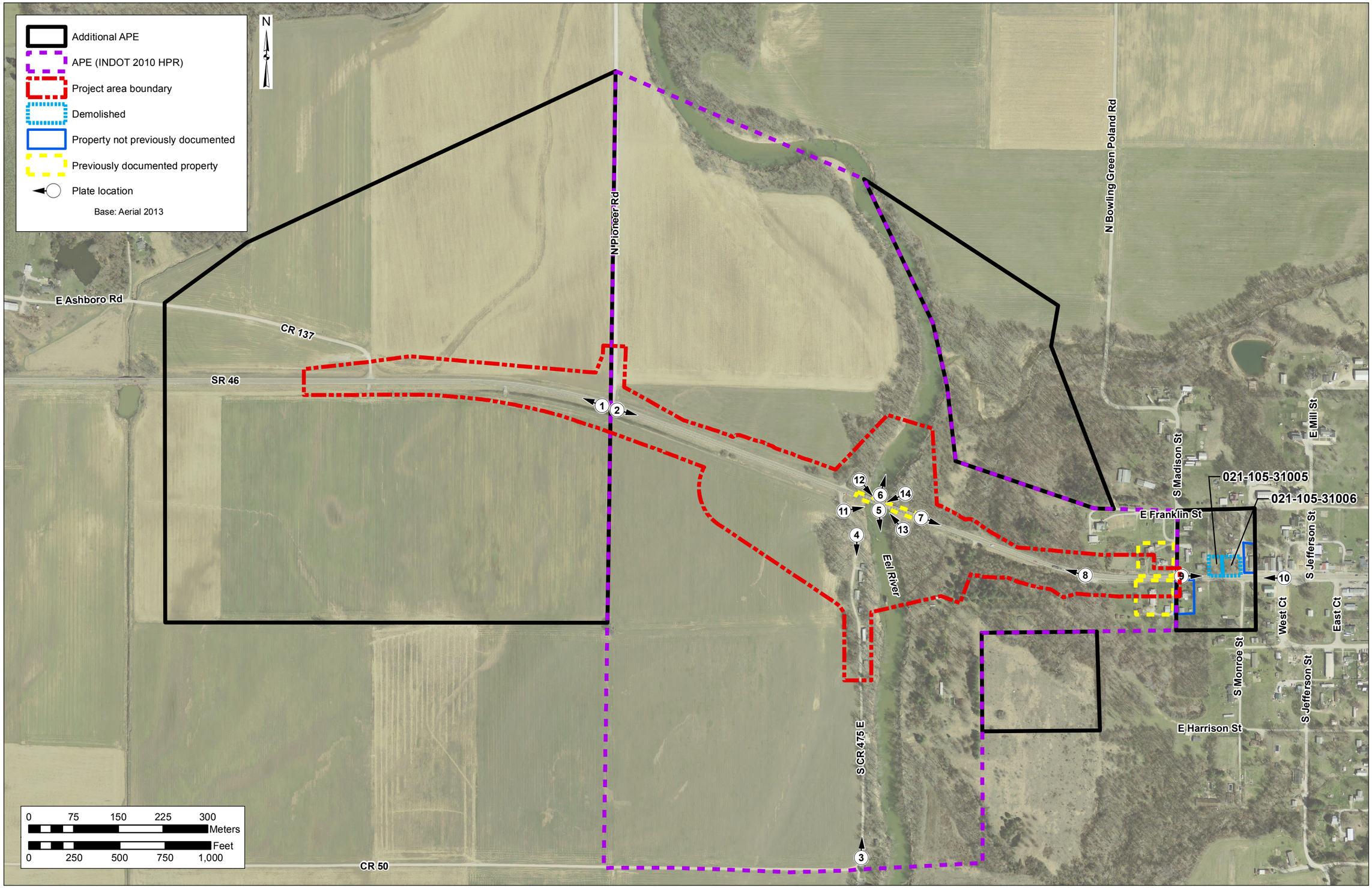
APPENDIX A

MAPS

Appendix A, Map 1: Indiana map showing vicinity of APE.



Appendix A, Map 2. Portions of the 1957 (photorevised 1986) Center Point and 1963 (photorevised 1986) Clay City, Indiana quadrangles (USGS 7.5′ topographic maps) showing the APE and project area.



Appendix A, Map 3. Aerial photograph showing the APEs, project area, historic properties, and plate locations.

Appendix A
Map 3

APPENDIX B
PHOTOGRAPHS

Plate 1. View of SR 46 at the intersection of North Pioneer Road, looking northwest.

Plate 2. View of SR 46 at the intersection of North Pioneer Road, looking southeast.

Plate 3. View of South CR 475 East at the intersection of CR 50, looking north.

Plate 4. View of South CR 475 East south of the intersection of SR 46, looking south.

Plate 5. View from Clay County Bridge No. 046-11-01316A/NBI No. 17050, looking south.

Plate 6. View from Clay County Bridge No. 046-11-01316A/NBI No. 17050, looking north-northeast.

Plate 7. View of SR 46 from east of Clay County Bridge No. 046-11-01316A/NBI No. 17050, looking southeast.

Plate 8. View of SR 46 from east of Clay County Bridge No. 046-11-01316A/NBI No. 17050, looking northwest.

Plate 9. View of SR 46 at the intersection of Madison Street, looking east.

Plate 10. View of SR 46 at the intersection of West Court, looking west.

Plate 11. View of Clay County Bridge No. 046-11-01316C/NBI No. 17050, south elevation; looking east-northeast.

Plate 12. View of Clay County Bridge No. 046-11-01316C/NBI No. 17050, north elevation; looking southeast.

Plate 13. View of Clay County Bridge No. 046-11-01316C/NBI No. 17050, south elevation; looking northwest.

Plate 14. View of Clay County Bridge No. 046-11-01316C/NBI No. 17050, north elevation; looking southwest.

Plate 15. View of Bowling Green sign; looking east.

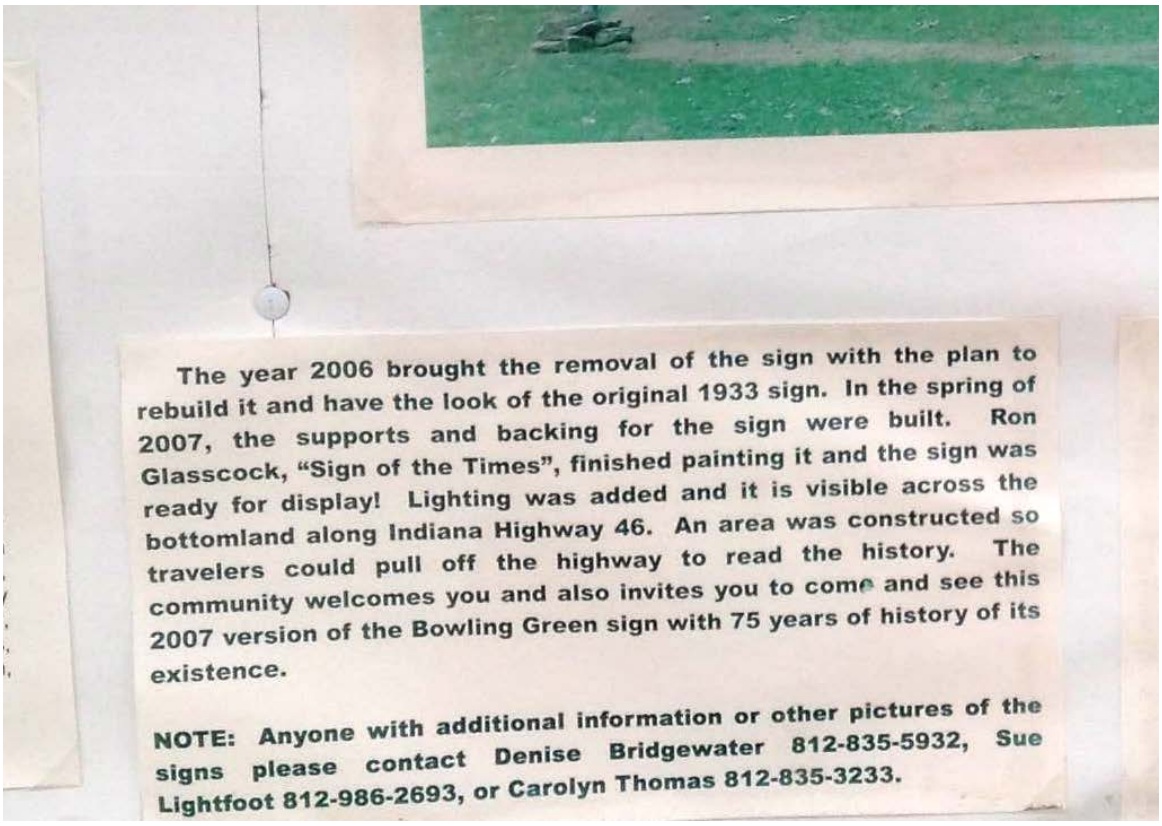


Plate 16. View of Bowling Green sign display; looking south.

APPENDIX C

ABSTRACTS AND SUMMARIES FROM HISTORIC PROPERTIES REPORT (2010), PHASE IC ARCHAEOLOGICAL RECONNAISSANCE (2011), HPR ADDENDUM LETTER (2014), AND PHASE 1A ARCHAEOLOGICAL RECONNAISSANCE SURVEY (2014)

HISTORIC PROPERTY REPORT

Bridge Project

SR 46 over Eel River

Near Bowling Green, Washington Township

Clay County, Indiana

(Des. #0800910)

Prepared by Susan Branigin

Indiana Department of Transportation

August, 2010

Executive Summary

This report documents the identification and evaluation efforts for properties included in the Area of Potential Effects (APE) for a bridge project on SR 46 over the Eel River in Washington Township, Clay County, Indiana. Above-ground resources were identified and evaluated in accordance with Section 106, National Historic Preservation Act (NHPA) of 1966, as amended, and CFR Part 800 (Revised January 2001) and Final Rule of Revision of Current Regulations, dated December 12, 2000, and incorporating amendments effective August 4, 2004.

As a result of the NHPA, as amended, and CFR Part 800 (Revised January 2001), federal agencies are required to take into account the impact of federal undertakings upon historic properties in the area of the undertaking. Historic properties include buildings, structures, sites, objects, and/or districts. As this project is receiving funding from the Federal Highway Administration (FHWA), it is subject to a Section 106 review. The SR 46 Bridge over the Eel River (Bridge Number 046-11-01316A/NBI No. 17060; Clay County #021-105-30027) was NR-listed in 1999. No other resources located within the APE for this project are listed in either the National Register of Historic Places or the Indiana Register of Historic Sites and Structures. As a result of identification and evaluation efforts for this project, no properties were determined eligible for listing in the National Register of Historic Places.

Conclusions

A long-form HPR was prepared for this project due to the fact that other above-ground resources within the APE,--besides the subject structure—met the requisite age and/or conditions for NR-eligibility assessment. (As stated previously, Section 106 requirements for Bridge Number 046-11-01316A/NBI No. 17060 are being met through the Historic Bridge Programmatic Agreement PDP.) Of those above-ground resources present within the proposed project's APE, only the ca.-1910 Queen Anne/Free Classic house at 260 Jackson St./SR 46 was deemed eligible for NR-eligibility assessment. This resource was not surveyed for or included in the 1997 Clay County Interim Report, but received an INDOT survey rating of "Contributing" for the purposes of this report. No research conducted for this report supported NR-eligibility for 260 Jackson Street under NR Criteria A, B or D. The house is a good example of a house type/architectural style(s) that were typical in late-19th-early 20th century rural Indiana. Situated on a slight hill overlooking the main highway through Bowling Green, the house and property most likely belonged to a prominent family and was a symbol of their success. The property appears to retain its original layout as well as several wood-frame outbuildings, including a ca.-1900 English barn in good condition.

Over time, however, numerous physical alterations made to 260 Jackson Street have served collectively to obviate its architectural and material integrity. These deficiencies also combine with the resource's lack of historical significance, as Queen Anne/Free Classic houses were not (and are not) uncommon in Clay County or in the State of Indiana. Therefore, 260 Jackson Street is not recommended NR-eligible under Criterion C: Architecture. In consideration of this information, it is the preliminary determination of this report that Des. #0800910 will result in a finding of "No Historic Properties Affected."

PHASE Ic SUBSURFACE RECONNAISSANCE:

SR 46 Bridge Rehabilitation over Eel River,
0.45 Miles west of Bowling Green, Clay County, Indiana
(Des No. 0800910)

Prepared by:
Shaun A. Miller
Principal Investigator

Prepared for:
Indiana Department of Transportation, Crawfordsville District
41 West 300 North
PO Box 667
Crawfordsville, In 47933

July 19, 2011

Indiana Department of Transportation
Cultural Resources Office
100 North Senate Avenue
Indianapolis, IN 46204
(317)233-6795

MANAGEMENT SUMMARY

In response to a request from the Indiana Department of Transportation (INDOT), Crawfordsville District, a Phase Ia archaeological reconnaissance was conducted for the rehabilitation of a bridge on SR 46 over the Eel River near the town of Bowling Green, Clay County, Indiana (Des No. 0800910). The undertaking also includes the realignment of CR 475E in the southwest quadrant of the project area. No archaeological sites were identified by the reconnaissance; however, well drained alluvial soils were confirmed in the southwest quadrant of the project area. Because of the potential for buried archaeological deposits, a Phase Ic subsurface reconnaissance was recommend for this area (Miller 2010a). This document provides the results of Phase Ic investigations.

INDOT, Cultural Resources Office (CRO) personnel conducted a Phase Ic subsurface reconnaissance on April 26, 2011 following the measures outlined in the approved Phase Ic proposal (Miller 2010b; DHPA #10596). Two 10m (32.8 feet) long by 1m (3.2 ft) wide linear trenches, representing a 1% sample of the area recommended for Phase Ic subsurface investigations, were excavated using a backhoe with a smooth edged bucket. Well-developed alluvial soils were documented to maximum depth of 1.5 m below ground surface. No archaeological deposits were identified and no further archaeological work is recommended before construction is allowed to proceed.

The Phase Ic investigation was conducted in accordance and compliance with the Secretary of the Interior's "Standards and Guidelines for Archaeology and Historic Preservation" (48 FR 44716), the Indiana Department of Natural Resources, Division of Historic Preservation and Archaeology's (IDNR, DHPA) "Guidebook for Indiana Historic Sites and Structures Inventory-Archaeological Sites", and the INDOT, Cultural Resources Manual. The fieldwork and preparation of the final report was accomplished by a professional archaeologist meeting the standards set forth in 36 CFR 61 of the National Historic Preservation Act and 312-IAC-21. Based upon the results of the Phase Ia reconnaissance (Miller 2010a) and Phase Ic subsurface reconnaissance, the project area does not appear to contain significant cultural resources eligible for inclusion in the IRHSS or NRHP. It is recommended that the project be allowed to proceed as planned without additional archaeological work. This recommendation is made with the understanding that if human remains, artifacts, or archaeological deposits are encountered during construction, disturbance will cease within 100 feet of the discovery and the IDNR, DHPA and INDOT, CRO will be notified immediately.

CONCLUSIONS AND RECOMMENDATIONS

In response to a request from the Indiana Department of Transportation (INDOT), Crawfordsville District, a Phase Ia archaeological reconnaissance was conducted for the rehabilitation of a bridge on SR 46over the Eel River near the town of Bowling Green, Clay County, Indiana (Des No. 0800910). The undertaking also includes the realignment of CR 475E in the southwest quadrant of the project area. No archaeological sites were identified by the reconnaissance; however, well drained alluvial soils were confirmed in the southwest quadrant of the project area. Because of the potential for buried archaeological deposits, a Phase Ic subsurface reconnaissance was recommend for this area (Miller 2010).

INDOT, Cultural Resources Section (CRS) personnel conducted a Phase Ic subsurface reconnaissance on April 26, 2011 following the measures outlined in the approved proposal

(DHPA # 10596). Two 10m (32.8 feet) long by 1m (3.2 ft) wide linear trenches, representing a 1% sample of the area recommended for Phase Ic, were excavated using a backhoe with a smooth edged bucket. Well-developed alluvial soils were documented to maximum depth of 1.5 m below ground surface. No archaeological deposits were identified and no further archaeological work is recommended before construction is allowed to proceed.

Based upon the results of the Phase Ia reconnaissance (Miller 2010a) and Phase Ic subsurface reconnaissance, the project area does not appear to contain significant cultural resources eligible for inclusion in the IRHSS or NRHP. It is recommended that the project be allowed to proceed as planned without additional archaeological work. This recommendation is made with the understanding that if human remains, artifacts, or archaeological deposits are encountered during construction, disturbance will cease within 100 feet of the discovery and the IDNR, DHPA and INDOT, CRO will be notified immediately.

Phase Ia Archaeological Survey of the Proposed State Road 46 over Eel River Bridge Relocation (Des. No. 0800910) in Washington Township, Clay County, Indiana

By

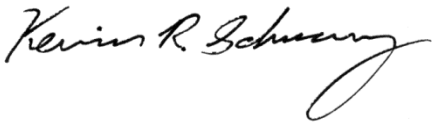
Michael Keith Lautzenheiser, MA, Catharine A. Carson, and Jonathan C. Criss

Submitted By:
Andrew Campbell
Project Manager
ASC Group, Inc.
9376 Castlegate Drive
Indianapolis, Indiana 46256
317.915.9300
acampbell@ascgroup.net

Submitted To:
Parsons Transportation Group. Inc.
101 West Ohio Street, Suite 2121
Indianapolis, Indiana 46204
317.616.1021

Lead Agency: INDOT

October 9, 2014



Kevin Schwarz, PhD, RPA, Principal Investigator

ABSTRACT

On August 21, September 4, and September 9, 2014, under contract with Parsons Transportation Group, Inc., ASC Group completed a Phase Ia archaeological survey for the proposed Clay County Bridge No. 046-11-01316A relocation and replacement (Des. No. 0800910) in Bowling Green, Washington Township, Clay County, Indiana. The project will involve the relocation of the two-span bridge from SR 46 over the Eel River to two locations in Brown County State Park near Nashville in Washington Township, Brown County, Indiana. The bridge will be separated into its two component spans and moved from Clay County to two locations along the proposed Salt Creek Trail in Brown County. The bridge was previously listed in the National Register of Historic Places (NRHP). The bridge was originally built in 1934 and reconstructed in 1977. The design construction is a Parker through truss/concrete deck. The survey area is 1,480 m (4,855 ft) in length with a width of 440 m (1,444 ft), and encompasses 17.2 ha (43.01 ac). The project area is located on the 1957 (photorevised 1986) Center Point quadrangle in the S ½ of the SW 1/4 of Section 13 and the NE and NW ¼'s of Section 24, Township 11N, Range 6W; and the NW ¼ of the NW ¼ of Section 19, Township 11N, Range 5W in Washington Township.

The fieldwork involved visual inspection, surface survey, shovel probing, and auger probing. Plowed agricultural fields and lightly to densely wooded areas were examined. Two newly identified archaeological sites (12Cy597 and 12Cy598) were recorded and one previously identified site (12Cy145) area was resurveyed. Site 12Cy597 yielded no archaeologically recovered artifacts, and is defined only by structural remains of an old bridge. It appears that a pier and abutment are all that remain of the former bridge. Because of this, and for its lack of architectural and historical significance, 12Cy597 is recommended not eligible for the NRHP. Site 12Cy598 is a historic scatter, portions of which extend beyond the currently defined project area and is recommended not eligible for the NRHP. Site 12Cy145 could not be relocated. This site shows no evidence of features or in situ materials within the survey area and further investigation of this site likely would not produce significant information. Most likely the site was destroyed during the bulldozing that occurred right before the site was reported and the collection was just from scatter that occurs during such a process. No further archaeological investigation is recommended for any of these sites.

The shovel probing and auger probing served as a preliminary examination of the project area for whether deep testing is needed. The previous study (Miller 2011) was also consulted. Based on the results of the excavations accomplished in the project area and the negative results that Miller obtained in an area next to SR 46, it does not appear Phase Ic deep testing is warranted. No Phase Ic deep testing is recommended.

In the unlikely event that archaeological deposits or human remains are encountered during the construction phase of the project, all work must cease and archaeologists from the Indiana Department of Natural Resources, Division of Historic Preservation and Archaeology (IDNR, DHPA) and the Indiana Department of Transportation-Cultural Resources Office (INDOT-CRO) must be notified.

SUMMARY AND INTERPRETATION OF FINDINGS

Under contract with Parsons Transportation Group, Inc., ASC Group, Inc. has completed a Phase Ia archaeological survey for the proposed Clay County Bridge No. 046-11-01316A relocation and replacement (Des. No. 0800910) in Bowling Green, Washington Township, Clay County, Indiana. The project will involve the relocation of the two-span bridge from SR 46 over the Eel River to two locations along the proposed Salt Creek Trail near Brown County State Park near Nashville in Washington Township, Brown County, Indiana. The bridge will be divided into its two component spans and moved from Clay County to Brown County. The bridge was previously listed in the National Register of Historic Places (NRHP). The bridge was originally built in 1934 and reconstructed in 1977. The design construction is a Parker through truss/concrete deck. The survey area is 1,480 m (4,855 ft) in length with a width of 440 m (1,444 ft), and encompasses approximately 17.2 ha (43.01 ac) starting on the southern boundary of Section 13, Township 11N, Range 6W on the 1957 (photorevised 1986) Center Point quadrangle (USGS 7.5' topographic map) and ending on the western boundary of Section 19, Township 11N, Range 5W on the 1957 (photorevised 1986) Center Point quadrangle (USGS 7.5' topographic map). The project extends through Section 24, Township 11N, Range 6W on the 1957 (photorevised 1986) Center Point quadrangle (USGS 7.5' topographic map). The land use in the project area is a forested riparian corridor and agricultural in the Eel River floodplain, with the town of Bowling Green just east of the bridge.

The fieldwork involved visual inspection, surface survey, shovel probing, and auger probing. Plowed agricultural fields and lightly to densely wooded areas were examined. Two newly identified archaeological sites (12Cy597 and 12Cy598) were recorded and one previously identified site (12Cy145) area was resurveyed. Site 12Cy597 yielded no artifacts. The pier and abutment are all that remain of the former bridge. Because of this, and for its lack of architectural and historical significance, 12Cy597 is recommended not eligible for the NRHP. Site 12Cy598 is a historic scatter, portions of which are outside of the currently defined project area boundary and is recommended not eligible for the NRHP. Site 12Cy145 could not be relocated. This site shows no evidence of features or in situ materials within the survey area and further investigation of this site likely would not produce significant information. Most likely the site was destroyed during the bulldozing that occurred right before the site was reported and the collection was just from

scatter that occurs during such a process. No further archaeological investigation is recommended for any of these sites.

The shovel probing and auger probing served as a preliminary examination of the project area for whether deep testing is needed. The previous study of Miller (2011) was also consulted. Based on the results of the excavations accomplished in the project area and the negative results that Miller obtained in an area next to SR 46, it does not appear Phase Ic deep testing is warranted. No Phase Ic deep testing is recommended.

In the event that archaeological deposits or human remains are encountered during the construction phase of the project, all work will cease and archaeologists from the DHPA and the INDOT-CRO must be notified.

APPENDIX D

LIST OF CONSULTING PARTIES

Consulting Parties for Clay County Bridge No. 046-11-01316A/NBI No. 17050, Bowling Green, Washington Township, Clay County, Indiana (DES. NO.: 0800910)

First Name	Last Name	Agency/Organization	Address	City	State	Zip Code	Accepted/Declined Consulting party status
Robert E.	Carter, Jr.	Indiana Department of Natural Resources-Division of Historic Preservation and Archaeology	402 W. Washington St., Room W274	Indianapolis	IN	46204-2739	Accepted
James	Cooper		629 East Seminary Street	Greencastle	IN	46135	Accepted
Paul	Brandenburg	Historic Spans Task Force	5868 Croton Circle	Indianapolis	IN	46254	No Response
Tommy	Kleckner	Director, Western Regional Office, Indiana Landmarks	669 Ohio Street	Terre Haute	IN	47807	Accepted
Mary	Moore	Clay County Historical Society	100 East National Avenue	Brazil	IN	47834	No Response
		Clay County Commissioners	609 East National Avenue	Brazil	IN	47834	No Response
Evelyn	Brown	Preservation Association of Clay County	401 West SR 340	Brazil	IN	47834	No Response
Wilmadean	Baker	Poland Historical Chapel Society, Inc.	204 North Murphy Ave.	Brazil	IN	47834	No Response
Jeffrey	Koehler	Clay County Historian	2544 North CR 200 E	Centerpoint	IN	47840-8297	No Response
Merv	Nolot	Executive Director, WCIEDD	1718 Wabash Ave.	Terre Haute	IN	47807	No Response
Patricia	Wilkinson	President, Clay County Genealogical Society of Indiana	P.O. Box 56	Centerpoint	IN	47840-0056	No Response
Mark	Dollase	Director, Indiana Landmarks Central Regional Office	1201 North Central Avenue	Indianapolis	IN	46202	Accepted
Diana	Biddle	Brown County Historian	160 McDonald Drive	Morgantown	IN	46160	No Response
Julia	Pearson	Brown County Historical Society	46 East Gould Street	Nashville	IN	47448-0668	No Response
Dr. Michael	Thompson	Brown County Administrator	201 Locust Lane, 2nd Floor	Nashville	IN	47448	Accepted
Bob	Bronson	Indiana Department of Natural Resources-Division of Outdoor Recreation	402 W. Washington St., Room W271	Indianapolis	IN	46204-2739	Accepted
Bob	Kirlin	Salt Creek Trail		Brown County	IN		Accepted

APPENDIX E

CORRESPONDENCE OF CONSULTING PARTIES

INDIANA DEPARTMENT OF TRANSPORTATION
Driving Indiana's Economic Growth

100 North Senate Avenue
Room N758
Indianapolis, Indiana 46204

PHONE: (317) 232-5533
FAX: (317) 232-0238

Mitchell E. Daniels, Jr., Governor
Michael B. Cline, Commissioner

August 24, 2010

«Title1» «First_Name» «Last_Name»
«Title»
«Company_Name»
«Address_Line_1»
«Address_Line_2»
«City», «State» «ZIP_Code»

Re: Des. #0800910, Bridge Project, SR 46 over the Eel River,
Near Bowling Green, Washington Township, Clay County

Dear «Title1» «Last_Name»:

The Indiana Department of Transportation (INDOT) intends to proceed with the above bridge project on SR 46. This letter is part of the early coordination phase of the environmental review process. We are requesting comments from your area of expertise regarding any possible environmental effects associated with this project. Please use the above description number and description in your reply.

The proposed project is located on SR 46 over the Eel River near the town of Bowling Green, Washington Township, Clay County. The purpose of the purpose of the project is to address the deteriorating condition of the existing structure, which was constructed in 1934. The subject bridge is Structure No.046-11-01316A; NBI No. 17050. It was listed in the National Register of Historic Places in 1999 under Criterion A: Transportation.

In the proposed project area, SR 46 is functionally classified as a Rural Minor Arterial route with a posted speed limit of 55 mph. SR 46 is a two-(2-) lane facility, consisting of two (2) 11-foot travel lanes and one-(1-)foot paved shoulders adjacent the travel lanes. Bridge approach guardrail is present on both sides of the roadway east of the subject bridge. The posted speed limit changed to 40 mph east of the bridge heading eastbound (approximately 900 feet east of the river).

The existing structure, a 2-span Parker pony steel-through-truss bridge, measuring 396 feet long (each span 198 feet in length) was constructed in 1934. The superstructure consists of eight (8) continuous wide-flange steel beams, supported by a substructure consisting of two (2) abutments and one intermediate pier. Reinforced concrete wing walls flank the ends of each abutment. The structure was rehabilitated in 1977; this rehabilitation consisted of bridge-floor slab replacement, removal and replacement of mud walls, installation of new abutment and pier pedestals and guardrail replacement.

According to the Crawfordsville District, the lower portions of the bridge's sway bracing were cut and removed a few years ago by District maintenance staff because they had been extensively collision-damaged. This bridge is built at the crest of a small vertical curve, so the clearances of the sway bracing were a little less than at the portals. If the lower portions of the sway bracing were put back at the original elevations as part of Des. #0800910, the sway bracing will continue to be collision-damaged. It is therefore recommended, as part of the scope of work for Des. #0800910, that the sway bracing be raised as is feasible in order to prevent damage through contact with vehicles passing through the bridge. The overall condition of the existing bridge is poor.

West of the bridge, approach guardrail is present to the intersection with County Road (CR) 475 E. Existing right-of-way width along SR 46 appears to be 65 feet from centerline along the south side of the roadway and 60 feet from centerline along the north side of the roadway. East of the bridge, existing right-of-way tapers down to 40 feet from centerline along the south side. Existing pavement along SR 46 is asphalt and is in fair condition, with no noticeable cracking, potholes or rutting present. Surface patching has been applied on both bridge approaches and on the existing pavement near the bridge structure, primarily along the roadway crown.

One intersection is located approximately 85 feet west of the existing bridge, where CR 475E comes to a "T" intersection with the south side of SR 46. A farm-field entrance is located on the north side of the roadway at this intersection. CR 475E is a two-lane asphalt road with ten-(10-) foot travel lanes with no paved shoulders. A residential driveway is located approximately 320 feet southeast of the existing bridge on the south side of the roadway. It is recommended as part of the proposed project's scope of work that the intersection of CR 475E and SR 46 should be realigned approximately 225 feet further west of the current intersection. This intersection relocation would provide adequate sight-distance in this location.

Land use within the proposed project limits is primarily wooded, with some residences located along CR 475E. Farmland is located to the west of the SR 46 bridge. Approximately 550 feet southeast of the bridge, a house is set back from SR 46 in the project's southeastern quadrant. A residence is also located in the project's southwestern quadrant, approximately 335 feet south of the bridge. The Eel River flows from north to south, with a slight meander, through the project limits. The small Clay County town of Bowling Green is located along SR 46, to the east of the subject structure.

It is anticipated that no permanent right-will be required for the proposed alternative along SR 46. Right-of-way will, however, be required along CR 475E for the realignment of this intersection. Approximately 0.42 acre of permanent right-of-way, composed mostly of farmland, will be necessary for the completion of the project. It is anticipated that no temporary right-of-way will be necessary for the proposed project. Traffic will be maintained throughout construction by means of an official detour.

The scope of work for the proposed preferred alternative (rehabilitation) is as follows:

- Removal/replacement of existing concrete deck;
- Bridge railings would be upgraded to meet current standards;
- Replacement of damaged or failed lacing bars;
- Cleaning and repainting of structural steel;
- Joint replacement;
- Installation of new approach slabs;
- Retrofitting of new angles at the bridge's diagonal members;
- The overhead sway bracing should be raised to increase vertical clearance at the structure.

The new bridge deck would need to have a clear roadway with of 24 feet; a wider clear roadway width cannot be provided due to the existing bridge seats. Approach guardrail would remain in place; although spot repairs would be incorporated into the project to extend the life of the substructure. The bridge, including the connection plates, should be rating for loadings prior to construction.

Pavement on the road approaches would be replaced to a point at the termination of the required bridge approach guardrail. In this option, CR 475E would also be realigned away from the southwest corner of the structure, to alleviate the inadequate sight distance issues. The farm-field entrance opposite the intersection would likewise be adjusted away from the structure. Pavement replacement on SR 46 would be extended to the limits of this new intersection.

Per the terms of the "Programmatic Agreement Regarding Management and Preservation of Indiana's Historic Bridges" (Historic Bridge PA), the Federal Highway Administration—Indiana Division will *"…satisfy its Section 106 responsibilities involving Select and Non-Select bridges…"* through the Project Development Process (PDP) of the Historic Bridge PA. Structure No.046-11-01316A; NBI No. 17050 has been classified as a "Select" bridge by the INDOT Historic Bridge Inventory. The Federal Highway Administration—Indiana Division will satisfy its Section 106 responsibilities for other resources located in the project area through coordination/consultation with consulting parties.

As per historical aspects of this project, it is INDOT's preliminary finding that the "area of potential effect" (APE) for the project includes existing right-of-way and the area immediately surrounding it, including incidental construction, and that the project will result in a determination of "No Historic Properties Affected." The State and National Register listings for Clay County were checked. As stated previously, the subject structure, Structure No.046-11-01316A; NBI No. 17050 was NR-listed in 1999 under Criterion A: Transportation. No other listed resources were located in or near the proposed project area. The Clay County Interim Report (1997; Washington Township; Bowling Green Scattered Sites (BGSS)) was also consulted and a SHPO records check was conducted. The subject structure, No.046-11-01316A; NBI No. 17050, was surveyed in 1997 as Washington Township #021-105-30027 (SR 46 bridge; ca.-1935, Parker through truss; rated "Outstanding"). The other surveyed Washington Township resource recorded near the proposed project area was #021-105-30026 (ca.-1890 Walsh Railroad Abutment, near CR 450E; rated "Contributing"). This resource was estimated by GIS aerial mapping to be located approximately 3107 north/northwest of the subject structure. Due to this estimated distance, #021-105-30026 was not included in the proposed project's APE.

Surveyed Bowling Green Scattered Sites (BGSS) recorded near the proposed project area include the following: **1)** #021-105-31005 (NA Jackson St./SR 46; ca.-1895 gabled-ell Queen Anne; rated "Notable"); **2)** #021-105-31006 (NA Jackson St./SR 46; ca.-1855 double-pen; rated "Contributing").

It should be noted that the field-survey inventory form for #021-105-31005 includes inaccurate information in the form's "Location Notes/Legal Description" section. The form states that the resource is located at the "north side, 2nd west of Monroe, NE corner of Madison & Jackson/SR 46." While BGSS #021-105-31005 is located on the north side of Jackson St./SR 46, and it is the second house west of Monroe Street on Jackson St./SR 46, the resource is not located at the northeast corner of Madison and Jackson/SR 46. Instead, it is the second house east of the northeast corner of Madison and Jackson streets. In any case, GIS aerial mapping indicates that this resource is located approximately 1909 feet east of the subject bridge. Due to this estimated distance, BGSS #021-105-31005 is not included in the proposed project's APE.

Field-survey inventory form "location notes" for BGSS #021-105-31006 record that the resource is located at the "NW corner of SR 46/Jackson St. & Monroe." Examination of 2005 aerial images appears to show that the resource has been demolished. Its estimated (by GIS aerial mapping) distance east of the subject structure is approximately 1949 feet. Due to this estimated distance, the resource—were it extant—would not be included in the proposed project's APE.

Three above-ground resources not surveyed for or included in the 1997 Clay County Interim Report were located in the proposed project area. One of these resources , 260 Jackson St./SR 46 (ca.-1910 Queen Anne/Free Classic house; includes ca.-1900 English barn and frame outbuildings; rated "Contributing"), met the requisite age/and or conditions criteria necessary for NR-eligiblity assessment.

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FAX: (317) 232-0238

Mitchell E. Daniels, Jr., Governor
Michael B. Cline, Commissioner

As previously stated, the subject structure, Des. #0800910 (Structure No.046-11-01316A; NBI No. 17050) was surveyed for the 1997 Clay County Interim Report as Washington Township #021-105-30027 (SR 46 bridge; ca.-1935, Parker through truss; rated "Outstanding"). Due to its year of construction (ca.-1934) at the time of inventory, the structure was not surveyed for/included in Dr. James L. Cooper's 1987 survey of Indiana's metal bridges entitled Iron Monuments to Distant Posterity: Indiana's Metal Bridges, 1870-1930 . The SR 46 bridge was surveyed for/included in, and noted as National Register-listed by, the INDOT Historic Bridge Inventory (HBI). The bridge was classified as a "Select" bridge by the HBI. As defined by the "Programmatic Agreement Regarding Management and Preservation of Indiana's Historic Bridges," (Historic Bridge PA) "Select" bridges are "those historic bridges that are most suitable for preservation and are excellent examples of a given type of historic bridge..." As stated previously in this letter, Section 106 obligations for this bridge are met under the Project Development Process (PDP) of the Historic Bridge PA. The "Alternatives Analysis" for this proposed bridge project is included in this mailing.

Aside from the subject structure, the three (3) above-ground resources located in the proposed project area are late-20th century residential and associated support constructions. Of these, two (2) do not meet the age and or conditions requirements for National Register-eligibility assessment. The remaining resource , 260 Jackson St./SR 46 (ca.-1910 Queen Anne/Free Classic house; includes ca.-1900 English barn and frame outbuildings; rated "Contributing") met the requisite age/and or conditions criteria necessary for NR-eligibility assessment. Due to the fact that the project APE includes above-ground resources, besides the subject structure, that are fifty years or older, a long-form historic property report (HPR) (Branigin, June, 2010) was prepared and is included in this mailing. It was the conclusion of the HPR that, aside from the subject structure, the proposed project's APE does not contain any above-ground resources listed in or eligible for listing in the National Register of Historic Places. The report recommended a preliminary determination for the proposed project of "No Historic Properties Affected."

With regard to archaeological concerns, an archaeological report is being prepared and will be submitted upon completion to the office of the Indiana SHPO for review.

Section 106 of the National Historic Preservation Act requires Federal agencies to take into account the effects of their undertakings on historic properties. In accordance with 36CFR800.2(c), you are hereby requested to be a consulting party to identify historic properties potentially affected by the undertaking, assess its effect and seek ways to avoid, minimize or mitigate any adverse effects on historic properties. The following agencies have been invited to be consulting parties: SHPO; Indiana Landmarks/Western Regional Office; Clay County Historian; Clay County Historical Society; Clay County Commissioners; West Central Indiana Economic Development District, Inc. (WCIEDD); Preservation Association of Clay County; Poland Historical Chapel Society, Inc.; Clay County Genealogical Society of Indiana; Indiana Historic Spans Task Force; Dr. James L. Cooper. Per 36CFR800.3(f), we hereby request that the SHPO notify this Office of any other parties that may be entitled to be consulting parties for the subject project **within thirty (30) days** by separate letter if necessary.

Please respond with your comments on any historic resource impacts incurred as a result of these projects so that an environmental report can be prepared. We also welcome your related opinions and other input to be considered in the preparation of the environmental document. If we do not receive your response within thirty (30) days, it will then be assumed that your agency or organization feels that there will be no significant effects as a result of these projects or that you wish to offer no opinions concerning these projects. However, should you find that an extension to respond is required, a reasonable amount will be granted upon request. If we do not receive your response within thirty (30) days, your agency or organization will not receive any further information on the projects unless the scope of work changes. If you have any questions regarding this matter, please feel free to contact Susan Branigin of this section at (317) 234-0142. Thank you in advance for your input.

Sincerely,

Staffan D. Peterson
Administrator, Cultural Resources Section,
Office of Environmental Services

SDP/SRB/srb

Enclosures
CC: Michael Eubank, INDOT Crawfordsville District Environmental Scoping Manager
Daniel Miller, INDOT Crawfordsville District Environmental Scientist
OES Project File

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Mitchell E. Daniels, Jr., Governor
Michael W. Reed, Commissioner

September 15, 2010

Ms. Karie Brudis
Indiana Department of Natural Resources
Division of Historic Preservation and Archaeology
402 West Washington Street, Room W274
Indianapolis, Indiana 46216

Re: Archaeological Short Report
Route No.: SR 46
Des. No.: 0800910
Description: Bridge Rehabilitation over Eel River, 0.45 miles west of Bowling Green, Clay County, Indiana

Dear Mr. Brudis,

Enclosed is an archaeological short report for the proposed SR 46 Bride over Eel River Rehabilitation in Bowling Green, Clay County. The archaeological reconnaissance of the project area found no sites but confirmed a well drained alluvial area in proposed r/w. A Phase Ic subsurface reconnaissance was recommended. Early Coordination materials were previously sent to SHPO on August 24, 2010.

Please review the enclosed archaeological short report and advise us of its acceptability. If there are any questions or questions regarding this project, please contact Mr. Shaun Miller of this section at (317)-233-6795.

Sincerely,

Staffan Peterson, Administrator
INDOT, Cultural Resources Section

STP/SAM/sam
Enclosures

CC: INDOT, Office of Environmental Services, Cultural Resources Section project file
Emc: Dan Miller, INDOT Crawfordsville District
Susan Branigin, INDOT, CRS

DNR Indiana Department of Natural Resources

Mitchell E. Daniels, Jr., Governor
Robert E. Carter, Jr., Director

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Phone 317-232-1646•Fax 317-232-0693 · dhpa@dnr.IN.gov

HISTORIC PRESERVATION AND ARCHAEOLOGY

September 28, 2010

Staffan D. Peterson
Administrator
Cultural Resources Section
Office of Environmental Services
Indiana Department of Transportation
100 North Senate Avenue, Room N642
Indianapolis, Indiana 46204

Federal Agency: Federal Highway Administration ("FHWA")

Re: Early coordination information, historic property report (Branigin, 8/10), and Indiana archaeological short report (Miller, 8/5/10) regarding a rehabilitation project to remedy the deteriorating condition of Bridge No. 046-11-01316A carrying SR 46 over the Eel River (Des. No. 0800910; DHPA No. 10596)

Dear Mr. Peterson:

Pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f), 36 C.F.R. Part 800, and the "Programmatic Agreement Among the Federal Highway Administration, the Indiana Department of Transportation, the Advisory Council on Historic Preservation and the Indiana State Historic Preservation Officer Regarding the Implementation of the Federal Aid Highway Program In the State of Indiana," the staff of the Indiana State Historic Preservation Officer ("Indiana SHPO") has reviewed the materials submitted with your cover letters dated August 24, 2010 and September 15, 2010 and received on August 30 and September 20, respectively, for the aforementioned project 0.45 mile west of the community of Bowling Green in Washington Township, Clay County, Indiana.

The area of potential effects proposed in the historic property report ("HPR") appears to be of sufficient breadth to encompass all areas in which effects on above-ground properties could occur as a result of the preferred alternative, rehabilitation.

We agree with the conclusion of the HPR that the National Register-listed Bridge No. 046-11-01316A is the only above-ground property within the APE that is historic.

We note that the Indiana Department of Transportation has preliminarily concluded that the finding for this project should be "No Historic Properties Affected" but believe that we need more information on the rehabilitation of the historic bridge before offering an opinion on the finding. Also, the archaeological short report recommends further archaeological investigation, and we would need to review the results of that investigation.

In regards to archaeology, based upon the documentation available to the staff of the Indiana SHPO, the proposed project area has soils with the potential to contain buried archaeological deposits. Therefore, we concur with the recommendation of the archaeological short report that a Phase Ic subsurface reconnaissance be conducted in the southwest quadrant of the proposed project area. A plan for the Phase Ic subsurface reconnaissance must be submitted to the Division of Historic Preservation and Archaeology ("DHPA") for review and comment prior to further field investigations. Further archaeological investigations must be conducted in accordance with the "Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation" (48 F.R. 44716). A description of the Phase Ic subsurface reconnaissance methods and results must be submitted to the Division of Historic Preservation and Archaeology for review before we can comment further (see list of qualified professional archaeologists at the DHPA website link http://www.in.gov/dnr/historic/bin/qp/qp_archeo.pdf).

In regards to the archaeological short report, we note that there appear to be some archaeological sites and McGregor industrial sites recorded within one mile of the proposed project area that are not included in the in the "Previously Reported Sites . . ." and "McGregor Industrial Site records" sections of the report.

If any archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, state law (Indiana Code 14-21-1-27 and 29) requires that the discovery must be reported to the Department of Natural Resources within two (2) business days. In that event, please call (317) 232-1646. Be advised that adherence to Indiana Code 14-21-1-27 and 29 does not obviate the need to adhere to applicable federal statutes and regulations.

Although several items in the scope of work for the preferred (rehabilitation) alternative may seem innocuous at first glance, it seems to us that more would need to be known about how some those items of work will be accomplished in order to ascertain whether the rehabilitation would satisfy the Historic Bridge Programmatic Agreement's goal of following the "Secretary of the Interior's Standards for Rehabilitation." We would want to know more about how at least the following items from the scope of work will be carried out:

- "Bridge railings would be upgraded to meet current standards."
- "Retrofitting of new angles at the bridge's diagonal members."
- "The overhead sway bracing should be raised to increase vertical clearance at the structure."

Once the indicated information is received, the Indiana SHPO staff will resume identification and evaluation or effects assessment review for this project. Please keep in mind that additional information may be requested in the future.

If you have questions about archaeological issues, please contact Dr. Rick Jones at (317) 233-0953 or rjones@dnr.IN.gov. Questions about buildings or structures should be directed to John Carr at (317) 233-1949 or jcarr@dnr.IN.gov. In all future correspondence regarding the above indicated project, please refer to DHPA No. 10596.

Very truly yours,

James A. Glass, Ph.D.
Deputy State Historic Preservation Officer

JAG:JLC:JRJ:jlc

emc: Shaun Miller, Cultural Resources Section, Office of Environmental Services, Indiana Department of Transportation
Mary Kennedy, Cultural Resources Section, Office of Environmental Services, Indiana Department of Transportation
Susan Branigin, Cultural Resources Section, Office of Environmental Services, Indiana Department of Transportation

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Mitchell E. Daniels, Jr., Governor
Michael W. Reed, Commissioner

September 29, 2010

Indiana Department of Natural Resources
Division of Historic Preservation and Archaeology
402 West Washington Street, Room W274
Indianapolis, Indiana 46216

Re: Proposal to conduct Phase Ic subsurface reconnaissance
Route No.: SR 46
Des. No.: 0800910
Description: Bridge Rehabilitation over Eel River, Clay County, Indiana
DHPA No.: 10596

Dear Ms. Brudis,

Please find enclosed a proposal to conduct a Phase Ic subsurface reconnaissance within the southwest quadrant of the SR 46 Bridge Rehabilitation over Eel River project in Clay County. This is our request for a permit to conduct the investigations.

If there are any questions or concerns regarding this project, please contact Mr. Shaun Miller of this section at (317)-233-6795.

Sincerely,

-For

Staffan Peterson, Administrator
INDOT, Cultural Resources Section

STP/SAM/sam
Enclosures

CC: INDOT Cultural Resources Section project file
Emc: Dan Miller, LaPorte District
Susan Branigin, INDOT, CRS

Indiana Department of Natural Resources

Mitchell E. Daniels, Jr., Governor
Robert E. Carter, Jr., Director

Division of Historic Preservation & Archaeology•402 W. Washington Street, W274 · Indianapolis, IN 46204-2739
Phone 317-232-1646•Fax 317-232-0693 · dhpa@dnr.IN.gov

HISTORIC PRESERVATION AND ARCHAEOLOGY

November 3, 2010

Staffan D. Peterson
Acting Director
Cultural Resources Administrator
Office of Environmental Services
Indiana Department of Transportation
100 N. Senate Ave., IGCN, Room N642
Indianapolis, IN 46204

Federal Agency: Federal Highway Administration

Re: Request to conduct phase Ic subsurface reconnaissance investigation (Miller, 9/29/10) in relation to a project to remedy the deteriorating condition of Bridge No. 046-11-01316A carrying SR 46 over the Eel River (Designation # 0800910; DHPA # 10596)

Dear Mr. Peterson:

Pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f), 36 C.F.R. Part 800, and the "Programmatic Agreement among the Federal Highway Administration, the Indiana Department of Transportation, the Advisory Council on Historic Preservation, the Indiana State Historic Preservation Officer regarding the implementation of the Federal Aid Highway Program in the State of Indiana," the staff of the Indiana State Historic Preservation Officer has conducted an analysis of the materials dated September 29, 2010 and received on October 5, 2010, for the above indicated project west of Bowling Green, Washington Township, Clay County, Indiana.

Thank you for providing the Phase Ic subsurface reconnaissance archaeological plan for the above project. The plan is acceptable with the following conditions:

1. All archaeological investigations must be directly supervised in the field and laboratory by an archaeologist meeting the professional qualification standards for archaeology in the "Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation."

2. If any human remains dating on or before December 31, 1939 are encountered, the discovery must be reported to the Indiana Department of Natural Resources within two (2) business days. The discovery must be treated in accordance with IC 14-21-1 and 312 IAC 22. In that event, please call 317-232-1646.

3. A report detailing the methods, techniques, analysis, and results of the project must be submitted to the DHPA for review and comment within six months of the end of fieldwork.

4. Archaeological site forms for all archaeological sites discovered must be submitted electronically to the state SHAARD database.

5. Any proposed revisions to the archaeological plan must be submitted in writing to the Division of Historic Preservation and Archaeology ("DHPA") prior to implementation in the field or laboratory. This plan is not transferable.

If any archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, state law (Indiana Code 14-21-1-27 and 29) requires that the discovery must be reported to the Department of Natural Resources within two (2) business days. In that event, please call (317) 232-1646. Be advised that adherence to Indiana Code

14-21-1-27 and 29 does not obviate the need to adhere to applicable federal statutes and regulations.

Once the report for the Phase Ic investigations is received, the Indiana SHPO will resume identification and evaluation procedures for this project. Please keep in mind that additional information may be requested in the future

A copy of the revised 36 C.F.R. Part 800 that went into effect on August 5, 2004, may be found on the Internet at www.achp.gov for your reference. If you have questions about archaeological issues please contact Dr. Rick Jones at (317) 233-0953 or rjones@dnr.IN.gov. Additionally, in all future correspondence regarding the above indicated project, please refer to DHPA #10596.

Very truly yours,

James A. Glass, Ph.D.
Deputy State Historic Preservation Officer

JAG:JRJ:jj

cc: Shaun Miller, Indiana Department of Transportation
Mary Kennedy, Indiana Department of Transportation
Susan Branigin, Indiana Department of Transportation

INDIANA DEPARTMENT OF TRANSPORTATION
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100 North Senate Avenue
Room N642
Indianapolis, Indiana 46204

PHONE: (317) 232-5533
FAX: (317) 232-0238

Mitchell E. Daniels, Jr., Governor
Michael B. Cline, Commissioner

July 19, 2011

Indiana Department of Natural Resources
Division of Historic Preservation and Archaeology
402 West Washington Street, Room W274
Indianapolis, Indiana 46216

Re: Phase Ic subsurface reconnaissance
Route No.: SR 46
Des. No.: 0800910
DHPA No.:10596
Description: Bridge Rehabilitation over Eel River and Realignment of CR 475E near Bowling Green, Clay County, Indiana

Dear Dr. Glass,

Please find enclosed a report of Phase Ic subsurface investigations for the realignment of CR 475E associated with Des No. 0800910. No archaeological deposits were identified and no further work is recommended. Please review the enclosed report and notify us of its acceptability. If there are any questions or concerns regarding this project, please contact Mr. Shaun Miller of this section at (317)-233-6795.

Sincerely,

Staffan Peterson, Manager
INDOT, Cultural Resources Office

STP/SAM/sam
Enclosures

CC: INDOT Cultural Resources Office project file
Emc: Susan Branigin, INDOT, Cultural Resources Office
Brock Ervin, INDOT Crawfordsville District

DNR Indiana Department of Natural Resources

Mitchell E. Daniels, Jr., Governor
Robert E. Carter, Jr., Director

Division of Historic Preservation & Archaeology•402 W. Washington Street, W274 · Indianapolis, IN 46204-2739
Phone 317-232-1646•Fax 317-232-0693 · dhpa@dnr.IN.gov

August 17, 2011

Staffan Peterson, Ph.D., Manager
Cultural Resources Office
Environmental Services
Indiana Department of Transportation
100 North Senate Avenue, Room N642
Indianapolis, Indiana 46204

Federal Agency: Federal Highway Administration ("FHWA")

Re: Phase Ic subsurface reconnaissance report (Miller, 7/19/11) for the rehabilitation of the SR 46 bridge (Bridge No. 046-11-01316A; NBI No.17050) over Eel River and realignment of CR 475E (Des. No. 0800910; DHPA No. 10596)

Dear Dr. Peterson:

Pursuant to Section 106 of the National Historic Preservation Act, as amended (16 U.S.C. § 470f), 36 C.F.R. Part 800, and the "Programmatic Agreement . . . Regarding the Implementation of the Federal Aid Highway Program In the State of Indiana" ("Minor Projects PA") and the "Programmatic Agreement . . . Regarding Management and Preservation of Indiana's Historic Bridges" ("Historic Bridges PA"), the staff of the Indiana State Historic Preservation Officer has reviewed the report submitted under your cover dated July 19, 2011 and received on July 21, for the aforementioned project, 0.45 mile west of the community of Bowling Green, Washington Township, Clay County, Indiana.

Based upon the documentation provided to the staff of the Indiana SHPO, we have not identified any currently known archaeological resources listed in or eligible for inclusion in the National Register of Historic Places within the proposed project area.

If any archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, state law (Indiana Code 14-21-1-27 and -29) requires that the discovery be reported to the Department of Natural Resources within two (2) business days. In that event, please call (317) 232-1646. Be advised that adherence to Indiana Code 14-21-1-27 and -29 does not obviate the need to adhere to applicable federal statutes and regulations.

We look forward to receiving further information about the rehabilitation of the SR 46 bridge over Eel River in the course of your implementing the April 1, 2010 "Historic Bridge PA Project Development Process." In particular, we would like to have further information about those items in the general scope of work that we mentioned in our September 28, 2010 letter.

If you have questions about archaeological issues, then please contact Dr. Rick Jones at (317) 233-0953 or rjones@dnr.IN.gov. Questions about buildings or structures should be directed to John Carr at (317) 233-1949 or jcarr@dnr.IN.gov. In all future correspondence regarding this project, please continue to refer to DHPA No. 10596.

Very truly yours,

James A. Glass, Ph.D.
Deputy State Historic Preservation Officer

JAG:JLC:JRJ:jj

emc: Lawrence Heil, P.E., Indiana Division, Federal Highway Administration
Staffan Peterson, Ph.D., Indiana Department of Transportation
Shaun Miller, Indiana Department of Transportation
Mary Kennedy, Indiana Department of Transportation
Susan Branigin, Indiana Department of Transportation
Melany Prather, Indiana Department of Transportation

ASC GROUP, INC.

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CULTURAL AND ENVIRONMENTAL CONSULTANTS

October 10, 2014

Mitch Zoll, Division Director
Indiana Department of Natural Resources
Division of Historic Preservation and Archaeology
402 West Washington Street, Room W274
Indianapolis, Indiana 46204-2739

Re: Proposed State Road 46 over Eel River Bridge Relocation (Des. No. 0800910) in Washington Township, Clay County, Indiana

Dear Mr. Zoll:

Enclosed is a Phase Ia Archaeological Survey for the above-referenced project.

The report has been reviewed by INDOT Cultural Resources personnel who meet the Secretary of Interior's Professional Qualification Standards as per 36 CFR Part 61. It was their opinion the archaeological report is acceptable, and concur with the evaluations and recommendations made by Lautzenheiser et al. (2014). Please review the enclosed report and advise us of its acceptability and recommendations.

ASC Group appreciates the opportunity to assist you with this project. If you have questions or require additional information, feel free to reach me at 317.915.9300.

Thank you for your attention to this request.

Sincerely,

Andrew Campbell
Interim Indiana Regional Manager/Office Manager
ASC Group, Inc.

Enclosures

cc: Alan Ball, Parsons Transportation Group
Shaun Miller, INDOT

AC/clc

9376 Castlegate Drive, Indianapolis, Indiana 46256
317.915.9300 phone 317.915.9301 fax
www.ascgroup.net

Michael R. Pence, Governor
Cameron F. Clark, Director

DNR Indiana Department of Natural Resources

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Phone 317-232-1646 • Fax 317-232-0693 · dhpa@dnr.IN.gov

HISTORIC PRESERVATION AND ARCHAEOLOGY

October 21, 2014

Patrick Carpenter
Cultural Resources Manager
Environmental Services
Indiana Department of Transportation
100 North Senate Avenue, Room N642
Indianapolis, Indiana 46204

Federal Agency: Federal Highway Administration

Re: Archaeological Report Concerning the Relocation of the SR 46 over Eel River Bridge, Located in Clay County, Indiana. (Designation #0800910; DHPA #10596)

Dear Mr. Carpenter:

Pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f), 36 C.F.R. Part 800, and the "Programmatic Agreement among the Federal Highway Administration, the Indiana Department of Transportation, the Advisory Council on Historic Preservation, the Indiana State Historic Preservation Officer regarding the implementation of the Federal Aid Highway Program in the State of Indiana," the staff of the Indiana State Historic Preservation Officer has conducted an analysis of the materials dated October 9, 2014 and received on October 14, 2014, for the above indicated project in Clay County, Indiana.

In regard to archaeological survey report, based upon the submitted information and the documentation available to the staff of the Indiana SHPO, we have not identified any archaeological resources listed in or eligible for inclusion in the National Register of Historic Places within the probable area of potential effects. We also agree that no subsurface archaeological reconnaissance will be required.

If any archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, state law (Indiana Code 14-21-1-27 and 29) requires that the discovery must be reported to the Department of Natural Resources within two (2) business days. In that event, please call (317) 232-1646. Be advised that adherence to Indiana Code 14-21-1-27 and 29 does not obviate the need to adhere to applicable federal statutes and regulations.

The above comments are strictly in regards to archaeological resources, since no information was provided about buildings and structures.

A copy of the revised 36 C.F.R. Part 800 that went into effect on August 5, 2004 may be found on the Internet at www.achp.gov for your reference. If you have questions about archaeological issues please contact Mitch Zoll at (317) 232-3492 or mzoll@dnr.IN.gov. If you have questions about buildings or structures please contact John Carr at (317) 233-1949 or jcarr@dnr.IN.gov. Additionally, in all future correspondence regarding the above indicated project, please refer to DHPA #10596.

Very truly yours,

Mitchell K. Zoll
Deputy State Historic Preservation Officer

MKZ:

emc: Patrick Carpenter, INDOT
Mary Kennedy, INDOT
Michael Lautzenheiser, ASC Group, Inc.
Andrew Campbell, ASC Group, Inc.

ASC GROUP, INC.

ARCHAEOLOGY ARCHITECTURAL HISTORY ENVIRONMENT

CULTURAL AND ENVIRONMENTAL CONSULTANTS

November 19, 2014

Mitchell Zoll
Indiana Department of Natural Resources
Division of Historic Preservation and Archaeology
402 West Washington Street, W274
Indianapolis, Indiana 46204-2739

Re: Clay County Bridge No. 046-11-01316A/NBI No. 17050 (Des. No. 0800910/DHPA No. 10596), Bowling Green, Washington Township, Clay County, Indiana
Dual Review Project

Dear Mr. Zoll:

ASC Group, Inc., (ASC Group) under contract with Parsons Transportation Group (Parsons), is submitting for your review and comment updated information relating to the proposed Clay County Bridge No. 046-11-01316A/NBI No. 17050 (Des. No. 0800910/DHPA No. 10596) project in Bowling Green, Washington Township, Clay County, Indiana. This information also will be provided to other potential consulting parties along with a new invitation to participate in the Section 106 process. The original project involved a rehabilitation of Clay County Bridge No. 046-11-01316A/NBI No. 17050, which included the following improvements: the removal/replacement of the existing concrete deck, installation of upgraded bridge railings, replacement of damaged or failed lacing bars, cleaning and repainting of structural steel, joint replacement, the installation of new approach slabs, the retrofitting of new angles at the bridge's diagonal members, and the raising of the overhead sway bracing to increase vertical clearance.

Because of the poor condition of the bridge (revealed in a bridge inspection performed after the original project scope was approved and as outlined in the enclosed documents) and its deficiencies as a vehicular bridge, the proposed project scope has changed. A Section 4(f) Alternatives Analysis was completed by Parsons and approved by INDOT-Cultural Resources Office. Please see the enclosed Section 4(f) Alternatives Analysis document for details on the new preferred alternative for Clay County Bridge No. 046-11-01316A/NBI No. 17050. INDOT is now proposing to remove Clay County Bridge No. 046-11-01316A/NBI No. 17050 from its existing location and reassemble it in two locations on the proposed Salt Creek Trail in Brown County. A new bridge carrying SR 46 across the Eel River is expected to be built in its place.

Clay County Bridge No. 046-11-01316A/NBI No. 17050 was listed on the National Register of Historic Places (NRHP) on March 15, 2000, under Criterion A, for its importance in the history of transportation on the local level. Because Clay County Bridge No. 046-11-01316A/NBI No. 17050 is listed on the NRHP and included in the INDOT Historic Bridge Inventory, the Section 106 responsibilities for the bridge are covered in the Programmatic Agreement Regarding Management and Preservation of Indiana's Historic Bridges (Historic Bridge PA). Clay County Bridge No. 046-11-01316A/NBI No. 17050 is classified as a Select bridge by the INDOT Historic Bridge Inventory. Select bridges are defined in the Historic Bridge PA as those structures that are excellent examples of a specific bridge type and that are most suitable for preservation. While Clay County Bridge No. 046-11-01316A/NBI No. 17050 is a Select bridge, an individual review of the bridge had concluded it would be more suitable for non-vehicular use.

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A Historic Properties Report [HPR] (Branigin 2010) was written by INDOT Cultural Resources staff in 2010 for compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966. The Indiana State Historic Preservation Officer (SHPO) staff reviewed the HPR and concurred in a letter dated September 28, 2010 that the only historic property within the Area of Potential Effects (APE) is Clay County Bridge No. 046-11-01316A/NBI No. 17050.

As part of the renewed consultation for this project, the APE for the project has been expanded due to the proposed changes in the scope. The additional APE consists of areas to the west and east of the proposed approaches of the proposed bridge (Figure 1). The original APE from the INDOT HPR (2010) has also been included on the figure for reference.

A records check for the additional APE was completed. Examination of the *Clay County Interim Report* (Historic Landmarks Foundation of Indiana [HLFI] 1997) identified two previously documented properties in the additional APE: a gabled-ell/Queen Anne-style house on SR 46 built ca. 1895 (021-105-31005) and a double-pen house (021-105-31006) built ca. 1855 located on the northwest corner of SR 46 and Monroe Street. Both have been demolished since the publication of the interim report. The records check also did not uncover any additional NRHP-listed or Indiana Register properties within the additional APE or historic bridges that are listed in the Indiana Historic Bridges Inventory. Please refer to Branigin (2010) for the original records check information and historic context.

A reconnaissance survey of the revised APE took place on August 14, 2014. Conditions for the survey were ideal, with clear skies and good visibility. Photographs of streetscapes of the project area were taken (Plates 1–10), along with photographs of architectural properties within the APE. There are no properties within the original APE that have attained 50 years of age since the initial documentation was completed in 2010. Three properties in the APE evaluated in 2010, including Clay County Bridge No. 046-11-01316A/NBI No. 17050, were photographed for purposes of documenting the properties' current integrity (Plates 11–21). The integrity of all three properties has not changed since they were documented in 2010.

Two properties, located on SR 46 in Bowling Green, were not in the original APE, but are located in the additional APE.

5102 SR 46 is a minimal traditional-style house built ca. 1940 (Plates 22–24). The one-story side-gabled house has vinyl siding and sheet metal roofing. There are two porches on the house, built with similar materials. A subterranean entryway is located on the house's west elevation. There are replacement windows and doors on the house, and there is a two-car detached garage to the rear of the house. 5102 SR 46 is not significant under Criterion A for a historic context. It is not known to be associated with a person important in history under Criterion B. The property does not have a distinctive design as a minimal-traditional house and is not a significant example of its type, and so, the property is not significant under Criterion C. The property is not likely to yield information important in history or prehistory, so the property is not significant under Criterion D. The building retains its integrity of location, design, workmanship, feeling, setting, and association. Alterations to its historic materials include replacement windows, doors, and siding, and it does not retain its integrity of materials. Nevertheless, the property looks similar to its original form and appearance and retains its overall integrity. Despite this, 5102 SR 46 lacks significance under Criteria A, B, C, and D and is recommended as not eligible for the NRHP.

5141 SR 46 is a ranch-style house built ca. 1955 (Plates 25 and 26). The one-story house has aluminum siding and an asphalt shingled roof. The windows are original to the house; all of the doors are replacements. The front porch has a poured concrete base, with iron supports holding up a lean-to roof. A one-car attached garage, with the door facing Monroe Street, is located on the back of the house. 5141 SR 46 is not significant under Criterion A for a historic context. It is not known to be associated with a person important in history under Criterion B. The property does not have a distinctive design and is not a significant example of its type, and so, the property is not significant under Criterion C. The property is not likely to yield information important

in history or prehistory, so the property is not significant under Criterion D. The building retains its integrity of location, design, workmanship, feeling, setting, and association. Alterations to its historic materials include replacement doors and siding, and it does not retain integrity of materials. Nevertheless, the property looks similar to its original form and appearance and retains its overall integrity. Despite this, 5141 SR 46 lacks significance under Criteria A, B, C, and D and is recommended as not eligible for the NRHP.

None of the architectural properties within the additional APE are recommended eligible individually for the NRHP. ASC Group recommends that no portion of the current APE is NRHP eligible as part of a historic district. Although the town of Bowling Green is one of the oldest established towns in the county, and, at one time, its county seat, there are few properties on the town's west end that are architecturally significant and have good integrity. Therefore, the additional areas do not have the significance needed for a potential NRHP historic district, and remains so with the changes in the project APE.

As part of the renewed consultation for this project, an APE for the proposed project activities at the Salt Creek Trail in Brown County has been formulated and subjected to above-ground investigations. As a result, a historic properties report for the two locations on the proposed Salt Creek Trail in Brown County, prepared by ASC Group, is enclosed for your review. Five properties within the APE 50 years of age or older at the time of project letting were photographed, recorded on mapping, and evaluated for NRHP eligibility. Two properties, the Ramp Creek Covered Bridge and the Brown County State Park North Gate House, are recommended eligible for the National Register of Historic Places, both under Criteria A and C.

With regard to archaeological concerns, an archaeological short report was prepared by INDOT CR staff for the project location in Clay County (Miller, August, 2010). It was submitted to the SHPO for review on September 15, 2010. The report recommended a Phase Ic subsurface reconnaissance due to the presence in the project area of "…well-drained alluvial soils indicating the potential for buried archaeological deposits in the southwest quadrant where CR 475 E is being realigned…"

The previously mentioned September 28, 2010, SHPO letter concurred that a Phase Ic subsurface reconnaissance be conducted in the southwest quadrant of the proposed project area. INDOT carried out the Phase Ic subsurface investigations and no archaeological deposits were identified. No further work was recommended. The Phase Ic report was submitted to the SHPO on July 19, 2011. The SHPO concurred with the Phase Ic report conclusions in a letter dated August 17, 2011.

As a result of the proposed scope changes, additional archaeological fieldwork was performed at the project area in Clay County by ASC Group. The archaeological fieldwork involved visual inspection, surface survey, shovel probing, and auger probing. Plowed agricultural fields and lightly to densely wooded areas were examined. Two newly identified archaeological sites were recorded and one previously identified site area was resurveyed. Because of the lack of integrity of the sites and for their lack of historical significance, both newly identified sites were recommended not eligible for the NRHP. The previously identified site could not be relocated. No Phase Ic deep testing was recommended in the report by ASC Group dated October 9, 2014. The SHPO concurred in the recommendations of the report in a letter dated October 21, 2014.

With regard to archaeological concerns at the Salt Creek Trail locations in Brown County, ASC Group has conducted the archaeological investigations and the resultant Phase Ia archaeological reconnaissance survey report will be forwarded to the SHPO for review upon finalization.

This letter serves as an invitation to a consulting parties meeting that will be held on Thursday, December 4, 2014, at 1:30 PM at the Parsons Office, which is located at 101 W. Ohio Street (Old National Bank building) at the corner of Illinois Street in downtown Indianapolis. The entrance to the attached parking garage is located on Ohio Street immediately west of the building. Take the garage elevator to the first floor and exit to the street. Turn right and enter the building near the corner of Illinois Street. The Parsons office is on the 21st floor. Attendees should bring their parking ticket to the Parsons office for validation. A

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317.915.9300 phone 317.915.9301 fax
www.ascgroup.net

conference call/WebEx option will also be available for this meeting and information on how to join the meeting remotely will be provided at a later date.

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Please note that per the permanent rule issued by the Indiana Department of Natural Resources effective August 14, 2013 (IAC 20-4-11.5), INDOT is requesting that this project be subjected to "dual review;" that is, reviewed by the Division of Historic Preservation and Archaeology simultaneously under 16 USC 470f (Section 106) and IC 14-21-1-18 (Indiana Preservation and Archaeology Law dealing with alterations of historic sites and structures requiring a Certificate of Approval). Pursuant to Section 1(f) of this rule, at the conclusion of the review process, we anticipate that the Division Director would issue a letter of clearance exempting this project from obtaining a certificate of approval under IC 14-21-1-18.

The previously mentioned enclosures to this letter can be viewed electronically by accessing INDOT's Section 106 document posting website IN SCOPE at the following website. Please use the project identification detail provided in the subject heading to search for the documents. ASC Group will provide a hard copy or CD of the materials to any invited consulting party who makes such a request within seven (7) days of receipt of this notification.

http://netservices.indot.in.gov/Section106Documents/Default.aspx.

We look forward to receiving your comments on the attached documents and we look forward to seeing you at the consulting parties meeting on December 4, 2014. If you have questions or require additional information, feel free to reach me at 317.915.9300, ext. 103 or e-mail rnelson@ascgroup.net.

Sincerely,

Ross Nelson

Ross Nelson
Architectural Historian
ASC Group, Inc.

Enclosures

cc: Sean Porter, Parsons Transportation Group
Alan Ball, Parsons Transportation Group
Patrick Carpenter, INDOT
Larry Heil, FHWA-Indiana Division

RN/clc

9376 Castlegate Drive, Indianapolis, Indiana 46256
317.915.9300 phone 317.915.9301 fax
www.ascgroup.net

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CULTURAL AND ENVIRONMENTAL CONSULTANTS

December 1, 2014

Mitch Zoll, Division Director
Indiana Department of Natural Resources
Division of Historic Preservation and Archaeology
402 West Washington Street, Room W274
Indianapolis, Indiana 46204-2739

Re: Relocation of Clay County Bridge No. 046-11-01316A (Des. No. 0800910) to Two Locations over Salt Creek, Washington Township, Brown County, Indiana

Dear Mr. Zoll:

Enclosed is an Archaeological Survey for the above-referenced project.

The report has been reviewed by INDOT Cultural Resources personnel who meet the Secretary of Interior's Professional Qualification Standards as per 36 CFR Part 61. It was their opinion the archaeological survey is acceptable, and concur with the evaluations and recommendations made by Lautzenheiser and Carson (2014). Please review the enclosed report and advise us of its acceptability and recommendations.

ASC Group appreciates the opportunity to assist you with this project. If you have questions or require additional information, feel free to reach me at 317.915.9300.

Thank you for your attention to this request.

Sincerely,

Andrew Campbell
Interim Indiana Regional Manager/Office Manager
ASC Group, Inc.

Enclosures

cc: Alan Ball, Parsons
Sean Porter, Parsons
David Moffatt, INDOT

AC/clc

9376 Castlegate Drive, Indianapolis, Indiana 46256
317.915.9300 phone 317.915.9301 fax
www.ascgroup.net

Michael R. Pence, Governor
Cameron F. Clark, Director

DNR Indiana Department of Natural Resources

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Phone 317-232-1646 • Fax 317-232-0693 · dhpa@dnr.IN.gov

December 9, 2014

Ross Nelson
Architectural Historian
ASC Group, Inc.
9376 Castlegate Drive
Indianapolis, Indiana 46256

Federal Agency: Federal Highway Administration

State Agency: Indiana Department of Transportation ("INDOT")

Re: Acknowledgment of proposal for Dual Review of the INDOT Bridge No. 046-11-01316A/NBI No. 17050 Project near the community of Bowling Green, in Washington Township, Clay County, Indiana (Des. No. 0800910; DHPA No. 10596)

Dear Mr. Nelson:

The Indiana Department of Natural Resources, Division of Historic Preservation and Archaeology ("DHPA"), which also serves as the staff of the Indiana State Historic Preservation Officer ("Indiana SHPO"), is in receipt of your letter dated November 19, 2014, transmitting INDOT's proposal under 312 IAC 20-4-11.5 for a Dual Review of the aforementioned project on SR 46 over the Eel River in Clay County, Indiana.

The division will review the information submitted under both Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. § 470f), and implementing regulations at 36 C.F.R. Part 800, and under Indiana Code 14-21-1-18 and 312 IAC 20-4. By copy of this letter, the division is providing notification of the commencement of the Dual Review to interested persons and members of the Indiana Historic Preservation Review Board. Notice of the commencement also will be posted on the division's website (www.in.gov/dnr/historic/7440.htm).

We note that we first began receiving submissions on a project under Des. No. 0800910 and involving INDOT Bridge No. 046-11-01316A/NBI No. 17050 in 2010. As was discussed at the December 4, 2014, consulting parties meeting on the current project, it appears that the preferred alternative for this bridge originally was for rehabilitation in place for continued vehicular use. Since then, we have reviewed and issued a director's letter of clearance to INDOT, under 312 IAC 20-4-11(c), in 2011 for Des. No. 1173575, emergency repairs on the bridge, and the Indiana Historic Preservation Review Board and our office were notified by INDOT in 2012, under guidelines previously approved by the Review Board, of further emergency repair work that had to be undertaken before a review could take place. We were advised by INDOT that both of those emergency repairs were to be conducted exclusively using state funds.

The circumstances surrounding the project under review today appear to be different from the circumstances surrounding the project that was proposed in 2010 specifically to rehabilitate the bridge in place for vehicular use. Based on information in the alternatives analysis submitted under Parsons Transportation Group's November 20, 2014, transmittal letter, which we received on November 21, the condition of the bridge either has deteriorated since 2010 or is worse than INDOT believed it to be in 2010. Consequently, even though a review of a project identified as Des. No. 0800910 and involving this bridge had been commenced in 2010, we think that the project is sufficiently different today and that the consulting parties under Section 106 and the interested persons and Review Board members under 312 IAC 20-4-11.5 will be given adequate information about each required step of the review process, such that it would be acceptable to review the project's state-funded aspects under the Dual Review rule (312 IAC 20-4-11.5). Because of the passage of time and because there may be Section 106 consulting parties actively participating in the review process today who were

not involved in 2010, we recommend that INDOT make available (e.g., electronically) to all Section 106 consulting parties the original historic properties report (Branigin 2010) that was cited in your November 19 letter.

We note also that, although your letter referred to this bridge as Bridge No. 046-11-01316A, the alternatives analysis submitted by Parsons Transportation Group referred to it as Bridge No. 046-11-01316C. Based on our experience with other bridge projects, we believe that the change in the letter at the end of the bridge number is simply a reflection of the modifications that have been made to this bridge between 2010 and 2014. To avoid confusion, however, we would recommend that, if possible, a single bridge number be used to refer to this bridge for the duration of this Dual Review.

We will comment shortly and by separate letter on the substantive information contained in the historic property report (Nelson, 10/27/2014) submitted with your November 19 explanatory letter, on the alternatives analysis (Prevost, 11/17/2014) submitted under Parsons Transportation Group's brief November 20 transmittal letter, and on the December 4 consulting parties meeting.

On December 3, 2014, we received a Phase Ia archaeological survey report (Lautzenheiser and Carson, 11/26/2014) for the relocation of the spans of this bridge to two locations over Salt Creek on a trail being developed in Brown County. We plan to comment separately on that report within a few weeks.

If you have any questions regarding the division's Dual Review of the INDOT Bridge No. 046-11-01316A/NBI No. 17050 Project near the community of Bowling Green in Washington Township, Clay County, please contact the DHPA. Questions about archaeological issues should be directed to Mitch Zoll at (317) 232-3492 or mzoll@dnr.IN.gov. Questions about historic buildings or structures pertaining to this review should be directed to John Carr at (317) 233-1949 or jcarr@dnr.IN.gov.

In all future correspondence regarding this project, please continue to refer to DHPA No. 10596.

Very truly yours,

Mitchell K. Zoll
Deputy State Historic Preservation Officer
Director, Division of Historic Preservation & Archaeology

MKZ:JLC:jlc

cc: Preservation Association of Clay County

emc: Daniel Prevost, Parsons Transportation Group
Allan Ball, Parsons Transportation Group
Sean Porter, Parsons Transportation Group
Andrew Campbell, ASC Group, Inc.
Ross Nelson, ASC Group, Inc.
Kevin Schwarz, Ph.D., RPA, ASC Group, Inc.
Lawrence Heil, P.E., Federal Highway Administration, Indiana Division
Patrick Carpenter, Indiana Department of Transportation
Shaun Miller, Indiana Department of Transportation
Mary Kennedy, Indiana Department of Transportation
Susan Branigin, Indiana Department of Transportation
David Moffatt, Indiana Department of Transportation
Shirley Clark, Indiana Department of Transportation
Bryan Allender, Clay County Commissioner
Board of Commissioners of Clay County, c/o Mary Jo Alumbaugh, County Recorder
Jeffrey Koehler, Clay County Historian
Vickie Mace, Clay County Historical Society
Bob Kirlin, Salt Creek Trail
Board of Commissioners of Brown County, c/o Dr. Michael Thompson, Administrator
Town Council, Town of Nashville, c/o Brenda Young, Clerk-Treasurer
Brown County Schools
Julia Pearson, Brown County Historical Society
Bob Bronson, Indiana Department of Natural Resources, Division of Outdoor Recreation

Dan Bortner, Indiana Department of Natural Resources, Division of State Parks & Reservoirs
Benjamin Clark, Indiana Department of Natural Resources, Division of State Parks & Reservoirs
Mark Dollase, Indiana Landmarks, Central Regional Office
Tommy Kleckner, Indiana Landmarks, Western Regional Office
Paul Brandenburg, Indiana Historic Spans Task Force
Dr. James L. Cooper, Professor Emeritus of History, DePauw University
Joshua Palmer, Indiana Historic Preservation Review Board
Daniel Kloc, Indiana Historic Preservation Review Board
Jim Corridan, Indiana Historic Preservation Review Board
Richard Butler, Indiana Historic Preservation Review Board
Kevin Orme, Indiana Historic Preservation Review Board
Beth McCord, Indiana Historic Preservation Review Board
Cameron Clark, Director, Indiana Department of Natural Resources and Indiana State Historic Preservation Officer
Christopher Smith, Deputy Director, Indiana Department of Natural Resources
Mitchell Zoll, Indiana Department of Natural Resources, Division of Historic Preservation & Archaeology
Chad Slider, Indiana Department of Natural Resources, Division of Historic Preservation & Archaeology
John Carr, Indiana Department of Natural Resources, Division of Historic Preservation & Archaeology

Michael R. Pence, Governor
Cameron F. Clark, Director

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Division of Historic Preservation & Archaeology•402 W. Washington Street, W274 · Indianapolis, IN 46204-2739
Phone 317-232-1646•Fax 317-232-0693 · dhpa@dnr.IN.gov

December 15, 2014

Patrick Carpenter
Cultural Resources Manager
Environmental Services
Indiana Department of Transportation
100 North Senate Avenue, Room N642
Indianapolis, Indiana 46204

Federal Agency: Federal Highway Administration

Re: Dual Review: Phase Ia Archaeological Survey Report for the Relocation of Clay County Bridge No. 046-11-01316A to Two Locations over Salt Creek in Washington Township, Brown County, Indiana. (Designation #0800910; DHPA #10596)

Dear Mr. Carpenter:

Pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f), 36 C.F.R. Part 800, and the "Programmatic Agreement among the Federal Highway Administration, the Indiana Department of Transportation, the Advisory Council on Historic Preservation, the Indiana State Historic Preservation Officer regarding the implementation of the Federal Aid Highway Program in the State of Indiana," the staff of the Indiana State Historic Preservation Officer has conducted an analysis of the materials dated December 1, 2014 and received on December 3, 2014, for the above indicated project in Brown County, Indiana.

In regard to archaeological survey report, based upon the submitted information and the documentation available to the staff of the Indiana SHPO, we concur that archaeological sites 12-Br-345, 346 and 347 do not appear to be eligible for inclusion in the National or State Registers of Historic Places. Therefore, we concur with the recommendation that further archaeological investigation is not necessary as presented in the above mentioned report.

We will comment on above ground resources once we have received the additional information requested by consulting parties. The above comments are strictly in regards to archaeological resources.

If any archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, state law (Indiana Code 14-21-1-27 and 29) requires that the discovery must be reported to the Department of Natural Resources within two (2) business days. In that event, please call (317) 232-1646. Be advised that adherence to Indiana Code 14-21-1-27 and 29 does not obviate the need to adhere to applicable federal statutes and regulations.

A copy of the revised 36 C.F.R. Part 800 that went into effect on August 5, 2004 may be found on the Internet at www.achp.gov for your reference. If you have questions about archaeological issues please contact Mitch Zoll at (317) 232-3492 or mzoll@dnr.IN.gov. If you have questions about buildings or structures please contact John Carr at (317) 233-1945 or jcarr@dnr.IN.gov. Additionally, in all future correspondence regarding the above indicated project, please refer to DHPA #16711.

Very truly yours,

Mitchell K. Zoll
Deputy State Historic Preservation Officer

MKZ:

cc: Patrick Carpenter, Manager, Cultural Resources Office, Indiana Department of Transportation
emc: Patrick A. Carpenter, INDOT - pacarpenter@indot.in.gov
Mary Kennedy, INDOT - mkennedy@indot.in.gov
Shaun Miller, INDOT - smiller@indot.in.gov
Shirley Clark, INDOT- sclark@indot.in.gov
Andrew Campbell, ASC Group
Cathy Carson, ASC Group

Michael R. Pence, Governor
Cameron F. Clark, Director

DNR Indiana Department of Natural Resources

Division of Historic Preservation & Archaeology • 402 W. Washington Street, W274 · Indianapolis, IN 46204-2739
Phone 317-232-1646 • Fax 317-232-0693 · dhpa@dnr.IN.gov

December 22, 2014

Ross Nelson
Architectural Historian
ASC Group, Inc.
9376 Castlegate Drive
Indianapolis, Indiana 46256

Federal Agency: Federal Highway Administration

State Agency: Indiana Department of Transportation ("INDOT")

Re: Historic properties report (Nelson, 10/27/2014), historic bridge alternatives analysis (Prevost, 11/17/2014), and December 4, 2014, consulting parties meeting for the Dual Review of the INDOT Bridge No. 046-11-01316C/ NBI No. 17050 Project near the community of Bowling Green, in Washington Township, Clay County, Indiana (Des. No. 0800910; DHPA No. 10596)

Dear Mr. Nelson:

The Indiana Department of Natural Resources, Division of Historic Preservation and Archaeology ("DHPA"), which also serves as the staff of the Indiana State Historic Preservation Officer ("Indiana SHPO"), has considered your letter, with enclosures, dated November 19, 2014, and received on November 21, for the aforementioned project on SR 46 over the Eel River in Clay County, Indiana.

Because this is a Dual Review, the DHPA/Indiana SHPO staff is reviewing the information submitted under both Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. § 470f), implementing regulations at 36 C.F.R. Part 800, and pertinent Section 106 programmatic agreements, as well as under Indiana Code 14-21-1-18 and 312 Indiana Administrative Code 20-4.

A great deal of information has been provided, a great many questions were raised at the December 4 consulting parties meeting, and a fair amount of additional investigation and discussion no doubt will be necessary in order to work through this consultation, especially those aspects governed by the 2006 "Programmatic Agreement Among the Federal Highway Administration, the Indiana Department of Transportation, the Indiana Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding Management and Preservation of Indiana's Historic Bridges" ("Indiana Historic Bridges PA"). Not knowing how the historic bridge alternatives analysis might be revised, and having limited ability under Federal and Indiana law to influence the outcome of this decision-making process, we do not believe that detailed comments from our office on the alternatives analysis are warranted at this time. However, we will offer some observations on the project and the process as we await further developments.

Because, as the bridge number indicates, the bridge in question is an INDOT bridge, we recommend, for the sake of clarity, that it not be referred to in the future as "*Clay County* Bridge No. 046-11-01316A." Furthermore, as we indicated in our December 9, 2014, letter, your November 19 letter indicates the bridge number is 046-11-01316A, whereas the historic bridge alternatives analysis prepared by Parsons Transportation Group refers to it as Bridge No. 046-11-01316C. Based on our experience with other bridge projects, we believe that the change in the letter at the end of the bridge number is simply a reflection of the modifications that have been made to this bridge between 2010 and 2014. Even so, consistency in stating the bridge number might help to avoid confusion.

We agree with your October 27, 2014, historic properties report ("HPR") regarding the proposed area of potential effects ("APE") for the two proposed relocation sites for the spans of INDOT Bridge No. 046-11-01316C over Salt Creek in Brown County. We also agree with the HPR, for the purposes of the review of this project, that the only two above-ground historic properties within the Brown County APE are the Ramp Creek Covered Bridge and the Brown County State Park North Gate House, both of which are thought to be eligible for the National Register of Historic Places under criteria A and C.

In our September 28, 2010, letter to INDOT, we agreed with the earlier HPR (Branigin, 8/2010) regarding the APE for the project area around the current location of INDOT Bridge No. 046-11-01316A (now 046-11-01316C) in Clay County and regarding the proposed determination that the only above-ground property within that APE was the two-span bridge, itself. We now agree, also, with the expansions of the APE for the current bridge location that are discussed in your November 19 letter, and for the purposes of this Section 106 review, we agree with your conclusion that there are no additional, historic above-ground properties within the APE expansion areas.

At the December 4 consulting parties meeting, FHWA expressed uncertainty about whether it would agree with the historic bridge alternatives analysis regarding the satisfaction of the purpose and need and the feasibility and prudence of some of the alternatives studied and asked Parsons Transportation Group for clarification. We do not recall, however, that FHWA questioned the satisfaction of the purpose and need or the feasibility and prudence of the *preliminary preferred* alternative identified in the historic bridge alternatives analysis, Alternative 5C-S (Bridge Replacement on New Alignment to South).

There seemed to be interest among some of the other consulting parties at the meeting in Alternative 3 (Rehabilitation for Continued Vehicular Use/One-Way Pair). Although the Indiana Historic Bridges PA requires consideration of that alternative in this situation, our recollection is that it has been rare in other bridge project reviews for the pairing of a historic metal truss bridge with a modern bridge to be found to be both feasible and prudent. The project involving Marion County Bridge No. 0501F carrying 86th/82nd Street over the White River in Indianapolis—which was mentioned at the meeting—might be the only recent case where the continued vehicular use of a historic truss bridge alongside a new bridge has been deemed acceptable. Indiana Landmarks suggested that it might commission a new engineering study of the feasibility and prudence of rehabilitating Bridge No. 046-11-01316C for continued vehicular use in its current location. We appreciate Indiana Landmark's willingness to fund such a study. Not being engineers, we cannot predict what the study would find. In our experience, however, it has been uncommon for outside studies to persuade the decision-making agencies to select a different preferred alternative. Another factor that comes into play where an INDOT bridge is involved is that INDOT appears not to want to own a bridge that it no longer considers useful.

We do think it would be worthwhile, as FHWA has suggested, to hold a meeting in Clay County that would be open to county officials and the public for the purpose of gauging local interest in taking ownership of the bridge, if it were to be bypassed.

We appreciate INDOT's and the Department of Natural Resources Division of Outdoor Recreation's joint efforts to contact—if we recall the number correctly—about 300 trail organizations around the state to see if there is interest in taking this bridge and relocating it to another community.

Furthermore, we can imagine what INDOT's providing the two spans of Bridge No. 046-11-01316C to the Salt Creek Trail could mean to local trail and economic development efforts. We also understand how expensive it could be to a trail project's sponsor to acquire bridges and rehabilitate and move them to the crossings where they are needed. Even so, we would prefer that splitting the spans of a two-span historic bridge be reserved as a last-resort solution to preserving historic truss spans. We would prefer, as well, to be consulted before even tentative offers of historic bridges are being made, where the future use of the trusses of a bridge would occur at different locations. We were caught by surprise by a similar situation a number of years ago involving historic Fountain County Bridge No. 63.

The historic bridge alternatives analysis at page 21 says that after the bridge is relocated, INDOT will seek the Department of the Interior to keep the bridge listed in the National Register. However, 36 C.F.R. § 60.14(b) provides a procedure for obtaining that approval, but only *before* the listed property is relocated. If the bridge were to be moved before that procedure is completed, it automatically would be deleted from the National Register. Before the Keeper of the National Register receives the specified information about the listed property, the reasons for the move, and the new

location, the state review board must first approve the continued listing. DHPA serves as the staff of the Indiana Historic Preservation Review Board and would receive the required information and transmit it to the Review Board.

We agree with the sentiment expressed by FHWA that it is important to obtain the assurance of the prospective owner of one of the trusses of the bridge that it is willing to maintain its span. We would recommend that both prospective owners be asked for such an assurance.

On December 3, 2014, we received a Phase Ia archaeological survey report (Lautzenheiser and Carson, 11/26/2014) for the relocation of the spans of this bridge to the two locations over the Salt Creek Trail being developed in Brown County. As you may know, we commented on that report in our December 15, 2014, letter to INDOT.

If you have any questions regarding our Dual Review of the INDOT Bridge No. 046-11-01316A/NBI No. 17050 Project near the community of bowling green in Washington Township, Clay County, please contact the DHPA. Questions about archaeological issues should be directed to Mitch Zoll at (317) 232-3492 or mzoll@dnr.IN.gov. Questions about historic buildings or structures pertaining to this review should be directed to John Carr at (317) 233-1949 or jcarr@dnr.IN.gov.

In all future correspondence regarding this project, please continue to refer to DHPA No. 10596.

Very truly yours,

Mitchell K. Zoll
Deputy State Historic Preservation Officer
Director, Division of Historic Preservation & Archaeology

MKZ:JLC:jlc

cc: Preservation Association of Clay County

emc: Daniel Prevost, Parsons Transportation Group
Allan Ball, Parsons Transportation Group
Sean Porter, Parsons Transportation Group
Andrew Campbell, ASC Group, Inc.
Ross Nelson, ASC Group, Inc.
Kevin Schwarz, Ph.D., RPA, ASC Group, Inc.
Lawrence Heil, P.E., Federal Highway Administration, Indiana Division
Patrick Carpenter, Indiana Department of Transportation
Shaun Miller, Indiana Department of Transportation
Mary Kennedy, Indiana Department of Transportation
Susan Branigin, Indiana Department of Transportation
David Moffatt, Indiana Department of Transportation
Shirley Clark, Indiana Department of Transportation
Bryan Allender, Clay County Commissioner
Board of Commissioners of Clay County, c/o Mary Jo Alumbaugh, County Recorder
Jeffrey Koehler, Clay County Historian
Vickie Mace, Clay County Historical Society
Bob Kirlin, Salt Creek Trail
Board of Commissioners of Brown County, c/o Dr. Michael Thompson, Administrator
Town Council, Town of Nashville, c/o Brenda Young, Clerk-Treasurer
Brown County Schools
Julia Pearson, Brown County Historical Society
Bob Bronson, Indiana Department of Natural Resources, Division of Outdoor Recreation
Dan Bortner, Indiana Department of Natural Resources, Division of State Parks & Reservoirs
Benjamin Clark, Indiana Department of Natural Resources, Division of State Parks & Reservoirs
Mark Dollase, Indiana Landmarks, Central Regional Office
Tommy Kleckner, Indiana Landmarks, Western Regional Office
Paul Brandenburg, Indiana Historic Spans Task Force
Dr. James L. Cooper, Professor Emeritus of History, DePauw University
Joshua Palmer, Indiana Historic Preservation Review Board
Daniel Kloc, Indiana Historic Preservation Review Board
Jim Corridan, Indiana Historic Preservation Review Board
Richard Butler, Indiana Historic Preservation Review Board

Kevin Orme, Indiana Historic Preservation Review Board
Beth McCord, Indiana Historic Preservation Review Board
Cameron Clark, Director, Indiana Department of Natural Resources and Indiana State Historic Preservation Officer
Christopher Smith, Deputy Director, Indiana Department of Natural Resources
Mitchell Zoll, Indiana Department of Natural Resources, Division of Historic Preservation & Archaeology
Chad Slider, Indiana Department of Natural Resources, Division of Historic Preservation & Archaeology
John Carr, Indiana Department of Natural Resources, Division of Historic Preservation & Archaeology

Michael R. Pence, Governor
Cameron F. Clark, Director

DNR Indiana Department of Natural Resources

Division of Historic Preservation & Archaeology • 402 W. Washington Street, W274 · Indianapolis, IN 46204-2739
Phone 317-232-1646 • Fax 317-232-0693 · dhpa@dnr.IN.gov

March 5, 2015

SR 46-Eel River Project
c/o Parsons Transportation Group
101 West Ohio Street, Suite 2121
Indianapolis, Indiana 46204

Federal Agency: Federal Highway Administration ("FHWA")

State Agency: Indiana Department of Transportation ("INDOT")

Re: DUAL REVIEW: January 29, 2015, public meeting about the SR 46 bridge over the Eel River (INDOT Bridge No. 046-11-01316C/NBI No. 17050) near the community of Bowling Green, in Washington Township, Clay County, Indiana (Des. No. 0800910; DHPA No. 10596)

Dear Sir or Madam:

The Indiana Department of Natural Resources, Division of Historic Preservation and Archaeology ("DHPA"), which also serves as the staff of the Indiana State Historic Preservation Officer ("Indiana SHPO"), wishes to comment on the January 29 public meeting in Bowling Green, pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended (recently recodified at 54 U.S.C. § 306108), implementing regulations at 36 C.F.R. Part 800, and pertinent Section 106 programmatic agreements, as well as under Indiana Code 14-21-1-18 and 312 Indiana Administrative Code 20-4.

We thank FHWA, INDOT, and Parsons Transportation Group for having held the January 29 public meeting. Giving the residents of Clay County and others from that part of the state an opportunity to learn about and to comment on the project and how it might affect this Select Bridge is important.

Similarly, we welcome INDOT's extension of the timeframe in which another party could propose taking ownership of the SR 46 bridge over the Eel River from only 60 days after the January 29 meeting until approximately the first week of August 2015, when the public hearing on the project is anticipated to be held.

While accurately depicting the condition of some of the rusted connections and braces on the current bridge, the slides used in the presentation on January 29 might have given some in the audience the impression that such deterioration is not just widespread but typical of the connection plates, interior gusset plates, lateral bracing, truss vertical members, and chords. Some commented that all trucks (not just those over 14 tons, as the posted signs indicate) should be prohibited from using that crossing until the replacement bridge is open to traffic, and some in the audience expressed the opinion that the bridge should be closed to all traffic. A misimpression about the bridge's condition could cause the public to believe that the bridge would be unsafe for all uses, even pedestrian. Our understanding is that, while the condition of the bridge is poor, it is not yet such a safety risk that it would need to be closed until at least 2017. However, if the condition deteriorates more rapidly than expected, we would ask that all Section 106 consulting parties be notified of that discovery immediately.

During the explanation on January 29 of how the bridge could be moved, it was stated that the two trusses act independently and can be used separately. That is true from a purely engineering perspective, but it overlooks the reality that the bridge is listed in the National Register of Historic Places as a two-span structure. Emphasizing that the trusses can be used separately could cause the public to infer that using the trusses in two different locations also would result in

two historic bridges being saved. That seems unlikely. In our experience, two halves of a National Register-eligible and -listed structure do not equate to either one listed or eligible structure or two listed or eligible structures.

Furthermore, as the U.S. Department of the Interior has written:

> Properties listed in the National Register should be moved only when there is no feasible alternative for preservation. When a property is moved, every effort should be made to reestablish its historic orientation, immediate setting, and general environment. [36 C.F.R. § 60.14(b)(1)]

The National Register nomination, which refers to the bridge as Indiana State Highway Bridge 46-11-1316 or the Bowling Bridge, indicates that the bridge is listed under Criterion A for its transportation significance in the settlement and development of Clay County. If the bridge must be moved, then we would want it to remain listed during and after the move if at all possible (see 36 C.F.R. § 60.14[b][2]). If the bridge were to be moved before that procedure involving the Keeper of the Register is completed, it automatically would be deleted from the National Register (36 C.F.R. § 60.14[b][4]).

We think it is possible that the bridge, as it exists currently, also might be eligible under Criterion C for engineering significance, and we think it would be essential for INDOT to make a case for Criterion C significance when it submits to the Indiana SHPO the information necessary to attempt to keep the bridge listed in the National Register, if relocation is proven to be the only feasible alternative. Recent experience with moved properties has informed us that the U.S. Department of the Interior, National Park Service, considers them eligible under Criterion C, only, if at all. Although integrity of location and setting are not irrelevant to a property's being eligible under Criterion C, those kinds of integrity might not be as important as they would be to a property that is eligible only under Criterion A. Even though many Parker through trusses once stood on state and Federal highways in Indiana, they are becoming increasingly rare, as INDOT has been actively replacing them in recent years. The historical value of a once-plentiful type of bridge rises as the numbers of examples of that type decrease. Thus, the reference during the presentation to this bridge's having been built from a standard design may understate its current engineering significance.

The various requirements for keeping a property that will be moved listed in the National Register are spelled out in 36 C.F.R. § 60.14(b), and we will not discuss them all in this letter. We would look to INDOT to provide the necessary documentation in support of the move and of retention on the National Register. However, we should mention that since the SR 46 bridge was nominated to the National Register as a State nomination (i.e., the nomination originated in Indiana, rather than in the Federal government), the Indiana Historic Preservation Review Board, in addition to the Indiana SHPO, also would need to review the proposed move. Then the Indiana SHPO would submit the documentation to the Keeper of the National Register in the National Park Service, and await the Keeper's response. If that response is favorable, then documentation of the bridge after the move also would need to be prepared by INDOT and submitted to the Keeper by the Indiana SHPO. Given the short timeframe that INDOT has laid out for constructing a new bridge at this crossing of the Eel River, we would encourage INDOT not to wait until time to move the bridge has almost expired before beginning this National Register retention approval process, as it could take several months.

My staff recalls hearing during the January 29 presentation that 25 years after the bridge spans are moved, the two spans would need about $500,000 worth of cleaning and painting, although we are unable to find that in the slides of the presentation. We assume that figure takes into account anticipated inflation of the dollar over 25 years, or, in other words, that the present value of that cost figure would be considerably less. In any event, it is not a figure that we recall having heard or read before. We wonder whether that figure also includes desirable, but not necessarily essential, maintenance measures that even a vehicular bridge would be unlikely to receive just 25 years after a thorough rehabilitation. Are INDOT's metal truss bridges typically cleaned and painted every 25 years? Our concern is that if the $500,000 figure is what the cleaning and painting would cost in 2040 or includes work that might not be essential, then stating that in another 25 years $500,000 would have to be spent could present such a bleak picture of what it would take to preserve the bridge for the long term that it would diminish the chances that anyone would want to take responsibility for this bridge—or any other metal truss bridge that is, or will become, available for new ownership or relocation.

It is apparent that INDOT does not want to retain ownership of this Select bridge after it is bypassed to the south by the new bridge, but we ask that FHWA and INDOT give that option serious consideration. That option would be a second variation on a combination of Alternative 4 (leaving the current bridge in place and restricting it to non-vehicular use) and

Alternative 5C-S (bypassing the current bridge's location to the south with a new vehicular bridge—the preliminary preferred alternative). The first variation, which was discussed on January 29, was for another entity, such as Clay County, to take responsibility for the current bridge. Under the second variation, INDOT could maintain the current bridge as a roadside park. We sense that INDOT is reluctant to do so. However, if a bridge owner wants to replace a Select bridge that it owns using FHWA funds, it appears to us that, according to the 2006 Indiana Historic Bridges Programmatic Agreement, the bridge owner must preserve that bridge if no outside party comes forward to take ownership of and responsibility for the bridge. If moving pieces of a National Register-listed Select bridge to different locations would destroy the bridge's listing and eligibility for listing (for probably 50 years), is that a prudent alternative as long as the bridge owner's preserving the bridge in place as a unit is feasible and prudent?

A member of the audience commented that if the SR 46 bridge were left in place after being bypassed, children could play on it and possibly get hurt. We acknowledge that possibility. It would be true for a bridge on a trail, as well. Injury of that kind is usually a possibility to some degree, even on bridges that are still in vehicular use. We think that the possibility here might be somewhat less than usual, given that the new bypass bridge would be immediately adjacent to the current bridge, rather than in a remote location that, for the most part, is out of the public view.

The January 29 presentation also brought up hydraulics issues that leaving the current SR 46 bridge in place while bypassing it with a new bridge are thought by the engineers to create. One of those was the anticipated need to align the new bridge's west abutment so as to be parallel with the west abutment of the current bridge. As a result, scouring of the new abutment is anticipated, which would require placement of rip-rap for protection. In our experience, rip-rap placement, for either new or rehabilitated bridges, is not unusual. Furthermore, the historic bridge alternatives analysis (Prevost, 11/17/2014) acknowledged that a detailed hydraulic analysis had not been done at that time. The January 29 presenters seemed to be more certain of the need to properly align the two bridges' west abutments than did the November alternatives analysis. Has that detailed hydraulic analysis been completed since November?

We would like to be informed of any formal decision that the Board of Commissioners of Clay County might have made or yet make and reported to you regarding the possibility of the County's taking ownership of the SR 46 bridge. Similarly, if any other party has requested to take ownership and responsibility for the bridge (in addition to Salt Creek Trail/Board of Commissioners of Brown County and Brown County State Park), we would appreciate being advised of that request.

If you have any questions regarding our Dual Review of the SR 46-Eel River Project near the community of Bowling Green in Washington Township, Clay County, please contact DHPA. Questions about historic buildings or structures pertaining to this review should be directed to John Carr at (317) 233-1949 or jcarr@dnr.IN.gov. Questions about archaeological issues should be directed to Mitch Zoll at (317) 232-3492 or mzoll@dnr.IN.gov.

In all future correspondence regarding this SR 46-Eel River Project (Des. No. 0800910), please refer to DHPA No. 10596.

Very truly yours,

Mitchell K. Zoll
Deputy State Historic Preservation Officer
Director, Division of Historic Preservation & Archaeology

MKZ:JLC:PCD:jlc

cc: Preservation Association of Clay County

emc: Daniel Prevost, Parsons Transportation Group
Allan Ball, Parsons Transportation Group
Sean Porter, Parsons Transportation Group
Andrew Campbell, ASC Group, Inc.
Ross Nelson, ASC Group, Inc.
Kevin Schwarz, Ph.D., RPA, ASC Group, Inc.

Lawrence Heil, P.E., Federal Highway Administration, Indiana Division
Rickie Clark, Indiana Department of Transportation
Tony Jones, Indiana Department of Transportation
Jessica Miller, Indiana Department of Transportation
Brock Ervin, Indiana Department of Transportation
Patrick Carpenter, Indiana Department of Transportation
Shaun Miller, Indiana Department of Transportation
Mary Kennedy, Indiana Department of Transportation
Susan Branigin, Indiana Department of Transportation
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Bryan Allender, Clay County Commissioner
Tony Fenwick, Clay County Commissioner
Paul Sinders, Clay County Commissioner
Board of Commissioners of Clay County, c/o Mary Jo Alumbaugh, County Recorder
Jeffrey Koehler, Clay County Historian
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Board of Commissioners of Brown County, c/o Dr. Michael Thompson, Administrator
Town Council, Town of Nashville, c/o Brenda Young, Clerk-Treasurer
Brown County Schools
Julia Pearson, Brown County Historical Society
Bob Bronson, Indiana Department of Natural Resources, Division of Outdoor Recreation
Dan Bortner, Indiana Department of Natural Resources, Division of State Parks & Reservoirs
Benjamin Clark, Indiana Department of Natural Resources, Division of State Parks & Reservoirs
Mark Dollase, Indiana Landmarks, Central Regional Office
Tommy Kleckner, Indiana Landmarks, Western Regional Office
Paul Brandenburg, Indiana Historic Spans Task Force
Dr. James L. Cooper, Professor Emeritus of History, DePauw University
Joshua Palmer, Indiana Historic Preservation Review Board
Daniel Kloc, Indiana Historic Preservation Review Board
Jim Corridan, Indiana Historic Preservation Review Board
Richard Butler, Indiana Historic Preservation Review Board
Kevin Orme, Indiana Historic Preservation Review Board
Beth McCord, Indiana Historic Preservation Review Board
Cameron Clark, Director, Indiana Department of Natural Resources and Indiana State Historic Preservation Officer
Christopher Smith, Deputy Director, Indiana Department of Natural Resources
Mitchell Zoll, Indiana Department of Natural Resources, Division of Historic Preservation & Archaeology
Chad Slider, Indiana Department of Natural Resources, Division of Historic Preservation & Archaeology
Paul Diehold, Indiana Department of Natural Resources, Division of Historic Preservation & Archaeology
John Carr, Indiana Department of Natural Resources, Division of Historic Preservation & Archaeology

INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N642
Indianapolis, Indiana 46204

PHONE: (317) 233-2061
FAX: (317) 233-4929

Michael R. Pence, Governor
Brandye L. Hendrickson, Commissioner

May 29, 2015

Paul Diebold
Assistant Director, Preservation Services
Division of Historic Preservation and Archaeology
Staff of the Indiana State Historic Preservation Officer
402 W. Washington St., Room W274
Indianapolis, IN 46204

RE:	Des. Nos.:	0800910
	Roadway:	SR 46
	Project Description:	Bridge No. 046-11-01316C over the Eel River, 2.8 miles east of SR 59
	County:	Clay
	DHPA No.	10596

Dear Mr. Diebold,

As my staff has discussed with you and your colleagues in the Environmental Review section of your office, INDOT is proposing, with Federal Highway Administration ("FHWA") funding, a project involving Bridge No. 046-11-01316C. As you are aware, Bridge No. 046-11-01316C was listed in the National Register of Historic Places ("National Register") in 2000 under Criterion A for its association with events in the settlement and economic development of Clay County, Indiana. As part of the *Indiana Historic Bridge Inventory*, the bridge was determined to be Select. As you are probably aware, Select bridges are historic bridges that are most suitable for preservation and are excellent examples of a given type of historic bridge. The Individual Review conducted for the bridge as part of the *Inventory* process specifically designated the bridge "Select for Non-Vehicular Use," indicating it is better suited for bicycle and/or pedestrian use than for vehicles. Therefore, INDOT's preferred alternative for this bridge does involve the preservation of the structure for pedestrian use.

INDOT is proposing to dismantle and move the two spans of the bridge from its existing location in Clay County to two new locations along a trail in Brown County, Indiana. The existing bridge would be rehabilitated and relocated for use on the Salt Creek Trail, a 2.5-mile multi-use trail connecting Nashville to Brown County State Park, two heavily visited tourist destinations. The purpose of the trail project is to provide an alternative transportation mode for pedestrians that are currently using SR 46 to travel to land uses in and between Nashville and Brown County State Park. The conflict between pedestrians and the motoring public is currently unsafe. The trail will reduce traffic congestion between the County's three largest motels and the shops in Nashville by providing pedestrian access rather than visitors driving to the shopping areas. In addition, the trail will provide a safe means of transportation for the youth of Nashville and Brown County as it will connect the Brown County School Corporation sports facilities. The trail has been under development for several years, with construction of the first phase already underway. The project includes two crossings of Salt Creek, approximately 0.7 mile apart from one another. The two spans of the existing bridge would be separated to cross Salt Creek at these two locations.

A detailed alternatives analysis regarding the potential options for this bridge was undertaken and was reviewed by your colleagues in the Environmental Review section. We do want to summarize here a few of the alternatives that were examined. The option to rehabilitation the bridge for continued vehicular use was examined. However, the bridge was originally designed with an H-20 structural capacity (20-ton truck) and current design standards require accommodation for HS- 20 structural capacity (36 ton truck); therefore, this alternative would require a Level 1

design exception from INDOT and FHWA. Based on this bridge's location on a National Truck Route and the number of heavy trucks known to use the bridge, INDOT and FHWA have indicated that this design exception would not be approved.

The option of keeping the bridge in place in Clay County and bypassing it with a new bridge was explored both from the perspective of the existing bridge serving has one half of a one-way pair of bridges and with the existing bridge being confined to pedestrian use. The one-way pair alternative was dismissed because it would require the same Level 1 design exception from INDOT and FHWA for structural capacity as indicated above, which would not be approved.

The bypass for pedestrian use alternative at the bridge's existing location was dismissed based on the location of the bridge in a sparsely populated area. INDOT believes that the pedestrian usage of the existing bridge would be minimal and provide little value to the general public as a historic site compared to its potential use at other locations. At a December 4, 2014 meeting with consulting parties, a request was made to INDOT to conduct outreach to Clay County and the public to determine the level of interest in retaining the bridge in its current location. On January 29, 2015, INDOT held a public meeting in Bowling Green to provide an overview of the project, including the bridge's condition, the alternatives under consideration, and the potential to relocate the bridge to Brown County. The deadline for a party to step forward and take responsibility for the bridge will extend to the time of the project's public hearing, currently anticipated for the first week of August 2015. The final decision regarding the preferred alternative and/or the future location of the existing bridge will not be made before that time. However, to date, no parties have stepped forward to take responsibility for the structure and retain it in place.

At the Salt Creek Trail location, there is a strong demand for a pedestrian facility. It is anticipated that on the Salt Creek Trail, the span to be located adjacent to SR 46 at Eagle Park would be owned and maintained by Brown County, while the span located within Brown County State Park would be owned and maintained by DNR. Each party will be required to sign an agreement committing to maintain their respective structures for a minimum of 25 years. However, it is anticipated that, based on the expected visitation levels, the bridges would be retained far beyond that minimum. DNR and Brown County have each submitted a letter of intent to take responsibility for the bridge spans.

It should also be noted that an approach that would keep the two spans together as part of the Salt Creek Trail was evaluated; however, the topography, hydraulic conditions, and presence of wetlands in the area, make that option impractical. Preliminary investigations confirmed that using the spans at two separate locations was the only practical option.

Based on coordination with your colleagues in the Environmental Review section, there is concern that relocation of the trusses would result in their immediate removal from the National Register. There is also concern that, because the bridge is listed under Criterion A for its transportation significance in the settlement and development of Clay County, that its relocation to another county would make it ineligible for continued listing. As such, your colleagues asked that INDOT initiate a two-fold request to your office: (1) that the bridge also be considered eligible under Criterion C based on its engineering significance and (2) that the bridge keep its National Register listing during and following any relocation. This letter and its attachments serve as that request.

Please find attached two sets of documents that address the two aspects of National Register listing discussed above. The first packet of information includes National Register continuation pages that we think make the case for Criterion C eligibility. The second packet of information includes the request to retain National Register listing of the bridge during and following the proposed relocation to Brown County. Upon your concurrence with this information, we request that both sets of information be submitted to the Indiana Historic Preservation Review Board ("Review Board") for approval at their July 22, 2015 meeting to then be forwarded to the Keeper of the National Register in the National Park Service.

We look forward to your review of the attached information. We eagerly await your recommendation as to whether you think that Bridge No. 046-11-01316C is eligible for listing in the National Register under Criterion C in addition to its current listing under Criterion A, and whether you think the bridge may remain listed in the National Register during and after a proposed move to Brown County.

Due to the urgent need for a permanent solution for the bridge at its current location, we are happy to meet with you at your convenience should you have any questions about the attached information. To keep our current project schedule for this very important project, submittal to the Review Board for approval at their July 22, 2015 is imperative. We are ready and willing to make any suggested edits to the enclosed documents that you feel are necessary before submittal to the Review Board as soon as you relay them to us. We truly appreciate your assistance on this matter. If you have any questions, please do not hesitate to contact Mary Kennedy of my staff at 317-232-5215 or mkennedy@indot.in.gov.

Sincerely,

Patrick Carpenter

Patrick Carpenter, Manager
Cultural Resources Office
Environmental Services

PAC/MEK/mek
Enclosure

cc: ES project files

emc: Des. No. 0800910 Consulting Parties
Tony Jones, INDOT
Jessica Miller, INDOT
Larry Heil, FHWA
Dan Prevost, Parsons
Sean Porter, Parsons

Michael R. Pence, Governor
Cameron F. Clark., Director

DNR Indiana Department of Natural Resources

Division of Historic Preservation & Archaeology•402 W. Washington Street, W274•Indianapolis, IN 46204-2739
Phone 317-232-1646•Fax 317-232-0693•dhpa@dnr.IN.gov•www.IN.gov/dnr/historic

June 16, 2015

Alan Plunkett
District Deputy Commissioner, Crawfordsville District
Indiana Department of Transportation
41 W 300 N, PO Box 667
Crawfordsville, IN 47933

Regarding: Relocation of Indiana State Highway Bridge 46-11-1316

We have received documentation for the relocation of the above-named property that will be considered by the Indiana Historic Preservation Review Board. The property is currently listed in the National Register of Historic Places. The purpose of this letter is to afford you an opportunity to comment on the relocation.

The Indiana Division of Historic Preservation and Archaeology would like to inform you that the above mentioned property, in which you have an interest, has been proposed for nomination to the National Register of Historic Places. The Indiana Historic Preservation Review Board will consider the nomination during their meeting on

July 22, 2015, 2:00 PM, at Indiana Government Conference Center,
302 W. Washington Street, Conference Room C, Indianapolis, Indiana

The meeting is open to the public and you are welcome to attend. We welcome your comments, favorable or unfavorable, regarding the application. Please address written comments to:

Cameron F. Clark, State Historic Preservation Officer
Division of Historic Preservation and Archaeology
402 West Washington Street, Room W274
Indianapolis, Indiana 46204-2739

Please send your comments on or before the above meeting date.

You may call our office at 317-232-1646, or visit our web site at www.in.gov/dnr/historic for more information and a copy of the National Register application form for the property.

The National Register of Historic Places
The National Register is the Federal Government's official list of prehistoric and historic properties worthy of preservation. In Indiana, this program is administered by the Department of Natural Resources, Indiana Division of Historic Preservation and Archaeology. The criteria used to judge a property's eligibility for the National Register and the results of listing are discussed in the enclosure.

Listing in the National Register provides recognition and assists in preserving our nation's heritage. It does not prevent a private owner from altering, demolishing, or disposing of the property as he wishes, provided that no federal license, permit, or funding is involved. Owners of National Register listed properties that are income-producing are eligible to apply for Federal tax credits for qualified historic rehabilitation efforts. This and other results of listing are explained further on the enclosure. After a National Register application is received by our office, it is processed and considered by the Indiana Historic Preservation Review Board. The board will either reject or approve the nomination of the property to the National Register, based on its merits relative to the criteria included on the enclosure.

Private Property Owner Concurrence or Objection
Owners of private properties nominated to the National Register of Historic Places have an opportunity to concur in or object to listing, in accord with the National Historic Preservation Act and Federal regulations 36 CFR Part 60. Any owner or partial owner of private property who chooses to object to listing shall submit to the State Historic Preservation Officer a notarized statement certifying that the party is the sole or partial owner of private property, as appropriate, and objects to the listing. For a single privately owned property with one owner, the property will not be listed if the owner objects. For properties with multiple owners, the property will not be listed if a majority of the private property owners object. Each owner or partial owner of private property has one vote regardless of what part of the property or how many properties that party owns. Each owner may vote regardless of whether their property contributes to the significance of the historic district. If you choose to object to the listing of your property, submit a *notarized* letter of objection to the State Historic Preservation Officer (address above), by the date indicated on the first page of this letter. If the property or district cannot be listed because the owner or a majority of private property owners objects, the State Historic Preservation Officer will submit the nomination to the Keeper of the National Register for a determination of the eligibility of the property for inclusion in the National Register. If the property is then determined eligible for listing, although not formally listed, Federal agencies will be required to allow the Advisory Council on Historic Preservation an opportunity to comment before the agency may fund, license, or assist a project which will affect the property.

Public Officials - Your Right to Comment
Local governments, public agencies, and other interested parties as well as property owners are welcome to comment on this proposed National Register nomination. Comments regarding the significance and eligibility of the property or district for the National Register will be considered by the Indiana Historic Preservation Review Board as well as the State Historic Preservation Officer. To ensure consideration, comments should be sent before the Indiana Historic Preservation Review Board considers this nomination (see page one of this notice for the date of the Review Board meeting and for the address to which comments should be sent).

Indiana Register of Historic Sites and Structures (State Register)
Unless objections are received within thirty (30) days from the date of this letter, the property indicated in this letter will be listed in the Indiana Register of Historic Sites and Structures, independently of the review board's decision on nomination to the National Register. If objections are received, the board will consider the application at the above referenced meeting, along with the historical, archaeological, architectural, or cultural merits of the property, and any staff comments. The final decision regarding any State Register nomination shall be made by the review board.

Listing in the Indiana Register of Historic Sites and Structures qualifies an owner of private property who has State of Indiana tax liability to apply for certain tax benefits. Programs include the Residential Historic Rehabilitation Credit or the Historic Rehabilitation Tax Credit (for commercial properties). Allotment of credits to operate the program depends on budgeting by the Indiana General Assembly. Contact our office or web site for more information.

Listing in the Indiana Register of Historic Sites and Structures provides protection for the property. All state- funded or state-assisted construction which will adversely impact historic properties owned by the State of Indiana must be reviewed by the Indiana Historic Preservation Review Board. Additionally, if a state-funded or state-assisted project will impact historic properties that are listed on the Indiana Register of Historic Sites and Structures, the project must be reviewed by the Indiana Historic Preservation Review Board. For more information, contact our office or web site.

A copy of the nomination including boundaries and map, and information on the federal and State of Indiana tax credit programs or the State and National Register programs may be obtained by calling 317/232-1646, by writing to the Division of Historic Preservation and Archaeology, 402 West Washington Street, Room W274, Indianapolis, Indiana 46204-2739, or by visiting our web site, www.in.gov/dnr/historic.

Very truly yours,

Cameron F. Clark
State Historic Preservation Officer

FDH:pcd-IL

Enclosure: Criteria for Evaluation / Results of Listing sheet

NATIONAL REGISTER OF HISTORIC PLACES
Criteria for Evaluation

The following criteria are designed to guide states, Federal agencies, and the Secretary of the Interior in evaluating entries for the National Register.

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, material, workmanship, feeling, and association, and:

A. that are associated with events that have made a significant contribution to the broad patterns of our history; or

B. that are associated with the lives of persons significant in our past; or

C. that embody the distinctive characteristics of a type, period, or method of construction, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. that they yielded or may be likely to yield information important in prehistory or history.

Ordinarily, cemeteries, birthplaces, or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the last 50 years shall not be considered for the National Register. Such properties will qualify if they are integral parts of districts that meet the criteria, or if they fall within the following categories:

A. a religious property deriving primary significance from architectural or artistic distinction or historical importance; or

B. a building or structure removed from its original location but which is the surviving structure most importantly associated with a historic person or event; or

C. a birthplace or grave of a historic figure of outstanding importance, if there is no other appropriate site or building directly associated with his productive life; or

D. a cemetery that derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or

E. a reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or

F. a property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own historical significance; or

G. a property achieving significance within the past 50 years, if it is of exceptional importance.

INDIANA DEPARTMENT OF TRANSPORTATION

Request to move the SR 46 Bridge over the Eel River
Bridge No. 046-11-01316C
from Clay County, Indiana to Brown County, Indiana

Related to INDOT Des. No. 0800910

Prepared per 36 CFR § 60.14 (b)(1)

by INDOT Cultural Resources Office staff

Contact: Mary Kennedy, mkennedy@indot.in.gov

May 2015

Introduction

Per 36 CFR § 60.14 (b)(1), properties listed in the National Register of Historic Places (National Register) should be moved only when there is no feasible alternative for preservation. Additionally, when a property is moved, every effort should be made to reestablish its historic orientation, immediate setting, and general environment.

As part of the Indiana Department of Transportation (INDOT)'s project Des. No. 0800910, with funding provided by the Federal Highway Administration (FHWA), INDOT has identified a preferred alternative that calls for dismantling and moving the two spans of the National Register-listed State Bridge No. 046-11-01316C from its existing location in Clay County to two new locations along a trail in Brown County, Indiana.

Per 36 CFR § 60.14 (b)(2), if it is proposed that a property listed in the National Register be moved and the State Historic Preservation Officer (SHPO) wishes the property to remain in the National Register during and after the move, the SHPO shall submit documentation to the National Park Service (NPS) prior to the move. Also, per 36 CFR § 60.14 (b)(3), any such proposal with respect to the new location shall follow the required notification procedures, shall be approved by the State Historic Preservation Review Board (Review Board) if it is a State nomination and shall continue to follow normal review procedures. The Keeper of the National Register (Keeper) shall also follow the required notification procedures for nominations. The Keeper shall respond to a properly documented request within 45 days of receipt from the SHPO.

In a letter to INDOT's consultant, Parsons Transportation Group (Parsons), dated March 5, 2015, the SHPO stated that if Bridge No. 046-11-01316C must be moved, "then we would want it to remain listed during and after the move if at all possible." As such, INDOT has prepared the following information to aid in the Indiana SHPO's required documentation submittal to the Review Board and Keeper in order for Bridge No. 046-11-01316C to remain in the National Register during and after the move.

Reasons for the proposed move of Bridge No. 046-11-01316C - per 36 CFR § 60.14 (b)(2)(i)

Bridge No. 046-11-01316C was listed in the National Register National Register in 2000. As part of the *Indiana Historic Bridge Inventory*, the bridge was determined to be Select. Select bridges are historic bridges that are most suitable for preservation and are excellent examples of a given type of historic bridge. The Individual Review conducted for the bridge as part of the *Inventory* process specifically designated the bridge "Select for Non-Vehicular Use," indicating it is better suited for bicycle and/or pedestrian use than for vehicles.

Major rehabilitation work is needed on Bridge No. 046-11-01316C at this time because nearly all steel members show some amount of rusting and/or minor section loss and the lower portion of all sway bracing has been removed due to continued collision damage. The deteriorated condition of the superstructure has required two closures of the bridge in recent years. In 2011 the bridge was closed to traffic requiring INDOT to complete repair work to some gusset plates and floor beams. In 2012 it was closed again after in-depth inspections revealed additional concerns. Additional gusset plate repairs were undertaken to reopen the bridge.

A detailed alternatives analysis for this bridge summarizing the bridge's existing conditions and exploring rehabilitation/re-use options was prepared by INDOT's consultant (Parsons, 5-21-15). A summary is provided below. The full text of the alternatives analysis can be found in Appendix A. The appendices of

the alternatives analysis are not included since they are over 450 pages long, but they are available upon request.

Despite its Select designation for Non-Vehicular Use, INDOT nonetheless examined the rehabilitation option to keep the bridge in continued vehicular use. This alternative would be expected to extend the life of the structure by approximately 25 years and would undertake the following work:

- Replacement of
    - Approximately 80% of lower chord members;
    - All gusset plates at the end bents and center pier;
    - Approximately 50% of other gusset plates;
    - Approximately 75% of splice plates, cover plates, and batten plates;
    - Approximately 50% of the lower lateral cross bracing and corner support angles;
    - Approximately 25% of vertical members;
    - Floor beams at each end bent and pier;
    - Existing bridge deck;
    - All bridge railing;
    - Rivets with round-headed bolts where members are replaced;
    - Exterior stringers (once the deck is removed additional stringers may be identified for replacement);
- Reinstallation of portal and sway bracing;
- Cleaning and painting of the entire bridge; and
- Patching of concrete on the abutments and center pier.

This alternative would be designed to meet "3R" (Resurfacing, Restoration, and Rehabilitation) standards as defined in the *Indiana Design Manual*. Due to the nature of truss bridges, it is not possible to address deficiencies related to the width of the structure without completely reconstructing the bridge. As such, design exceptions for lane, shoulder, and clear roadway width would be required. The bridge was originally designed with an H-20 structural capacity (20-ton truck) and the rehabilitation would restore this capacity. However, current design standards require accommodation for HS- 20 structural capacity (36 ton truck); therefore, this alternative would require a Level 1 design exception from INDOT and FHWA. Based on this bridge's location on a National Truck Route and the number of heavy trucks known to use the bridge, INDOT and FHWA have indicated that this design exception would not be approved. Therefore, this is not a prudent and feasible alternative.

The alternative to construct a new bridge parallel to the existing bridge and rehabilitate the existing bridge, with each structure carrying a single lane of traffic, was examined. This alternative includes constructing a new bridge approximately 20' to the south of the existing structure to carry eastbound traffic, retaining westbound traffic on the existing structure. The new bridge would be constructed to accommodate future 2-way travel, for the time when the existing bridge can no longer be maintained. The existing bridge would be rehabilitated in the same way described above with the same service life expectations. It would also have the same structural capacity limitations and would still require a Level 1 design exception. Additionally, this alternative is very costly. Therefore, this is not a prudent and feasible alternative.

INDOT is proposing to dismantle and move the two spans of the bridge from its existing location in Clay County to two new locations along a trail in Brown County, Indiana. The existing bridge would be relocated and rehabilitated for use on the Salt Creek Trail, a 2.5-mile multi-use trail connecting Nashville to Brown County State Park (BCSP), two heavily visited tourist destinations. The purpose of the trail project is to provide an alternative transportation mode for pedestrians that are currently using SR 46 to

travel to land uses in and between Nashville and BCSP. The conflict between pedestrians and the motoring public is currently unsafe. The trail will reduce traffic congestion between the County's three largest motels and the shops in Nashville by providing pedestrian access rather than visitors driving to the shopping areas. In addition, the trail will provide a safe means of transportation for the youth of Nashville and Brown County as it will connect the Brown County School Corporation sports facilities. The trail has been under development for several years, with construction of the first phase already underway. The project includes two crossings of Salt Creek, approximately 0.7 mile apart from one another. The two spans of the existing bridge would be separated to cross Salt Creek at these two locations.

The option of keeping the bridge in place at or near its original location in Clay County as a pedestrian structure and bypassing it with a new bridge was explored. This alternative was dismissed based on the location of the bridge in a sparsely populated area. A sidewalk or multi-use path could be provided from the nearby unincorporated town of Bowling Green to the bridge. The town is located approximately 0.25 mile to the east of the existing bridge with a population of approximately 250. Although it is the closest population center, Bowling Green does not commonly draw visitors from other areas. In 2009, INDOT reached out to Clay County regarding the possibility of relocating the bridge immediately adjacent to the existing location so that the County could create a park with the bridge as a feature. Clay County indicated that they had no interest in creating a park facility utilizing the bridge.

At a December 4, 2014 meeting with Consulting Parties, a request was made to INDOT to conduct outreach to Clay County and the public to determine the level of interest in retaining the bridge in its current location. On January 29, 2015, INDOT held a public meeting in Bowling Green to provide an overview of the project, including the bridge's condition, the alternatives under consideration, and the potential to relocate the bridge to Brown County. The deadline for a local party to step forward and take responsibility for the bridge was originally set as March 30, 2015; however, based on comments received at the meeting and during the comment period, INDOT extended this deadline to the time of the public hearing, currently anticipated for the first week of August 2015, a period of more than six months from the date of the public meeting. To date, no parties have stepped forward to take responsibility for the structure and retain it in place.

INDOT believes that the pedestrian usage of the existing bridge in its current location would be minimal and provide little value to the general public as a historic site compared to its potential use at other locations. At the Salt Creek Trail location, there is a strong demand for a pedestrian facility. When complete, it is anticipated that approximately 10,000 people will use the trail each year. It is anticipated that on the Salt Creek Trail, the span to be located adjacent to SR 46 at Eagle Park would be owned and maintained by Brown County, while the span located within BSCP would be owned and maintained by DNR. Each party will be required to sign an agreement committing to maintain their respective structures for a minimum of 25 years. However, it is anticipated that, based on the expected visitation levels, the bridges would be retained far beyond that minimum. DNR and Brown County have each submitted a letter of intent to take responsibility for the bridge spans.

It should also be noted that an approach that would keep the two spans together as part of the Salt Creek Trail was evaluated; however, the topography, hydraulic conditions, and presence of wetlands in the area, make that option impractical. Preliminary investigations confirmed that using the spans at two separate locations was the only practical option.

Effect of the move on Bridge No. 046-11-01316C's historical integrity - per 36 CFR § 60.14 (b)(2)(ii)

Given the decreased loading associated with pedestrian use, the extent of rehabilitation of Bridge No. 046-11-01316C for use on the Salt Creek Trail would not be quite as extensive as required for vehicular

use. The scope of the rehabilitation described here is based on visual inspection and engineering judgment only and includes:

- Replacement of:
  - Approximately 25% of lower chord members;
  - All gusset plates at the end bents and center pier;
  - Approximately 50% of other gusset plates;
  - Approximately 25% of splice plates, cover plates, and batten plates;
  - Approximately 10% of the lower lateral cross bracing and corner support angles;
  - Approximately 10% of vertical members;
  - Floor beams at each end bent and pier;
  - Existing bridge deck;
  - All bridge railing;
  - Rivets with round-headed bolts where members are replaced;
  - Exterior stringers (once the deck is removed additional stringers may be identified for replacement);
- Reinstallation of portal and sway bracing;
- Cleaning and painting of the entire bridge;
- Construction of new abutments at the new bridge locations;
- Construction of ADA compliant shared-use trail approaches to the bridges that connect to the existing ground elevation.

No formal determination has been made as to whether the improvements described above would meet the *Secretary of the Interior's Standards for Rehabilitation (Secretary's Standards)*. However, it is anticipated that structural materials would be replaced in-kind and the integrity of the truss would be retained. Rivets would be replaced with round-headed bolts to retain visual similarity and missing sway bracing would be re-installed. In accordance with Attachment B of the *Programmatic Agreement among the Federal Highway Administration, the Indiana Department of Transportation, the Indiana State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding Management and Preservation of Indiana's Historic Bridges* (Historic Bridge PA)[1], the rehabilitation plans will be reviewed by the Indiana SHPO to ensure compliance with the *Secretary's Standards* and to incorporate context sensitive design features, where practicable.

With regard to relocating the bridge, INDOT shall disassemble the bridge while match-marking and mapping its components. The disassembly will be conducted as non-destructively as possible and shall incorporate principles and guidance (as feasible and relevant to bridges) from the publication "Moving Historic Buildings" by John Obed Curtis (published originally by the United States Department of the Interior). If the bridge must be stored before reassembly at the new locations, the larger components shall be placed on blocks or railroad tie and stored off the ground. Smaller components and other detached members shall be stored indoors or in an otherwise locked facility. As has successfully occurred with several other bridge projects in the past, INDOT will submit the detailed disassembly plan to the Indiana SHPO and FHWA for review and approval before disassembly shall take place.

Even though the trusses will be separated at the new locations on the Salt Creek Trail, the trusses are structurally independent and once reassembled and rehabilitated, each truss will retain its historical and evolutionary integrity/significance as examples of Indiana State Highway Commission (ISHC)-designed Parker through trusses.

[1] The Historic Bridge PA can be downloaded here: http://www.in.gov/indot/files/HistoricBridgePA.pdf.

New setting and general environment of the proposed site - per 36 CFR § 60.14 (b)(2)(iii)

The current setting of Bridge No. 046-11-01316C is on SR 46 over the Eel River, approximately 4.84 miles east of SR 59, in Clay County. SR 46 is functionally classified as a Rural Minor Arterial on Indiana's 3R system. The speed limit across the structure and on SR 46 west of the bridge is 55 mph, but it is reduced east of the bridge as SR 46 nears the small town of Bowling Green. Specifically, this bridge is located in Sections 13 & 24 of Township 11 North, Range 6 West and Sections 19 of Township 11 North, Range 5. This location is in Washington Township in Clay County, which can be seen on the USGS Center Point Quadrangle Map.

The Eel River is a perennial stream and exhibits an ordinary high-water mark (OHWM). It is listed on the "Roster of Indiana Waters Declared Navigable or Non-navigable" as a navigable stream. Three other bodies of water are within the project area, though they are not shown on the USGS topographic map. Stream 1 is an unnamed tributary (UNT) to the Eel River, and is located in the southeast quadrant of the project area. Stream 1 is an ephemeral stream that exhibits an OHWM, and has a confluence with the Eel River just downstream of the project area. Streams 2 and 3 are both unnamed tributaries to Stream 1. They are both ephemeral streams with an OHWM, located in the southeast quadrant of the project area.

The land in the northwest and southwest quadrants is primarily used for row-crop agriculture while the eastern quadrants are primarily forested. Terrestrial habitat in the project area primarily consists of the forests east of the river, a narrow wooded riparian corridor along the west bank of the river, grassy roadside, and the farmland. The project area supports a variety of flora and fauna typical to these habitats

The proposed new setting of Bridge No. 046-11-01316C is in rural Brown County, between the small town of Nashville, Indiana and the BCSP. Specifically, the new location is located in Sections 20 and 29, Township 9N, Range 3E. This location is in Washington Township in Brown County, which can be seen on the USGS Nashville Quadrangle Map. Salt Creek meanders through the project vicinity and is crossed by SR 46 three times between the project area and Nashville. There are currently no pedestrian facilities that cross Salt Creek, although Phase 1 of the Salt Creek Trail Project is now open from the south side of Nashville (near the CVS Pharmacy), east along Salt Creek to near the Brown County YMCA at the end of Hawthorne Drive.

Within the local community surrounding the project area, this creek is simply called Salt Creek, but the full name of this watercourse is actually North Fork of Salt Creek. There are several streams in the area with "Salt Creek" in the name (North Fork, Middle Fork, South Fork, Little Fork, etc). All of these creeks merge in what is now Monroe Lake. The outflow of Monroe Lake is actually called just "Salt Creek."

Within the project area, the North Fork of Salt Creek is a perennial stream and exhibits an OHWM. It is listed on the "Roster of Indiana Waters Declared Navigable or Non-navigable" as a navigable stream from its junction with Salt Creek for 36.7 river miles to its junction with David Branch (which is near the SR 46/SR135 junction, 1.5 miles upstream from the project area).

At the proposed West bridge location, the west abutment would be on residential and commercial property. The east abutment would be in a wooded riparian corridor along Salt Creek on property that is owned by the Brown County School Corporation that is known as Eagle Park. At the proposed East bridge location, the north abutment would be in a wooded area consisting of floodplain forest. The south abutment would be in a grassy-covered lawn area adjacent to the BCSP pool parking lot. Terrestrial habitat in the project area primarily consists of floodplain forest, a narrow, wooded riparian corridor along

Salt Creek, and grassy lawns. The project area supports a variety of flora and fauna typical to these habitats.

Every effort would be made to reestablish the bridge's historic orientation, immediate setting, and general environment after the move. At its existing location, Bridge No. 046-11-01316C crosses the Eel River at in a general east-west alignment (on a slight diagonal). At the proposed West bridge location, the span would also be generally east-west oriented (on a diagonal). At the proposed East bridge location, the alignment of the span would generally be north-south due to the general east-west route of Salt Creek in this area, the desire to connect the trail near existing facilities in BCSP, and constraints related to topography and hydraulic conditions.

The bridge's existing conditions and immediate setting of forested land, a wooded riparian corridor, and grassy areas would be similar at both of the proposed new span locations. Additionally, at both the existing and new locations, the structure will span a navigable stream with several other small streams located in the greater area. Although miles from the exiting location, the proposed new bridge locations would also be in proximity to the alignment of the roadway that the bridge currently carries, SR 46. While the commercial and residential property near the West bridge location and BCSP near the East bridge location are slightly different features than found at the existing location, they are not completely out of context. The outskirts of the town of Bowling Green, located approximately 0.25 mile east of the existing bridge, are visible when looking eastward from the bridge. Namely the large billboard that outlines the history of Bowling Green is discernible year-round while some buildings are discernible when foliage is off the trees.

The compatibility of the new site to the resource is ideal. At the proposed new locations, the bridge's historic orientation will be reestablished for one of the spans and for both of the spans, the immediate setting, and general environment will be reestablished. The fact that the spans can be placed across another navigable stream amidst similar flora and fauna and in proximity to the route that the bridge historically carried is a unique and desirable opportunity.

It should be noted that the proposed site does not possess historical or archeological significance that would be adversely affected by the relocation of Bridge No. 046-11-01316C. The new locations have been subjected to the appropriate archaeological and above-ground studies for compliance with Section 106 of the National Historic Preservation Act of 1966, as amended. A *Phase Ia Archaeological Survey Report* (Schwarz, 11/26/14) for the new sites of the bridge was prepared and determined that three archaeological sites within the Area of Potential Effects (APE) do not appear to be eligible for the National Register. The SHPO agreed with this recommendation in a letter dated December 15, 2014. The historic properties report for the proposed new locations (Nelson, 10/27/14) recommended two properties located within the APE, the Ramp Creek Covered Bridge and the BCSP North Gate House, as being eligible for the National Register, both under Criteria A and C. The SHPO issued a letter on December 22, 2014 concurring with the recommendations of the report. No adverse effects on these properties are anticipated as a result of the bridge relocation as both properties are located over 750' away from the location of the closest span with some trees and buildings partially blocking the view.

Justification for National Register Eligibility Under Criterion C During and After the Move

As mentioned above, even though it is necessary to separate the trusses at the new location on the Salt Creek Trail, the trusses are structurally independent. The ISHC utilized a varied number of spans of Parker trusses as the conditions of a specific crossing dictated. Examples ranged from one single span to nine spans at one location. Once reassembled and rehabilitated, each truss of Bridge No. 046-11-01316C

will retain its historical and evolutionary integrity/significance as an example of ISHC-designed Parker through trusses.

The relocation of the bridge would remove its association from events and historical patterns related to its original location and era. Therefore, it seems likely that it would only be considered eligible for inclusion in the National Register under Criterion C and no longer under Criterion A. Criterion C is applicable to structures that embody the distinctive characteristics of a type, period, or method of construction. Although originally listed in the National Register under Criterion A only, INDOT has prepared information to justify the bridge's listing under Criterion C as well at the state level. The bridge's Criterion C significance lies in being an important example of a revised, third-generation ISHC standard plan and an excellent and rare extant example of the work of a major Indiana bridge-building firm, the Vincennes Bridge Company.

In its new location, Bridge No. 046-11-01316C would still be an excellent example of an important ISHC standard plan. Common truss lengths for Parkers designed by the ISHC were 150', 175', and 200'. Therefore, even when functioning as two separate 198' trusses, they will still be two of the longer extant examples of an ISHC Parker truss. Additionally, the trusses will still be rare extant examples of Parkers built by the Vincennes Bridge Company. Due to relocation, the bridge spans' significance would limited to the original date of construction, 1935.

Under National Register Criteria Consideration B, a property removed from its original or historically significant location can be eligible if it is significant for architectural value, or perhaps more appropriately in the case of a bridge, engineering value. Additionally, moved properties must still have an orientation, setting, and general environment that are comparable to those of the historic location and that are compatible with the property's significance. As explained above, the bridge will still retain significance under Criterion C and its new location is comparable to its original location and compatible with the bridge's significance. In its new location, the bridge will maintain its integrity of design, materials, workmanship, and feeling as an ISHC-designed and Vincennes Bridge Company-built Parker through truss.

Finally, it might be helpful to take into consideration the argument of noted Indiana bridge historian James L. Cooper that metal truss bridges are still significant after being moved, which was made in his July 2004 paper titled "Nomads of the Roadways: Metal Bridges on the Move." Even though written in the context of type of effects under Section 106 and not specifically related to National Register criteria, Cooper explains that metal bridges have traditionally been treated as "eminently moveable resources" and that their ability to be transported from one location to another is an "inherent and desirable characteristic." Specifically with regard to ISHC bridges, Cooper states that some of the once-prevalent standard designs no longer exhibit any extant examples on Indiana roadways and others are now "close to extinction." Therefore, he argues, "relocated examples of state-design may be our best hope for retaining elements of ISHC's trajectory on Hoosier highways."

Appendix A

Excerpt from Alternatives Analysis Document

HISTORIC BRIDGE ALTERNATIVES ANALYSIS

Bridge Number: 046-11-01316C
Designation Number: 0800910

SR 46 OVER EEL RIVER
Clay County
NBI Number: 017050

Eel River, 4.84 miles east of SR 59 at reference post 22+05

PREPARED BY:

PARSONS

Dan Prevost, AICP CTP, ENV-SP

May 21, 2014

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I. INTRODUCTION

A. Section 4(f) Alternatives Analysis Framework

The Indiana Department of Transportation (INDOT) has identified a need to improve the structural and operational condition of the SR 46 bridge over the Eel River in Clay County (Appendix A, Figures 1-4). The bridge is listed on the National Register of Historic Places (NRHP) and was identified in the Indiana Historic Bridge Inventory (August 2009) as "Select". Select bridges are those "that are most suitable for preservation and are excellent examples of a given type of historic bridge."[1]

Section 4(f) of the US Department of Transportation Act of 1966 (Title 49, USC, Section 303) requires special considerations be made regarding the "use" of any publicly owned park, recreation area, wildlife/waterfowl refuge or historic property that is listed in or eligible for the NRHP. Prior to any "use" of a Section 4(f) property, an alternatives analysis must be conducted that confirms that there are no "feasible and prudent" alternatives to the "use" of the resource.

Alternatives for this project were developed in accordance with INDOT's *Historic Bridge Programmatic Agreement Project Development Process* (Historic Bridge PA PDP) and include no build, rehabilitation, and replacement options, with and without relocation of the existing bridge. The evaluation below follows INDOT's *Historic Bridge Alternatives Analysis Layout* for documentation of this process.

B. Indiana Historic Bridge Inventory

As noted above, the SR 46 bridge over the Eel River was evaluated as part of INDOT's Historic Bridge Inventory survey. That process, developed in conjunction with the Federal Highway Administration and the Indiana Department of Natural Resources-Division of Historic Preservation and Archaeology (IDNR-DHPA), evaluated the NRHP-eligibility of every state-owned bridge in Indiana and established a systematic framework for how historic bridges shall be considered in the project development process.

Because the SR 46 bridge was already listed in the NRHP, its historic eligibility was not reevaluated (see Appendices E-1, E-2, and E-3). Determination of a bridge's Select or Non-Select status involves a multi-step process that incorporates both the historic eligibility and the current condition of the bridge. The SR 46 bridge received a "high" eligibility rating (based on its NRHP listing), but a "low" condition rating (29 out a possible 45) (See Appendix E-4). Bridges with this combination of ratings received an "Individual Review" that considered its condition, the feasibility of rehabilitation, and the potential to correct nonstandard elements without affecting its historic integrity. The Individual Review also considered whether the bridge was suitable for reuse as a non-vehicular (bicycle/pedestrian) structure either in its existing location or at a new location.

Through the Individual Review, the SR 46 bridge was found to be Select, based largely on the fact that the structural deficiencies could be corrected without jeopardizing the character-defining features that made it NRHP-eligible (see Appendix E-5). However, the Individual Review also recognized that while a major rehabilitation could make the bridge structurally sound, some deficiencies could not be corrected. As a result, the Historic Bridge Inventory identified the SR 46 bridge as Select for Non-Vehicular Use, indicating it may be better suited for bicycle and/or pedestrian use than for vehicles (see Appendix E-6).

[1] *Programmatic Agreement Regarding Management and Preservation of Indiana's Historic Bridges*, July 17, 2006 (Historic Bridge PA).

C. Project Development History

In 2009, INDOT determined that action was required to address the deteriorated condition of the bridge. At the time, the Historic Bridge Inventory was not yet complete; however, the bridge was already listed on the NRHP. Due to the condition of the bridge, it was not yet known whether the bridge would be listed as Select or Non-Select. In August 2009, INDOT conducted a field check, during which it was decided that the deterioration was so severe that replacement was appropriate. INDOT reached out to Clay County regarding the possibility of relocating the bridge immediately adjacent to the existing location so that the County could create a park with the bridge as a feature. Clay County indicated that they had no interest in creating a park facility utilizing the bridge.

Volume 4 of the Indiana Historic Bridge Inventory finalized the list of Select and Non-Select bridges, identifying the Eel River Bridge as “Select for Non-Vehicular Use” as described above. While the “Select” designation effectively requires that the bridge remain in use (vehicular or non-vehicular), the “Non-Vehicular Use” label was utilized for bridges that may be more suitable for non-vehicular use due to condition and/or nonstandard geometric features. The Indiana Historic Bridge Inventory did not evaluate whether non-vehicular use was appropriate at the bridge’s existing site, but did consider whether the bridge type was suitable for relocation. In 2009, based on the lack of interest from Clay County to take ownership of the bridge for a park, INDOT reversed its previous decision and decided to proceed with a rehabilitation project.

During 2011, INDOT’s system-wide approach to fracture-critical bridge inspections became more rigorous due to an increased concern that risks were not being fully identified. Prior to that change, the bridge was inspected primarily via climbing from the bridge deck, the use of ladders where possible, and binoculars for inspecting the areas over the water. The use of under-bridge inspection trucks had previously been minimal due to their availability (INDOT owns only two) and the difficulty of threading the truck’s inspection bucket through the truss members. The 2011 inspection used an under-bridge inspection truck allowing the inspector to remove rust and make a more accurate assessment of the condition of the floor beams.

In 2011, Parsons was selected to prepare design plans for the rehabilitation of the Eel River Bridge. During INDOT’s inspection of the Eel River Bridge in November 2011, applying these more rigorous inspection techniques, failed gusset plates and a close-to-failure floor beam were identified, resulting in closure of the bridge. In December 2011, INDOT completed an expedited repair that allowed the structure to reopen, although it still required a more permanent repair. On July 31 and August 1, 2012, Parsons performed an in-depth inspection to determine the scope of the rehabilitation effort. During that inspection, Parsons identified additional concerns regarding the condition of the bridge, including serious deterioration of additional gusset plates and bottom chord splice plates. Based on these findings, Parsons requested the bridge be closed until an additional expedited repair could be designed and implemented. The bridge was closed July 31, 2012 and reopened November 2, 2012 after the repair was complete.

The 2011 and 2012 inspections identified structural deficiencies that were far more serious than those identified previously. During each of the closures numerous complaints from the public and businesses were received due to the long (21.9 miles) detour route. This bridge carries more than 3,300 vehicles per day and is an arterial route and part of the National Truck Network. Based on the public's negative response to the detour during those closures INDOT determined that it would be prudent to select an option that requires no (or very limited) closure. The severity of the deterioration and need to minimize closures led INDOT to reconsider the appropriateness of rehabilitation and reevaluate all alternatives, which is the purpose of this document.II. EXISTING STRUCTURE DATA

This section provides a summary of the structural and geometric features of the existing SR 46 bridge over the Eel River.

A. Identification/History

Bridge No.	046-11-01316C
NBI Number	017050
Project Location	SR 46 over the Eel River, Clay County, INDOT Crawfordsville District
Designation No.	0800910
Year Built	1933
Years Repaired	1977, 2011, 2012
Most Recent Field Inspection Date	5/1/2014
Average Daily Traffic (ADT)/Year of ADT	3,310 (2011) / 4,071 (2034)
Percentage of Commercial Vehicles	9%
Low volume road?	No
Functional Classification	Rural Minor Arterial
Detour Length	21.9 miles
Load Rating	14 tons
Sufficiency Rating	7.0
National Register of Historic Places Status	Listed
Historic Bridge Prioritization Status	Select

B. Structure/Dimensions

Surface Type	1 ½" modified concrete overlay placed on a 6 ½" concrete deck (1977)
Out to Out of Copings	25'-0"
Out to Out of Bridge Floor	402'-4"
Clear Roadway Width	24'-0"
Number of Lanes on Structure	2
Skew	0 degrees
Type of Superstructure	Parker steel through truss
Spans	2 – 198'-0" each
Type of Substructure/Foundation	End bents are reinforced concrete wall on spread footings; Intermediate pier is a solid reinforced concrete wall on piles
Seismic Zone	Zone 1

C. Appurtenances

Bridge Railing	C6 x 8.2 steel channel handrail, 2'-10 ¾" height
Curbs	Concrete 6" wide by 5" high, both sides
Sidewalks	None
Utilities	Overhead electric to south; Buried fiber optic to north
Railroad	None

D. Approaches

Roadway Width	24'-0"
Surface Type	Asphalt over concrete
Guardrail	Steel W-beam, class D-S
Guardrail End Treatment	Curved terminals on the west approach, type OS on the east approach

III. EXISTING CONDITIONS

This section summarizes the condition of the bridge's structural elements. Except where noted, the information below was obtained from the May 1, 2014 *Bridge Inspection Report* (see Appendix D-2) prepared by INDOT, the most recent INDOT inspection report available. Representative photos from the Inspection Report are provided in Appendix B.

The numerical or condition ratings assigned to each bridge element are on a scale from 0 through 9 in accordance with the Federal Highway Administration's *Recording and Coding Guide for the Inventory and Appraisal of the Nations Bridges*. The condition ratings are as follows:

9 Excellent or new condition

8 Very good condition—no problems noted

7 Good condition—some minor problems

6 Satisfactory condition—structural elements show some minor deterioration

5 Fair condition—all primary structural elements are sound but have minor section loss, cracking, spall or scour

4 Poor condition—advanced section loss, deterioration, spall or scour

3 Serious condition—loss of section, deterioration, spall or scour have seriously 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—Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but repairs may put back into light service

0 Failed—out of service and beyond repair

A. Roadway Geometrics

State Road 46 is on Indiana's "3R" (Resurfacing, Restoration, and Rehabilitation) System and it is not anticipated that the route would require any change in that status in the next 25 years. 3R design criteria, as outlined in Chapter 55 and Figure 55-3A of the *Indiana Design Manual*, are appropriate for the existing bridge and approaches and would apply if the bridge were rehabilitated. If the bridge is replaced, "4R" (Resurfacing, Restoration, Rehabilitation, and Reconstruction) design criteria, provided in Chapter 53 and Figure 53-2 would apply. The table below shows the Level 1 design criteria (3R) as well as the bridge's existing dimensions. Level 1 criteria are those that are the most critical indicators of a highway's safety and serviceability.

SR 46 runs due east-west across most of Clay County, with very few curves. The bridge lies within the tangent section between a slight reverse curve (radii of 8,596 and 11,458) with a computed design speed at or above the posted 55 mph speed limit. The approach roadway is generally flat to either side of the bridge, with grades less than 1%. All curves meet the minimum design speed of 55 mph based on Figures 43-3A(3) (horizontal), 44-3A (crest curves), and 55-4A (sag curves) of the *Indiana Design Manual*.

TABLE 1: LEVEL 1 DESIGN CRITERIA AND EXISTING BRIDGE VALUES

Criteria	Minimum Design Criteria (1)	Existing Value	Meets Standard	Possible to Reconstruct to Standard
Travel Lane Width	12'	11'	No	Yes(2)
Usable Shoulder	6'	1'	No	No
Paved Shoulder	2'	1'	No	No(2)
Cross Slope	2%	1.5%	No	No(3)
Structural Capacity	HS-20	H-20	No	No
Clear Road Width	39'4"(4)	24'0"	No	No
Vertical Clearance	14'	14'-8"56)	Yes	N/A

(1) *Indiana Design Manual*, Chapter 55 and Figure 55-3A
(2) If travel lanes were marked at 12', the usable shoulder width on the bridge would be 0. It is not feasible to widen a through truss bridge without replacing nearly all of the structural components with larger, stronger members.
(3) This truss is unlikely to be able to support additional dead load from increased deck thickness without decreasing the live load capacity.
(4) This is based on two 12' travel lanes, 7' shy line offset distance and 8" barrier offset either side.
(5) This clearance has been obtained by removing the lower sway bracing, which has impacted the historic material integrity of the bridge.

B. Bridge Deck

The deck is in overall satisfactory condition. The wearing surface has transverse cracking over top of every floor beam along with longitudinal cracking. There are a total of 31 patches in the wearing surface, numerous areas of delamination, and several spalls. The curbs exhibit vertical cracking and require repair. Several of the downspouts have rusted off entirely.

TABLE 2: BRIDGE DECK CONDITION RATINGS

	Condition Rating
Wearing Surface	5
Deck Underside	6
Curbs	6
Copings	6
Railings	5
Painted Lines	5
Drains	7
Downspouts	4
Joints	6
Deck (overall)	**6**

C. Superstructure

The deteriorated condition of the superstructure has required two closures of the bridge in the past three years. During an inspection of the bridge by INDOT in November 2011, failed gusset plates and a close-to-failure floor beam were identified, resulting in a rating of 1 ("Imminent Failure") and closure of the bridge. In December 2011, INDOT completed an expedited repair that allowed the structure to reopen, although it still had an overall rating of 4 ("Poor") and required a more permanent repair. On July 31 and August 1, 2012, Parsons performed an inspection to determine the scope of the rehabilitation effort (see Appendix D-1). During that inspection, Parsons identified additional concerns regarding the condition of the bridge and requested the bridge be closed until an additional expedited repair could be designed and implemented. The bridge was closed July 31, 2012 and reopened November 2, 2012 after the repair was complete.

Following these repairs, the condition of the bridge has been reevaluated. The stringers are in Fair condition with minor section loss and continued rusting. Most of the floor beams have some section loss, with individual beams exhibiting section loss ranging from 10-50%. Several of the lower bracing laterals have section loss of 50% or more. Vertical truss members have minor section loss and several members have been damaged by collision. Nearly all steel members show some amount of rusting and/or minor section loss. The lower portion of all sway bracing was removed due to continued collision damage (Appendix B, Photos 26-27). Every gusset plate shows some section loss, while some exhibit significant or complete section loss resulting in a condition rating of 1. The most serious of these gusset plate deficiencies were addressed by the temporary repair. The paint is failing in many areas and was rated as Poor. Photos 20-36 in Appendix B show the generally deteriorated nature of the superstructure.

The 2012 repair designed by Parsons (Appendix B, Photo 37) is anticipated to have a service life of a minimum of 5 years (2017). Following that repair, and based on the findings of Parsons' 2012 inspection, the superstructure condition was given a rating of 3 in its 2013 inspection (see Appendix D-2). INDOT continues to inspect this bridge annually to monitor its condition.

TABLE 3: SUPERSTRUCTURE CONDITION RATINGS

	Condition Rating		Condition Rating
Bearings	5	Gusset Plates	1
Stringers	5	Stay/Batten Plates	4
Floor Beams	4	Lacings	4
Knee Braces	N/A	Rivets	5
Trusses	4	Bolts	5
Verticals	4	Splice Plates	5
Diagonals	6	Brackets	6
Upper Chords	6	Pins	5
Lower Chords	4	Nuts	6
Upper Bracings	6	Collision Damage	5
Portals	4	Alignment of Members	6
Top Laterals	6	Deflections	6
Lateral Strut	6	Vibrations	6
Sway Bracing	4	Impact	6
Lower Bracing Laterals	3	Noise	6
Connection Plates	3		
Superstructure (overall)	**3**		
Paint	**4**		

D. Substructures and Foundations

The substructure is in overall Good condition with some cracking and spalling identified. The river flows from north to south and the channel runs along the west face of the center pier. Originally, the river channel was located under the east span of the bridge. However, due to the high velocity of the river, it has migrated to the west, eroding and destabilizing the channel bank, causing large trees to fall into the river. Today, during a Q100 storm, a rain event that has a 1 percent chance of occurring in a given year, water overtops the west bank by 5000 feet and causes approximately 2 feet of backwater (Appendix B, Photos 16-17), During Parsons' 2012 inspection, significant erosion was noted on the west bank under the bridge. The calculated scour depths exceed the pier footing depth and it is likely that within 20 years the west abutment and approach embankment will become unstable. Without proper bank protection, the end bent would eventually be undermined and the bridge would require closure.

TABLE 4: SUBSTRUCTURE AND CHANNEL CONDITION RATINGS

	Condition Rating		Condition Rating
Abutments		Channel	
Bridge Seat	7	Scour upstream	7
Backwall	7	Scour downstream	6
Breastwall	7	Drift	7
Wing Walls	5	Vegetation	7
Scour	7	Channel Change	7
Erosion/Undermining	6	Adequacy of Opening	7
Settlement	7	Channel Protection	5
Intermediate Pier		Waterway Adequacy	6
Pier Cap	7	**Channel (overall)**	**5**
Column	7		
Erosion/Undermining	7		
Scour/Undermining	7		
Settlement	7		
General			
Concrete	6		
Debris on Bridge Seat	7		
Substructure (overall)	**7**		

E. Approaches

The roadway approaches are in overall good condition following a road resurfacing project approximately 10 years ago (Appendix B, Photos 2, 3, and 6).

TABLE 5: APPROACH CONDITION RATINGS

	Condition Rating
Alignment	8
Approach Slab	7
Approach Guardrail	7
Approach Pavement	7
Approach Shoulders	7
Approach (overall)	**7**

IV. PURPOSE AND NEED

The purpose of this project is to provide a safe and structurally sufficient bridge to carry SR 46 over the Eel River.

The primary need for a project at this location is the advanced deterioration, section loss and fatigue affecting critical load-bearing components of this fracture critical bridge. The SR 46 bridge has been closed to traffic twice—once in 2011 and once in 2012—due to an ‘imminent failure’ condition of fracture critical components discovered during inspections by INDOT and Parsons. Expedited repairs were made on both occasions sufficient to reopen the bridge to traffic; however much more extensive reconstruction would be needed for the bridge to remain in long-term service. The bridge is considered structurally deficient and has a sufficiency rating of 45.6.

The nature and volume of existing and proposed traffic on SR 46 necessitates that the bridge be capable of safely carrying modern highway loadings including commercial vehicles, grain haulers, school buses, and emergency vehicles.

In addition to this need, other desired outcomes of the project include:

- Improvements to the hydraulic capacity of the structure and implementation of scour countermeasures;
- A bridge that provides standard lane widths and shoulders and can safely accommodate agricultural equipment;
- An improved intersection at CR 475 East that provides sufficient sight distance;
- Guardrail transitions and end treatments that meet current standards; and
- A bridge that is not subject to frequent or long-term closures for construction, maintenance, or inspection due to the lack of safe, efficient alternative routes and high user costs;

Alternatives meeting this purpose and need will be weighed based on their ability to balance feasibility, cost-effectiveness, and environmental impacts.

V. ALTERNATIVES

As described above, Section 4(f) and the INDOT Historic Bridge PA PDP require the systematic evaluation of alternatives for this project. The alternatives analysis must prove why each alternative either is or is not feasible and prudent, and it should document the justification for the decision to proceed with the preferred alternative. The regulations state that a potential avoidance alternative is not “feasible” if it cannot be built as a matter of sound engineering judgment (23 CFR 774.17), it is not possible to engineer, design and build. The term "prudent" means there are no unique problems or unusual factors involved with the use of such alternatives. Per 23 CFR 774.17, an alternative is not prudent if:

- It compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need;
- It results in unacceptable safety or operational problems;
- After reasonable mitigation, it still causes:
    - Severe social, economic, or environmental impacts;
    - Severe disruption to established communities;
    - Severe disproportionate impacts to minority or low income populations; or
    - Severe impacts to environmental resources protected under other Federal statutes;
- It results in additional construction, maintenance, or operational costs of an extraordinary magnitude;
- It causes other unique problems or unusual factors; or
- It involves multiple factors that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.

The Historic Bridge PA PDP establishes the criteria for determining feasibility and prudence for projects involving historic bridges in Indiana. The Historic Bridge PA PDP is available at: http://www.in.gov/indot/2531.htm.

A. Alternative 1: No Build

Alternative Description

The No Build alternative would make no improvements to this bridge at this time (Appendix A, Figure 5). INDOT would continue its current inspection program to identify structural deficiencies and would address issues as required. As described in Section III above, the expedited repair implemented by INDOT in 2012 has an anticipated minimum lifespan of five years. Therefore, it is anticipated that sometime in 2017 or later, the bridge would require a permanent solution or would need to be closed to traffic. INDOT would continue to monitor the structure to ensure the safety of motorists.

Because of the age and condition of this structure, it is impossible to anticipate the cost of repairs that would be needed or when the bridge would require closure.

Compliance with Design Standards

The No Build Alternative would make no improvements to the structure, leaving all design elements in their current state. As shown in Table 6, the bridge does not meet INDOT Design Criteria for travel lane width and shoulder width on the bridge and approaches, clear roadway width and structural capacity on the bridge, and cross slope on the approaches.

TABLE 6 - DESIGN CRITERIA FOR ALTERNATIVE 1

Design Element	Minimum Design Criteria (1)	Existing Condition	Proposed Condition	Level 1 Design Exception Required
Bridge Features				
Travel Lane	12’	11’	11’	Yes
Shoulder	6’ (minimum)	1’	1’	Yes
Structural Capacity	HS-20	H-20	H-20	Yes
Clear Roadway Width	40’	24’	24’	Yes
Vertical Clearance	14’	14’-8”(2)	14’-8”	No
Roadway Features				
Travel Lane	12’	11’	11’	Yes
Shoulder Width	6’	1’	1’	Yes
Stopping Sight Distance at Vertical Curve	495’	1,124’	1,124’	No
Maximum Grade	5%	0.59%	0.59%	No
Through Lane Cross Slope	2%	1.5%	1.5%	Yes

(1) *Indiana Design Manual*, Chapter 55 and Figure 55-3A
(2) Vertical clearance has been achieved through the removal of the lower sway bracing.

Hydraulics

The lowest point of the existing bridge is located at approximately elevation 574.05 feet above sea level. The Q_{100}, the elevation at which there is a 1% chance of a storm event of the magnitude in any given year, for this bridge is 573.00 above sea level. The *Indiana Design Manual* requires a minimum of 2 feet of freeboard, clearance between the Q_{100} and the bottom of the bridge, to allow for passage of ice and debris. The existing SR 46 bridge over the Eel River does not meet that standard and the No Build alternative would not alter that condition.

Historic Bridge Effects

This alternative would not alter the historic elements of the structure. The lower sway bracing, which was removed by INDOT, would remain as-is. However, the bridge would continue to deteriorate until closure was required.

Right-of-Way

The No Build alternative would require no right-of-way.

Utilities

The No Build alternative would have no impact on existing utilities in the corridor.

Maintenance of Traffic

Because there is no construction associated with this alternative, no maintenance of traffic plan is required. However, if, as a result of its continued deterioration, the bridge was closed temporarily for repairs or permanently, the official detour would use SR 59 and SR 246 (see Appendix C, page 51), adding 7 miles to a through trip. SR 246 is a narrow, winding rural roadway not well suited to carry 159 commercial vehicles a day. When the bridge was closed in 2011 due to the condition of the bridge, the district received complaints and safety concerns from the public about the number of trucks on SR 246. When SR 46 was closed again in 2012, commercial traffic was routed along SR 59, I-70 and US 231 through Spencer, an additional approximately 22.5 miles. The district again received complaints from users and elected officials due to the additional distance. There is no adequate local road detour. CR 200 crosses the Eel River to the southwest, but doesn't afford significant time or mileage savings over the SR 59 and SR 246 official state detour.

Environmental Issues

This alternative would cause no direct environmental impacts. If the bridge required closure for a long duration, the diversion of traffic could have traffic-related impacts on other communities along the alternative route(s) that vehicles utilized.

Cost

The No Build Alternative does not include any improvements and, therefore, has no cost. As noted above, it is not possible to estimate the costs associated with any repairs that would be required or the user costs associated with any temporary or permanent closures. If the structure were closed for a long duration (or permanently) it may be necessary to make improvements to other roadways in the area to improve access or to allow them to accommodate the additional traffic.

Section 4(f) Evaluation

The No Build Alternative requires no design or construction; therefore, **it is a feasible alternative**. It would, however, retain the non-standard features identified above and the hydraulic capacity would remain insufficient. Further, this alternative does not provide a safe, reliable transportation facility for the SR 46 corridor. **It does not, therefore, meet the project's purpose and need** and is **not a prudent alternative**. It will, however, be retained throughout the project's development for comparison purposes as required by the National Environmental Policy Act.

B. Alternative 2: Rehabilitation for Continued Vehicular Use

Alternative Description

The scope of the rehabilitation described here is based on visual inspection and engineering judgment only. A detailed three-dimensional model could be used to refine the extent of improvements if this alternative was to be investigated further. This alternative would undertake a major rehabilitation of the existing bridge (Appendix A, Figure 6) including:

- Replacement of approximately 80% of lower chord members;
- Replacement of all gusset plates at the end bents and center pier;
- Replacement of approximately 50% of other gusset plates;
- Replacement of approximately 75% of splice plates, cover plates, and batten plates;
- Replacement of approximately 50% of the lower lateral cross bracing and corner support angles;
- Replacement of approximately 25% of vertical members;
- Replacement of the floor beams at each end bent and pier;
- Replacement of the existing bridge deck;
- Replacement of exterior stringers (once the deck is removed additional stringers may be identified for replacement);
- Reinstallation of portal and sway bracing (will be thicker, more compact section to allow vertical clearance requirement to be met);
- Replacement of all bridge railing;
- Replacement of rivets with round-headed bolts where members are replaced;
- Cleaning and painting of the entire bridge; and
- Patching of concrete on the abutments and center pier.

This alternative would be expected to extend the life of the structure by approximately 25 years. If the work was completed in 2016, the bridge would require additional rehabilitation in 2041, when major remaining elements would be 108 years old.

On the east side of the bridge, the approach roadway would be reconstructed for a length of approximately 300 feet to provide wider shoulders, add guardrail, and modify the driveway entrance to improve sight distance. On the west side, the reconstruction would also include relocating the intersection of CR 475 E and SR 46 approximately 200 feet to the west in order to improve the sight distance for vehicles entering from CR 475 E.

Compliance with Design Standards

This alternative would be designed to meet 3R standards as defined in the *Indiana Design Manual*. Due to the nature of truss bridges, it is not possible to address deficiencies related to the width of the structure without completely reconstructing the bridge (see Table 7). As such, design exceptions for lane, shoulder, and clear roadway width would be required. The bridge was originally designed with an H-20 structural capacity (20-ton truck) and the rehabilitation would restore this capacity. However, current design standards require accommodation for HS-20 structural capacity (36 ton truck); therefore, this alternative would require a Level 1 design exception from INDOT and FHWA. Based on this bridge's location on a National Truck Route and the number of heavy trucks known to use the bridge, INDOT and FHWA have indicated that this design exception would not be approved.

Hydraulics

Alternative 2 would make no changes to the elevation of the bridge, the substructure, or the channel. As such, this alternative would not meet the 2-foot freeboard requirement.

Historic Bridge Effects

No formal determination has been made as to whether the improvements described above would meet the *Secretary of the Interior's Standards for Rehabilitation*. However, it is anticipated that structural materials would be replaced in-kind and the integrity of the truss would be retained. Rivets would be replaced with round-headed bolts to retain visual similarity. Sway bracing would be re-installed – with some modifications – so as to not recreate the clearance issues that led to its removal.

Right-of-Way

Alternative 2 would require approximately 2.0 acres of new right-of-way from adjacent properties to allow for the improvements to the bridge, its approaches, and the realignment of CR 475 E.

Utilities

Overhead utility lines parallel the roadway to the south. Alternative 2 would require the relocation of approximately 2 utility poles as part of the realignment of CR 475 E.

TABLE 7 - DESIGN CRITERIA FOR ALTERNATIVE 2

Design Element	Minimum Design Criteria (1)	Existing Condition	Proposed Condition	Level 1 Design Exception Required
Bridge Features				
Travel Lane	12'	11'	11'	Yes
Shoulder	6' (minimum)	1'	1'	Yes
Structural Capacity	HS-20	H-20	H-20	Yes
Clear Roadway Width	40'	24'	24'	Yes
Vertical Clearance	14'	14'-8"(2)	14'-8"	No
Roadway Features				
Travel Lane	12'	11'	12'	No
Shoulder Width	6'	1'	8'	No
Stopping Sight Distance at Vertical Curve	495'	415'	501'	No
Maximum Grade	5%	3.7%	3.7%	No
Through Lane Cross Slope	2%	1.5%	2%	No

(1) *Indiana Design Manual*, Chapter 55 and Figure 55-3A
(2) Vertical clearance has been achieved through the removal of the lower sway bracing.

Maintenance of Traffic

Rehabilitation of the existing bridge would require the full closure of SR 46 for approximately 9 months. During this time, the posted detour would use SR 59 and SR 246 (see Appendix C, page 51), adding 7 miles to a through trip. This is the same detour route used during the closure in 2011. As noted previously, SR 246 is a narrow, winding rural roadway not well suited to large trucks, resulting in numerous complaints from the public when this was used as a detour route during the 2011 repair project.

Environmental Issues

Environmental surveys, including the Waters of the U.S. Determination Report, are still in progress; therefore, this assessment is preliminary and qualitative. Reconstruction work on the approaches to the bridge would potentially cause minor impacts to a stream located in the southeast quadrant of the bridge. The jurisdictional status of other water features in the area

has not been determined. Minimal tree clearing may also be required. Impacts could potentially be minimized or eliminated during final design through the use of steeper slopes or retaining walls. Impacts to Waters of the US would be mitigated as required through the Section 404/401 permitting process. Potential impacts to other resources, including threatened and endangered species and the Eel River floodway will be reported in the project's Categorical Exclusion (CE) document and mitigated as appropriate. This alternative would also result in traffic-related impacts on other communities along the alternative route(s) that vehicles utilized during construction.

Cost

Alternative 2 would cost $4,838,780 to construct and would have user costs[2], resulting from time and operating expenses associated with the longer, slower detour of $4,848,363, for a total project cost of $9,687,143. Additional cost details are provided in Appendix C, pages 1-4 and pages 47-48. Due to its fracture critical nature, the bridge would continue to be inspected at one-year intervals (instead of the typical two-year interval for non-fracture-critical bridges), requiring expenditures not captured above.

Construction Cost*	$4,768,780
ROW/Utilities	$70,000
Project Cost	**$4,838,780**
User Costs	$4,848,363
TOTAL COST	**$9,687,143**

*Includes bridge rehabilitation and roadway improvements

Section 4(f) Evaluation

It would be possible to design and build Alternative 2; however, it would not meet structural capacity requirements. The H-20 load rating does not meet the needs of the corridor and, therefore, this alternative **does not meet the project's purpose and need**.

During the Individual Review for this bridge as part of the Historic Bridge Inventory Select/Non-Select analysis, it was determined that this bridge could not be rehabilitated to meet current applicable design standards and that design exceptions would not be appropriate for this bridge. As a result, the Individual Review designated the bridge Select for Non-Vehicular Use, indicating it may be better suited for bicycle and/or pedestrian use than for vehicles. Therefore, Alternative 2 **is not a feasible alternative**. While Alternative 2 would provide a reliable transportation corridor for at least 25 years, it requires an investment of almost $5 million and would cause user costs of an equal amount during the rehabilitation process. The Historic Bridge PA PDP establishes that if the cost of rehabilitation is equal to or greater than 80% of the replacement cost, it may not be suitable for rehabilitation. Alternative 2 exceeds this threshold when compared to several of the replacement alternatives (see Table 14). This alternative would retain the non-standard features identified above, it would not meet the 2-foot freeboard requirement, and the location of the west abutment would leave it subject to scour and the need for countermeasure maintenance. Based on this evaluation, Alternative 2 is **not a prudent alternative**.

[2] User costs were included in the evaluation due to the concerns raised by businesses and the public regarding safety and delays during the short-term closures associated with the 2011 and 2012 repair projects. User costs were calculated based on the methodology provided in the *Indiana Design Manual*, Section 81-4.02(2). User cost calculations for each alternative are provided in Appendix C.

C. Alternative 3: Rehabilitation for Continued Vehicular Use/One-Way Pair

Alternative Description

This alternative would construct a new bridge parallel to the existing bridge and rehabilitate the existing bridge, with each structure carrying a single lane of traffic. This alternative includes constructing a new bridge approximately 20' to the south of the existing structure (Appendix A, Figure 7) to carry eastbound traffic, retaining westbound traffic on the existing structure. To accommodate this directional split, the eastbound SR 46 roadway would shift to the south starting approximately 0.5 mile west of the bridge, travel across the new bridge over the Eel River, and re-join the existing SR 46 alignment approximately 0.25 mile east of the river. The new bridge would be a 5-span, 525-foot long structure with an estimated service life of 75 years. In accordance with the *Historic Bridge Alternatives Analysis Layout*, the new bridge would be constructed to accommodate future 2-way travel, for the time when the existing bridge can no longer be maintained.

To allow for the additional structure depth of a new bridge and to provide a minimum 2 feet of freeboard, the profile of the existing roadway would need to be raised approximately 8 feet.

The existing bridge would be rehabilitated in the same way described above for Alternative 2, with the same service life expectations (25 years).

Compliance with Design Standards

The new bridge would be designed to meet 4R standards as defined in the *Indiana Design Manual*, while the existing bridge would be rehabilitated to 3R standards, as shown in Table 8.

TABLE 8 - DESIGN CRITERIA FOR ALTERNATIVE 3

Design Element	Minimum Design Criteria	Existing Condition	Proposed Condition	Level 1 Design Exception Required
Bridge Features – Existing Bridge (1)				
Travel Lane	12'	11'	12'	No
Shoulder	6' (minimum)	1'	6'	No
Structural Capacity	HS-20	H-20	H-20	Yes
Clear Roadway Width	40'	24'	24'	No
Vertical Clearance	14'	14'-8"(2)	14'-8"	No
Bridge Features – New Bridge (3)				
Travel Lane	12'	11'	12'	No
Shoulder	6' (minimum)	1'	8'	No
Structural Capacity	HL-93	H-20	HL-93	No
Clear Roadway Width	40'	24'	40'	No
Vertical Clearance	14'	14'-8"(2)	N/A (4)	No
Roadway Features (1)				
Travel Lane	12'	11'	12'	No
Shoulder Width	6'	1'	10'	No
Stopping Sight Distance at Vertical Curve	495'	415'	501'	No
Maximum Grade	5%	6.74	7.16%	Yes
Through Lane Cross Slope	2%	2%	2%	No

(1) *Indiana Design Manual*, Chapter 55 and Figure 55-3A
(2) Vertical clearance has been achieved through the removal of the lower sway bracing.
(3) *Indiana Design Manual*, Chapter 53 and Figure 53-2
(4) The new bridge will have no vertical obstructions.

The new bridge would meet all applicable design criteria. With only one lane utilizing the 24-foot wide bridge, the rehabilitated existing bridge would meet design standards for lane width and shoulders. The bridge was originally designed with an H-20 structural capacity (20-ton truck) and the rehabilitation would restore this capacity. However, current design standards require accommodation for HS-20 structural capacity (36 ton truck); therefore, this alternative would require a Level 1 design exception from INDOT and FHWA. Based on this bridge's location on a National Truck Route and the number of heavy trucks known to use the bridge, INDOT and FHWA have indicated that this design exception would not be approved.

The approach roadways would meet all design criteria, except for maximum grade at the eastern end of the project as the roadway approaches Bowling Green. This grade exists today and correcting it would be cost-prohibitive.

Hydraulics

The new bridge would be constructed with a low elevation of 576.00 feet above sea level, providing more than 3 feet of freeboard above the Q100 elevation (573.00 feet above sea level). Alternative 3, however, would make no changes to the elevation of the existing bridge, its substructure, or the channel. As such, the rehabilitated existing bridge would not meet the 2 foot freeboard requirement. Further, while a detailed hydraulic analysis has not been completed, it is anticipated that the analysis would show that the new bridge's west abutment would be required to line up with the existing bridge's abutment. Therefore, it would be subject to the same scour issues experienced by the existing bridge and would require regular maintenance of the installed countermeasures (likely riprap). As per the Historic Bridge PA, the existing bridge would be maintained for a minimum of 25 years; however, should it be removed after that time, the new bridge would remain in its hydraulically undesirable location for the rest of its service life (75 years).

Historic Bridge Effects

No formal determination has been made as to whether the improvements described above would meet the *Secretary of the Interior's Standards for Rehabilitation*. However, it is anticipated that structural materials would be replaced in-kind and the integrity of the truss would be retained. Rivets would be replaced with round-headed bolts to retain visual similarity. Sway bracing would be re-installed – with some modifications – so as to not recreate the clearance issues that led to its removal.

Right-of-Way

Alternative 3 would require approximately 13.9 acres of new right-of-way from 7 parcels to allow for the construction of the new eastbound bridge and approach roadways and the realignment of CR 475 E.

Utilities

Overhead utility lines parallel the roadway to the south. Alternative 3 would require the relocation of approximately 8 utility poles.

Maintenance of Traffic

During construction of the new bridge and approaches traffic would be maintained on the existing SR 46 roadway and bridge. All traffic would then be shifted to the new bridge during the rehabilitation of the existing bridge. No disruption to SR 46 traffic is anticipated except at the

location where the new road is tied into the existing one. At no time is it anticipated that SR 46 would be completely closed to traffic.

Environmental Issues

Environmental surveys, including the Waters of the U.S. Determination Report, are still in progress; therefore, this assessment is preliminary and qualitative. Construction of the new bridge to the south would potentially cause moderate impacts to a stream located in the southeast quadrant of the bridge and would require moderate tree clearing. The jurisdictional status of other water features in the area has not been determined. Impacts to Waters of the US would be mitigated as required through the Section 404/401 permitting process. Potential impacts to other resources, including threatened and endangered species and the Eel River floodway will be reported in the project's CE document and mitigated as appropriate.

Cost

Alternative 3 would cost $11,349,048 to construct and would have user costs, resulting from time and operating expenses associated with reduced speeds through the construction zone of $81,081, for a total project cost of $11,430,129. Additional cost details are provided in Appendix C, pages 5-10 and page 50. Due to its fracture critical nature, the bridge would continue to be inspected at one-year intervals (instead of the typical two-year interval for non-fracture-critical bridges), requiring expenditures not captured above.

Construction Cost*	$11,075,048
ROW/Utilities	$274,000
Project Cost	**$11,349,048**
User Costs	$81,081
TOTAL COST	**$11,430,129**

*Includes rehabilitation of existing bridge, the new bridge, and roadway improvements

Section 4(f) Evaluation

It would be possible to design and build Alternative 3; however, it would not meet structural capacity requirements. The H-20 load rating does not meet the needs of the corridor and, therefore, this alternative **does not meet the project's purpose and need**.

During the Individual Review for this bridge as part of the Historic Bridge Inventory Select/Non-Select analysis, it was determined that this bridge could not be rehabilitated to meet current applicable design standards and that design exceptions would not be appropriate for this bridge. As a result, the Individual Review designated the bridge Select for Non-Vehicular Use, indicating it may be better suited for bicycle and/or pedestrian use than for vehicles. Therefore, Alternative 3 **is not a feasible alternative**. Alternative 3 would address some of the geometric deficiencies by only placing a single lane of traffic on the existing bridge, but the existing bridge would retain its insufficient freeboard, leaving it at risk for damage due to ice or debris, and the location of the west abutment would leave it subject to scour and the need for countermeasure maintenance. The Historic Bridge PA PDP establishes that if the cost of rehabilitation is equal to or greater than 80% of the replacement cost, it may not be suitable for rehabilitation. At a cost of $11,349,048, this is the most expensive alternative to construct and would exceed this threshold (see Table 14). Based on this evaluation, Alternative 3 is **not a prudent alternative**.

D. Alternative 4: Bypass/Non-Vehicular Use

Alternative Description

This alternative includes constructing a new bridge approximately 20' to the south of the existing structure (Appendix A, Figure 8). The alignment of SR 46 would need to be adapted to access this new structure. Starting about 0.5 mile west of the bridge, SR 46 would diverge to the south of the existing alignment and require a reverse curve formation in order to merge back into the

existing roadway alignment approximately 0.25 mile east of the bridge. To allow for the additional structure depth of a new bridge and to provide a minimum 2 feet of freeboard, the profile of the existing roadway would need to be raised approximately 8 feet. The new bridge would be a 5-span, 525-foot long structure with an estimated service life of 75 years.

Once complete, all SR 46 traffic would utilize the new structure. The existing bridge would be retained for non-vehicular (pedestrian) use. Given the decreased loading associated with pedestrian use, the extent of rehabilitation would not be quite as extensive as required for vehicular use. The scope of the rehabilitation described here is based on visual inspection and engineering judgment only. A detailed three-dimensional model could be used to refine the extent of improvements if this alternative was to be investigated further. Based on this review, the following improvements are proposed:

- Replacement of approximately 25% of lower chord members;
- Replacement of all gusset plates at the end bents and center pier;
- Replacement of approximately 50% of other gusset plates;
- Replacement of approximately 25% of splice plates, cover plates, and batten plates;
- Replacement of approximately 10% of the lower lateral cross bracing and corner support angles;
- Replacement of approximately 10% of vertical members;
- Replacement of the floor beams at each end bent and pier;
- Replacement of the existing bridge deck;
- Replacement of exterior stringers (once the deck is removed additional stringers may be identified for replacement);
- Reinstallation of portal and sway bracing;
- Replacement of bridge railing;
- Replacement of rivets with round-headed bolts where members are replaced; and
- Cleaning and painting of the entire bridge.

The existing roadway approaches would provide access to the existing bridge for vehicles and/or pedestrians. While not included in the current design, a sidewalk or multi-use path could be provided from Bowling Green as well. The unincorporated town of Bowling Green, located approximately 0.25 mile to the east of the existing bridge with a population of approximately 250, is the closest population center and does not commonly draw visitors from other areas.

At a December 4, 2014 meeting with Consulting Parties, a request was made to INDOT to conduct outreach to Clay County and the public to determine the level of interest in retaining the bridge in its current location. On January 29, 2015, INDOT held a public meeting in Bowling Green to provide an overview of the project, including the bridge's condition, the alternatives under consideration, and the potential to relocate the bridge to Brown County. The presentation also included the requirements for a party seeking to take ownership of the bridge. A copy of the materials presented at the meeting, as well as the comments received is provided in Appendix F-7.

The deadline for a party to step forward was originally set as March 30, 2015; however, based on comments received at the meeting and during the comment period, INDOT extended this deadline to the time of the public hearing, currently anticipated for the first week of August 2015, a period of more than six months from the date of the public meeting.

To date, no parties have stepped forward to take responsibility for the structure and retain it in place.

Compliance with Design Standards

The new bridge would be designed to meet 4R standards as defined in the *Indiana Design Manual* as shown in Table 9.

The new bridge would meet all applicable design criteria. The approach roadways would meet all design criteria, except for maximum grade at the eastern end of the project as the roadway approaches Bowling Green. The steep grade exists today and correcting it would be cost-prohibitive.

The structural capacity of the pedestrian bridge is based on an H10 design vehicle, which would accommodate typical maintenance vehicles that may need to utilize the bridge.

Hydraulics

The new bridge would be constructed with a low elevation of 576.00 feet above sea level, providing more than 3 feet of freeboard above the Q100 elevation (573.00 feet above sea level). Alternative 4, however, would make no changes to the elevation of the existing bridge, its substructure, or the channel. As such, the existing bridge, repurposed for pedestrian use, would not meet the 2 foot freeboard requirement. Further, while a detailed hydraulic analysis has not been completed, it is anticipated that the analysis would show that the new bridge's west abutment would be required to line up with the existing bridge's abutment. Therefore, it would be subject to the same scour issues experienced by the existing bridge and would require regular maintenance of the installed countermeasures (likely riprap). As per the Historic Bridge PA, the existing bridge would be maintained for a minimum of 25 years; however, should it be removed after that time, the new bridge would remain in its hydraulically undesirable location for the rest of its service life (75 years).

TABLE 9 - DESIGN CRITERIA FOR ALTERNATIVE 4

Design Element	Minimum Design Criteria	Existing Condition	Proposed Condition	Level 1 Design Exception Required
New Bridge Features (1)				
Travel Lane	12’	11’	12’	No
Shoulder	10’	1’	10’	No
Structural Capacity	HL-93	H-20	HL-93	No
Clear Roadway Width	44’	24’	44’	No
Vertical Clearance	16.5’	14’-8”(2)	N/A (3)	No
Pedestrian Bridge Features (4)				
Structural Capacity	H-10	H-20	H-10	No
Roadway Features (1)				
Travel Lane	12’	11’	12’	No
Shoulder Width	10’	1’	10’	No
Stopping Sight Distance at Vertical Curve	570’	415’	579’	No
Maximum Grade	3%	2.74%	7.16%	Yes
Through Lane Cross Slope	2%	2%	2%	No

(1) *Indiana Design Manual*, Chapter 53 and Figure 53-2
(2) Vertical clearance has been achieved through the removal of the lower sway bracing.
(3) The new bridge will have no vertical obstructions.
(4) LRFD Guide Specifications for the Design of Pedestrian Bridges

Historic Bridge Effects

No formal determination has been made as to whether the improvements described above would meet the *Secretary of the Interior's Standards for Rehabilitation*. However, it is anticipated that structural materials would be replaced in-kind and the integrity of the truss would be retained. Rivets would be replaced with round-headed bolts to retain visual similarity and sway bracing would be re-installed.

Right-of-Way

Alternative 4 would require approximately 13.9 acres of new right-of-way from 7 parcels to allow for the construction of the new eastbound bridge and approach roadways and the realignment of CR 475 E.

Utilities

Overhead utility lines parallel the roadway to the south. Alternative 4 would require the relocation of approximately 8 utility poles.

Maintenance of Traffic

During construction of the new bridge and approaches traffic would be maintained on the existing SR 46 roadway and bridge. No disruption to SR 46 traffic is anticipated except at the location where the new road is tied into the existing one. At no time is it anticipated that SR 46 would be completely closed to traffic.

Environmental Issues

Environmental surveys, including the Waters of the U.S. Determination Report, are still in progress; therefore, this assessment is preliminary and qualitative. Construction of the new bridge to the south would potentially cause moderate impacts to a stream located in the southeast quadrant of the bridge and would require moderate tree clearing. The jurisdictional status of other water features in the area has not been determined. Impacts to Waters of the US would be mitigated as required through the Section 404/401 permitting process. Potential impacts to other resources, including threatened and endangered species and the Eel River floodway will be reported in the project's CE document and mitigated as appropriate.

Cost

Alternative 4 would cost $10,260,836 to construct and would have user costs, resulting from time and operating expenses associated with reduced speeds through the construction zone of $81,081, for a total cost of $10,341,917. Additional cost details are provided in Appendix C, pages 11-16 and page 50.

Construction Cost*	$9,986,836
ROW/Utilities	$274,000
Project Cost	**$10,260,836**
User Costs	$81,081
TOTAL COST	**$10,341,917**

*Includes rehabilitation of existing bridge, the new bridge, and roadway improvements

Section 4(f) Evaluation

It would be possible to design and build Alternative 4; therefore, **it is a feasible alternative**. Alternative 4 would provide a safe, reliable, and cost-effective structure to carry all traffic in the SR 46 corridor. The bridge and roadway would meet nearly all design criteria, with a design exception required only for the grade approaching Bowling Green. The existing bridge, repurposed for pedestrian use, would retain its insufficient freeboard, leaving it at risk for damage due to ice or debris, and the location of the west abutment would leave it subject to scour and the need for countermeasure maintenance. Based on the location of the bridge in a sparsely populated area, INDOT believes that the pedestrian usage of the existing bridge would be minimal and provide little value to the general public as a historic site compared to its

potential use at other locations. As described below, several groups expressed interest in utilizing the bridge as part of planned, high-demand trail networks.

Based on the reasons above, Alternative 4 has been identified as **not prudent**, pending outreach to local stakeholders regarding the potential demand for the bridge to remain in place.

E. Alternative 5: Bridge Replacement/Relocation of Historic Bridge

Alternative Description

This alternative includes the construction of a new bridge over the Eel River and relocation of the existing bridge to a new location for use as a pedestrian/bicycle facility. As is the case in any bridge replacement project, there are several options for construction methods and alignment. Five options – or subalternatives – were developed for consideration under this alternative:

- 5A – Bridge Replacement on Existing Alignment – Full Detour
- 5B-S – Bridge Replacement on Existing Alignment – Temporary Bridge to South
- 5B-N – Bridge Replacement on Existing Alignment – Temporary Bridge to North
- 5C-S – Bridge Replacement on New Alignment to South (Preliminary Preferred Alternative)
- 5C-N – Bridge Replacement on New Alignment to North

Each option would provide a new bridge that would provide a safe, reliable, cost-effective structure for vehicles in the SR 46 corridor. The new bridge would be a 5-span, 525-foot long structure with an estimated service life of 75 years. Each would also relocate the existing historic bridge to a new location where it would be highly utilized and maintained for a minimum of 25 years. The primary differences are in the location of the new bridge, the approach to maintaining traffic during construction, and potential user costs.

Bridge Relocation Options

In accordance with the Historic Bridge PA PDP, this alternative would require the identification of a suitable location for the structure, as well as an organization willing to commit to taking ownership and maintenance responsibility. It would also require INDOT, as the bridge's current owner, to pay for the cost to rehabilitate and relocate the structure. The IDNR Division of Outdoor Recreation maintains an email list of individuals and organizations involved in the development and improvement of recreational trails. At INDOT's request, information regarding the existing SR 46 bridge, including dimensions, conditions, and adoption requirements, was distributed to more than 300 people (see Appendix F-1).

Three interested parties responded to IDNR's solicitation: John Bawcum, Friends of the Panhandle Pathway, Inc. (see Appendices F-2 and F-3); Cliff Kunze, Covered Bridge Gateway Trails Association (see Appendix F-4); and Mike List, Indiana State Parks & Reservoirs (see Appendix F-5). The Panhandle Pathway was interested in using the SR 46 bridge (or more likely, one of the spans) to provide a grade-separated trail crossing of SR 14 in Winamac, Indiana. The Covered Bridge Gateway Trails Association expressed interest in relocating the SR 46 bridge as part of a rails-to-trails project in Parke County. The proposal from Indiana State Parks & Reservoirs was to use the bridges at two locations of the Salt Creek Trail, which is under development near Brown County State Park.

INDOT reviewed the three requests and determined that the Salt Creek Trail option was the best option for preserving the bridge and in the best interest of the State (see Appendix F-6). The Salt Creek Trail project has been under development for approximately 10 years and, as of this year, one segment is open and three of its four remaining segments (including the one

where the bridges would be placed) are fully funded. A Categorical Exclusion (CE) document was completed in 2007 for the entire trail; due to some alignment changes a portion of the trail will be re-evaluated in a new CE document in the next year. The anticipated high usage (10,000 people per year) and the location of one of the bridge spans immediately adjacent to SR 46 at Eagle Park will provide a high level of visibility for the spans. While using the bridge for the Salt Creek Trail project would require separation of the bridge into its two component spans, based on the other responses received and INDOT's past experience with bridge relocation for recreational trails, due to the length of this bridge any other proposal to reuse the bridge would likely do the same.

Since selecting the Salt Creek Trail location as the proposed relocation option, additional investigations and analyses have been conducted in the areas where the two spans would be placed. A hydraulic analysis has been conducted to confirm the requirements for span lengths and location and preliminary field investigations have been conducted to identify potential environmental resources. An approach that would keep the two spans together as part of the Salt Creek Trail was evaluated; however, the topography, hydraulic conditions, and presence of wetlands in the area, make that option impractical. These preliminary investigations confirmed that using the spans at two separate locations was the only practical option.

The Salt Creek Trail

Under each of the Alternative 5 options (A, B-S, B-N, C-S, and C-N), the existing bridge would be rehabilitated and relocated for use on the Salt Creek Trail, a 2.5-mile multi-use trail connecting Nashville, Indiana to Brown County State Park, two heavily visited tourist destinations (See Figure 9). The purpose of the trail project is to provide an alternative transportation mode for pedestrians that are currently using State Road 46 to travel to land uses in and between Nashville and Brown County State Park. The conflict between pedestrians and the motoring public is currently unsafe. The trail will reduce traffic congestion between the County's three largest motels and the shops in Nashville by providing pedestrian access rather than visitors driving to the shopping areas. In addition, the trail will provide a safe means of transportation for the youth of Nashville and Brown County, as the trail will connect with the Brown County School Corporation sports facilities.

The trail has been under development for several years, with construction of the first phase breaking ground earlier this year. The project includes two crossings of Salt Creek, approximately 0.7 mile apart from one another. The SR 46 bridge is comprised of two 198 foot long trusses that are structurally independent and are of an appropriate length to span the two Salt Creek crossings. The current cost estimate for the trail project, assuming the construction of new bridges at the two stream crossings, is $5,000,000 with construction to be completed in 2017.[3] **When complete, it is anticipated that approximately 10,000 people will use the trail each year.**

While a formal agreement will be developed later in the project process, under the plan INDOT, which is obligated under the Historic Bridge PA to ensure the bridge is preserved, will pay to dismantle the existing bridge, replace or rehabilitate any elements that require it, construct new foundations, and install the truss spans in their new locations. It is anticipated that the span to be located adjacent to SR 46 at Eagle Park would be owned and maintained by Brown County, while the span located within Brown County State Park would be owned and maintained by IDNR. Each agency will be required to sign an agreement committing to maintain their

[3] The trail project is being built in segments as funding becomes available. This cost estimate was developed prior to the availability of the Eel River spans and assumed construction of two new bridges at these locations. As such, the cost estimate for the trail would be reduced by some amount if the Eel River spans were relocated to the trail.

respective structures for a minimum of 25 years. However, it is anticipated that, based on the anticipated visitation levels, the bridges would be retained far beyond that minimum. IDNR and Brown County have each submitted a letter of intent to take responsibility for the bridge spans (Appendix F-8).

Compliance with Design Standards

Each of the Alternative 5 options would be designed to meet 4R standards as defined in the *Indiana Design Manual*. None of the options would address the maximum grade on the approach into Bowling Green. Design standard compliance details for each option are provided in the sections below.

Hydraulics

Under each Alternative 5 option, the new bridge would be constructed with a low elevation of 576.00 feet above sea level, providing more than 3 feet of freeboard above the Q100 elevation (573.00 feet above sea level). The west abutment of the new, longer structure would be located such that scour would not be a concern.

Historic Bridge Effects

No formal determination has been made as to whether the improvements described above would meet the *Secretary of the Interior's Standards for Rehabilitation*. However, it is anticipated that structural materials would be replaced in-kind and the integrity of the truss would be retained. Rivets would be replaced with round-headed bolts to retain visual similarity and sway bracing would be re-installed. In accordance with Attachment B of the Historic Bridge PA, the rehabilitation plans will be reviewed by SHPO to ensure compliance with the Secretary of Interior's Standards for Rehabilitation and to incorporate context sensitive design features, where practicable.

Based on coordination with SHPO, there is concern that relocation of the trusses would result in their immediate removal from the NRHP. There is also concern that, because the bridge is listed under Criterion A for its transportation significance in the settlement and development of Clay County, that its relocation to another county would make it ineligible for continued listing. SHPO has requested that INDOT initiate a request that the bridge also be considered under Criterion C based on its engineering significance as well as its continued listing during and following any relocation. INDOT is in the process of submitting such a request.

Right-of-Way

Each of the Alternative 5 options would require right-of-way, ranging from 7-16 acres. No relocations would be required. Details for each option are provided in the sections below.

Utilities

Each option would require the relocation of some utilities; details for each option are provided below. None of these relocations are anticipated to be complicated or excessively costly.

Maintenance of Traffic

Alternative 5A would require a full detour resulting in high user costs. Each of the other options would maintain traffic on SR 46 except for limited periods. Details for each option are provided in the sections below.

Environmental Issues

Environmental surveys, including the Waters of the U.S. Determination Report, are still in progress; therefore, this assessment is preliminary and qualitative. Each of the alternatives would result in minor to moderate impacts to environmental resources, but would not impact any

unique or exceptional resources for which mitigation is not possible. Additional information is provided in the sections below.

Cost

Estimated project costs (right-of-way, utilities, construction, and rehabilitation/relocation of the existing bridge) for the Alternative 5 options range from $8.2 – 11.0 million. User costs associated with closures and detours range from $80,000 to $4.8 million, the latter associated with the 9-month closure required to construct Alternative 5A. Total estimated costs range from $9.7 million to $13.0 million.

Section 4(f) Evaluation

It would be possible to design and build each of the Alternative 5 options; therefore, **each is a feasible alternative**.

Each of the Alternative 5 options would construct a safe, reliable structure to carry all traffic in the SR 46 corridor, thus meeting the project's purpose and need. Under each, the existing bridge would be relocated to the Salt Creek Trail, where there is a strong demand for a pedestrian facility and the truss spans can be installed to meet all hydraulic requirements.

Impacts associated with each of the Alternative 5 options vary; however, none would be considered severe. Long-term operation and maintenance costs would be similar for each and, while construction and user costs vary, none are of an extraordinary magnitude. Based on this evaluation, **each is a prudent alternative**.

The Section 4(f) analysis for each alternative is summarized in Table 14.

The sections below provide additional details about each Alternative 5 option and provide the basis for the selection of the preliminary preferred alternative.

Alternative 5A – Bridge Replacement on Existing Alignment – Full Detour

Alternative 5A would replace the bridge over the Eel River utilizing the existing SR 46 alignment (Appendix A, Figure 10). The roadway would be closed throughout construction and all traffic detoured. To allow for the additional structure depth of a new bridge and to provide a minimum 2 feet of freeboard, the profile of the existing roadway would need to be raised approximately 8 feet. This would require reconstruction of SR 46 for approximately 800 feet to the west of the existing bridge and approximately 600 feet to the east in order to transition back to existing grade.

Accelerated Bridge Construction (ABC) techniques were investigated in an effort to minimize the duration of the closure. These methods include the use of prefabricated bridge elements or construction of the bridge offline and then sliding it into place. These techniques are typically applied when a structure is being replaced on its existing alignment and closures incur substantial impacts. At this location, both prefabricated elements and slide-in structures were considered. However, as noted earlier, the roadway profile at this location must be raised by 6-8 feet to accommodate the additional structure depth of a new bridge and provide adequate freeboard above the river. Additionally, any new bridge would need to be longer than the existing one, likely with a different span arrangement, to satisfy hydraulic requirements. While these techniques could be applied to the SR 46 bridge, they would be cost-prohibitive compared to alternative methods of maintaining traffic. As such, Alternative 5A did not include any of these techniques.

Compliance with Design Standards

The new bridge would be designed to meet 4R as defined in the *Indiana Design Manual* as shown in Table 10.

The new bridge would meet all applicable design criteria. The approach roadways would also meet all design criteria; however, it should be noted that the nonstandard grade on the approach to Bowling Green identified in other alternatives would exist under this alternative as well, but would lie outside the project limits and, therefore, not require a Level 1 design exception.

Right-of-Way

Alternative 5A would require approximately 7.0 acres of new right-of-way from 5 parcels to allow for the grading required to raise the roadway profile and the realignment of CR 475 E.

Utilities

Overhead utility lines parallel the roadway to the south. Alternative 5A would require the relocation of approximately 2 utility poles to allow for the realignment of CR 475 E.

Maintenance of Traffic

Alternative 5A would require the full closure of SR 46 for approximately 9 months. During this time, the posted detour would use SR 59 and SR 246 (see Appendix C, page 51), adding 7 miles to a through trip. This is the same detour route used during the closure in 2011. As noted previously, SR 246 is a narrow, winding rural roadway not well suited to large trucks, resulting in numerous complaints from the public when this was used as a detour route during the 2011 repair project.

TABLE 10 - DESIGN CRITERIA FOR ALTERNATIVE 5A

Design Element	Minimum Design Criteria	Existing Condition	Proposed Condition	Level 1 Design Exception Required
New Bridge Features (1)				
Travel Lane	12’	11’	12’	No
Shoulder	10’	1’	10’	No
Structural Capacity	HL-93	H-20	HL-93	No
Clear Roadway Width	44’	24’	44’	No
Vertical Clearance	16.5’	14’-8”(2)	N/A (3)	No
Pedestrian Bridge Features (4)				
Structural Capacity	H-10	H-20	H-10	No
Roadway Features (1)				
Travel Lane	12’	11’	12’	No
Shoulder Width	10’	1’	10’	No
Stopping Sight Distance at Vertical Curve	570’	415’	588’	No
Maximum Grade	3%	3.7%	2.8%	No
Through Lane Cross Slope	2%	2%	2%	No

(1) *Indiana Design Manual*, Chapter 53 and Figure 53-2
(2) Vertical clearance has been achieved through the removal of the lower sway bracing.
(3) The new bridge will have no vertical obstructions.
(4) LRFD Guide Specifications for the Design of Pedestrian Bridges

Environmental Issues

Environmental surveys, including the Waters of the U.S. Determination Report, are still in progress; therefore, this assessment is preliminary and qualitative. Reconstruction work on the approaches to the bridge would potentially cause minor impacts to a stream located in the southeast quadrant of the bridge. The jurisdictional status of other water features in the area has not been determined. Minimal tree clearing may also be required. Impacts to Waters of the US would be mitigated as required through the Section 404/401 permitting process. Potential impacts to other resources, including threatened and endangered species and the Eel River floodway will be reported in the project's CE document and mitigated as appropriate. This alternative would also result in traffic-related impacts on other communities along the alternative route(s) that vehicles utilized.

Cost

Alternative 5A would cost $8,179,880 to construct and would have user costs, resulting from time and operating expenses associated with the longer, slower detour of $4,848,363, for a total cost of $13,028,243. Additional cost details are provided in Appendix C, pages 17-22 and pages 47-48.

Construction Cost*	$8,029,880
ROW/Utilities	$150,000
Project Cost	**$8,179,880**
User Costs	$4,848,363
TOTAL COST	**$13,028,243**

*Includes rehabilitation and relocation of existing bridge, the new bridge, and roadway improvements

Alternative 5B-S – Bridge Replacement on Existing Alignment – Temporary Bridge to South

Alternative 5B-S would replace the bridge over the Eel River utilizing the existing SR 46 alignment (Appendix A, Figure 11). In order to maintain traffic during construction, a temporary bridge would be constructed to the south of the existing bridge. To allow for the additional structure depth of a new bridge and to provide a minimum 2 feet of freeboard, the profile of the existing roadway would need to be raised approximately 8 feet. This would require reconstruction of SR 46 for approximately 800 feet to the west of the existing bridge and approximately 600 feet to the east in order to transition back to existing grade.

The temporary bridge would be designed as a 6-span, 372-foot long, single lane structure with temporary signals on either end to control traffic flow. The temporary bridge would be constructed with a low structure elevation of 567.6. This elevation, equivalent to the Q_2 storm event (a storm that has a 50% chance of occurrence in any given year), would allow water to overtop the roadway and not create a backwater issue upstream. In the event of a storm greater than the Q_2 storm, the bridge would be closed to traffic. Throughout construction, the temporary bridge would need to be monitored for the accumulation of debris at the piers that could create scour concerns. The contractor would be required to remove debris immediately.

Compliance with Design Standards

The new bridge would be designed to meet 4R as defined in the *Indiana Design Manual* as shown in Table 11.

The new bridge would meet all applicable design criteria. The approach roadways would also meet all design criteria; however, it should be noted that the nonstandard grade identified in other alternatives would exist under this alternative as well, but would lie outside the project limits and, therefore, not require a Level 1 design exception.

Right-of-Way

Alternative 5B-S would require approximately 10.6 acres of new right-of-way from 5 parcels to allow for the construction of the temporary bridge, the grading required to raise the roadway profile, and the realignment of CR 475 E.

Utilities

Overhead utility lines parallel the roadway to the south. Alternative 5B-S would require the relocation of approximately 5 utility poles.

Maintenance of Traffic

As described above, a single-lane temporary bridge would be in place throughout construction, with temporary signals at either end controlling traffic. While vehicles would experience some delay associated with the signals, reduced speeds, and roadway curvature, SR 46 would remain open to all traffic.

TABLE 11 - DESIGN CRITERIA FOR ALTERNATIVE 5B-S

Design Element	Minimum Design Criteria	Existing Condition	Proposed Condition	Level 1 Design Exception Required
New Bridge Features (1)				
Travel Lane	12’	11’	12’	No
Shoulder	10’	1’	10’	No
Structural Capacity	HL-93	H-20	HL-93	No
Clear Roadway Width	44’	24’	44’	No
Vertical Clearance	16.5’	14’-8”(2)	N/A (3)	No
Pedestrian Bridge Features (4)				
Structural Capacity	H-10	H-20	H-10	No
Roadway Features (1)				
Travel Lane	12’	11’	12’	No
Shoulder Width	10’	1’	10’	No
Stopping Sight Distance at Vertical Curve	570’	415’	588’	No
Maximum Grade	3%	3.7%	2.8%	No
Through Lane Cross Slope	2%	2%	2%	No

(1) *Indiana Design Manual*, Chapter 53 and Figure 53-2
(2) Vertical clearance has been achieved through the removal of the lower sway bracing.
(3) The new bridge will have no vertical obstructions.
(4) LRFD Guide Specifications for the Design of Pedestrian Bridges

Environmental Issues

Environmental surveys, including the Waters of the U.S. Determination Report, are still in progress; therefore, this assessment is preliminary and qualitative. Construction of the temporary bridge to the south would potentially cause moderate impacts to a stream located in the southeast quadrant of the bridge and would require moderate tree clearing. The jurisdictional status of other water features in the area has not been determined. Impacts to Waters of the US would be mitigated as required through the Section 404/401 permitting process. Potential impacts to other resources, including threatened and endangered species

and the Eel River floodway will be reported in the project's CE document and mitigated as appropriate.

Cost

Alternative 5B-S would cost $11,025,257 to construct and would have user costs, resulting from time and operating expenses associated with the construction zone of $576,445, for a total cost of $11,601,702. Additional cost details are provided in Appendix C, pages 23-28 and page 49. Note the user costs presented here do not include the costs associated the closure of the temporary bridge due to a large storm event. Depending on the magnitude and duration of the event the user cost could increase substantially.

Construction Cost*	$10,814,257
ROW/Utilities	$211,000
Project Cost	**$11,025,257**
User Costs	$576,445
TOTAL COST	**$11,601,702**
*Includes rehabilitation and relocation of existing bridge, the new bridge, and roadway improvements	

Alternative 5B-N – Bridge Replacement on Existing Alignment – Temporary Bridge to North

Alternative 5B-N would be similar to Alternative 5B-S except that the temporary structure would be built to the north of the existing bridge (Appendix A, Figure 12). Only features that differ from Alternative 5B-S are described below.

Right-of-Way

Alternative 5B-N would require approximately 11.0 acres of new right-of-way from 5 parcels to allow for the construction of the temporary bridge, the grading required to raise the roadway profile, and the realignment of CR 475 E.

Utilities

Buried fiber optic lines parallel the roadway to the north. Alternative 5B-N would require the lines to be relocated. This alternative would also require the relocation of approximately 2 utility poles on the south side of the roadway in order to realign CR 475 E.

Environmental Issues

Environmental surveys, including the Waters of the U.S. Determination Report, are still in progress; therefore, this assessment is preliminary and qualitative. Reconstruction of the roadway approaches would potentially cause moderate impacts to a stream located in the southeast quadrant of the bridge and would require moderate tree clearing. Construction of the temporary bridge to the north would require additional tree clearing. The jurisdictional status of other water features in the area has not been determined. Impacts to Waters of the US would be mitigated as required through the Section 404/401 permitting process. Potential impacts to other resources, including threatened and endangered species and the Eel River floodway will be reported in the project's CE document and mitigated as appropriate.

Cost

Alternative 5B-N would cost $11,028,285 to construct and would have user costs, resulting from time and operating expenses associated with the construction zone of $576,445, for a total cost of $11,604,730. Additional cost details are provided in Appendix C, pages 29-34 and page 49. Note the user costs presented here do not include the costs associated the closure of the temporary bridge due to a large storm event. Depending on the magnitude and duration of the event the user cost could increase substantially.

Construction Cost*	$10,828,285
ROW/Utilities	$200,000
Project Cost	**$11,028,285**
User Costs	$576,445
TOTAL COST	**$11,604,730**
*Includes rehabilitation and relocation of existing bridge, the new bridge, and roadway improvements	

Alternative 5C-S – Bridge Replacement on New Alignment to South (Preliminary Preferred Alternative)

Alternative 5C-S would construct a new bridge over the Eel River approximately 20 feet to the south of the existing bridge and permanently realign the SR 46 roadway (Appendix A, Figure 13). To allow for the additional structure depth of a new bridge and to provide a minimum 2 feet of freeboard, the profile of the existing roadway would need to be raised approximately 8 feet.

The alignment of SR 46 would need to be adapted to access this new structure. Starting about 0.5 mile west of the bridge, SR 46 would diverge to the south of the existing alignment and require a reverse curve formation in order to merge back into the existing roadway alignment approximately 0.25 mile east of the bridge.

Compliance with Design Standards

The new bridge would meet all applicable design criteria. The approach roadways would meet all design criteria, except for maximum grade at the eastern end of the project as the roadway approaches Bowling Green as shown in Table 12. The steep grade exists today and correcting it would be cost-prohibitive.

TABLE 12 - DESIGN CRITERIA FOR ALTERNATIVE 5C-S

Design Element	Minimum Design Criteria	Existing Condition	Proposed Condition	Level 1 Design Exception Required
Bridge Features (1)				
Travel Lane	12’	11’	12’	No
Shoulder	10’	1’	10’	No
Structural Capacity	HL-93	H-20	HL-93	No
Clear Roadway Width	44’	24’	44’	No
Vertical Clearance	16.5’	14’-8”(2)	N/A (3)	No
Pedestrian Bridge Features (4)				
Structural Capacity	H-10	H-20	H-10	No
Roadway Features (1)				
Travel Lane	12’	11’	12’	No
Shoulder Width	10’	1’	10’	No
Stopping Sight Distance at Vertical Curve	570’	415’	588’	No
Maximum Grade	3%	6.74%	7.16%	Yes
Through Lane Cross Slope	2%	2%	2%	No

(1) *Indiana Design Manual*, Chapter 53 and Figure 53-2
(2) Vertical clearance has been achieved through the removal of the lower sway bracing.
(3) The new bridge will have no vertical obstructions.
(4) LRFD Guide Specifications for the Design of Pedestrian Bridges

Right-of-Way

Alternative 5C-S would require approximately 13.9 acres of new right-of-way from 7 parcels to allow for the construction of the bridge and the realignment of SR 46 and CR 475 E.

Utilities

Overhead utility lines parallel the roadway to the south. Alternative 5C-S would require the relocation of approximately 8 utility poles.

Maintenance of Traffic

During construction of the new bridge and approaches traffic would be maintained on the existing SR 46 roadway and bridge. No disruption to SR 46 traffic is anticipated except at the location where the new road is tied into the existing one. At no time is it anticipated that SR 46 would be completely closed to traffic.

Environmental Issues

Environmental surveys, including the Waters of the U.S. Determination Report, are still in progress; therefore, this assessment is preliminary and qualitative. Construction of the new bridge to the south would potentially cause moderate impacts to a stream located in the southeast quadrant of the bridge and would require moderate tree clearing. The jurisdictional status of other water features in the area has not been determined. Impacts to Waters of the US would be mitigated as required through the Section 404/401 permitting process. Potential impacts to other resources, including threatened and endangered species and the Eel River floodway will be reported in the project’s CE document and mitigated as appropriate.

Cost

Alternative 5C-S would cost $9,663,935 to construct and would have user costs, resulting from time and operating expenses associated with reduced speeds through the construction zone of $81,081, for a total cost of $9,745,016. Additional cost details are provided in Appendix C, pages 35-40 and page 50.

Construction Cost*	$9,389,935
ROW/Utilities	$274,000
Project Cost	**$9,663,935**
User Costs	$81,081
TOTAL COST	**$9,745,016**
*Includes rehabilitation and relocation of existing bridge, the new bridge, and roadway improvements	

Alternative 5C-N – Bridge Replacement on New Alignment to North

Alternative 5C-N would be similar to Alternative 5C-S except that the new bridge would be built to the north of the existing bridge (Appendix A, Figure 14). Only features that differ from Alternative 5C-S are described below.

Compliance with Design Standards

Like Alternative 5C-S, this alternative would require a Level 1 design exception for maximum grade based on the grade approaching Bowling Green, as shown in Table 13. Alternative 5C-N would also require a Level 1 design exception for the curve radius in the same area. While a full sight distance analysis has not been completed, it is likely that sight distance would be further compromised due to the likely need to install guardrail on the inside of this curve. Flattening out this curve to make it standard would require acquisition of right-of-way from multiple residential parcels in Bowling Green.

Right-of-Way

Alternative 5C-N would require approximately 16.1 acres of new right-of-way from 13 parcels to allow for the construction of the bridge and the realignment of SR 46 and CR 475 E. It is also likely that this alternative would require the relocation of one residence in Bowling Green.

Utilities

Buried fiber optic lines parallel the roadway to the north. Alternative 5B-N would require the lines to be relocated. This alternative would also require the relocation of approximately 2 utility poles in order to realign CR 475 E.

Environmental Issues

Environmental surveys, including the Waters of the U.S. Determination Report, are still in progress; therefore, this assessment is preliminary and qualitative. Construction of the new bridge to the north would require moderate tree clearing. The jurisdictional status of water features in the area has not been determined. Impacts to Waters of the US would be mitigated as required through the Section 404/401 permitting process. Potential impacts to other resources, including threatened and endangered species and the Eel River floodway will be reported in the project's CE document and mitigated as appropriate.

TABLE 13 - DESIGN CRITERIA FOR ALTERNATIVE 5C-N

Design Element	Minimum Design Criteria	Existing Condition	Proposed Condition	Level 1 Design Exception Required
Bridge Features (1)				
Travel Lane	12’	11’	12’	No
Shoulder	10’	1’	10’	No
Structural Capacity	HL-93	H-20	HL-93	No
Clear Roadway Width	44’	24’	44’	No
Vertical Clearance	16.5’	14’-8”(2)	N/A (3)	No
Pedestrian Bridge Features (4)				
Structural Capacity	H-10	H-20	H-10	No
Roadway Features (1)				
Travel Lane	12’	11’	12’	No
Shoulder Width	10’	1’	10’	No
Horizontal Curvature	1200’	1,432’	1000’	Yes
Stopping Sight Distance at Vertical Curve	570’	415’	588’	No
Maximum Grade	3%	6.74%	7.36%	Yes
Through Lane Cross Slope	2%	2%	2%	No

(1) *Indiana Design Manual*, Chapter 53 and Figure 53-2
(2) Vertical clearance has been achieved through the removal of the lower sway bracing.
(3) The new bridge will have no vertical obstructions.
(4) LRFD Guide Specifications for the Design of Pedestrian Bridges

Cost

Alternative 5C-N would cost $10,015,307 to construct and would have user costs, resulting from time and operating expenses associated with reduced speeds through the construction zone of $81,081, for a total cost of $10,096,388. Additional cost details are provided in Appendix C, pages 41-46 and page 50.

Construction Cost*	$9,458,840
ROW/Utilities	$371,000
Project Cost	**$10,015,307**
User Costs	$81,081
TOTAL COST	**$10,096,388**
*Includes rehabilitation and relocation of existing bridge, the new bridge, and roadway improvements	

Alternatives Evaluation

While the project cost of Alternative 5A is the lowest of these options, it would cause substantial user costs ($4.8 million) as a result of the closure of SR 46 for approximately 9 months. Based on the response to the previous closures, both of which were much shorter, INDOT has determined that this alternative is not in the interest of the traveling public and eliminated it from consideration.

Alternatives 5B-N and 5B-S would each utilize a temporary bridge and signal to construct a new bridge on the existing alignment. Either alternative would reduce the user costs compared to Alternative 5A, with only a couple short term closures required. However, the temporary bridge’s low elevation would introduce a risk that it would be overtopped requiring additional closures. Finally, these options would cost more than $1 million more than Alternative 5C-S or 5C-N.

Alternatives 5C-N and 5C-S would each maintain traffic on the existing bridge and roadway throughout construction, minimizing user costs associated with delay or detours. Project costs are similar for each, as are environmental and right-of-way impacts. Both would require a Level 1 design exception for the maximum grade approaching Bowling Green; Alternative 5C-N, would introduce a horizontal curve on its approach to Bowling Green that would require an additional Level 1 design exception. Eliminating this non-standard curve would require impacts to several residential properties.

Based on the analysis above, INDOT has identified Alternative 5C-S as the preliminary preferred alternative. A comparison of all alternatives is provided in Table 14.

VI. MINIMIZATION AND MITIGATION

In addition to evaluating if there is a feasible and prudent avoidance alternative, minimization and mitigation of unavoidable impacts to the historic resource is required.

A. Minimization

As noted above, no formal determination has been made as to whether the rehabilitation of the existing bridge described above would meet the *Secretary of the Interior's Standards for Rehabilitation*. However, it is anticipated that structural materials would be replaced in-kind and the integrity of the truss would be retained. Rivets would be replaced with round-headed bolts to retain visual similarity and sway bracing would be re-installed, as it would meet the 10 foot minimum clearance for a shared use path. In accordance with Attachment B of the Historic Bridge PA, the rehabilitation plans will be reviewed by SHPO to ensure compliance with the Secretary of Interior's Standards for Rehabilitation and to incorporate context sensitive design features, where practicable.

B. Mitigation

INDOT will consult with the SHPO to determine if photo documentation of the existing bridge is needed. Any requirement for documentation will be included in the Section 106 Findings documentation. INDOT will work with IDNR to determine if interpretive signage regarding the bridge's history and origin could be provided nearby.

VII. PRELIMINARY PREFERRED ALTERNATIVE

As noted above, Alternative 5C-S was found to be both feasible and prudent and has been identified as the preliminary preferred alternative.

TABLE 14: ALTERNATIVES ANALYSIS SUMMARY

Alternative		Meets Project Purpose & Need	Project Cost	User Cost	Total Cost	Feasible & Prudent
1	No Build	No (non-standard features, hydraulics, continued closures/repairs)	N/A*	$6,482,243 per year of closure*	N/A*	Feasible: Yes Prudent: No – Does not meet purpose and need; cost associated with road closure
2	Rehabilitation for Continued Vehicular Use	No (structural capacity)	$4,838,780	$4,848,363	$9,687,143	Feasible: No – Cannot be rehabilitated to meet current design standards Prudent: No – Non-standard features, hydraulics, user costs
3	Rehabilitation for Continued Vehicular Use/ One-Way Pair	No (structural capacity)	$11,349,048	$81,081	$11,430,129	Feasible: No – Cannot be rehabilitated to meet current design standards Prudent: No – Non-standard features, hydraulics
4	Bypass/Non-Vehicular Use	Yes	$10,260,836	$81,081	$10,341,917	Feasible: Yes Prudent: No – Pedestrian bridge hydraulics; very low pedestrian usage
5A	Bridge Replacement on Existing Alignment – Full Detour	Yes	$8,179,880	$4,848,363	$13,028,243	**Feasible: Yes** **Prudent: Yes**
5B-S	Bridge Replacement on Existing Alignment – Temporary Bridge to South	Yes	$11,025,257	$576,445	$11,601,702	
5B-N	Bridge Replacement on Existing Alignment – Temporary Bridge to North	Yes	$11,028,285	$576,445	$11,604,730	
5C-S	Bridge Replacement on New Alignment to South (Preliminary Preferred Alternative)	Yes	$9,663,935	$81,081	$9,745,016	
5C-N	Bridge Replacement on New Alignment to North	Yes	$10,015,307	$81,081	$10,096,388	

* While the No Build Alternative does not include any improvements, it is not possible to estimate the costs associated with any repairs that would be required or the user costs associated with any temporary or permanent closures.

Appendix B

Photographs & Maps of the Bridge in its Existing Location

Image: USGS, Center Point quad
Data: USFWS, National Wetlands Inventory

0 500 1,000 2,000 Feet

Legend

NWI Polygons

PARSONS

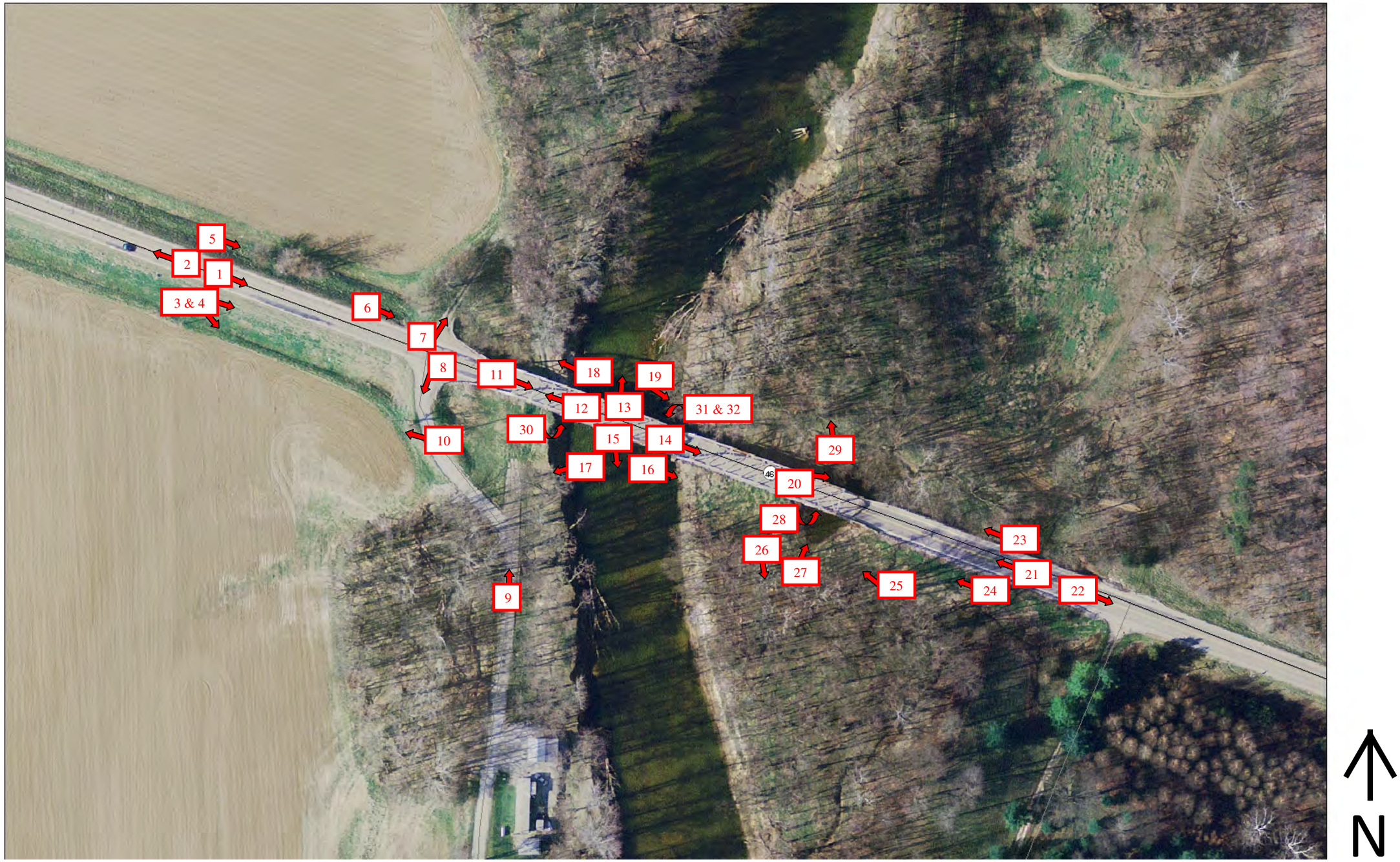
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Photo 1: Standing on SR 46 facing east towards the bridge (Bridge # 046-11-01316A).

Photo 2: Standing on SR 46 facing west.

Photo 3: View (1) of the SW ditch.

Photo 4: View (2) of the SW ditch and farmland where CR 475 E will be relocated.

Photo 5: View of the NW shoulder.

Photo 6: View of the farm filed entrance adjacent from CR 475 E.

Photo 7: Looking north at the farm field entrance intersection with SR 46.

Photo 8: Looking south at the SR 46/CR 475 E intersection.

Photo 9: Standing on CR 475 E looking north.

Photo 10: Standing on CR 475 looking west to where CR 475 E will be relocated.

Photo 11: Standing on SR 46 looking east at the bridge.

Photo 12: Standing on the bridge looking west.

Photo 13: Standing on the bridge looking north (upstream) at the Eel River.

Photo 14: Standing on the bridge looking east.

Photo 15: Standing on the bridge looking south (downstream) at the Eel River.

Photo 16: View of the SE bank.

Photo 17: View of the SW bank.

Photo 18: View of the NW bank.

Photo 19: View of the NE bank.

Photo 20: Looking at a ponded area near the eastern abutment.

Photo 21: Standing on SR 46 facing west towards the bridge.

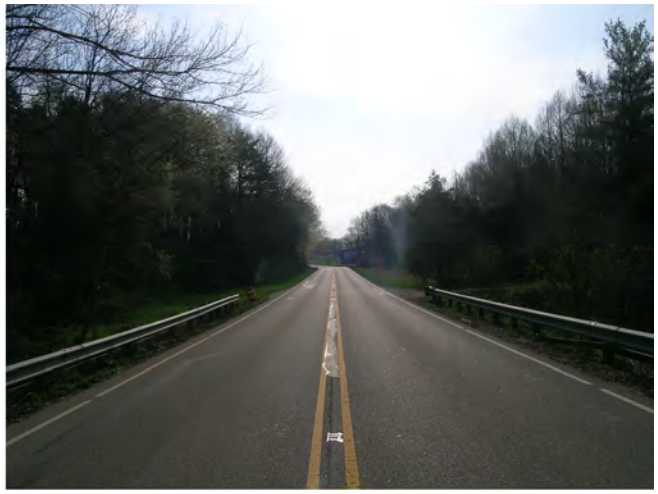


Photo 22: Standing on SR 46 facing east.

Photo 23: View of the NE shoulder.

Photo 24: View of the SE shoulder.

Photo 25: Standing in the floodplain, looking northwest at the bridge.

Photo 26: Looking south at the floodplain.

Photo 27: Looking north at the floodplain and ponded area adjacent to the eastern abutment.

Photo 28: View (2) of the ponded area.

Photo 29: Looking north at the floodplain.

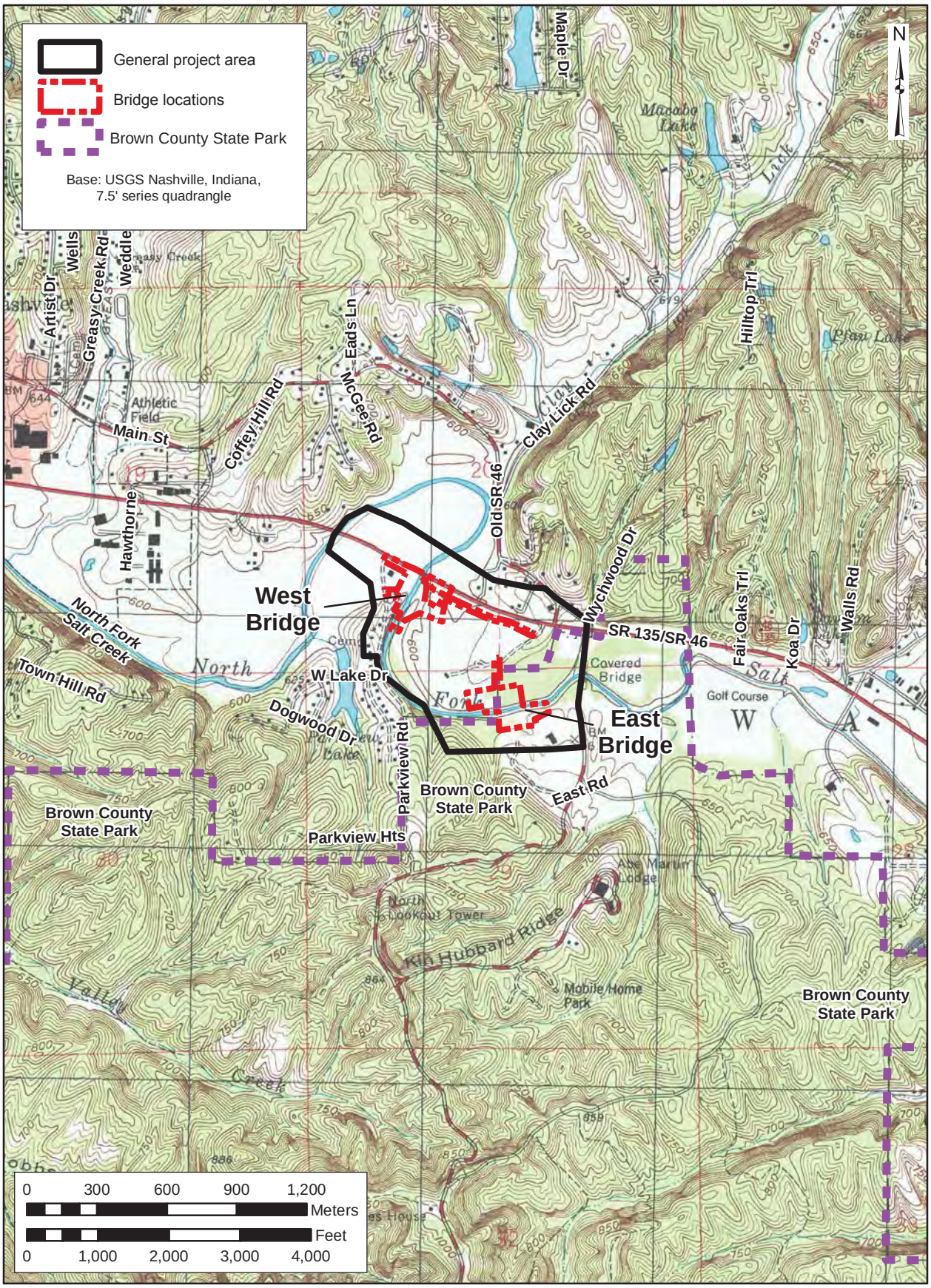
Photo 30: View of the western bank of the Eel River under the bridge.

Photo 31: View of the NE bank of the Eel River under the bridge.

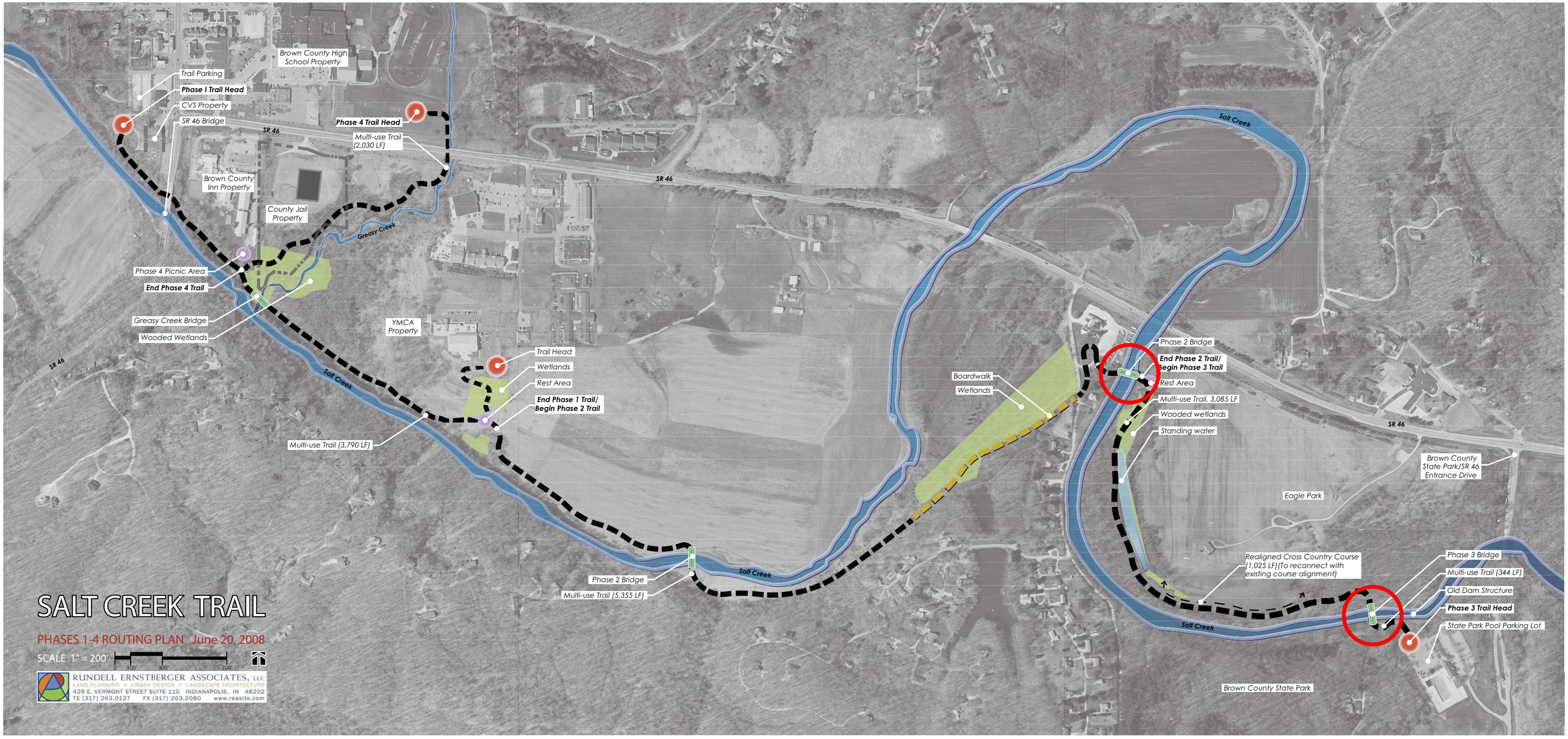
Photo 32: View of the SE bank of the Eel River under the bridge.

Appendix C

Photographs & Maps of the Proposed New Location



Portion of the 1998 Nashville, Indiana quadrangle (USGS 7.5′ topographic map) showing the APE and project area.



Proposed location of Relocated Eel River Bridge Span

Historic Bridge Relocation to Salt Creek Trail

Photo Location Map, West Bridge

Legend

Preliminary Construction Limits

Salt Creek photo locations

0 50 100 200 Feet

N

PARSONS

Photo 1: West bridge looking east from near west abutment.

Photo 2: West bridge looking south just north of west abutment.

Photo 3: West Bridge looking north from west abutment.

Photo 4: West bridge looking north (downstream).

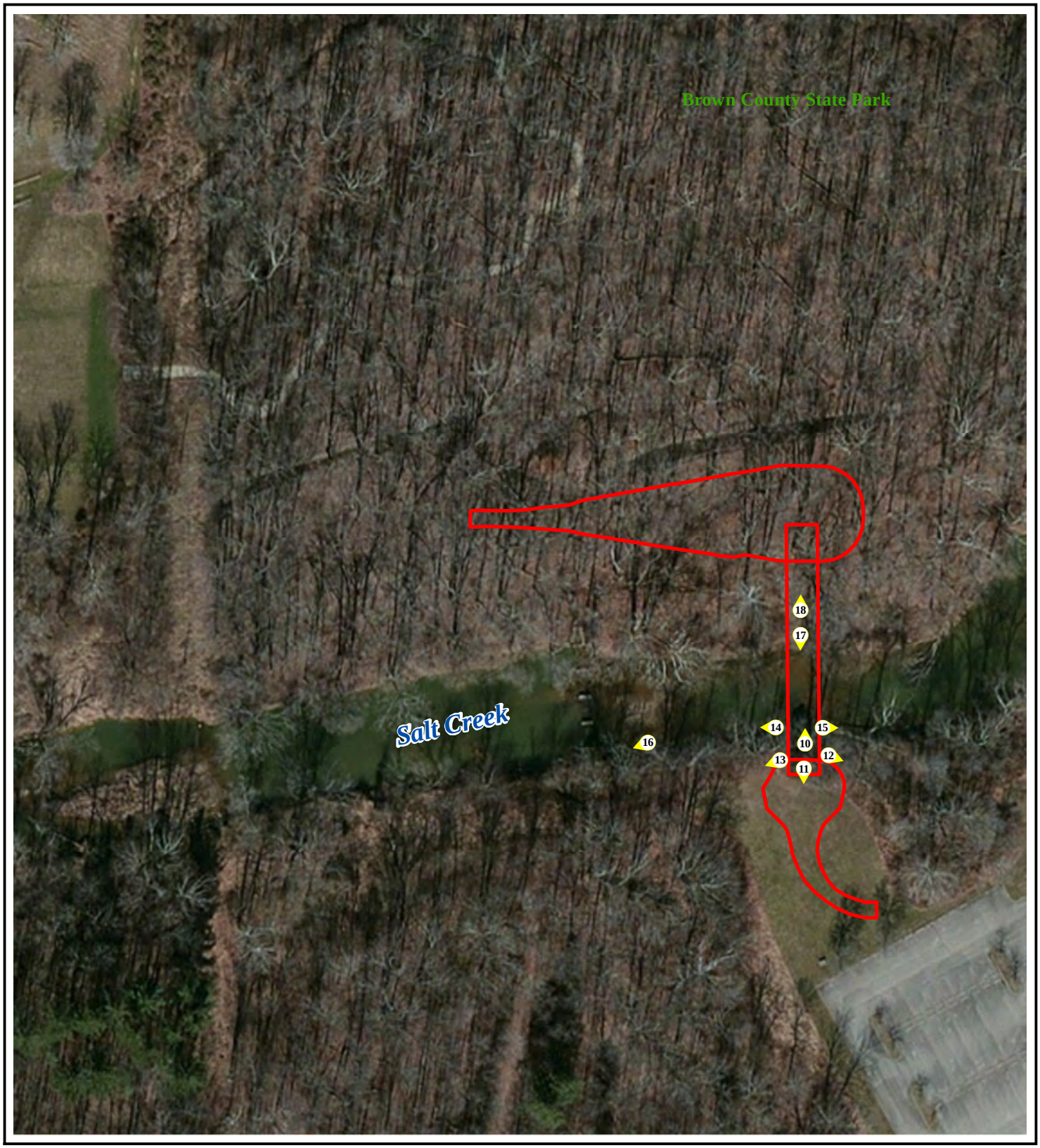
Photo 5: West bridge looking south (upstream) from 100 feet downstream (north) of location.

Photo 6: West bridge looking west from east bank at area of west abutment.

Photo 7: West bridge looking south from east bank.

Photo: 8 West bridge looking north from east bank.

Photo 9: West bridge looking south from east abutment.



Historic Bridge Relocation to Salt Creek Trail

Photo Location Map, East Bridge

Legend

Preliminary Construction Limits

Salt Creek photo locations

0 50 100 200 Feet

N

PARSONS

Photo 10: East bridge looking north from south bank

Photo 11: East bridge looking south from south bank

Photo 12: East bridge looking east from south bank

Photo 13: East bridge looking west from south bank

Photo 14: East bridge looking downstream (west)at old dam

Photo 15: East bridge looking upstream (east)

Photo 16: East bridge looking downstream (southwest) at south bank bluff and old dam

Photo 17: East bridge looking south at south bank from north bank

Photo 18: East bridge looking north from north bank

COOPERATIVE AGREEMENT
Between
THE INDIANA DEPARTMENT OF TRANSPORTATION,
And
THE INDIANA DEPARTMENT OF NATURAL RESOURCES,
Concerning
RELOCATION AND TRANSFER OF OWNERSHIP
OF SELECT BRIDGE 046-11-01316C

EDS:_____

This Agreement is made and entered into this _____ day of _____ 2015 by and between: the Indiana Department of Transportation (hereinafter referred to as "INDOT"); and the Indiana Department of Natural Resources (hereinafter referred to as either "IDNR" or the Indiana State Historic Preservation Officer [hereinafter referred to as the "INSHPO"], as appropriate) and jointly referred to as the "PARTIES".

RECITALS

WHEREAS, pursuant to 36 C.F.R. 800.14(b) of the regulations implementing Section 106 of the National Historic Preservation Act of 1966 (Section 106) (16 U.S.C. 470f), INDOT, the SHPO, the Federal Highway Administration ("FHWA") and the Advisory Council on Historic Preservation ("Council") have entered into a Programmatic Agreement applicable to Federal-aid projects that result in the rehabilitation or replacement of historic bridges in Indiana (hereinafter referred to as the Historic Bridges PA, attached as Exhibit A and herein incorporated by reference); and

WHEREAS, historic bridges may be rehabilitated through several Federal-aid programs, such as the Transportation Enhancement Program, the Surface Transportation Program, and the Highway Bridge Replacement and Rehabilitation Program provided the appropriate eligibility criteria are satisfied; and

WHEREAS, the Historic Bridges PA Section III.A.8 provides that "If the preferred alternative includes transferring ownership of the historic bridge, then INDOT will initiate an agreement between INDOT, the bridge owner if the bridge does not belong to INDOT, the Indiana SHPO, and the proposed new bridge owner"; and

WHEREAS, the historic bridge known as Bridge Number 046-11-01316C (hereinafter "the Bridge"), which carries traffic on SR 46 over the Eel River (NBI No. 017050), is scheduled to be replaced by INDOT under INDOT Project Des. No. 0800910; and

WHEREAS, IDNR wishes to obtain ownership of one span of the Bridge Number 046-11-01316C historic bridge (hereinafter "Span A") and to relocate Span A for use in the Salt Creek Trail project (as shown and described in the attached Exhibit B, herein incorporated by reference); and

WHEREAS, Brown County wishes to obtain ownership of the second span of the Bridge Number 046-11-01316C historic bridge (hereinafter "Span B") and to relocate Span B for use in the Salt Creek Trail project (as shown and described in the attached Exhibit B), which will be outlined in a separate agreement; and

WHEREAS, in obtaining Span A, IDNR agrees to adhere to all requirements of the Historic Bridges PA, including Attachment B to the Historic Bridge PA (outlining standards for treatment of historic bridges); and

WHEREAS, in the interest of preserving Spans A and B while providing for replacement of the Bridge in Clay County, the Parties desire to transfer Span A to IDNR and Span B to Brown County (through separate agreement) for use on the Salt Creek Trail Project;

NOW THEREFORE, in consideration of the promises and the mutually dependent covenants contained herein and other good and valuable consideration, the adequacy and receipt of which are hereby acknowledged, and intending to be legally bound, the Parties hereto agree as follows:

1.1. <u>IDNR's Responsibilities</u>.

A. IDNR agrees to take on ownership of Span A (as described in Exhibits A and B to this Agreement and in accordance with all requirements of the Historic Bridges PA).

B. Once installation of Span A at the Salt Creek Trail site is complete, subject to Section 1.2 below, IDNR agrees to accept all costs associated with maintenance of the bridge according to the standards established in the Historic Bridges PA and for the duration of this agreement identified in Section 1.4.

1.2. <u>INDOT's Responsibilities</u>.

A. INDOT hereby agrees to be responsible for all costs associated with disassembly, relocation and rehabilitation of the Span A. These costs include right-of-way engineering, appraising, buying and all associated land acquisition activities for permanent right-of-way, temporary right-of-way and easements required for construction of Span A and Span B over Salt Creek. The costs also include preparation of engineering and hydraulics analysis documents, environmental documents, and plan sheets for the Span A and Span B crossing sites in Brown County. The costs additionally include disassembly, transportation to the relocation site, construction of the required substructure and approach elements, and rehabilitation and reassembly of the bridge at the new location. INDOT will be responsible for building ADA compliant shared-use trail approaches to the bridges that connect to the existing ground elevation. INDOT further agrees to execute any additional documents it believes necessary to effectuate the transfer of ownership of the Bridge to IDNR.

1.3. <u>Standard Treatment of Historic Bridges</u>. The Parties shall follow the requirements of the Historic Bridges PA (including the "Standard Treatment Approach for Historic Bridges" outlined in Attachment B to the PA) in relocating the Span A.

1.4. <u>Duration and Renewal of Agreement</u>. The term of this Agreement shall begin on the date of last signature to this Agreement and continue through December 31, 2043 or until the end of the useful life of the Span A, whichever occurs last. This Agreement may be renewed under the same terms and conditions subject to the approval of all signing Parties.

II. GENERAL PROVISIONS

2.1. Access to Records. INDOT (individually and collectively referred to as the "SPONSORING PARTY") shall maintain all books, documents, papers, correspondence, accounting records and other evidence pertaining to the cost incurred under this Agreement, and shall make such materials available at their respective offices at all reasonable times during the period of this Agreement and for five (5) years from the date of final payment under the terms of this Agreement, for inspection or audit by INDOT, or its authorized representative, and copies thereof shall be furnished free of charge, if requested by INDOT. The SPONSORING PARTY agrees that, upon request by any agency participating in federally-assisted programs with whom the SPONSORING PARTY has Agreed to or seeks to agree to, INDOT may release or make available to the agency any working papers from an audit performed by INDOT of the SPONSORING PARTY in connection with this Agreement, including any books, documents, papers, accounting records and other documentation which support or form the basis for the audit conclusions and judgments.

2.2. Audit. The SPONSORING PARTY acknowledges that it may be required to submit to an audit of funds paid through this Agreement. Any such audit shall be conducted in accordance with IC 5-11-1, et. seq. and audit guidelines specified by the State and/or in accordance with audit requirements specified elsewhere in this Agreement.

The State considers the SPONSORING PARTY to be a "vendor" for purposes of this Agreement. However, if required by applicable provisions of the Office of Management and Budget Circular A-133 (Audits of States, Local Governments, and Non-Profit Organizations), following the expiration of this Agreement the SPONSORING PARTY shall arrange for a financial and compliance audit of funds provided by the State pursuant to this Agreement. Such audit is to be conducted by an independent public or certified public accountant (or as applicable, the Indiana State Board of Accounts), and performed in accordance with Indiana State Board of Accounts publication entitled "Uniform Compliance Guidelines for Examination of Entities Receiving Financial Assistance from Governmental Sources," and applicable provisions of the Office of Management and Budget Circulars A-133 (Audits of States, Local Governments, and Non-Profit Organizations). The SPONSORING PARTY is responsible for ensuring that the audit and any management letters are completed and forwarded to the State in accordance with the terms of this Agreement. Audits conducted pursuant to this paragraph must be submitted no later than nine (9) months following the close of the SPONSORING PARTY's fiscal year. The SPONSORING PARTY agrees to provide the Indiana State Board of Accounts and the State an original of all financial and compliance audits. The audit shall be an audit of the actual entity, or distinct portion thereof that is the SPONSORING PARTY, and not of a parent, member, or subsidiary corporation of the SPONSORING PARTY, except to the extent such an expanded audit may be determined by the Indiana State Board of Accounts or the State to be in the best interests of the State. The audit shall include a statement from the Auditor that the Auditor has reviewed this Agreement and that the SPONSORING PARTY is not out of compliance with the financial aspects of this Agreement.

2.3. Authority to Bind SPONSORING PARTY. The signatory for the SPONSORING PARTY warrants that he/she has the necessary authority to enter into this Agreement. The signatory for the SPONSORING PARTY represents that he/she has been duly authorized to execute this Agreement on behalf of the SPONSORING PARTY, and has obtained all necessary or applicable approval to make this Agreement fully binding upon the SPONSORING PARTY when his/her signature is affixed to this Agreement.

2.4. <u>Certification for Federal-Aid Contracts Lobbying Activities</u>. The SPONSORING PARTY certifies, by signing and submitting this Agreement, to the best of its knowledge and belief that the SPONSORING PARTY has complied with Section 1352, Title 31, U.S. Code, and specifically, that:

A. No federal appropriated funds have been paid or will be paid, by or on behalf of the SPONSORING PARTY, to any person for influencing or attempting to influence an officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal Agreements, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal Agreement, grant, loan, or cooperative agreement.

B. If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this federal Agreement, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

C. The SPONSORING PARTY also agrees by signing this Agreement that it shall require that the language of this certification be included in all contractor agreements including lower tier subcontracts, which exceed $100,000, and that all such sub recipients shall certify and disclose accordingly. Any person who fails to sign or file this required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each failure.

2.5. <u>Compliance with Laws</u>.

A. The SPONSORING PARTY shall comply with all applicable federal, state and local laws, rules, regulations and ordinances, and all provisions required thereby to be included herein are hereby incorporated by reference. The enactment of any state or federal statute, or the promulgation of regulations thereunder, after execution of this Agreement, shall be reviewed by INDOT to determine whether formal modifications are required to the provisions of this Agreement.

B. The SPONSORING PARTY and its agents shall abide by all ethical requirements that apply to persons who have a business relationship with the State, as set forth in Indiana Code § 4-2-6, et seq., Indiana Code § 4-2-7, et. seq., the regulations promulgated thereunder, and Executive Order 05-12, dated January 12, 2005. If the SPONSORING PARTY is not familiar with these ethical requirements, the SPONSORING PARTY should refer any questions to the Indiana State Ethics Commission, or visit the Indiana State Ethics Commission website at <<http://www.in.gov/ethics/>>>. If the SPONSORING PARTY or its agents violate any applicable ethical standards, the State may, at its sole discretion, terminate this Agreement immediately upon notice to the SPONSORING PARTY. In addition, the SPONSORING PARTY may be subject to penalties under Indiana Code §§ 4-2-6 and 4-2-7, and under any other applicable state or federal laws.

C. The SPONSORING PARTY certifies by entering into this Agreement, that neither it nor its principal(s) are presently in arrears in payment of its taxes, permit fees or other statutory, regulatory or judicially required payments to the State of Indiana. Further, the SPONSORING PARTY agrees that any payments in arrears and currently due to the State of Indiana may be withheld from

payments due to the SPONSORING PARTY. Additionally, further work or payments may be withheld, delayed, or denied and/or this Agreement suspended until the SPONSORING PARTY becomes current in its payments and has submitted proof of such payment to INDOT.

D. The SPONSORING PARTY warrants that it has no current or outstanding criminal, civil, or enforcement actions initiated by the State of Indiana pending, and agrees that it will immediately notify INDOT of any such actions. During the term of such actions, the SPONSORING PARTY agrees that INDOT may delay, withhold, or deny work under any supplement, amendment, change order, contract or the like.

E. If a valid dispute exists as to the SPONSORING PARTY'S liability or guilt in any action initiated by the State of Indiana or its agencies, and INDOT decides to delay, withhold, or deny work to the SPONSORING PARTY, the SPONSORING PARTY may request that it be allowed to continue, or receive work, without delay. The SPONSORING PARTY must submit, in writing, a request for review to INDOT. A determination by the INDOT shall be final and binding on the Parties and not subject to administrative review. Any payments that the INDOT may delay, withhold, deny, or apply under this section shall not be subject to penalty or interest under IC 5-17-5.

F. The SPONSORING PARTY represents and warrants that the SPONSORING PARTY shall obtain and maintain all required permits, licenses, registrations and approvals, as well as comply with all health, safety, and environmental statutes, rules, or regulations in the performance of work activities for INDOT. Failure to do so may be deemed a material breach of this Agreement and grounds for termination and denial of further work with the State.

G. The SPONSORING PARTY hereby represents and warrants that, if it is an entity described in IC Title 23, it is properly registered and owes no outstanding reports with the Indiana Secretary of State.

H. As required by IC 5-22-3-7: (1) the SPONSORING PARTY and any principals of the SPONSORING PARTY certify that (A) the SPONSORING PARTY, except for de minimis and nonsystematic violations, has not violated the terms of (i) IC 24-4.7 [Telephone Solicitation Of Consumers], (ii) IC 24-5-12 [Telephone Solicitations] , or (iii) IC 24-5-14 [Regulation of Automatic Dialing Machines] in the previous three hundred sixty-five (365) days, even if IC 24-4.7 is preempted by federal law; and (B) the SPONSORING PARTY will not violate the terms of IC 24-4.7 for the duration of the Agreement, even if IC 24-4.7 is preempted by federal law. (2) The SPONSORING PARTY and any principals of the SPONSORING PARTY certify that an affiliate or principal of the SPONSORING PARTY and any agent acting on behalf of the SPONSORING PARTY or on behalf of an affiliate or principal of the SPONSORING PARTY (A) except for de minimis and nonsystematic violations, has not violated the terms of IC 24-4.7 in the previous three hundred sixty-five (365) days, even if IC 24-4.7 is preempted by federal law; and (B) will not violate the terms of IC 24-4.7 for the duration of the Agreement, even if IC 24-4.7 is preempted by federal law.

2.6. <u>Conflict of Interest</u>.

A. As used in this section:
"Immediate family" means the spouse and the un-emancipated children of an individual.
"Interested Party," means:
1. The individual executing the Agreement;

2. An individual who has an interest of three percent (3%) or more of SPONSORING PARTY, if SPONSORING PARTY is not an individual; or
3. Any member of the immediate family of an individual specified under subdivision 1 or 2.

"Commission" means the State Ethics Commission.

B. INDOT may cancel this Agreement without recourse by the SPONSORING PARTY if any interested Party is an employee of the State of Indiana.

C. INDOT will not exercise its right of cancellation under Section B, above, if the SPONSORING PARTY gives INDOT an opinion by the Commission indicating that the existence of this Agreement and the employment by the State of the interested Party does not violate any statute or code relating to ethical conduct of state employees. INDOT may take action, including cancellation of this Agreement, consistent with an opinion of the Commission obtained under this section.

D. The SPONSORING PARTY has an affirmative obligation under this Agreement to disclose to INDOT when an interested Party is or becomes an employee of INDOT. The obligation under this section extends only to those facts that the SPONSORING PARTY knows or reasonably could know.

2.7. Disadvantaged Business Enterprise Program. Notice is hereby given to the SPONSORING PARTY that failure to carry out the requirements set forth in 49 CFR Sec. 26.13(b) shall constitute a breach of this Agreement and, after notification, may result in termination of this Agreement or such remedy as INDOT deems appropriate.

The referenced section requires the following policy and disadvantaged business enterprise ("DBE") assurance to be included in all subsequent Agreements between the SPONSORING PARTY and any contractors.

The SPONSORING PARTY shall not discriminate on the basis of race, color, national origin, or sex in the performance of this Agreement. The SPONSORING PARTY shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted Agreements. Failure by the SPONSORING PARTY to carry out these requirements is a material breach of this Agreement, which may result in the termination of this Agreement or such other remedy, as INDOT, as the recipient, deems appropriate.

As part of the SPONSORING PARTY'S equal opportunity affirmative action program, SPONSORING PARTY, it is required that the SPONSORING PARTY shall take positive affirmative actions and put forth good faith efforts to solicit proposals or bids from and to utilize disadvantaged business enterprise, vendors or suppliers.

2.8. Drug-Free Workplace Certification. The SPONSORING PARTY hereby covenants and agrees to make a good faith effort to provide and maintain a drug-free workplace, and that it will give written notice to the Indiana Department of Transportation and the Indiana Department of Administration within ten (10) days after receiving actual notice that an employee of the SPONSORING PARTY in the State of Indiana has been convicted of a criminal drug violation occurring in the SPONSORING PARTY'S workplace. False certification or violation of the certification may result in sanctions including, but not limited to, suspension of Agreement payments,

termination of the Agreement and/or debarment of contracting opportunities with the State of Indiana for up to three (3) years.

In addition to the provisions of the above paragraphs, if the total Agreement amount set forth in this Agreement is in excess of $25,000.00, the SPONSORING PARTY hereby further agrees that this Agreement is expressly subject to the terms, conditions and representations of the following certification:

This certification is required by Executive Order No. 90-5, April 12, 1990, issued by the Governor of Indiana. Pursuant to its delegated authority, the Indiana Department of Administration is requiring the inclusion of this certification in all Agreements with and grants from the State of Indiana in excess of $25,000.00. No award of an Agreement shall be made, and no Agreement, purchase order or agreement, the total amount of which exceeds $25,000.00, shall be valid, unless and until this certification has been fully executed by the SPONSORING PARTY and made a part of the Agreement as part of the Agreement documents.

The SPONSORING PARTY certifies and agrees that it will provide a drug-free workplace by:

a. Publishing and providing to all of its employees a statement notifying their employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the SPONSORING PARTY'S workplace and specifying the actions that will be taken against employees for violations of such prohibition;

b. Establishing a drug-free awareness program to inform its employees of (1) the dangers of drug abuse in the workplace; (2) the SPONSORING PARTY'S policy of maintaining a drug-free workplace; (3) any available drug counseling, rehabilitation, and employee assistance programs; and (4) the penalties that may be imposed upon an employee for drug abuse violations occurring in the workplace;

c. Notifying all employees in the statement required by subparagraph (a) above that as a condition of continued employment the employee will (1) abide by the terms of the statement; and (2) notify the SPONSORING PARTY of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such conviction;

d. Notifying in writing the State within ten (10) days after receiving notice from an employee under subdivision (c)(2) above, or otherwise receiving actual notice of such conviction;

e. Within thirty (30) days after receiving notice under subdivision (c)(2) above of a conviction, imposing the following sanctions or remedial measures on any employee who is convicted of drug abuse violations occurring in the workplace: (1) take appropriate personnel action against the employee, up to and including termination; or (2) require such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State or local health, law enforcement, or other appropriate agency; and

f. Making a good faith effort to maintain a drug-free workplace through the implementation of subparagraphs (a) through (e) above.

2.9. <u>Force Majeure</u>. In the event that either Party is unable to perform any of its obligations under this Agreement or to enjoy any of its benefits because of natural disaster or decrees of

governmental bodies not the fault of the affected Party (hereinafter referred to as a Force Majeure Event), the Party who has been so affected shall immediately give notice to the other Party and shall do everything possible to resume performance. Upon receipt of such notice, all obligations under this Agreement shall be immediately suspended. If the period of nonperformance exceeds thirty (30) days from the receipt of notice of the Force Majeure Event, the Party whose ability to perform has not been so affected may, by giving written notice, terminate this Agreement.

2.10. Funding Cancellation Clause. When the Director of the Office of Management and Budget makes a written determination that funds are not appropriated or otherwise available to support continuation of the performance of this Agreement, this Agreement shall be canceled. A determination by the Budget Director that funds are not appropriated or otherwise available to support continuation of performance shall be final and conclusive.

2.11. Governing Laws. This Agreement shall be construed in accordance with and governed by the laws of the State of Indiana and the suit, if any, must be brought in the State of Indiana.

2.12. Indemnification. The SPONSORING PARTY agrees to indemnify exculpate, and hold harmless the State of Indiana, INDOT, and their officials and employees from any liability due to loss, damage, injuries, or other causalities of whatever kind, or by whosoever caused, to the person or property of anyone on or off the Project arising out of, or resulting from the work covered by this AGREEMENT or the work connected therewith, or from the installation, existence, use, maintenance, condition, repairs, alteration or removal of any equipment or material, to the extent of negligence of the SPONSORING PARTY, including any claims arising out the Worker's Compensation Act or any other law, ordinance, order or decree. The SPONSORING PARTY agrees to pay all reasonable expenses and attorney's fees incurred by or imposed on the State and INDOT in connection herewith in the event that the SPONSORING PARTY shall default under the provisions of this Section.

2.13. Non-Discrimination.

A. Pursuant to I.C. 22-9-1-10 and the Civil Rights Act of 1964, the SPONSORING PARTY, shall not discriminate against any employee or applicant for employment, to be employed in the performance of work under this Agreement, with respect to hire, tenure, terms, conditions or privileges of employment or any matter directly or indirectly related to employment, because of race, color, religion, sex, disability, national origin, ancestry or status as a veteran. Breach of this covenant may be regarded as a material breach of this Agreement. Acceptance of this Agreement also signifies compliance with applicable federal laws, regulations, and executive orders prohibiting discrimination in the provision of services based on race, color, national origin, age, sex, disability or status as a veteran.

B The SPONSORING PARTY understands that INDOT is a recipient of federal funds. Pursuant to that understanding, the SPONSORING PARTY agrees that if the SPONSORING PARTY employs fifty (50) or more employees and does at least $50,000.00 worth of business with the State and is not exempt, the SPONSORING PARTY will comply with the affirmative action reporting requirements of 41 CFR 60-1.7. The SPONSORING PARTY shall comply with Section 202 of executive order 11246, as amended, 41 CFR 60-250, and 41 CFR 60-741, as amended, which are incorporated herein by specific reference. Breach of this covenant may be regarded as a material breach of Agreement.

It is the policy of INDOT to assure full compliance with Title VI of the Civil Rights Act of 1964 and related statutes and regulations in all programs and activities. Title VI and related statutes require that no person in the United States shall on the grounds of race, color or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance. (INDOT's Title VI enforcement shall include the following additional grounds: sex, ancestry, age, religion and disability.) The following are examples of where this policy shall be applied relative to the INDOT.

C. The SPONSORING PARTY shall not discriminate in its selection and retention of contractors, including without limitation, those services retained for, or incidental to, construction, planning, research, engineering, property management, and fee contracts and other commitments with persons for services and expenses incidental to the acquisitions of right-of-way.

D. The SPONSORING PARTY shall not modify the Project in such a manner as to require, on the basis of race, color or national origin, the relocation of any persons. (INDOT's Title VI enforcement will include the following additional grounds; sex, ancestry, age, religion and disability).

E. The SPONSORING PARTY shall not modify the Project in such a manner as to deny reasonable access to and use thereof to any persons on the basis of race, color or national origin. (INDOT's Title VI enforcement will include the following additional grounds; sex, ancestry, age, religion and disability.)

F. The SPONSORING PARTY shall neither allow discrimination by contractors in their selection and retention of subcontractors, leasors and/or material suppliers, nor allow discrimination by their subcontractors in their selection of subcontractors, leasors or material suppliers, who participate in construction, right-of-way clearance and related projects.

G. The SPONSORING PARTY shall take appropriate actions to correct any deficiency determined by INDOT and/or the Federal Highway Administration ("FHWA") within a reasonable time period, not to exceed ninety (90) days, in order to implement Title VI compliance in accordance with INDOT's assurances and guidelines.

2.14. Notice to Parties. Whenever any notice, statement or other communication is required under this Agreement, it shall be sent to the following contacts unless otherwise specifically advised.

For INDOT:
Cultural Resources Manager
INDOT Environmental Services Division
100 N. Senate Avenue, Room N642
Indianapolis, IN 46204

For INSHPO:
Division Director
Department of Historic Preservation & Archaeology
Indiana Department of Natural Resources
402 West Washington Street, W274
Indianapolis, Indiana 46204-2739

For IDNR: Division Director
Outdoor Recreation
Indiana Department of Natural Resources
402 West Washington Street, W271
Indianapolis, Indiana 46204

2.15. Payment. All payments shall be made according to the terms of this Agreement and in conformance with State fiscal policies and procedures and, as required by IC 4-13-2-14.8, by electronic funds transfer to the financial institution designated by the SPONSORING PARTY in writing unless a specific waiver has been obtained from the Indiana Auditor of State. No payments will be made in advance of receipt of the goods or services that are the subject of this Agreement except as permitted by IC 4-13-2-20.

If the SPONSORING PARTY has any outstanding balances on any Contract with INDOT, and such outstanding balances due to INDOT are at least sixty (60) calendar days past the due date, INDOT may proceed in accordance with I.C. 8-14-1-9 to invoke the powers of the Auditor of the State of Indiana to make a mandatory transfer of funds from the SPONSORING PARTY's allocation of the Motor Vehicle Highway Account to INDOT's account, or INDOT may withhold or garnish payments otherwise due to the SPONSORING PARTY from INDOT under this Agreement to partially or wholly satisfy such outstanding balances.

2.16. Penalties, Interest and Attorney's Fees. INDOT will in good faith perform its required obligations hereunder, and does not agree to pay any penalties, liquidated damages, interest, or attorney's fees, except as required by Indiana law in part, IC 5-17-5, I. C. 34-54-8, and I. C. 34-13-1.

2.17. Severability. The invalidity of any section, subsection, clause or provision of this Agreement shall not affect the validity of the remaining sections, subsections, clauses or provisions of this Agreement.

2.18. Status of Claims. The SPONSORING PARTY shall be responsible for keeping INDOT currently advised as to the status of any claims made for damages against the SPONSORING PARTY resulting from services performed under this Agreement.

2.19. Termination. Any party may terminate this Agreement upon thirty (30) days written notice to the others, provided the agency requesting the termination can show cause that there has been a failure on the part of the other to substantially fulfill its responsibilities pursuant to this Agreement or that the Agreement is otherwise not working to the satisfaction of either party, and after providing notice and sufficient opportunity for remedy. The terminating party shall be responsible for any and all costs associated with or resulting from termination of the Agreement.

2.20. Employment Eligibility Verification.

A. The SPONSORING PARTY affirms under the penalties of perjury that it does not knowingly employ an unauthorized alien.

B. The SPONSORING PARTY shall enroll in and verify the work eligibility status of all his/her/its newly hired employees through the E-Verify program as defined in IC 22-5-1.7-3. The SPONSORING PARTY is not required to participate should the E-Verify program cease to exist. Additionally, the SPONSORING PARTY is not required to participate if the SPONSORING PARTY is self-employed and does not employ any employees.

C. The SPONSORING PARTY shall not knowingly employ or contract with an unauthorized alien. The SPONSORING PARTY shall not retain an employee or contract with a person that the SPONSORING PARTY subsequently learns is an unauthorized alien.

D. The SPONSORING PARTY shall require his/her/its subcontractors, who perform work under this contract, to certify to the SPONSORING PARTY that the subcontractor does not knowingly employ or contract with an unauthorized alien and that the subcontractor has enrolled and is participating in the E-Verify program. The SPONSORING PARTY agrees to maintain this certification throughout the duration of the term of a contract with a subcontractor.

E. The State may terminate for default if the SPONSORING PARTY fails to cure a breach of this provision no later than thirty (30) days after being notified by the State.

2.21. General. This Agreement represents the entire understanding between the Parties relating to the subject matter, and supersedes any and all prior oral and/or written communications, understandings or agreements relating to the subject matter. Any amendment or modification to this Agreement must be in writing, reference this Section 2.21 and be signed by duly authorized representatives of the Parties. Neither this Agreement nor any portions of it may be assigned, licensed or otherwise transferred by the SPONSORING PARTY without the prior written consent of INDOT. This Agreement will be binding upon the Parties and their permitted successors or assigns. Failure of either Party to enforce any provision of this Agreement will not constitute or be construed as a waiver of such provision or of the right to enforce such provision. The headings are inserted for convenience only and do not constitute part of this Agreement.

[Remainder of Page Intentionally Left Blank]

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Non-Collusion

The undersigned attests, subject to the penalties for perjury, that he/she is the properly authorized representative, agent, member or officer of the Party, that he/she has not, nor has any other member, employee, representative, agent or officer of the Party, directly or indirectly, to the best of his/her knowledge, entered into or offered to enter into any combination, collusion or agreement to receive or pay, and that he/she has not received or paid, any sum of money or other consideration for the execution of this Agreement other than that which appears upon the face of this Agreement.

In Witness Whereof, the Parties have, through duly authorized representatives, entered into this Agreement. The Parties having read and understand the forgoing terms of this Agreement do by their respective signatures dated below hereby agree to the terms thereof.

STATE OF INDIANA
Department of Transportation

_____(for)
Brandye Hendrickson
Commissioner

Date: _____

STATE OF INDIANA
Department of Natural Resources

_____
John Davis
Deputy Director

STATE OF INDIANA
Division of Historic Preservation and Archaeology

_____
Mitch Zoll
Director

Date: _____

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APPROVALS

STATE OF INDIANA
State Budget Agency

_____
Brian E. Bailey, Director

Date: _____

STATE OF INDIANA
Department of Administration

_____
Jessica Robertson, Commissioner

Date: _____

Approved as to Form and Legality:

_____(for)
Gregory F. Zoeller
Attorney General of Indiana

Date Approved: _____

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COOPERATIVE AGREEMENT
Between
THE INDIANA DEPARTMENT OF TRANSPORTATION,
THE INDIANA DEPARTMENT OF NATURAL RESOURCES,
And
BROWN COUNTY
Concerning
RELOCATION AND TRANSFER OF OWNERSHIP
OF SELECT BRIDGE 046-11-01316C

EDS:_____

This Agreement is made and entered into this _____ day of _____ 2015 by and between: the Indiana Department of Transportation (hereinafter referred to as "INDOT"); the Indiana Department of Natural Resources (hereinafter referred to as "IDNR"), acting by and through the Indiana State Historic Preservation Officer (hereinafter referred to as the "INSHPO"); and Brown County and jointly referred to as the "PARTIES".

RECITALS

WHEREAS, pursuant to 36 C.F.R. 800.14(b) of the regulations implementing Section 106 of the National Historic Preservation Act of 1966 (Section 106) (16 U.S.C. 470f), INDOT, the SHPO, the Federal Highway Administration ("FHWA") and the Advisory Council on Historic Preservation ("Council") have entered into a Programmatic Agreement applicable to Federal-aid projects that result in the rehabilitation or replacement of historic bridges in Indiana (hereinafter referred to as the Historic Bridges PA, attached as Exhibit A and herein incorporated by reference); and

WHEREAS, historic bridges may be rehabilitated through several Federal-aid programs, such as the Transportation Enhancement Program, the Surface Transportation Program, and the Highway Bridge Replacement and Rehabilitation Program provided the appropriate eligibility criteria are satisfied; and

WHEREAS, the Historic Bridges PA Section III.A.8 provides that "If the preferred alternative includes transferring ownership of the historic bridge, then INDOT will initiate an agreement between INDOT, the bridge owner if the bridge does not belong to INDOT, the Indiana SHPO, and the proposed new bridge owner"; and

WHEREAS, the historic bridge known as Bridge Number 046-11-01316C (hereinafter "the Bridge"), which carries traffic on SR 46 over the Eel River (NBI No. 017050), is scheduled to be replaced by INDOT under INDOT Project Des. No. 0800910; and

WHEREAS, IDNR wishes to obtain ownership of one span of the Bridge Number 046-11-01316C historic bridge (hereinafter "Span A") and to relocate Span A for use in the Salt Creek Trail project (as shown and described in the attached Exhibit B, herein incorporated by reference), which will be outlined in a separate agreement; and

WHEREAS, Brown County wishes to obtain ownership of the second span of the Bridge Number 046-11-01316C historic bridge (hereinafter "Span B") and to relocate Span B for use in the Salt Creek Trail project (as shown and described in the attached Exhibit B); and

WHEREAS, in obtaining Span B, Brown County agrees to adhere to all requirements of the Historic Bridges PA, including Attachment B to the Historic Bridge PA (outlining standards for treatment of historic bridges); and

WHEREAS, in the interest of preserving Spans A and B while providing for replacement of the Bridge in Clay County, the Parties desire to transfer Span A to IDNR (through separate agreement) and Span B to Brown County for use on the Salt Creek Trail Project;

NOW THEREFORE, in consideration of the promises and the mutually dependent covenants contained herein and other good and valuable consideration, the adequacy and receipt of which are hereby acknowledged, and intending to be legally bound, the Parties hereto agree as follows:

1.1. <u>Brown County's Responsibilities</u>.

A. Brown County agrees to take on ownership of Span B (as described in Exhibits A and B to this Agreement and in accordance with all requirements of the Historic Bridges PA).

B. Once installation of Span B at the Salt Creek Trail site is complete, subject to Section 1.2 below, Brown County agrees to accept all costs associated with maintenance of the bridge according to the standards established in the Historic Bridges PA and for the duration of this agreement identified in Section 1.4.

1.2. <u>INDOT's Responsibilities</u>.

A. INDOT hereby agrees to be responsible for all costs associated with disassembly, relocation and rehabilitation of the Span B. These costs include right-of-way engineering, appraising, buying and all associated land acquisition activities for permanent right-of-way, temporary right-of-way and easements required for construction of Span A and Span B over Salt Creek. The costs also include preparation of engineering and hydraulics analysis documents, environmental documents, and plan sheets for the Span A and Span B crossing sites in Brown County. The costs additionally include disassembly, transportation to the relocation site, construction of the required substructure and approach elements, and rehabilitation and reassembly of the bridge at the new location. INDOT will be responsible for building ADA compliant shared-use trail approaches to the bridges that connect to the existing ground elevation. INDOT further agrees to execute any additional documents it believes necessary to effectuate the transfer of ownership of the Bridge to Brown County

1.3. <u>Standard Treatment of Historic Bridges</u>. The Parties shall follow the requirements of the Historic Bridges PA (including the "Standard Treatment Approach for Historic Bridges" outlined in Attachment B to the PA) in relocating the Span B.

1.4. <u>Duration and Renewal of Agreement</u>. The term of this Agreement shall begin on the date of last signature to this Agreement and continue through December 31, 2043 or until the end of the useful life of the Span B, whichever occurs last. This Agreement may be renewed under the same terms and conditions subject to the approval of all signing Parties.

II. GENERAL PROVISIONS

2.1. Access to Records. INDOT (individually and collectively referred to as the "SPONSORING PARTY") shall maintain all books, documents, papers, correspondence, accounting records and other evidence pertaining to the cost incurred under this Agreement, and shall make such materials available at their respective offices at all reasonable times during the period of this Agreement and for five (5) years from the date of final payment under the terms of this Agreement, for inspection or audit by INDOT, or its authorized representative, and copies thereof shall be furnished free of charge, if requested by INDOT. The SPONSORING PARTY agrees that, upon request by any agency participating in federally-assisted programs with whom the SPONSORING PARTY has Agreed to or seeks to agree to, INDOT may release or make available to the agency any working papers from an audit performed by INDOT of the SPONSORING PARTY in connection with this Agreement, including any books, documents, papers, accounting records and other documentation which support or form the basis for the audit conclusions and judgments.

2.2. Audit. The SPONSORING PARTY acknowledges that it may be required to submit to an audit of funds paid through this Agreement. Any such audit shall be conducted in accordance with IC 5-11-1, et. seq. and audit guidelines specified by the State and/or in accordance with audit requirements specified elsewhere in this Agreement.

The State considers the SPONSORING PARTY to be a "vendor" for purposes of this Agreement. However, if required by applicable provisions of the Office of Management and Budget Circular A-133 (Audits of States, Local Governments, and Non-Profit Organizations), following the expiration of this Agreement the SPONSORING PARTY shall arrange for a financial and compliance audit of funds provided by the State pursuant to this Agreement. Such audit is to be conducted by an independent public or certified public accountant (or as applicable, the Indiana State Board of Accounts), and performed in accordance with Indiana State Board of Accounts publication entitled "Uniform Compliance Guidelines for Examination of Entities Receiving Financial Assistance from Governmental Sources," and applicable provisions of the Office of Management and Budget Circulars A-133 (Audits of States, Local Governments, and Non-Profit Organizations). The SPONSORING PARTY is responsible for ensuring that the audit and any management letters are completed and forwarded to the State in accordance with the terms of this Agreement. Audits conducted pursuant to this paragraph must be submitted no later than nine (9) months following the close of the SPONSORING PARTY's fiscal year. The SPONSORING PARTY agrees to provide the Indiana State Board of Accounts and the State an original of all financial and compliance audits. The audit shall be an audit of the actual entity, or distinct portion thereof that is the SPONSORING PARTY, and not of a parent, member, or subsidiary corporation of the SPONSORING PARTY, except to the extent such an expanded audit may be determined by the Indiana State Board of Accounts or the State to be in the best interests of the State. The audit shall include a statement from the Auditor that the Auditor has reviewed this Agreement and that the SPONSORING PARTY is not out of compliance with the financial aspects of this Agreement.

2.3. Authority to Bind SPONSORING PARTY. The signatory for the SPONSORING PARTY warrants that he/she has the necessary authority to enter into this Agreement. The signatory for the SPONSORING PARTY represents that he/she has been duly authorized to execute this Agreement on behalf of the SPONSORING PARTY, and has obtained all necessary or applicable approval to make this Agreement fully binding upon the SPONSORING PARTY when his/her signature is affixed to this Agreement.

2.4. <u>Certification for Federal-Aid Contracts Lobbying Activities</u>. The SPONSORING PARTY certifies, by signing and submitting this Agreement, to the best of its knowledge and belief that the SPONSORING PARTY has complied with Section 1352, Title 31, U.S. Code, and specifically, that:

A. No federal appropriated funds have been paid or will be paid, by or on behalf of the SPONSORING PARTY, to any person for influencing or attempting to influence an officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal Agreements, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal Agreement, grant, loan, or cooperative agreement.

B. If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this federal Agreement, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

C. The SPONSORING PARTY also agrees by signing this Agreement that it shall require that the language of this certification be included in all contractor agreements including lower tier subcontracts, which exceed $100,000, and that all such sub recipients shall certify and disclose accordingly. Any person who fails to sign or file this required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each failure.

2.5. <u>Compliance with Laws</u>.

A. The SPONSORING PARTY shall comply with all applicable federal, state and local laws, rules, regulations and ordinances, and all provisions required thereby to be included herein are hereby incorporated by reference. The enactment of any state or federal statute, or the promulgation of regulations thereunder, after execution of this Agreement, shall be reviewed by INDOT to determine whether formal modifications are required to the provisions of this Agreement.

B. The SPONSORING PARTY and its agents shall abide by all ethical requirements that apply to persons who have a business relationship with the State, as set forth in Indiana Code § 4-2-6, et seq., Indiana Code § 4-2-7, et. seq., the regulations promulgated thereunder, and Executive Order 05-12, dated January 12, 2005. If the SPONSORING PARTY is not familiar with these ethical requirements, the SPONSORING PARTY should refer any questions to the Indiana State Ethics Commission, or visit the Indiana State Ethics Commission website at <<http://www.in.gov/ethics/>>>. If the SPONSORING PARTY or its agents violate any applicable ethical standards, the State may, at its sole discretion, terminate this Agreement immediately upon notice to the SPONSORING PARTY. In addition, the SPONSORING PARTY may be subject to penalties under Indiana Code §§ 4-2-6 and 4-2-7, and under any other applicable state or federal laws.

C. The SPONSORING PARTY certifies by entering into this Agreement, that neither it nor its principal(s) are presently in arrears in payment of its taxes, permit fees or other statutory, regulatory or judicially required payments to the State of Indiana. Further, the SPONSORING PARTY agrees

that any payments in arrears and currently due to the State of Indiana may be withheld from payments due to the SPONSORING PARTY. Additionally, further work or payments may be withheld, delayed, or denied and/or this Agreement suspended until the SPONSORING PARTY becomes current in its payments and has submitted proof of such payment to INDOT.

D. The SPONSORING PARTY warrants that it has no current or outstanding criminal, civil, or enforcement actions initiated by the State of Indiana pending, and agrees that it will immediately notify INDOT of any such actions. During the term of such actions, the SPONSORING PARTY agrees that INDOT may delay, withhold, or deny work under any supplement, amendment, change order, contract or the like.

E. If a valid dispute exists as to the SPONSORING PARTY'S liability or guilt in any action initiated by the State of Indiana or its agencies, and INDOT decides to delay, withhold, or deny work to the SPONSORING PARTY, the SPONSORING PARTY may request that it be allowed to continue, or receive work, without delay. The SPONSORING PARTY must submit, in writing, a request for review to INDOT. A determination by the INDOT shall be final and binding on the Parties and not subject to administrative review. Any payments that the INDOT may delay, withhold, deny, or apply under this section shall not be subject to penalty or interest under IC 5-17-5.

F. The SPONSORING PARTY represents and warrants that the SPONSORING PARTY shall obtain and maintain all required permits, licenses, registrations and approvals, as well as comply with all health, safety, and environmental statutes, rules, or regulations in the performance of work activities for INDOT. Failure to do so may be deemed a material breach of this Agreement and grounds for termination and denial of further work with the State.

G. The SPONSORING PARTY hereby represents and warrants that, if it is an entity described in IC Title 23, it is properly registered and owes no outstanding reports with the Indiana Secretary of State.

H. As required by IC 5-22-3-7: (1) the SPONSORING PARTY and any principals of the SPONSORING PARTY certify that (A) the SPONSORING PARTY, except for de minimis and nonsystematic violations, has not violated the terms of (i) IC 24-4.7 [Telephone Solicitation Of Consumers], (ii) IC 24-5-12 [Telephone Solicitations] , or (iii) IC 24-5-14 [Regulation of Automatic Dialing Machines] in the previous three hundred sixty-five (365) days, even if IC 24-4.7 is preempted by federal law; and (B) the SPONSORING PARTY will not violate the terms of IC 24-4.7 for the duration of the Agreement, even if IC 24-4.7 is preempted by federal law. (2) The SPONSORING PARTY and any principals of the SPONSORING PARTY certify that an affiliate or principal of the SPONSORING PARTY and any agent acting on behalf of the SPONSORING PARTY or on behalf of an affiliate or principal of the SPONSORING PARTY (A) except for de minimis and nonsystematic violations, has not violated the terms of IC 24-4.7 in the previous three hundred sixty-five (365) days, even if IC 24-4.7 is preempted by federal law; and (B) will not violate the terms of IC 24-4.7 for the duration of the Agreement, even if IC 24-4.7 is preempted by federal law.

2.6. <u>Conflict of Interest</u>.

A. As used in this section:
"Immediate family" means the spouse and the un-emancipated children of an individual.
"Interested Party," means:

1. The individual executing the Agreement;
2. An individual who has an interest of three percent (3%) or more of SPONSORING PARTY, if SPONSORING PARTY is not an individual; or
3. Any member of the immediate family of an individual specified under subdivision 1 or 2.

"Commission" means the State Ethics Commission.

B. INDOT may cancel this Agreement without recourse by the SPONSORING PARTY if any interested Party is an employee of the State of Indiana.

C. INDOT will not exercise its right of cancellation under Section B, above, if the SPONSORING PARTY gives INDOT an opinion by the Commission indicating that the existence of this Agreement and the employment by the State of the interested Party does not violate any statute or code relating to ethical conduct of state employees. INDOT may take action, including cancellation of this Agreement, consistent with an opinion of the Commission obtained under this section.

D. The SPONSORING PARTY has an affirmative obligation under this Agreement to disclose to INDOT when an interested Party is or becomes an employee of INDOT. The obligation under this section extends only to those facts that the SPONSORING PARTY knows or reasonably could know.

2.7. Disadvantaged Business Enterprise Program. Notice is hereby given to the SPONSORING PARTY that failure to carry out the requirements set forth in 49 CFR Sec. 26.13(b) shall constitute a breach of this Agreement and, after notification, may result in termination of this Agreement or such remedy as INDOT deems appropriate.

The referenced section requires the following policy and disadvantaged business enterprise ("DBE") assurance to be included in all subsequent Agreements between the SPONSORING PARTY and any contractors.

The SPONSORING PARTY shall not discriminate on the basis of race, color, national origin, or sex in the performance of this Agreement. The SPONSORING PARTY shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted Agreements. Failure by the SPONSORING PARTY to carry out these requirements is a material breach of this Agreement, which may result in the termination of this Agreement or such other remedy, as INDOT, as the recipient, deems appropriate.

As part of the SPONSORING PARTY'S equal opportunity affirmative action program, SPONSORING PARTY, it is required that the SPONSORING PARTY shall take positive affirmative actions and put forth good faith efforts to solicit proposals or bids from and to utilize disadvantaged business enterprise, vendors or suppliers.

2.8. Drug-Free Workplace Certification. The SPONSORING PARTY hereby covenants and agrees to make a good faith effort to provide and maintain a drug-free workplace, and that it will give written notice to the Indiana Department of Transportation and the Indiana Department of Administration within ten (10) days after receiving actual notice that an employee of the SPONSORING PARTY in the State of Indiana has been convicted of a criminal drug violation occurring in the SPONSORING PARTY'S workplace. False certification or violation of the certification may result in sanctions including, but not limited to, suspension of Agreement payments,

termination of the Agreement and/or debarment of contracting opportunities with the State of Indiana for up to three (3) years.

In addition to the provisions of the above paragraphs, if the total Agreement amount set forth in this Agreement is in excess of $25,000.00, the SPONSORING PARTY hereby further agrees that this Agreement is expressly subject to the terms, conditions and representations of the following certification:

This certification is required by Executive Order No. 90-5, April 12, 1990, issued by the Governor of Indiana. Pursuant to its delegated authority, the Indiana Department of Administration is requiring the inclusion of this certification in all Agreements with and grants from the State of Indiana in excess of $25,000.00. No award of an Agreement shall be made, and no Agreement, purchase order or agreement, the total amount of which exceeds $25,000.00, shall be valid, unless and until this certification has been fully executed by the SPONSORING PARTY and made a part of the Agreement as part of the Agreement documents.

The SPONSORING PARTY certifies and agrees that it will provide a drug-free workplace by:

a. Publishing and providing to all of its employees a statement notifying their employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the SPONSORING PARTY'S workplace and specifying the actions that will be taken against employees for violations of such prohibition;

b. Establishing a drug-free awareness program to inform its employees of (1) the dangers of drug abuse in the workplace; (2) the SPONSORING PARTY'S policy of maintaining a drug-free workplace; (3) any available drug counseling, rehabilitation, and employee assistance programs; and (4) the penalties that may be imposed upon an employee for drug abuse violations occurring in the workplace;

c. Notifying all employees in the statement required by subparagraph (a) above that as a condition of continued employment the employee will (1) abide by the terms of the statement; and (2) notify the SPONSORING PARTY of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such conviction;

d. Notifying in writing the State within ten (10) days after receiving notice from an employee under subdivision (c)(2) above, or otherwise receiving actual notice of such conviction;

e. Within thirty (30) days after receiving notice under subdivision (c)(2) above of a conviction, imposing the following sanctions or remedial measures on any employee who is convicted of drug abuse violations occurring in the workplace: (1) take appropriate personnel action against the employee, up to and including termination; or (2) require such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State or local health, law enforcement, or other appropriate agency; and

f. Making a good faith effort to maintain a drug-free workplace through the implementation of subparagraphs (a) through (e) above.

2.9. <u>Force Majeure</u>. In the event that either Party is unable to perform any of its obligations under this Agreement or to enjoy any of its benefits because of natural disaster or decrees of

governmental bodies not the fault of the affected Party (hereinafter referred to as a Force Majeure Event), the Party who has been so affected shall immediately give notice to the other Party and shall do everything possible to resume performance. Upon receipt of such notice, all obligations under this Agreement shall be immediately suspended. If the period of nonperformance exceeds thirty (30) days from the receipt of notice of the Force Majeure Event, the Party whose ability to perform has not been so affected may, by giving written notice, terminate this Agreement.

2.10. Funding Cancellation Clause. When the Director of the Office of Management and Budget makes a written determination that funds are not appropriated or otherwise available to support continuation of the performance of this Agreement, this Agreement shall be canceled. A determination by the Budget Director that funds are not appropriated or otherwise available to support continuation of performance shall be final and conclusive.

2.11. Governing Laws. This Agreement shall be construed in accordance with and governed by the laws of the State of Indiana and the suit, if any, must be brought in the State of Indiana.

2.12. Indemnification. The SPONSORING PARTY agrees to indemnify exculpate, and hold harmless the State of Indiana, INDOT, and their officials and employees from any liability due to loss, damage, injuries, or other causalities of whatever kind, or by whosoever caused, to the person or property of anyone on or off the Project arising out of, or resulting from the work covered by this AGREEMENT or the work connected therewith, or from the installation, existence, use, maintenance, condition, repairs, alteration or removal of any equipment or material, to the extent of negligence of the SPONSORING PARTY, including any claims arising out the Worker's Compensation Act or any other law, ordinance, order or decree. The SPONSORING PARTY agrees to pay all reasonable expenses and attorney's fees incurred by or imposed on the State and INDOT in connection herewith in the event that the SPONSORING PARTY shall default under the provisions of this Section.

2.13. Non-Discrimination.

A. Pursuant to I.C. 22-9-1-10 and the Civil Rights Act of 1964, the SPONSORING PARTY, shall not discriminate against any employee or applicant for employment, to be employed in the performance of work under this Agreement, with respect to hire, tenure, terms, conditions or privileges of employment or any matter directly or indirectly related to employment, because of race, color, religion, sex, disability, national origin, ancestry or status as a veteran. Breach of this covenant may be regarded as a material breach of this Agreement. Acceptance of this Agreement also signifies compliance with applicable federal laws, regulations, and executive orders prohibiting discrimination in the provision of services based on race, color, national origin, age, sex, disability or status as a veteran.

B The SPONSORING PARTY understands that INDOT is a recipient of federal funds. Pursuant to that understanding, the SPONSORING PARTY agrees that if the SPONSORING PARTY employs fifty (50) or more employees and does at least $50,000.00 worth of business with the State and is not exempt, the SPONSORING PARTY will comply with the affirmative action reporting requirements of 41 CFR 60-1.7. The SPONSORING PARTY shall comply with Section 202 of executive order 11246, as amended, 41 CFR 60-250, and 41 CFR 60-741, as amended, which are incorporated herein by specific reference. Breach of this covenant may be regarded as a material breach of Agreement.

It is the policy of INDOT to assure full compliance with Title VI of the Civil Rights Act of 1964 and related statutes and regulations in all programs and activities. Title VI and related statutes require that no person in the United States shall on the grounds of race, color or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance. (INDOT's Title VI enforcement shall include the following additional grounds: sex, ancestry, age, religion and disability.) The following are examples of where this policy shall be applied relative to the INDOT.

C. The SPONSORING PARTY shall not discriminate in its selection and retention of contractors, including without limitation, those services retained for, or incidental to, construction, planning, research, engineering, property management, and fee contracts and other commitments with persons for services and expenses incidental to the acquisitions of right-of-way.

D. The SPONSORING PARTY shall not modify the Project in such a manner as to require, on the basis of race, color or national origin, the relocation of any persons. (INDOT's Title VI enforcement will include the following additional grounds; sex, ancestry, age, religion and disability).

E. The SPONSORING PARTY shall not modify the Project in such a manner as to deny reasonable access to and use thereof to any persons on the basis of race, color or national origin. (INDOT's Title VI enforcement will include the following additional grounds; sex, ancestry, age, religion and disability.)

F. The SPONSORING PARTY shall neither allow discrimination by contractors in their selection and retention of subcontractors, leasors and/or material suppliers, nor allow discrimination by their subcontractors in their selection of subcontractors, leasors or material suppliers, who participate in construction, right-of-way clearance and related projects.

G. The SPONSORING PARTY shall take appropriate actions to correct any deficiency determined by INDOT and/or the Federal Highway Administration ("FHWA") within a reasonable time period, not to exceed ninety (90) days, in order to implement Title VI compliance in accordance with INDOT's assurances and guidelines.

2.14. Notice to Parties. Whenever any notice, statement or other communication is required under this Agreement, it shall be sent to the following contacts unless otherwise specifically advised.

For INDOT:
Cultural Resources Manager
INDOT Environmental Services Division
100 N. Senate Avenue, Room N642
Indianapolis, IN 46204

For INSHPO:
Division Director
Department of Historic Preservation & Archaeology
Indiana Department of Natural Resources
402 West Washington Street, W274
Indianapolis, Indiana 46204-2739

For IDNR: Division Director
Outdoor Recreation
Indiana Department of Natural Resources
402 West Washington Street, W271
Indianapolis, Indiana 46204

2.15. Payment. All payments shall be made according to the terms of this Agreement and in conformance with State fiscal policies and procedures and, as required by IC 4-13-2-14.8, by electronic funds transfer to the financial institution designated by the SPONSORING PARTY in writing unless a specific waiver has been obtained from the Indiana Auditor of State. No payments will be made in advance of receipt of the goods or services that are the subject of this Agreement except as permitted by IC 4-13-2-20.

If the SPONSORING PARTY has any outstanding balances on any Contract with INDOT, and such outstanding balances due to INDOT are at least sixty (60) calendar days past the due date, INDOT may proceed in accordance with I.C. 8-14-1-9 to invoke the powers of the Auditor of the State of Indiana to make a mandatory transfer of funds from the SPONSORING PARTY's allocation of the Motor Vehicle Highway Account to INDOT's account, or INDOT may withhold or garnish payments otherwise due to the SPONSORING PARTY from INDOT under this Agreement to partially or wholly satisfy such outstanding balances.

2.16. Penalties, Interest and Attorney's Fees. INDOT will in good faith perform its required obligations hereunder, and does not agree to pay any penalties, liquidated damages, interest, or attorney's fees, except as required by Indiana law in part, IC 5-17-5, I. C. 34-54-8, and I. C. 34-13-1.

2.17. Severability. The invalidity of any section, subsection, clause or provision of this Agreement shall not affect the validity of the remaining sections, subsections, clauses or provisions of this Agreement.

2.18. Status of Claims. The SPONSORING PARTY shall be responsible for keeping INDOT currently advised as to the status of any claims made for damages against the SPONSORING PARTY resulting from services performed under this Agreement.

2.19. Termination. Any party may terminate this Agreement upon thirty (30) days written notice to the others, provided the agency requesting the termination can show cause that there has been a failure on the part of the other to substantially fulfill its responsibilities pursuant to this Agreement or that the Agreement is otherwise not working to the satisfaction of either party, and after providing notice and sufficient opportunity for remedy. The terminating party shall be responsible for any and all costs associated with or resulting from termination of the Agreement.

2.20. Employment Eligibility Verification.

A. The SPONSORING PARTY affirms under the penalties of perjury that it does not knowingly employ an unauthorized alien.

B. The SPONSORING PARTY shall enroll in and verify the work eligibility status of all his/her/its newly hired employees through the E-Verify program as defined in IC 22-5-1.7-3. The SPONSORING PARTY is not required to participate should the E-Verify program cease to exist. Additionally, the SPONSORING PARTY is not required to participate if the SPONSORING PARTY is self-employed and does not employ any employees.

C. The SPONSORING PARTY shall not knowingly employ or contract with an unauthorized alien. The SPONSORING PARTY shall not retain an employee or contract with a person that the SPONSORING PARTY subsequently learns is an unauthorized alien.

D. The SPONSORING PARTY shall require his/her/its subcontractors, who perform work under this contract, to certify to the SPONSORING PARTY that the subcontractor does not knowingly employ or contract with an unauthorized alien and that the subcontractor has enrolled and is participating in the E-Verify program. The SPONSORING PARTY agrees to maintain this certification throughout the duration of the term of a contract with a subcontractor.

E. The State may terminate for default if the SPONSORING PARTY fails to cure a breach of this provision no later than thirty (30) days after being notified by the State.

2.21. General. This Agreement represents the entire understanding between the Parties relating to the subject matter, and supersedes any and all prior oral and/or written communications, understandings or agreements relating to the subject matter. Any amendment or modification to this Agreement must be in writing, reference this Section 2.21 and be signed by duly authorized representatives of the Parties. Neither this Agreement nor any portions of it may be assigned, licensed or otherwise transferred by the SPONSORING PARTY without the prior written consent of INDOT. This Agreement will be binding upon the Parties and their permitted successors or assigns. Failure of either Party to enforce any provision of this Agreement will not constitute or be construed as a waiver of such provision or of the right to enforce such provision. The headings are inserted for convenience only and do not constitute part of this Agreement.

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Non-Collusion

The undersigned attests, subject to the penalties for perjury, that he/she is the properly authorized representative, agent, member or officer of the Party, that he/she has not, nor has any other member, employee, representative, agent or officer of the Party, directly or indirectly, to the best of his/her knowledge, entered into or offered to enter into any combination, collusion or agreement to receive or pay, and that he/she has not received or paid, any sum of money or other consideration for the execution of this Agreement other than that which appears upon the face of this Agreement.

In Witness Whereof, the Parties have, through duly authorized representatives, entered into this Agreement. The Parties having read and understand the forgoing terms of this Agreement do by their respective signatures dated below hereby agree to the terms thereof.

STATE OF INDIANA
Department of Transportation

_____(for)
Brandye Hendrickson
Commissioner

Date: _____

STATE OF INDIANA
Department of Natural Resources
Division of Historic Preservation and Archaeology

_____
Mitch Zoll
Director

Date: _____

Brown County
Board of Commissioners

_____
Dave Anderson, President

_____
Dennis J. Wray, Member

Date: _____

Date: _____

_____
Diana Biddle, Member

DRAFT

Date: _____

DRAFT

APPROVALS

STATE OF INDIANA
State Budget Agency

_____
Brian E. Bailey, Director

Date: _____

STATE OF INDIANA
Department of Administration

_____
Jessica Robertson, Commissioner

Date: _____

Approved as to Form and Legality:

_____(for)
Gregory F. Zoeller
Attorney General of Indiana

Date Approved: _____

DRAFT

Fed ID#: 36.43.03.335

Prescribed by State Board of Accounts

General Form No. 99P (Revised 2009A)

To: Brazil Times
100 North Meridian St.,
Brazil, IN 47834

T HERE

(Governmental Unit)
Clay County, Indiana

Public Notice
Des #0800910

The Indiana Department of Transportation (INDOT) is planning to undertake a bridge project located on SR 46 over Eel River, approximately 4.84 mi E of SR 59 in Clay County, Indiana, Structure No. Bridge No. 046-11-01316C/NBI No. 17050. The project is receiving funding from the Federal Highway Administration (FHWA). The bridge is listed in the National Register of Historic Places and is classified as a "Select" bridge by the INDOT Historic Bridge Inventory and, thus, the procedures outlined in Stipulation III.A. of the Historic Bridges Programmatic Agreement (HBPA) will be followed to fulfill FHWA's Section 106 responsibilities for the bridge. Per Stipulation III.A. of the Historic Bridges PA, INDOT will hold a public hearing for the project prior to completion of National Environmental Policy Act (NEPA) studies. The hearing will be advertised at a later date.

To satisfy FHWA's Section 106 responsibilities for other historic resources that may be in the Area of Potential Effects (APE), FHWA will comply with the requirements of 36 CFR Parts 800.3-800.6. Regarding other resources in the APE, the INDOT, on behalf of the FHWA, has determined a "no historic properties affected" finding is appropriate because no other properties listed in or eligible for listing in the National Register are present within the APE. In accordance with the National Historic Preservation Act, the views of the public are being sought regarding the effect of the proposed project on the historic elements as per 36 CFR 800.2(d), 800.3(e) and 800.6(a)(4). Pursuant to 36 CFR 800.6(a) (4), the documentation specified in 36 CFR 800.11(d) is available for inspection in the INDOT Cultural Resources Office in Indianapolis or the INDOT Crawfordsville District Office. This documentation serves as the basis for the "no historic properties affected" finding. The views of the public on this finding are being sought. Please reply to the following address no later than Thursday, August 6, 2015. Patrick Carpenter, Manager, INDOT Environmental Services, 100 N. Senate Avenue, IGCN Rm 642, Indianapolis, IN 46204-2218, Phone: (317) 233-2061, Email: pacarpenter@indot.in.gov.

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hspaxlp

BLISHER'S CLAIM

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Pursuant to the provisions and penalties of IC-5-11-10-1, I hereby certify that the foregoing account is just and correct, that the amount claimed is legally due, after allowing all just credits, and that no part of the same has been paid.

I also certify that the printed matter attached hereto is a true copy, of the same column width and type size, which was duly published in said paper 1 times. The dates of publication being as follows:

July 8th

Additionally, our newspaper has a website and this public notice was posted on the same day(s) as it was published in the newspaper.

Edie Burgess

Date: July 8th, 20 15

Title: PUBLISHERS REPRESENTATIVE

PARSONS

101 West Ohio, Suite 2121 • Indianapolis, Indiana 46204 • (317) 616-1000 • FAX (317) 616-1033 • www.parsons.com

MEETING SUMMARY

Meeting Subject: **CONSULTING PARTIES MEETING:** State Road 46 over Eel River Project

Meeting Location: Parsons Transportation Group,
101 W. Ohio St. Indianapolis, IN 46204

Meeting Time: Thursday, December 4, 2014, 1:30 pm

Attendees:

Name	Representing	Email address	Telephone
Tony Jones	INDOT	TWJones@indot.IN.gov	317-233-5282
Mary Kennedy	INDOT	mkennedy@indot.in.gov	317-232-5215
Susan Branigin	INDOT	sbranigin@indot.in.gov	317-234-0142
Larry Heil	FHWA	Larry.heil@fhwa.dot.gov	317-226-7480
Ross Nelson	ASC Group	rnelson@ascgroup.net	317-915-9300 ext 103
Bob Bronson	DNR	bbronson@dnr.in.gov	317-232-4075
Bob Kirlin	Salt Creek Trail	Bob.kirlin@sbcglobal.net	812-988-2227
Mark Dollase	Indiana Landmarks	mdollase@indianalandmarks.org	317-639-4534
Raina Regan	Indiana Landmarks	rregan@indianalandmarks.org	317-639-4534
John Carr	DNR-DHPA	Jcarr@dnr.in.gov	317-233-1949
Jeff Koehler	Clay County Historian	koehlerjm@frontier.com	812-249-3724
Paul Brandenburg	Indiana Historic Spans Task Force	Indianabridges@sbcglobal.net	317-347-1004
Tommy Kleckner	Indiana Landmarks	tkleckner@indianalandmarks.org	812-232-4534
Doug Terpstra	ASC Group	dterpstra@ascgroup.net	614-643-3206
Brock Ervin	INDOT C'ville Dist.	bervin@indot.in.gov	765-361-5259
Mike Thompson	Brown Co. Admin	thompsonme@browncounty-in.us	812-988-4901
Dan Prevost	Parsons	daniel.prevost@parsons.com	317-616-1017
Sean Porter	Parsons	sean.porter@parsons.com	317-616-1001
Alan Ball	Parsons	alan.ball@parsons.com	317-616-1021
Kyle Muellner	Parsons	kyle.muellner@parsons.com	317-616-4672

Pursuant to the Section 106 process, a *Consulting Parties Meeting* was held to discuss the nature of this project and obtain those parties' input. Clarifications are underlined. **Action Items are shown in bold:**

Project Information

1. The primary scope of this project is to address the deteriorated structural condition of Bridge 46-11-01316C. This bridge has been stabilized with a temporary localized repair; however, it was not intended to be a permanent solution.

2. Dan Prevost discussed the project overview using a PowerPoint presentation, of which certain points were discussed by the group in greater depth.

3. The condition rating system was discussed. It was noted that the superstructure was rated a "3," which translates to Poor/Serious condition. It was discussed that gusset plates were rated a "1", which indicates imminent failure of a component. Subsequently, the newly released 2014 State Inspection report was obtained. This report, which maintains the "1" rating, *notes these gussets have been bypassed with temporary retrofits.*

4. The original design was for a 20-Ton truck (2-axle "H-20"), while today's Federal standards for a State Arterial mandate a 36-Ton truck (Multi-axle "HS-20" or "HL-93"). This structure currently carries 13.85% commercial trucks (445 per day). It also exhibits vertical and horizontal clearance issues, as well as the imminent need for closure and repair within roughly 3 years.

5. Based on the alternatives analysis provided, INDOT identified Alternative 5C-S (constructing State Road 46 "off alignment" to the south of the existing bridge) as the preliminary preferred alternative. Traffic will be maintained on the old bridge until the new section of roadway is opened.

6. The Existing Truss Bridge is on the National Register of Historic Places, and considered "Select" in the *INDOT/FHWA Historic Bridge Inventory*.

7. In 2013, it was identified that the historic trusses could be moved to a trail in Brown County, connecting the City of Nashville with Brown County State Park. The idea was discussed by INDOT, the staff of the State Historic Preservation Officer (SHPO) and Parsons upon selection of the site. At the time, all indicated concurrence that it was a potentially viable solution.

8. Mary Kennedy of INDOT discussed the requirements of the "Historic Bridges Programmatic Agreement (PA)," which states that the FHWA will not participate in the demolition of a Select bridge. The PA also mandates that INDOT hold a Public

Hearing for the Project and may require Photo-documentation. She also indicated the "INDOT Historic Bridges" website is typically a mitigation method required for a *Non-Select* Bridge. A Select Bridge would not require that avenue, as the final home of the structure must be identified prior to the Section 106 completion. A potential home has been identified on this project.

9. It was suggested that local agencies in Clay County should have had an opportunity to claim ownership and responsibility of this bridge. During the meeting Dan Prevost indicated that they were not contacted. Following the meeting, the team learned that the Clay County Commissioners were indeed contacted in 2009 by the previous INDOT project manager (who retired in 2014). Their response at that time indicated that they had no interest in maintaining the bridge for park use (see attached email from Ellie Dieckmeyer). Based on the length of time that has elapsed, INDOT will re-initiate coordination with them to determine their interest. **Parsons/INDOT will notify the Consulting Parties if a meeting is held or other response is received.**

10. Bowling Green is unincorporated.

11. Paul Brandenberg indicated that the relocation of the bridge and splitting of the trusses may result in the removal of the bridge from the National Register (NRHP). Raina Regan also noted that, because the bridge was listed due to its role in the development of Clay County, moving the bridge outside of Clay County may also cause it to be removed from the NRHP.

12. Mary indicated that based upon experience from another project, that the Department of the Interior *did not* want to be contacted regarding the potential de-listing of a bridge. They felt it was a matter to be handled with the SHPO.

13. Larry Heil explained that FHWA desires to place the structure in a location where it would get used, and more importantly, maintained. Without an inter-local agreement to assure maintenance, the State would only be required to maintain the bridge for 25 years.

14. Larry Heil felt that the following changes should be made to the Alternatives Analysis matrix:
    - Alternative 2 (Rehabilitation) and Alternative 3 (One-Way Pair) should be identified as *not* meeting the project's Purpose and Need since they would require a design exception for load capacity.
    - Alternative 4 should be identified as "not prudent" pending a commitment from Clay County to accept long-term responsibility for the bridge.

15. Agreements regarding the commitment to maintain the structures must be signed prior to FHWA approval of the CE document. According to Bob Bronson, the IDNR will take responsibility for the span to be placed on Brown County State Park

property. The Brown County Commissioners have not formally made a decision on ownership. The County Trails Board, which would be the recipient of the trusses at Salt Creek, is a part of the County under the Commissioners. It was determined that **the Inter-Local Agreement, in its draft form, will be shared with Brown County.**

16. It was suggested that a non-standard one-way pair could be an option. This could feature a narrower deck instead of re-purposing the 2 existing lanes.

17. It was inquired as to why this project changed scope from Rehabilitation to Replacement. Mark Dollase would like a letter indicating the project history between 2008 and 2012. Larry Heil indicated project history is part of the Environmental Document. As this is an unusual request, INDOT did not have a timeline to provide such a document.

18. Tommy Kleckner would like to see an "open" style rail at the new crossing, for continued visibility of the stream from the bridge. After the meeting he indicated a good example project had used a short-parapet and steel tube rail system ("PF"-Type).

19. Tommy asked ASC Group whether they surveyed the "Bowling Green" sign as part of the expanded A.P.E. He wondered whether it is over 50 yrs old and holds any National Register eligibility significance. Ross Nelson said they were not able to determine the age of the sign. **ASC Group will look into the sign further.**

20. It was noted there were no (other) properties eligible for inclusion in the NRHP found in the APE.

Prepared by: Kyle Muellner

December 17, 2014

APPENDIX E – RED FLAG AND HAZARDOUS MATERIALS

- Red Flag Investigation

INDIANA DEPARTMENT OF TRANSPORTATION

Driving Indiana's Economic Growth

100 North Senate Avenue
Room N642
Indianapolis, Indiana 46204-2216 (317) 232-5348 FAX: (317) 233-4929

Michael R. Pence, Governor
Michael B. Cline, Commissioner

Date: March 7, 2014

To: Hazardous Materials Unit
Environmental Services
Indiana Department of Transportation
100 N Senate Avenue, Room N642
Indianapolis, IN 46204

From: Stephany Stamatis
Parsons
101 W Ohio Street, Suite 2121
Indianapolis, IN 46204
stephany.stamatis@parsons.com

Re: RED FLAG INVESTIGATION
DES # 0800910
SR 46 over Eel River
Washington Township, Clay County, Indiana

NARRATIVE

The proposed project is located on SR 46 over Eel River near the town of Bowling Green, Washington Township, Clay County. The purpose of the project is to address the deteriorating condition of the existing structure, which was constructed in 1934. The bridge is Structure No.046-11-01316A; NBI No. 17050. It was listed in the National Register of Historic Places in 1999 under Criterion A: Transportation.

In the proposed project area, SR 46 is functionally classified as a Rural Minor Arterial route with a posted speed limit of 55 mph. SR 46 is a two-(2-) lane facility, consisting of two (2) 11-foot travel lanes and one-(1-)foot paved shoulders adjacent the travel lanes. Bridge approach guardrail is present on both sides of the roadway east of the subject bridge. The posted speed limit changed to 40 mph east of the bridge heading eastbound (approximately 900 feet east of the river).

The existing structure, a 2-span Parker pony steel-through-truss bridge, measuring 396 feet long (each span 198 feet in length) was constructed in 1934. The superstructure consists of eight (8) continuous wide-flange steel beams, supported by a substructure consisting of two (2) abutments and one intermediate pier. Reinforced concrete wing walls flank the ends of each abutment. The structure was rehabilitated in 1977; this rehabilitation consisted of bridge-floor slab replacement, removal and replacement of mud walls, installation of new abutment and pier pedestals and guardrail replacement.

According to INDOT Crawfordsville District, the lower portions of the bridge's sway bracing were cut and removed a few years ago by District maintenance staff because they had been extensively collision-damaged. This bridge was built at the crest of a small vertical curve, so the clearances of the sway bracing were a little less than at the portals. If the lower portions of the sway bracing are put back at the original elevations as part of Des. #0800910, the sway bracing will continue to be collision-damaged. It is therefore recommended, as part of the scope of work for Des. #0800910, that

the sway bracing be raised as is feasible in order to prevent damage through contact with vehicles passing through the bridge. The overall condition of the existing bridge is poor.

West of the bridge, approach guardrail is present at the intersection with County Road (CR) 475 E. Existing right-of-way width along SR 46 appears to be 65 feet from centerline along the south side of the roadway and 60 feet from centerline along the north side of the roadway. East of the bridge, existing right-of-way tapers down to 40 feet from centerline along the south side. Existing pavement along SR 46 is asphalt and is in fair condition, with no noticeable cracking, potholes, or rutting present. Surface patching has been applied on both bridge approaches and on the existing pavement near the bridge structure, primarily along the roadway crown.

The scope of work for the preferred alternative (Alternative 5C-S) will construct a new bridge over Eel River approximately 20 feet to the south of the existing bridge and permanently realign the SR 46 roadway. To allow for the additional structure depth of a new bridge and to provide a minimum 2 feet of freeboard, the profile of the existing roadway will need to be raised approximately 8 feet. The alignment of SR 46 will need to be adapted to access this new structure. Starting about 0.5 mile west of the bridge, SR 46 will diverge to the south of the existing alignment and require a reverse curve formation in order to merge back into the existing roadway alignment approximately 0.25 mile east of the bridge.

Alternative 5C-S will require approximately 13.9 acres of new right-of-way from 7 parcels to allow for the construction of the bridge and the realignment of SR 46 and CR 475 E. During construction of the new bridge and approaches traffic will be maintained on the existing SR 46 roadway and bridge. No disruption to SR 46 traffic is anticipated except at the location where the new road is tied into the existing one. At no time is it anticipated that SR 46 will be completely closed to traffic.

SUMMARY

Infrastructure Indicate the number of items of concern found within ½ mile, including an explanation why each item within the ½ mile radius will/will not impact the project. If there are no items, please indicate N/A:			
Religious Facilities	**1**	Recreational Facilities	**1**
Airports	**N/A**	Pipelines	**N/A**
Cemeteries	**2**	Railroads	**N/A**
Hospitals	**N/A**	Trails	**N/A**
Schools	**N/A**	Managed Lands	**N/A**

Explanation:

Religious Facilities

- Mount Carmel Church, approximately located at SR 46 and N CR 375 E in Center Point, is within the half mile radius, but is not within the project limits and will not be impacted.

Cemeteries

- Killion Cemetery, approximately located at N CR 375 E and E CR 50 N in Washington Township, is within the half mile radius, but is not within the project limits and will not be impacted.
- A cemetery (name unlisted), approximately located at E CR 25 S and E Mill St in Bowling Green, is within the half mile radius, but is not within the project limits and will not be impacted.

Recreational Facilities

- Bowling Green Park, approximately located at SR 46 and West Ct in Bowling Green, is within the half mile radius, but is not within the project limits and will not be impacted.

Water Resources Indicate the number of items of concern found within ½ mile, including an explanation why each item within the ½ mile radius will/will not impact the project. If there are no items, please indicate N/A:			
NWI - Points	**N/A**	NWI - Wetlands	**14**
Karst Springs	**N/A**	IDEM 303d Listed Lakes	**N/A**
Canal Structures – Historic	**N/A**	Lakes	**10**
NWI - Lines	**1**	Floodplain - DFIRM	**1**
IDEM 303d Listed Rivers and Streams (Impaired)	**1**	Cave Entrance Density	**N/A**
Rivers and Streams	**4**	Sinkhole Areas	**N/A**
Canal Routes - Historic	**N/A**	Sinking-Stream Basins	**N/A**

Explanation:

NWI - Lines

- One R2UBH NWI line that is a tributary of Eel River is within the half mile radius, approximately 300 feet northeast of the project site, and will not likely be impacted.

IDEM 303d Listed Rivers and Streams (Impaired)

- Jordan Creek (HUC14 – 05120203070070) is a Category 5A impaired stream that is within the half mile radius, approximately 140 feet north of the project limits, and it may be impacted. The cause of impairment is E-Coli.

Rivers and Streams

- Eel River is within the project limits, flowing under the existing bridge that will be replaced. This project will likely have temporary impacts to Eel River.
- Jordan Creek (HUC14 – 05120203070070) is within the half mile radius, approximately 140 feet north of the project limits, and may be impacted.
- One unnamed tributary of Jordan Creek is within the half mile radius, approximately 2,000 feet east of the project site, but will not be impacted.
- One unnamed tributary, approximately 1,000 feet west of the project limits, is within the half mile radius, but will not be impacted.

NWI - Wetlands

- One R2UBH NWI wetland polygon is within the project limits, a portion of which is under the existing bridge that will be replaced, and may be impacted.
- Three PFO1A NWI wetland polygons are within the project limits, under the existing bridge that will be replaced, and may be impacted. Three PFO1A NWI wetland polygons are within the half mile radius, but are not within the project limits and will not be impacted.
- One PFO1AX NWI wetland polygons is within the half mile radius, but is not within the project limits and will not be impacted.
- One PEMC NWI wetland polygon is within the half mile radius, but is not within the project limits and will not be impacted.
- One PEMA NWI wetland polygon is within the half mile radius, but is not within the project limits and will not be impacted.
- One PUBGX NWI wetland polygon is within the half mile radius, but is not within the project limits and will not be impacted.
- Three PUBGH NWI wetland polygons are within the half mile radius, but are not within the project limits and will not be impacted.
- NWI wetlands may be impacted by construction activities and this work may require authorization or permits from the USACE and the IDEM.

Lakes

- Ten lakes are within the half mile radius, but none are within the project limits. No lakes are anticipated to be impacted by this project.

Floodplain – DFIRM

- One Flood Zone A floodplain is within the project limits and may be impacted.
- A Construction in a Floodway (CIF) Permit will be required from the Indiana Department of Natural Resources (IDNR) prior to any construction within a floodplain.

Mining/Mineral Exploration Indicate the number of items of concern found within ½ mile, including an explanation why each item within the ½ mile radius will/will not impact the project. If there are no items, please indicate N/A:			
Petroleum Wells	**4**	Petroleum Fields	**N/A**
Mines – Surface	**N/A**	Mines – Underground	**N/A**

Explanation:

Petroleum Wells

- Per the PDMS database, there are four petroleum wells that are presumed to be plugged, located east of the project site in Bowling Green. It is not anticipated there will be an impact to these wells.

Hazmat Concerns Indicate the number of items of concern found within ½ mile, including an explanation why each item within the ½ mile radius will/will not impact the project. If there are no items, please indicate N/A:			
Brownfield Sites	**N/A**	Restricted Waste Sites	**N/A**
Corrective Action Sites (RCRA)	**N/A**	Septage Waste Sites	**N/A**
Confined Feeding Operations	**N/A**	Solid Waste Landfills	**N/A**
Construction Demolition Waste	**N/A**	State Cleanup Sites	**N/A**
Industrial Waste Sites (RCRA Generators)	**N/A**	Tire Waste Sites	**N/A**
Infectious/Medical Waste Sites	**N/A**	Waste Transfer Stations	**N/A**
Lagoon/Surface Impoundments	**N/A**	RCRA Waste Treatment, Storage, and Disposal Sites (TSDs)	**N/A**
Leaking Underground Storage Tanks (LUSTs)	**N/A**	Underground Storage Tanks	**N/A**
Manufactured Gas Plant Sites	**N/A**	Voluntary Remediation Program	**N/A**
NPDES Facilities	**N/A**	Superfund	**N/A**
NPDES Pipe Locations	**N/A**	Institutional Control Sites	**N/A**
Open Dump Sites	**N/A**		

Explanation: No hazardous materials concerns are within the half mile radius of the project.

Ecological Information

The Clay County listing of the Indiana Natural Heritage Data Center information on endangered, threatened, or rare (ETR) species and high quality natural communities is attached with ETR species highlighted. The ETR species and high quality natural communities in Clay County include:

- 10 State Endangered aquatic species, terrestrial species (vertebrate/invertebrate), avian species, and vascular plants are listed.
- 1 State Threatened vascular plant is listed.
- 2 Federal Endangered terrestrial (vertebrate/invertebrate) species and vascular plants are listed.

An early coordination letter will be sent to IDNR and USFWS. Any required commitments will be included in the project documents.

Cultural Resources

Bridge # 046-11-01316A **is classified as a "Select" bridge** per the INDOT Historic Bridge Inventory. Per the **"Programmatic Agreement Regarding Management and Preservation of Indiana's Historic Bridges" (Historic Bridge PA),** INDOT, on behalf of the Federal Highway Administration (FHWA), will "satisfy its Section 106 responsibilities involving Select and Non-Select bridge" through the Project Development Process (PDP) of the Historic Bridge PA. INDOT, on behalf of FHWA, will comply with all Section 106 requirements and coordinate with consulting parties. All comments will be included in the environmental document. Phase 1 historic architecture and archaeological surveys will be performed in coordination with INDOT-ES Cultural Resources Section. Any potential impacts to section 106 resources will be identified and evaluated in coordination with INDOT-ES CRS and SHPO.

RECOMMENDATIONS

INFRASTRUCTURE: N/A

WATER RESOURCES: A full wetland delineation and Waters of the U.S. Report will be completed for the project to identify any jurisdictional resources in the area. Environmental permits including an IDEM Section 401 permit, and USACE Section 404 Permit, an IDNR CIF permit, and an IDEM Rule 5 Permit shall be obtained for any impacts to these resources. Resource agencies responsible for issuance of these permits will be contacted to gather additional information regarding sensitive resources and permit or mitigation requirements. Care should be taken concerning E-Coli contaminated water (Jordan Creek), including limiting personal exposure, use of proper Personal Protective Equipment, and regular hand washing.

MINING/MINERAL EXPLORATION: N/A

HAZMAT CONCERNS: N/A

ECOLOGICAL INFORMATION: An early coordination letter will be sent to IDNR and USFWS. Any required commitments will be included in the project documents.

CULTURAL RESOURCES: Phase 1 historic architecture and archaeological surveys will be performed in coordination with the INDOT-EA Cultural Resource Section. Any potential impacts to Section 106 resources will be identified and evaluated in coordination with the Historic Bridge PA PDP.

INDOT Environmental Services concurrence: Marlene Mathas Digitally signed by Marlene Mathas DN: cn=Marlene Mathas, o=INDOT Environmental Services, ou=Hazardous Materials, email=mmathas@indot.in.gov, c=US Date: 2014.03.07 14:47:43 -05'00' (Signature)

Prepared by:
Stephany Stamatis
Environmental Planner
Parsons

Graphics:

A map for each report section with a ½ mile radius buffer around all project area(s) showing all items identified as possible items of concern is attached. If there is not a section map included, please change the YES to N/A:

GENERAL SITE MAP SHOWING PROJECT AREA: YES
INFRASTRUCTURE: YES
WATER RESOURCES: YES
MINING/MINERAL EXPLORATION: YES
HAZMAT CONCERNS: YES

Indiana County Endangered, Threatened and Rare Species List

County: Clay

Species Name	Common Name	FED	STATE	GRANK	SRANK
Mollusk: Bivalvia (Mussels)					
Obovaria subrotunda	Round Hickorynut		SSC	G4	S1
Pleurobema clava	Clubshell	LE	SE	G2	S1
Villosa lienosa	Little Spectaclecase		SSC	G5	S3
Insect: Odonata (Dragonflies & Damselflies)					
Enallagma divagans	Turquoise Bluet		SR	G5	S3
Amphibian					
Acris crepitans blanchardi	Northern Cricket Frog		SSC	G5	S4
Rana areolata circulosa	Northern Crawfish Frog		SE	G4T4	S2
Reptile					
Clonophis kirtlandii	Kirtland's Snake		SE	G2	S2
Crotalus horridus	Timber Rattlesnake		SE	G4	S2
Nerodia erythrogaster neglecta	Copperbelly Water Snake	PS:LT	SE	G5T3	S2
Terrapene ornata ornata	Ornate Box Turtle		SE	G5T5	S1
Thamnophis proximus proximus	Western Ribbon Snake		SSC	G5T5	S3
Bird					
Bartramia longicauda	Upland Sandpiper		SE	G5	S3B
Buteo lineatus	Red-shouldered Hawk		SSC	G5	S3
Haliaeetus leucocephalus	Bald Eagle	LT,PDL	SSC	G5	S2
Lanius ludovicianus	Loggerhead Shrike	No Status	SE	G4	S3B
Mammal					
Myotis sodalis	Indiana Bat or Social Myotis	LE	SE	G2	S1
Nycticeius humeralis	Evening Bat		SE	G5	S1
Taxidea taxus	American Badger		SSC	G5	S2
Vascular Plant					
Carex atlantica ssp. atlantica	Atlantic Sedge		ST	G5T4	S2
High Quality Natural Community					
Wetland - seep acid	Acid Seep		SG	GU	S1

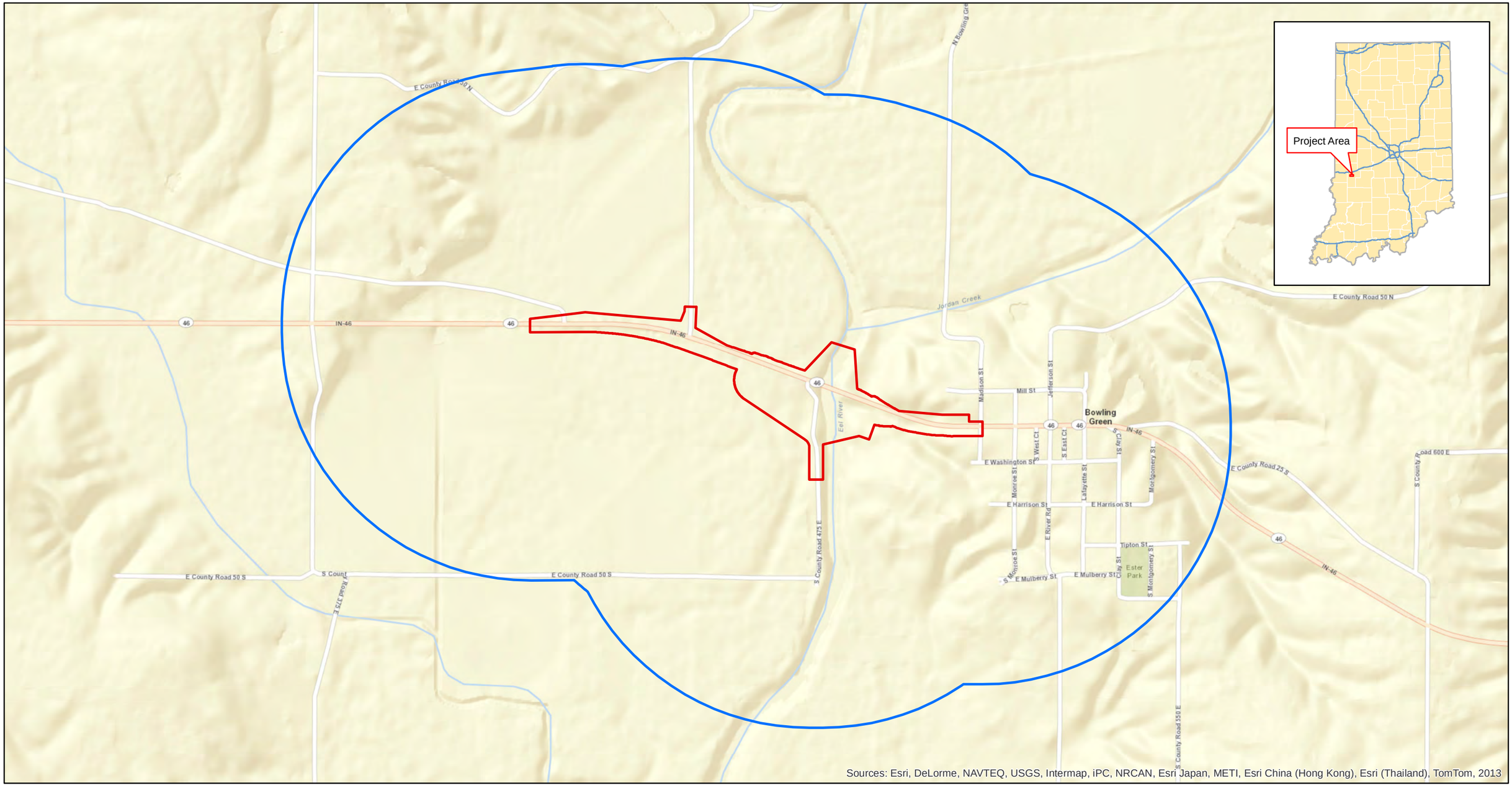
Indiana Natural Heritage Data Center
Division of Nature Preserves
Indiana Department of Natural Resources
This data is not the result of comprehensive county surveys.

Fed: LE = Endangered; LT = Threatened; C = candidate; PDL = proposed for delisting

State: SE = state endangered; ST = state threatened; SR = state rare; SSC = state species of special concern; SX = state extirpated; SG = state significant; WL = watch list

GRANK: Global Heritage Rank: G1 = critically imperiled globally; G2 = imperiled globally; G3 = rare or uncommon globally; G4 = widespread and abundant globally but with long term concerns; G5 = widespread and abundant globally; G? = unranked; GX = extinct; Q = uncertain rank; T = taxonomic subunit rank

SRANK: State Heritage Rank: S1 = critically imperiled in state; S2 = imperiled in state; S3 = rare or uncommon in state; G4 = widespread and abundant in state but with long term concern; SG = state significant; SH = historical in state; SX = state extirpated; B = breeding status; S? = unranked; SNR = unranked; SNA = nonbreeding status unranked



Legend

Preliminary Construction Limits

Half Mile Buffer

N

0 1,250 2,500 5,000 Feet

1 inch = 1,000 feet

SR 46 over Eel River

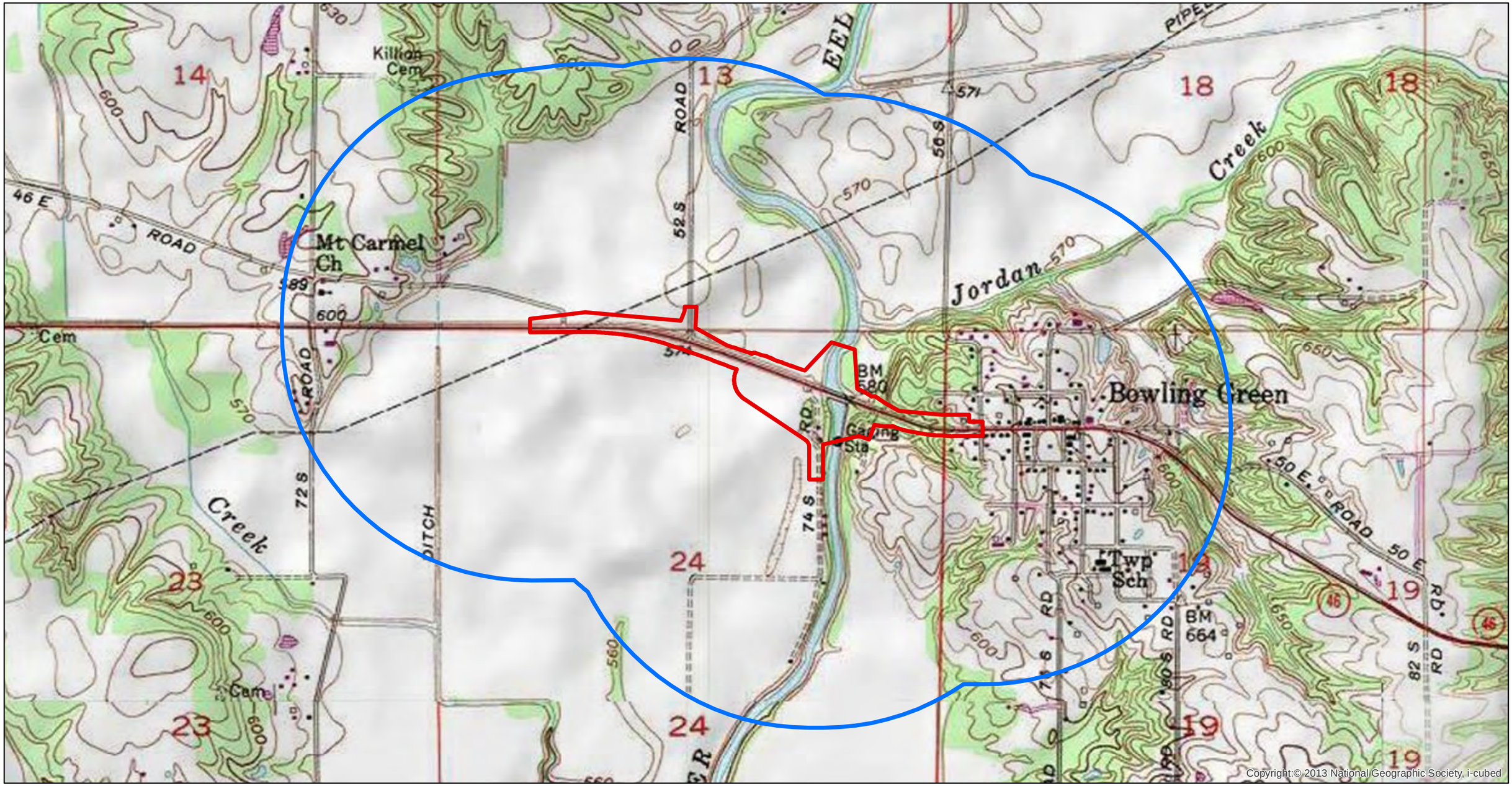
Figure 1 - Project Location
Red Flag Investigation

Des No. 0800910

Date: 1/29/14

Created By: SES

PARSONS



Legend

- Preliminary Construction Limits
- Half Mile Buffer

N

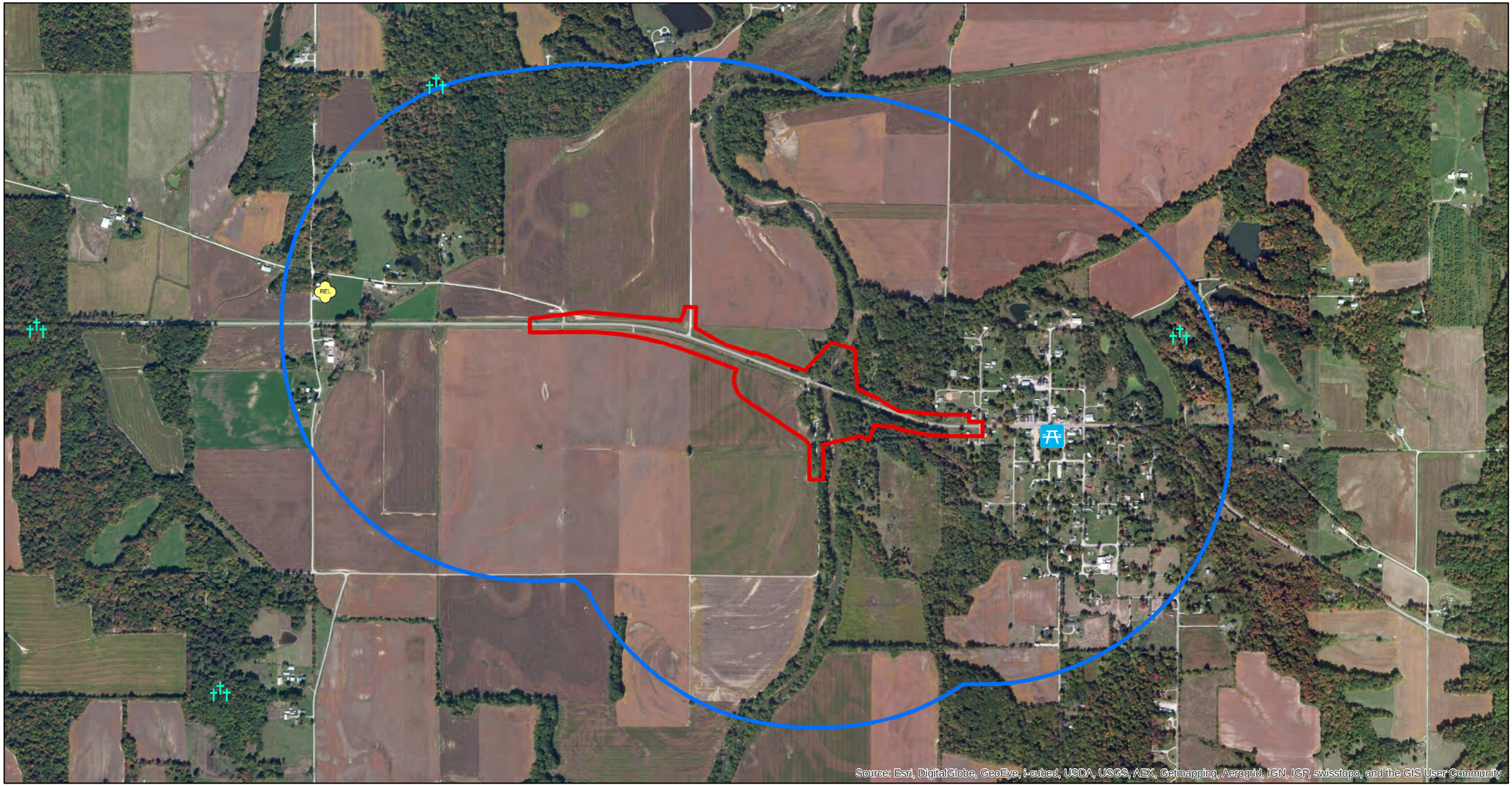
0 1,250 2,500 5,000 Feet

1 inch = 1,000 feet

SR 46 over Eel River

Figure 2 - USGS Topographic
Red Flag Investigation

Des No. 0800910	PARSONS
Date: 1/29/14	
Created By: SES	



Legend

- Preliminary Construction Limits
- Half Mile Buffer
- Cemeteries
- Recreational Facilities
- Religious Facilities

N

0 1,250 2,500 5,000 Feet

1 inch = 1,000 feet

SR 46 over Eel River

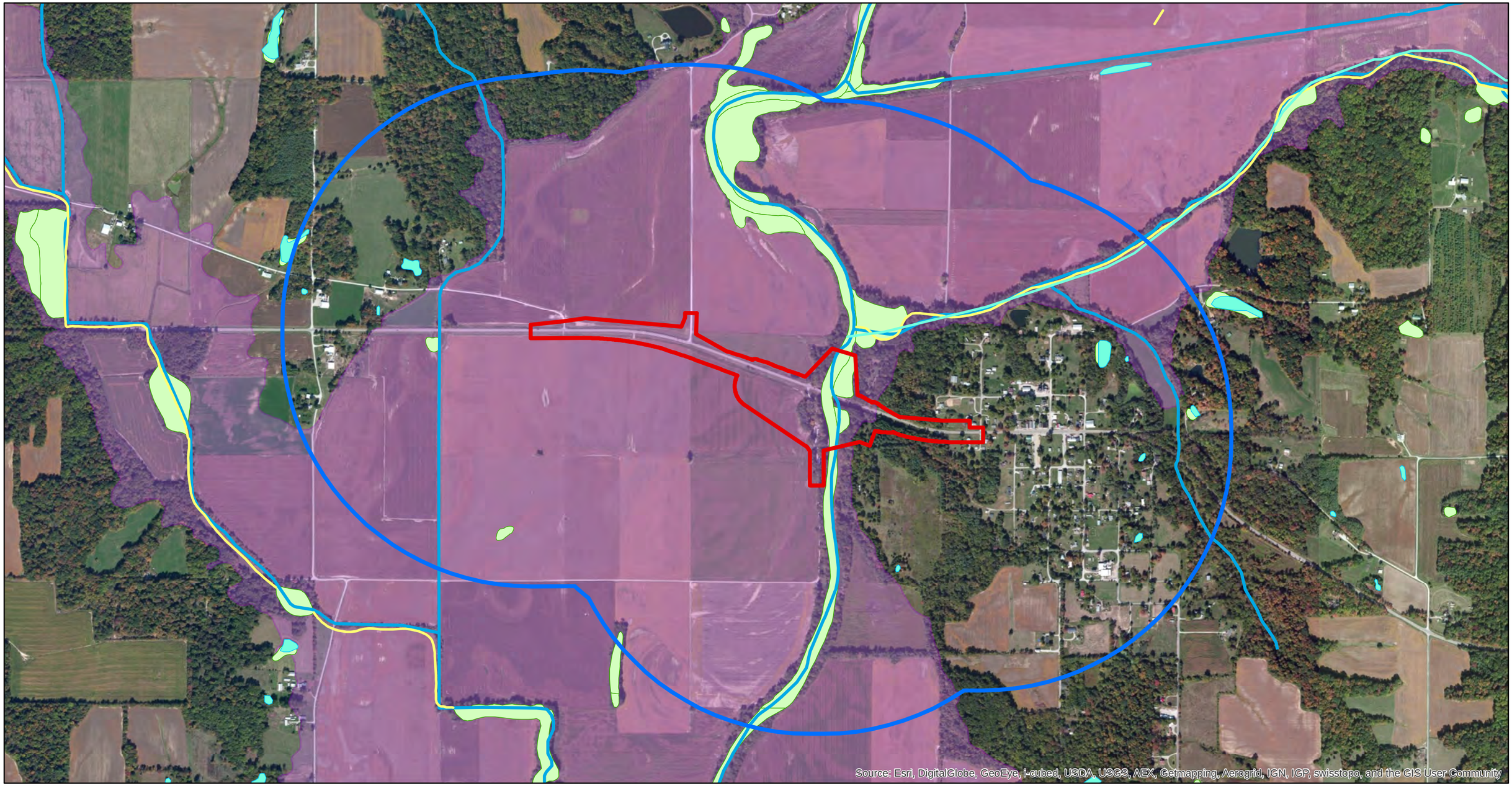
Figure 3 - Infrastructure Red Flag Investigation

Des No. 0800910

Date: 1/29/14

Created By: SES

PARSONS



Legend

- Preliminary Construction Limits
- Half Mile Buffer
- Impaired Streams
- NWI Wetland Line
- Rivers and Streams
- Lakes
- NWI Wetlands
- Floodplain-DFIRM

N

0 1,250 2,500 5,000 Feet

1 inch = 1,000 feet

SR 46 over Eel River

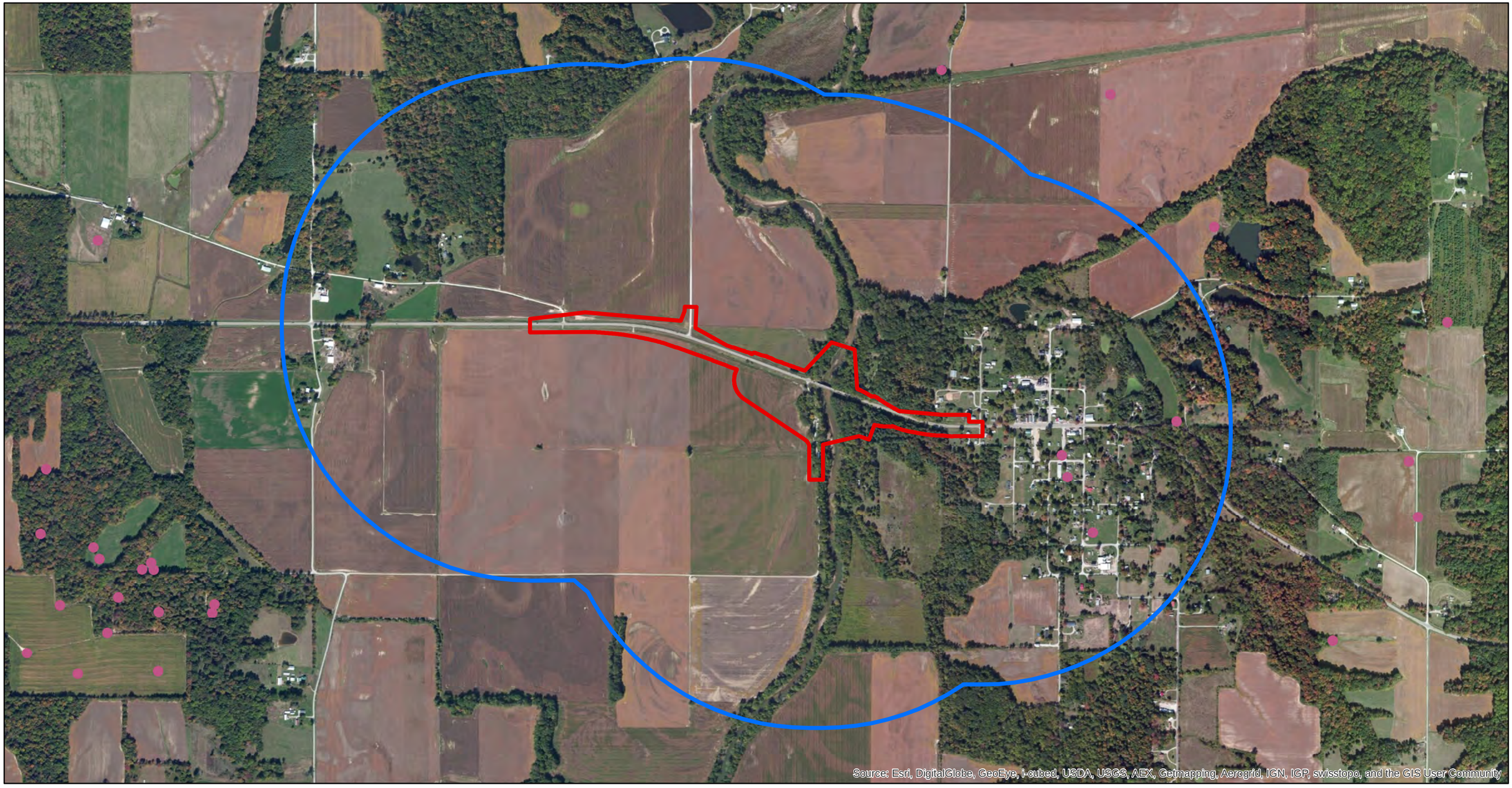
Figure 4 - Water Resources
Red Flag Investigation

Des No. 0800910

Date: 2/6/14

Created By: SES

PARSONS



Legend

- Preliminary Construction Limits
- Half Mile Buffer
- Petroleum Wells

N

0 1,250 2,500 5,000 Feet

1 inch = 1,000 feet

SR 46 over Eel River

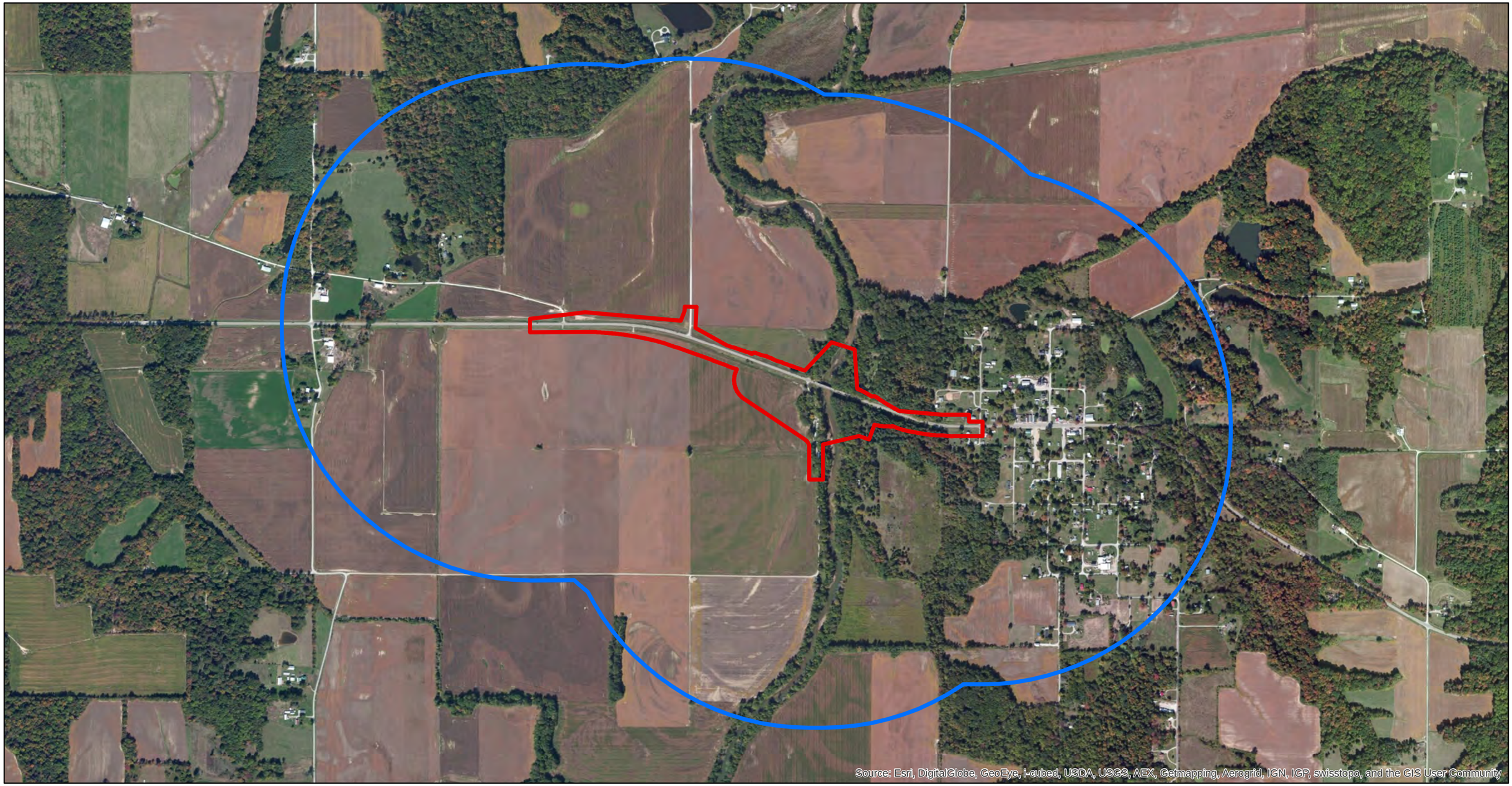
Figure 5 - Mining/Mineral Exploration Resources Red Flag Investigation

Des No. 0800910

Date: 3/7/14

Created By: SES

PARSONS



Legend

Preliminary Construction Limits

Half Mile Buffer

N

0 1,250 2,500 5,000 Feet

1 inch = 1,000 feet

SR 46 over Eel River

Figure 6 - Hazardous Materials Red Flag Investigation

Des No. 0800910

Date: 1/29/14

Created By: SES

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APPENDIX F – WATER RESOURCES

- Waters of the U.S. Delineation Report (draft)

Waters of the U.S. Delineation Report

SR 46 Bridge over the Eel River
Clay County, Indiana
INDOT Des. No. 0800910

DRAFT

June 8, 2015

Prepared by:
PARSONS
101 West Ohio Street, Suite 2121
Indianapolis, IN 46204

Prepared for:
Indiana Department of Transportation
Environmental Services Division
100 North Senate Avenue, Room N642
Indianapolis, IN 46204

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WETLAND AND OTHER WATERS DELINEATION REPORT
SR 46 over the Eel River
Clay County, Indiana
INDOT Designation Number 0800910

Prepared By: Alan K. Ball, Senior Environmental Planner
June 8, 2015

I: Project Information

Fieldwork Dates:
Fieldwork was conducted on September 4 and November 10, 2014.

Principal Investigator:
Alan Ball, Senior Environmental Planner

Contributors:
Thomas J. Warrner, Environmental Planner
Wade Kimmon, GIS Specialist

Project Location:
Center Point Quadrangle:
Sections 13 and 24 of Township 11N, Range 6W
Section 19 of Township 11N, Range 5W

Washington Township, Clay County, Indiana

Project Description:
The Indiana Department of Transportation (INDOT) is planning a bridge project on SR 46 over the Eel River in Clay County, Indiana. The proposed project is located on SR 46 over Eel River near the unincorporated town of Bowling Green, Washington Township, Clay County (see Appendix A, Figure 1). The purpose of the project is to address the deteriorating condition of the existing structure, which is a 2-span Parker steel through-truss bridge, measuring 396 feet long (each span is 198 feet in length) constructed in 1934. The subject bridge is Structure No.046-11-01316C; NBI No. 17050, which was listed as a "Select" bridge in the National Register of Historic Places in 1999 under Criterion A: Transportation.

A Section 4(f) Alternatives Analysis, which includes INDOT's preliminary recommendation for a Preferred Alternative, has been drafted to be circulated for review. Once the alternatives have been reviewed by FHWA and SHPO, the Preferred Alternative is subject to change based upon their review and comments. The preliminary Preferred Alternative 5C-S will construct a new bridge over Eel River approximately 20 feet to the south of the existing bridge and permanently realign the SR 46 roadway. It would require approximately 7.06 acres of new permanent right-of-way from 7 parcels to allow for construction of a new bridge and the realignment of SR 46 and CR 475 E. During construction of the new bridge and approaches, traffic will be maintained on the existing SR 46 roadway and bridge.

This report describes the wetlands, streams and open water features that have been identified within or adjacent to the study area. The study area is the preliminary construction limits for Alternative 5C-S shown on the included figures (Appendix A). Water features were located during two field visits – on September 4 and November 10, 2014. The proposed project may result in impacts to these features. Therefore, INDOT anticipates the need to obtain verification from the US Army Corps of Engineers (USACE) and the Indiana Department of Environmental Management (IDEM) regarding the jurisdictional status of wetlands, streams and open waters located within the study area, and that authorization from USACE and IDEM to discharge fill in these features is necessary.

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II: Office Evaluation

Methodology
A desktop review of the project limits was conducted to identify potential waters or waters of the U.S. (streams, wetlands, ponds, etc.). This included review of historic and recent aerial photography for any areas with a water signature or a sharp change in vegetation. Any such areas were flagged for field follow-up. FEMA Floodplain mapping, USGS topographic mapping, National Wetlands Inventory (NWI) mapping, mapped soil units, and historic drainage were also reviewed.

FEMA Floodplain Mapping
Figure 2 in Appendix A shows a recent aerial image with the FEMA floodplain (FIRM) mapping. The Eel River channel is near the eastern side of the floodplain, which is approximately a mile wide in this area. All of the project area west of the river is within the floodplain, as is about 300 feet of SR 46 east of the bridge. Only the eastern-most 1,000 feet of the project is above the floodplain.

USGS Mapping:
After review of USGS 7.5 minutes series topographic maps, the only water resource identified within the project limits was the Eel River. The contour lines suggested that there might be a drainage feature leading from the west side of Bowling Green west towards the Eel River (identified as Stream 1 during field investigations). USGS maps are provided for reference in Appendix A, Figure 3.

NWI Mapping:
During NWI review, multiple potential wetland polygons were identified within the project limits. All of the NWI polygons are associated with the Eel River, or its immediate riparian corridor. NWI maps are provided for reference in Appendix A, Figure 4.

Mapped Soil Units:
According to the Soil Survey Geographic (SSURGO) Database for Clay County, Indiana, the project area contains seven mapped soil units. The Natural Resources Conservation Service (NRCS) classifies soil types as follows: hydric (100%), predominantly hydric (66-99%), partially hydric (33-65%), predominantly non-hydric (1-32%), and non-hydric (0%). One of the seven mapped soils is hydric (Petrolia silty clay loam [Pg]), while the remaining six soil units are non-hydric (0%). Table 1 below details the soil units mapped within the project limits. Maps showing the location of soil types are provided in Appendix A, Figure 5.

Table 1: Soils in the Study Area

Symbol	Description	Hydric rating
BmD	Bloomfield loamy fine sand, 12 to 18 percent slopes	Non-hydric (0%)
BmF	Bloomfield loamy fine sand, 25 to 50 percent slopes	Non-hydric (0%)
Ca	Chagrin silt loam, occasionally flooded	Non-hydric (0%)
Cb	Chagrin-Stonelick complex, occasionally flooded	Non-hydric (0%)
Nr	Nolin silty clay loam, rarely flooded	Non-hydric (0%)
Pg	Petrolia silty clay loam, frequently flooded	Hydric (100%)
PnB	Princeton fine sandy loam, 2 to 6 percent slopes	Non-hydric (0%)

Historic Drainage:
A copy of the 1982 soil survey for Clay County was reviewed to identify areas with historic drainage. Two historic drainage features were identified within or near the project limits. One of these, on the east side of the Eel River was identified as Stream 1 during field investigations. The other historic drainage is on the west side of the Eel River and appears to be either a former meander scar or an area of erosion from flooding in the Eel River floodplain. It was not identified during field investigations. A map of the historic drainage features is located in Appendix A, Figure 6.

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III: Field Reconnaissance

Methodology

Parsons conducted fieldwork on September 4 and November 10, 2014 to determine the presence of wetlands, streams, and other water resources within the project limits. While specific areas identified via desktop review were targeted for review, the entire project was surveyed for water resources. When observed, features located adjacent to, but outside of the project limits were also noted. Resource maps showing all identified features are attached for reference (Appendix A, Figure 7a-7c).

Photographs were taken throughout the right-of-way, and specifically for each feature identified. Selected photographs and photo location maps are included within this report for reference (Appendix B).

Wetlands were delineated using the guidance provided in the *1987 Corps Manual* (Environmental Laboratory, 1987). Vegetation, soil, and hydrology data were collected using the methods described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* (USACE 2010). Wetland indicator statuses for plants were obtained from the 2014 National Wetland Plant List. Each wetland polygon was classified utilizing the Cowardin Classification System (Cowardin et.al., 1979). Wetland data forms are provided in Appendix C for reference, as are photographs of each data point's soil profile. A hand-held GPS unit (Geoexplorer XH 6000 Series) was used to collect the boundary of each identified wetland, as well as its data points. Because the NWI mapping shows several wetland polygons along the river, additional data points were taken to document the conditions in additional non-wetland areas. These upland data points are also included in Appendix C, and are discussed below in the "Non-Wetland Data Points" section below.

Stream and open water boundaries were delineated in the field at the ordinary high water mark (OHWM), which was obtained using a measuring tape. Streams with an OHWM are identified as perennial, intermittent or ephemeral. Two different function and value assessment methodologies were used, depending on the size of the stream's immediate watershed (drainage area). These methodologies include the Qualitative Habitat Evaluation Index (QHEI, Ohio EPA 2006) for larger streams and the Headwater Habitat Evaluation Index (HHEI, Ohio EPA 2012) for smaller streams. The results of these evaluations are provided in Appendix D. A hand-held GPS unit (Geoexplorer XH 6000 Series) was used to collect the location of each identified stream.

Wetlands

Five wetlands were delineated within or adjacent to the study area, which, for the purpose of waters investigations, is considered to be the preliminary construction limits shown on the included figures. The largest wetland (Wetland 4) is classified as a palustrine forested wetland (PFO), while the other four are palustrine emergent (PEM) wetlands. The total area of the wetlands delineated is 1.46 acres. Wetland 4 appears to have the hydrologic connectivity that would place it under the jurisdiction of the US Army Corps of Engineers. The remaining 4 wetlands are all emergent wetlands within roadside ditches. Under normal conditions, the ditches do not appear to drain to downstream water features, and therefore these 4 emergent wetlands appear to be isolated, or Waters of the State. Table 2 summarizes the wetlands located within and adjacent to the study area. Figures 7a through 7c in Appendix A show the wetland boundaries and the locations of the data points. Appendix B contains photo location keys, and photographs of each wetland. Wetland determination forms are located in Appendix C as are photos of the soil profiles.

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Table 2: Wetlands within the Study Area

Wetland ID	Photo Numbers	Lat. / Long.	Type	Delineated Area (acres)	Acres within Study Area [1]	Waters of the US?
1	1-6	39.385300 N 87.025250 W	PEM	0.62	0.17	No
2	7	39.386050 N 87.027600 W	PEM	0.02	0.00	No
3	8-9	39.385500 N 87.025000 W	PEM	0.08	0.00	No
4	26-27	39.383200 N 87.018400 W	PFO	0.72	0.54 (based on right-of-way limits)	Yes
5	28	39.382980 N 87.015970 W	PEM	0.02	0.02	No
Total Acres				**1.46**	**0.73**	

[1] Unless indicated otherwise, Study Area is defined as the preliminary construction limits shown on the included figures.

Wetland 1

This emergent wetland (PEM) is located in a broad, deep ditch on the south side of the existing SR 46 roadway (see Appendix A, Figure 7b). It occurs partially within the hydric soil series Petrolia silty clay loam (Pg) and partially within Nolin silty clay loam (Nr) and Chagrin silt loam soils (Ca), which are not hydric and have no hydric inclusions.

Because of the large length of this wetland ditch, two pairs of data points were used to describe its characteristics. The more western wetland data point, Wetland 1 point 1, was dominated by moneywort (*Lysimachia nummularia*, FACW). The soil at this wetland data point was observed to contain a low chroma with a depleted matrix, which met hydric soil field indicator F3. Wetland hydrology was indicated by the presence of one primary indicator (oxidized rhizospheres) and two secondary indicators (geomorphic position and FAC-neutral test).

Located near the east end of Wetland 1, the other wetland data point (Wetland 1 point3) was dominated by crested sedge (*Carex cristatella*, FACW) and calico aster (*Symphyotrichum lateriflorum*, FACW). The low chroma soils within the soil profile satisfied hydric soil indicator F3, depleted matrix. Wetland hydrology was indicated by the presence of two secondary indicators: geomorphic position and FAC-neutral test.

Besides the dominant species noted at the two wetland data points discussed above, the middle portion of Wetland 1 is dominated by spotted lady's thumb (*Persicaria maculosa*, FACW, see photo 4 on page 4 of Appendix B). Wetland 1 is wholly contained within a roadside ditch, which makes the wetland/upland boundary quite distinct at near the toe of the fill slopes. This ditch does not appear to drain in either direction, and the portion of the ditch closer to the Eel River actually does not meet wetland criteria (see discussion of upland Data Point A under the Non-Wetland Data Points section below). Due to its lack of connection to downstream waters, Wetland 1 might be considered isolated. Approximately 0.17 acre of Wetland 1 is within the preliminary construction limits (study area). Potential impacts to this wetland would be in the form of placing earthen fill to comprise the new roadbed for a relocation of SR 46 just south of its current alignment. A new ditch would likely be placed along side of the newly realigned SR 46, and it is likely that another wetland would develop within the new ditch, which would completely offset any loss of wetland habitat or functional values that occurred during construction of the new roadway.

Wetland 2

This emergent wetland (PEM) occupies a very slight depression below the toe of slope, on the north side of the existing SR 46 roadway (see Figure 7b in Appendix A). Wetland 2 (data point Wetland 2 point 1) lies within the Nolin silty clay loam (Nr) soil unit, which is not hydric and has no hydric inclusions. Moneywort is the dominant species and a soil profile with low chroma meets field indicator F3, depleted matrix. One primary indicator (sediment deposits) and two secondary indicators (geomorphic position and FAC-neutral test) of wetland hydrology were observed.

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There is no well-defined roadside ditch in the area of wetland 2, and no connection between Wetland 2 and other water features was observed. For this reason, Wetland 2 may be considered isolated. Because the Preliminary Preferred Alternative is to relocate SR 46 to the south, this wetland is outside of the preliminary construction limits (study area) and may not be impacted by this project.

Wetland 3

Wetland 3 lies in a shallow roadside ditch on the north side of SR 46, east of Wetland 2 (see Appendix A Figure 7b). The wetland is within Chagrin silt loam (Ca) soils, which are not hydric and do not contain any hydric inclusions. Wetland 3 (data point Wetland 3 point 1) has a dominant vegetative cover of moneywort and the soil profile meets field indicator F3, depleted matrix. Wetland hydrology was directly observed within Wetland 3. The water table in the soil pit was about 10 inches below the ground surface and the soil was saturated at about 6 inches. Two secondary indicators, geomorphic position and FAC-neutral test, were also observed.

The shallow ditch that contains Wetland 3 does not appear to drain in either direction and has no connection to other waters. Wetland 3, therefore, could be considered isolated. The Preliminary Preferred Alternative, based on construction limits, will not impact this wetland.

Wetland 4

Wetland 4 is the only forested wetland (PFO) delineated within or adjacent to the study area. It is also the largest wetland, with a total size of approximately 0.72 acre. The mapped soil unit under the wetland data point (Wetland 4 point 1) is Bloomfield loamy fine sand, 25 to 50 percent slopes (BmF). This soil unit is not hydric, and does not contain any hydric inclusions. Three vegetative strata were present within the wetland. The tree stratum was dominated by southern bald cypress (*Taxodium distichum*, OBL), the shrub stratum was dominated by box elder (*Acer negundo*, FAC) and the herbaceous layer contained co-dominant species: pale touch-me-not (*Impatiens pallida*, FACW) and Canadian clearweed (*Pilea pumila*, FACW). The soil profile met two field indicators of hydric soil: F3 depleted matrix, and F6 redox dark surface. The soil profile was saturated at a depth of about 8inches, which means that wetland hydrology was present. Hydrology was also indicated by geomorphic position and the FAC-neutral test, both of which are secondary indicators.

This forested wetland lies in a basin bounded by the existing SR 46 road fill to the north and a steep hill to the south (see Appendix A, Figure 7c). Prior to the mid-1930s, SR 46 ran across the top of this ridge south of Wetland 4 and crossed the Eel River downstream (south) of the existing steel truss bridge via a covered bridge. When the existing steel bridge was built and SR 46 was realigned, the former roadbed south of Wetland 4 was abandoned. It was probably around this time that the bald cypress trees were planted, judging from their current size. In Indiana, bald cypress swamps are considered a rare and ecologically important wetland type. However, an IDEM reviewer (Jay Turner) has visited the site, and agreed that this planted bald cypress wetland does not qualify for special consideration beyond that of any other forested wetland (see correspondence e-mail in Appendix F).

The Preliminary Preferred Alternative would place a new bridge over the Eel River south of the existing bridge and require a southerly realignment of both the east and west approaches. The realignment of the east approach, between Bowling Green and the Eel River, would potentially fill about 0.3 acre of Wetland 4 (based on the preliminary construction limits) However, due to the clearances needed for the relocation of an overhead electric transmission line, tree clearing will be necessary out to the ROW limits in the area of Wetland 4. Using the ROW limits, the total impact to Wetland 4 would be about 0.54 acre. Three small ephemeral streams (described in the Streams section below) run through Wetland 4 and combine into a stream (Stream 1) that directly flows into the Eel River. Therefore, Wetland 4 should be considered a jurisdictional Water of the US, which places it under regulatory authority of both USACE and IDEM.

Wetland 5

Like Wetlands 1, 2 and 3, Wetland 5 is an emergent wetland in a roadside ditch with no apparent outlet. The wetland data point (Wetland 5 point 1) is in an area of mapped Princeton fine sandy loam, 2 to 6 percent slopes (PnB), which is not hydric and does not contain hydric inclusions. The single, dominant species was

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broad-leaf cat-tail (*Typha latifolia*, OBL). Hydric soil indicator F3, Depleted Matrix was observed in the soil profile, which was saturated at 10 inches. The water table within the soil pit was at about 12 inches below the surface, and two secondary indicators of wetland hydrology were observed (geomorphic position and FAC-neutral test).

Because Wetland 5 is on the south side of existing SR 46, nearly all of it (0.02 acre) may be impacted by construction of the Preliminary Preferred Alternative (see Figure 7c in Appendix A). This wetland is in a shallow roadside ditch, which at one point probably carried storm water west towards the Eel River. However, there is a driveway just west of Wetland 5, and the culvert under it that is intended to maintain flow in this ditch, is either clogged or set too high. Wetland 5 was not observed to have any surface connection to any downstream wetlands or streams, and as such, it may be considered isolated.

Streams

Four streams were identified in the Study Area. Three of these streams are classified as ephemeral, while the remaining stream, the Eel River, is classified as a perennial stream. The total length for streams located within the Study Area is 821 feet. These features are summarized below in Table 3. All roadside drainage features within the project limits were evaluated for the presence or absence of an OHWM, and only those that exhibited an OHWM are discussed in this report. All other roadside drainages lacked OHWMs and are therefore not likely to be considered to be waters of the U.S.

Table 3: Streams within the Study Area

Stream ID	Photo Nos.	Waterbody Name	Stream Type	Rapanos Type	Avg. Width at OHW (ft.)	Avg. Depth at OHW (ft.)	Linear feet within Study Area [1]	Acres within Study Area	QHEI/ HHEI	Waters of the US?
Eel River	13-14	Eel River	PER	RPW	150	6	92	0.01	50.5	Yes
Stream 1	19-22	Unnamed Tributary to Eel River	EPH	Non-RPW	3.5	0.5	405	0.032	61	Yes
Stream 2	23	Unnamed Tributary to Stream 1	EPH	Non-RPW	3	0.33	133	0.009	24	Yes
Stream 3	24-25	Unnamed Tributary to Stream 1	EPH	Non-RPW	2	0.33	191	0.009	28	Yes
						Total	821	0.06		

[1] The study area is defined as the preliminary construction limits shown on the included figures.

Eel River

The Eel River is a perennial stream that flows north to south though the project area. A Qualitative Habitat Evaluation Index (QHEI) rating sheet (see Appendix D) was prepared for the stretch of the Eel River within the project area. The overall score was 50.5, which is at the low end of the "fair" rating range. The Eel River scored well in the "gradient and drainage area" and the "bank erosion and riparian zone" metrics (8 and 7.5 out of 10, respectively), but the scores for the other metrics were only moderate at best.

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The Eel River is listed on the Roster of Indiana Waters Declared Navigable as a navigable stream and it is a jurisdictional Water of the US. The preliminary preferred alternative would impact approximately 92 feet (46 feet of impact on each bank) of the Eel River during construction of piers near each bank of the river below the OHWM. Both spill slopes below the eastern and western abutments would be graded and covered with riprap for scour protection, but this work will occur above the OHWM. Tree clearing along the river may extend the full width of the ROW (245 feet) along the Eel River.

Stream 1

Stream 1 is an unnamed tributary (UNT) to the Eel River. It is shown on the historic drainage map of the Bowling Green area (Appendix A, Figure 6), but its potential presence is only indicated on the USGS topographic map by contours (Appendix A, Figure 3). Stream 1 has an average width of 3.5 feet, and an average depth of 6 inches. On the HHEI rating sheet, Stream 1 scored at or above fifty percent on substrate, pool depth and bankfull width and had a total score of 61. Approximately 405 linear feet of this stream are within the construction limits of Alternative 5C-S. Because of its direct connection to the Eel River, Stream 1 should be considered a water of the U.S.

Stream 2

Stream 2 is a short stretch of ephemeral stream contained entirely within forested Wetland 4, and is a tributary to Stream 1. Stream 2 is not shown on the historic drainage or topographic maps. It scored low on all three HHEI metrics, and had a total score of 24. Stream 2 is an average of 4 inches deep and 3 feet wide. Because of its connection to the Eel River via Stream 1, Stream 2 should be considered a water of the U.S.

Stream 3

Stream 3 is an ephemeral tributary to Stream 1. The jurisdictional limits (where the OHWM appears) begin in a roadside ditch along the north side of SR 46. Stream 3 flows west a short distance, then turns south and crosses under SR 46 though a concrete box culvert. It then joins Stream 1 within the forested Wetland 4. Stream 3 is not shown on the topographic or historic drainage maps. Because of its connection to the Eel River via Stream 1, Stream 2 should be considered a water of the U.S.

Open Water

One open water feature was delineated within the Study Area. Vernal Pool 1 (Figure 7c in Appendix A) is a closed basin under the eastern span of the bridge, near the east abutment. The basin is likely the result of ongoing scour from over bank flows of the Eel River. Vernal pool 1 appears to hold water for much of the year, and as such, it could possibly be considered a small pond. Alternatively, Vernal Pool 1 was once observed to be completely dry in the late summer, functionally making it more like an emergent wetland (see photos 15 and 16 in Appendix B). However, after multiple site visits, including one with a reviewer from IDEM, the functions of this resource most closely fit those of a small pond or a vernal pool, and therefore, this feature should be regulated as an open water habitat.

There is a clear ordinary high water mark around the rim of this feature, and this was delineated as the jurisdictional boundary. Because Vernal Pool 1 is adjacent to the Eel River (a permanent, jurisdictional waterway), it should not be considered isolated, but should be considered a jurisdictional water of the U.S. Table 4 summarizes the open water within the Study Area.

Table 4: Open water features within the Study Area

Feature ID	Photos	Lat. / Long.	Total Area of Open Water (acres)	Acres within Study Area [1]	Waters of the US?
Vernal Pool 1	15-16	39.383950 N 87.020050 W	0.18	0.14	Yes
		Total	0.17	0.17	

[1] The study area is defined as the preliminary construction limits shown on the included figures.

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Non-Wetland Data Points

The majority of the project will take place in a mapped floodplain and there are several NWI wetland polygons shown near the Eel River. No wetlands were found that correspond to those shown on the NWI mapping (Appendix A, Figure 4). The following five data points were used to document the conditions in the non-wetland areas near the Eel River bridge or those areas mapped as NWI polygons.

Upland Data Point A

This data point was taken in the roadside ditch on the south side of SR 46 to the east of Wetland 1. Upland Point A supports the assertion that Wetland 1 is isolated because it confirms that Wetland 1 does not have a surface connection to the Eel River. Although Candian thistle (*Cirsium arvense*, FACU) was a dominant species, reed canary grass (*Phalaris arundinacea*, FACW) had slightly more cover, and therefore, the hydrophytic vegetation criterion was met. Neither of the other two criteria, hydric soils or wetland hydrology, were present or indicated.

Upland Data Point B

Upland Point B was located in a small woodlot just west of CR 475E. The data point is dominated by two FAC species (box elder [*Acer negundo*] and poison ivy [*Toxicodendron radicans*], and a FACW species (silver maple [*Acer saccharinum*]). The hydrophytic vegetation criterion was met, but neither wetland soils nor hydrology were present.

Upland Data Point C

Upland Point C was located near the west abutment of the existing bridge, just a few feet south of the SR 46 roadway. The land in this area is under an overhead utility line, and therefore is mowed periodically and maintained to be free of tree encroachments into the utility easement. The dominant vegetative species at this data point is reed canary grass, which nearly forms a monoculture near the bridge, so the vegetative criterion is met. The soils do not meet hydric criteria, and wetland hydrology is neither present nor indicated.

Upland Data Point D

Upland Point D was located a few feet south of the eastern bridge abutment. Like Upland Points C and E, the vegetative cover in this area is nearly 100 percent reed canary grass. The vegetation at Upland Point D is also mowed periodically to maintain an overhead utility easement. The soil profile does not satisfy a field indicator of hydric soils, and a positive FAC-neutral test was the only indicator of wetland hydrology.

Upland Data Point E

Upland Point E was located north of the east bridge abutment. The land cover in this area is a mixture of floodplain forest and small grassy openings. This data point was taken in a forest opening, where reed canary grass was the only species present. Like all of the previous upland data points, only the vegetative requirement was met. Neither wetland soils, nor wetland hydrology were present.

IV: Conclusions

Based on the field review, this project has features that are likely waters of the U.S. and within the project limits.

A total of five wetlands totaling 1.46 acres were identified within the project limits. Four of these were emergent wetlands, and one was a forested wetland. Only the forested wetland appears to be likely jurisdictional, while the remaining four emergent wetlands are likely isolated. The forested wetland, Wetland 4, is dominated by bald cypress. Bald cypress swamps are listed as a rare and ecologically important wetland type in Indiana, but are described as being isolated to the far southwest corner of Indiana. On September 12, 2014, Alan Ball gave a tour of the SR 46 over the Eel River project site to Jay Turner. During that visit, Jay agreed that the bald cypress wetland was not a rare or ecologically important wetland, and that the cypress trees had been planted sometime after SR 46 was realigned to its current location. Jay agreed that a 4:1 mitigation ratio would be appropriate for impacts to Wetland 4, and that the feature

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described as Vernal Pool 1 should be considered an open water habitat and be mitigated at a 1:1 mitigation ratio.

A total of four streams totaling 821 linear feet were identified within the project limits. All roadside drainage features within the project limits were examined. Only those that exhibited an OHWM or met wetland criteria are detailed in this report. All roadside drainages not detailed in this report lacked OHWMs or did not meet wetland criteria and are therefore not likely waters of the U.S.

Every effort should be taken to avoid impacts to the resources outlined in this report. If impacts will occur, waterway permits will be required and mitigation may be required. Impacts must be minimized before mitigation can be considered. INDOT's Ecology and Waterway Permitting Office (EWPO) staff should be contacted immediately if impacts will occur.

The conclusions in this report are the best judgment of Parsons and based on the guidelines set forth by the USACE. ***The final determination of jurisdictional waters, however, is ultimately made by the USACE.***

A preliminary jurisdictional determination (pre-JD) form is provided in Appendix E.

V. References

Cowardin, L.M, V. Carter, F.C. Golet, and E.T. LaRoe. *Classification of Wetlands and Deepwater Habitats of the United States.* U.S. Department of the Interior, Fish and Wildlife Service, Washington D.C. 1979

Environmental Laboratory. *U.S. Army Corps of Engineers' Wetland Delineation Manual, Technical Report Y-87-1("1987 Corps Manual")*, U.S. Waterways Experiment Station, Vicksburg, MS. 1987.

Ohio EPA. *Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams*. State of Ohio Environmental Protection Agency, Division of Surface Water. 2012.

Ohio EPA. *Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (QHEI)*. State of Ohio Environmental Protection Agency, Division of Surface Water. 2006.

United States Army Corps of Engineers. *Midwest 2014 Regional Plant List.* Cold Regions Research and Engineering Laboratory. 2014.

United States Army Corps of Engineers. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0).* U.S. Army Engineer Research and Development Center, Washington D.C. 2010.

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Appendix A

Figure 1: Project Location Map
Figure 2: Aerial Imagery and Floodplain Map
Figure 3: USGS Topographic Map
Figure 4: NWI Map
Figure 5: NRCS Soils Map
Figure 6: Historic Drainage Map
Figure 7: Water Resources Maps

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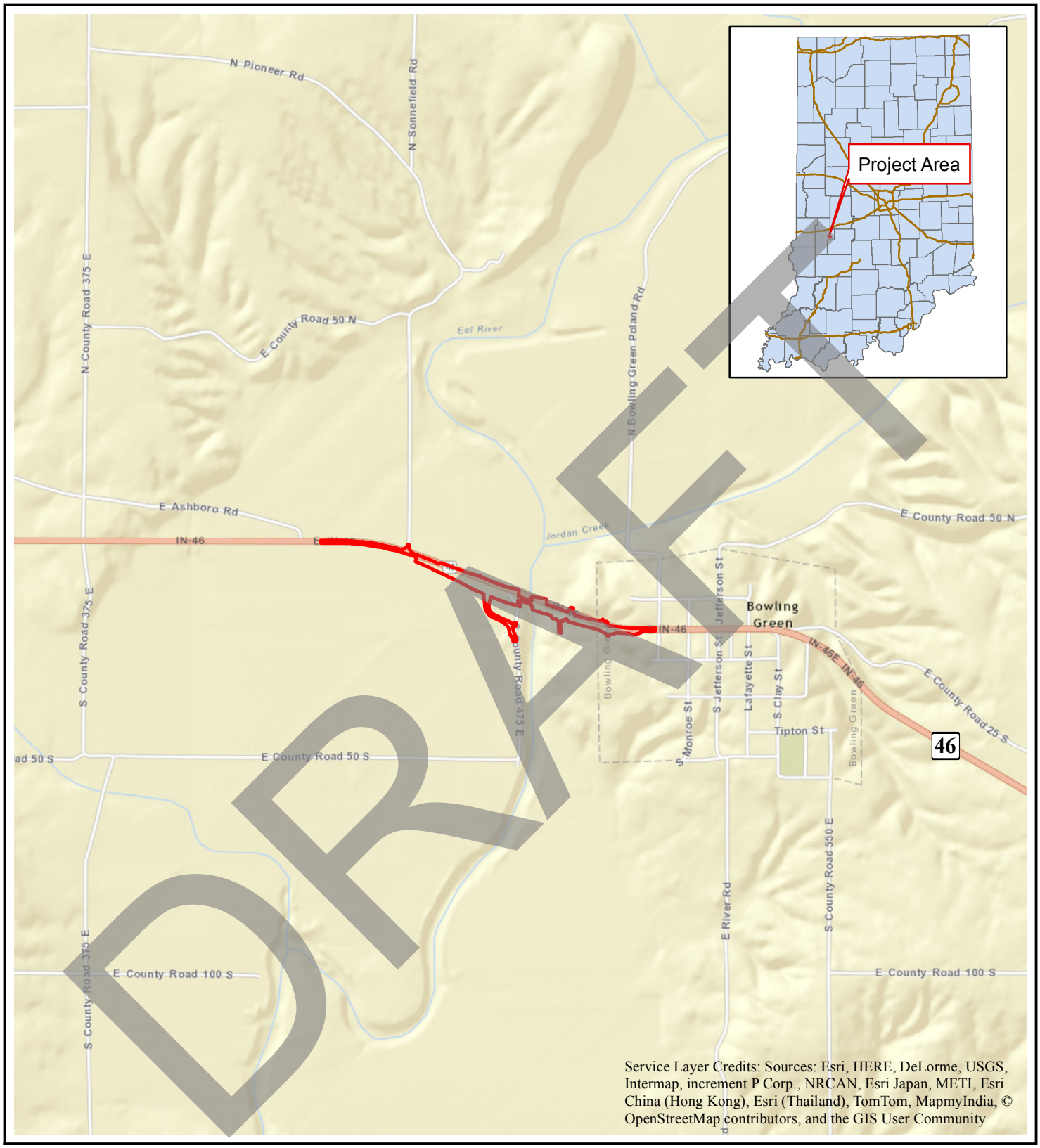

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Legend

Preliminary Construction Limits

0 750 1,500 3,000 Feet

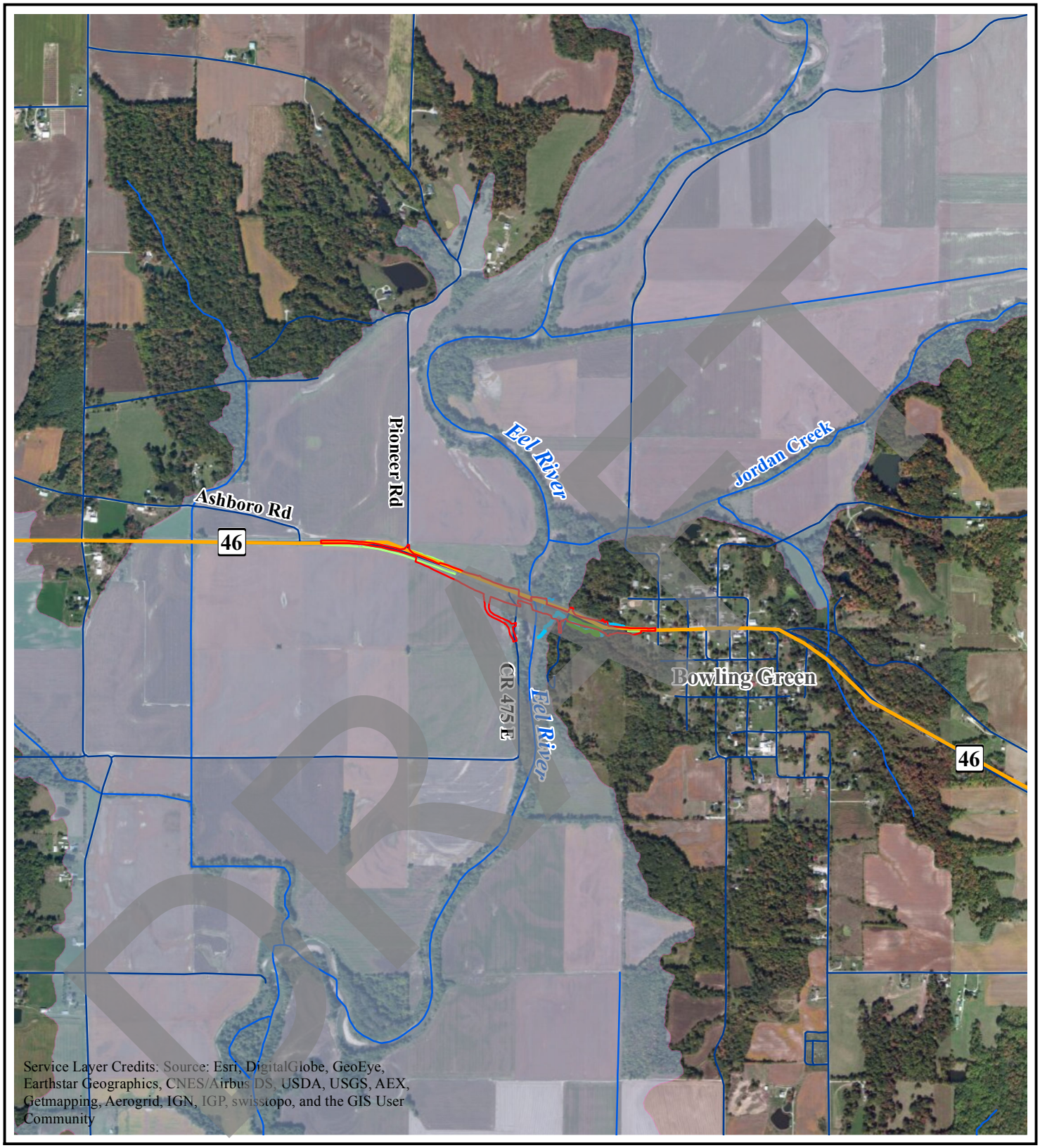
N

SR 46 over Eel River

Des. No. 0800910

Figure 1 - Project Location

PARSONS



Legend

Floodplain

Preliminary Construction Limits

0 750 1,500 3,000 Feet

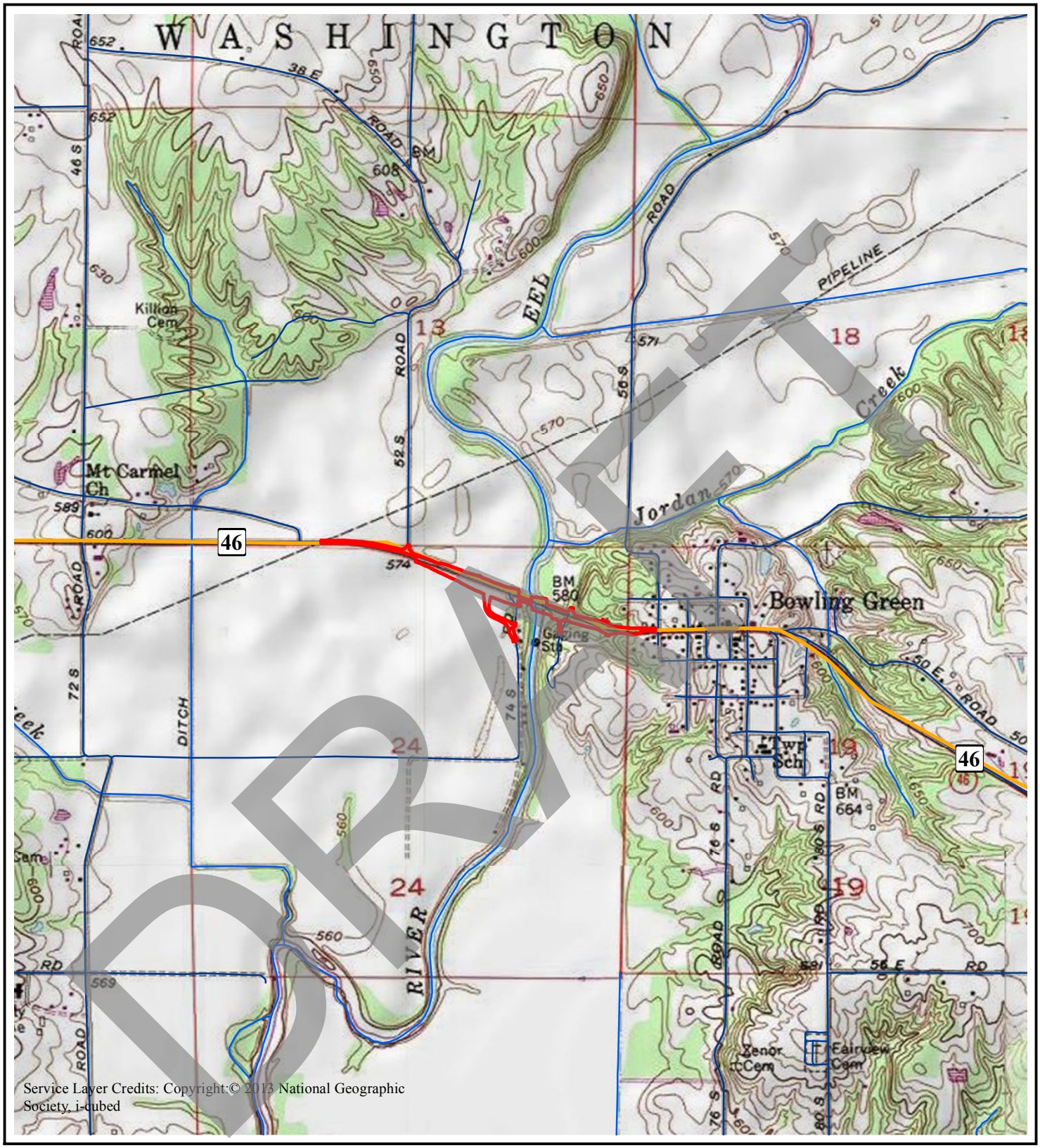
N

SR 46 over Eel River

Des. No. 0800910

Figure 2 - Aerial Imagery and Floodplain Map

PARSONS



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Legend

Preliminary Construction Limits

0 750 1,500 3,000 Feet

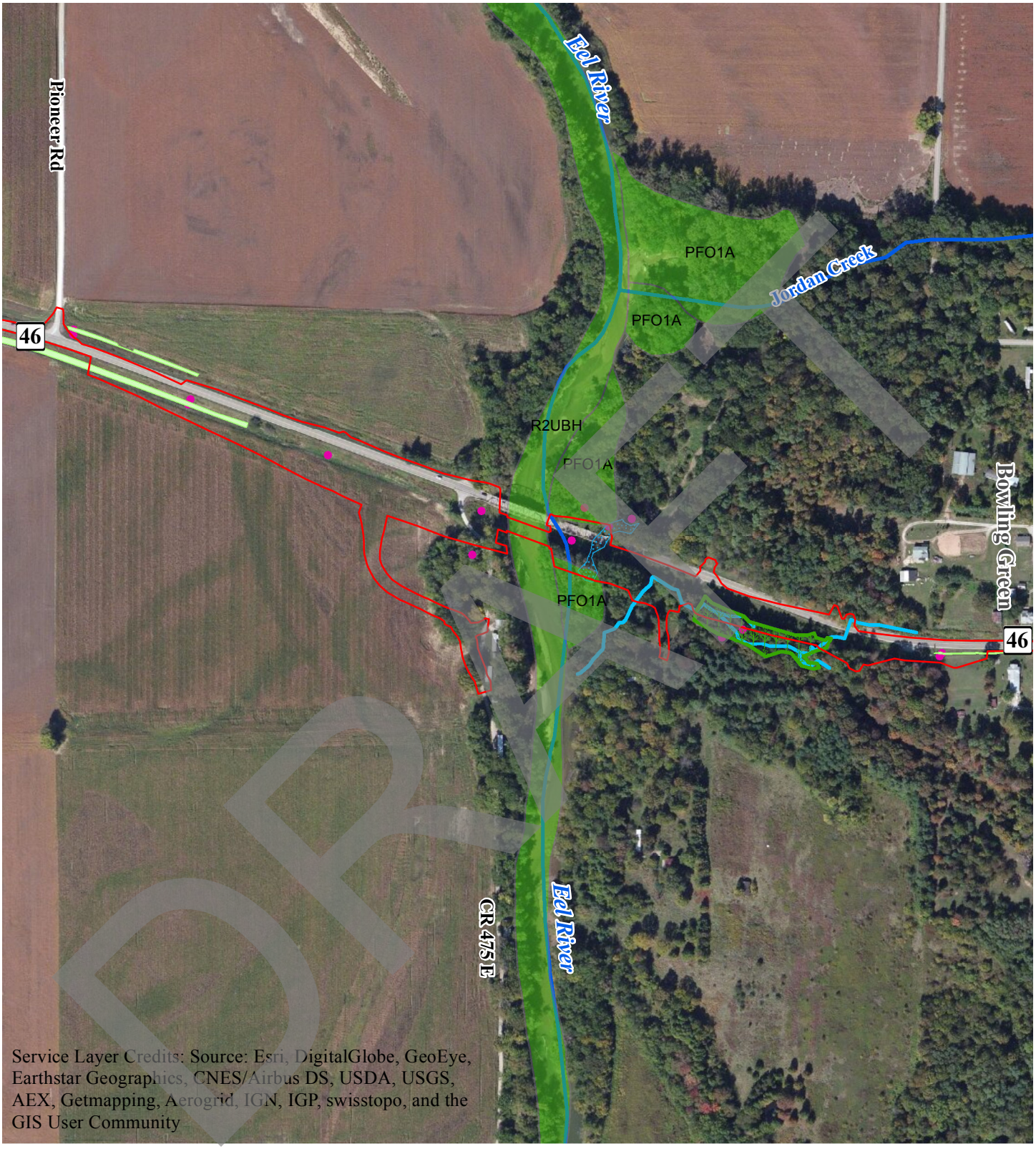
N

SR 46 over Eel River

Des. No. 0800910

Figure 3 - USGS Topographic Map

PARSONS



Legend

Preliminary Construction Limits

NWI Polygons

N

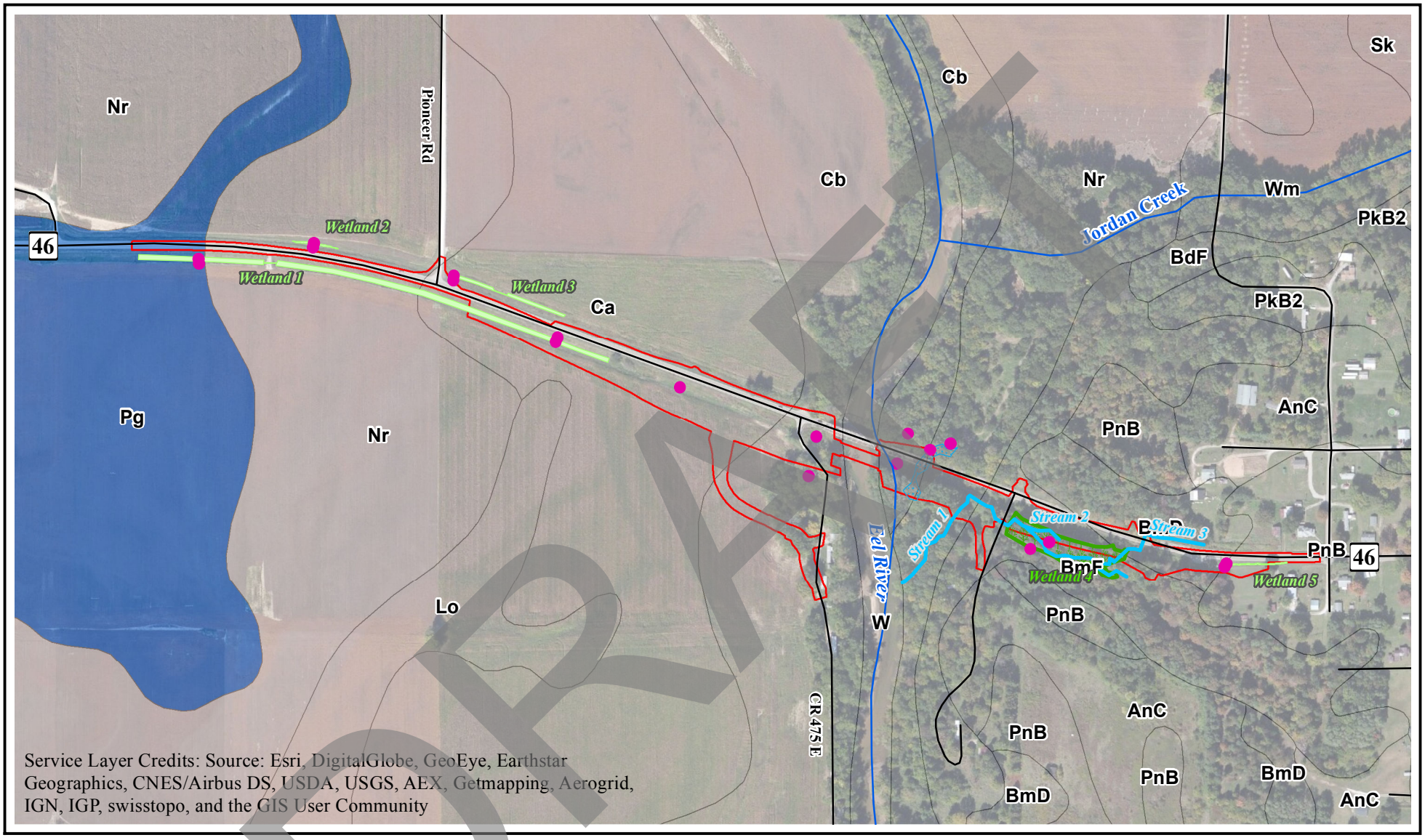
0 200 400 800 Feet

SR 46 over Eel River

Des. No. 0800910

Figure 4 - NWI Polygons

PARSONS



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Legend

- Preliminary Construction Limits
- Ephemeral Stream
- Vernal Pool
- Data Point
- Emergent Wetland
- Forested Wetland

SOILS

Hydric Classification-Presence

- Hydric (100%)
- Not Hydric (0%)

N

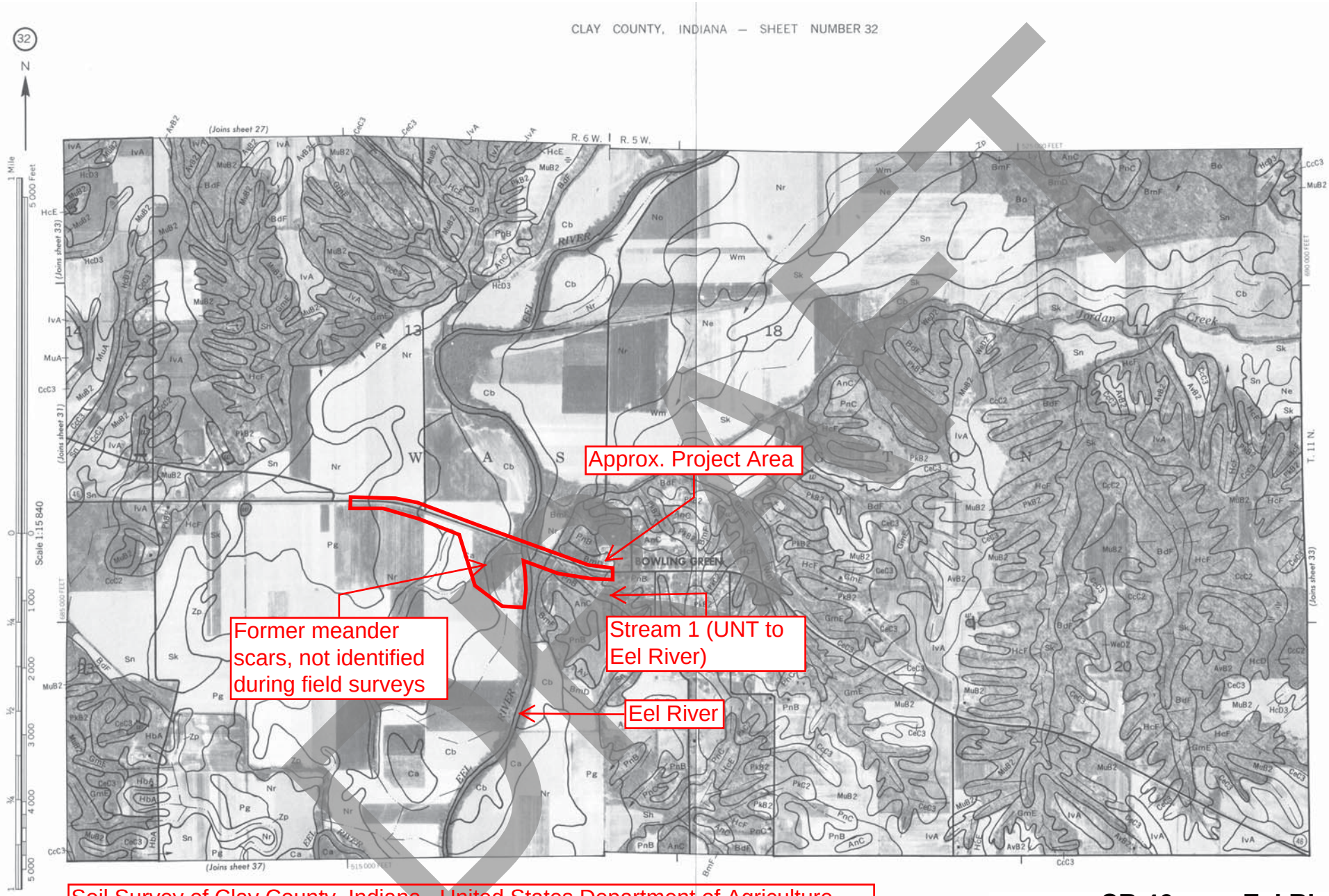
0 250 500 1,000 Feet

SR 46 over Eel River

Des. No. 0800910

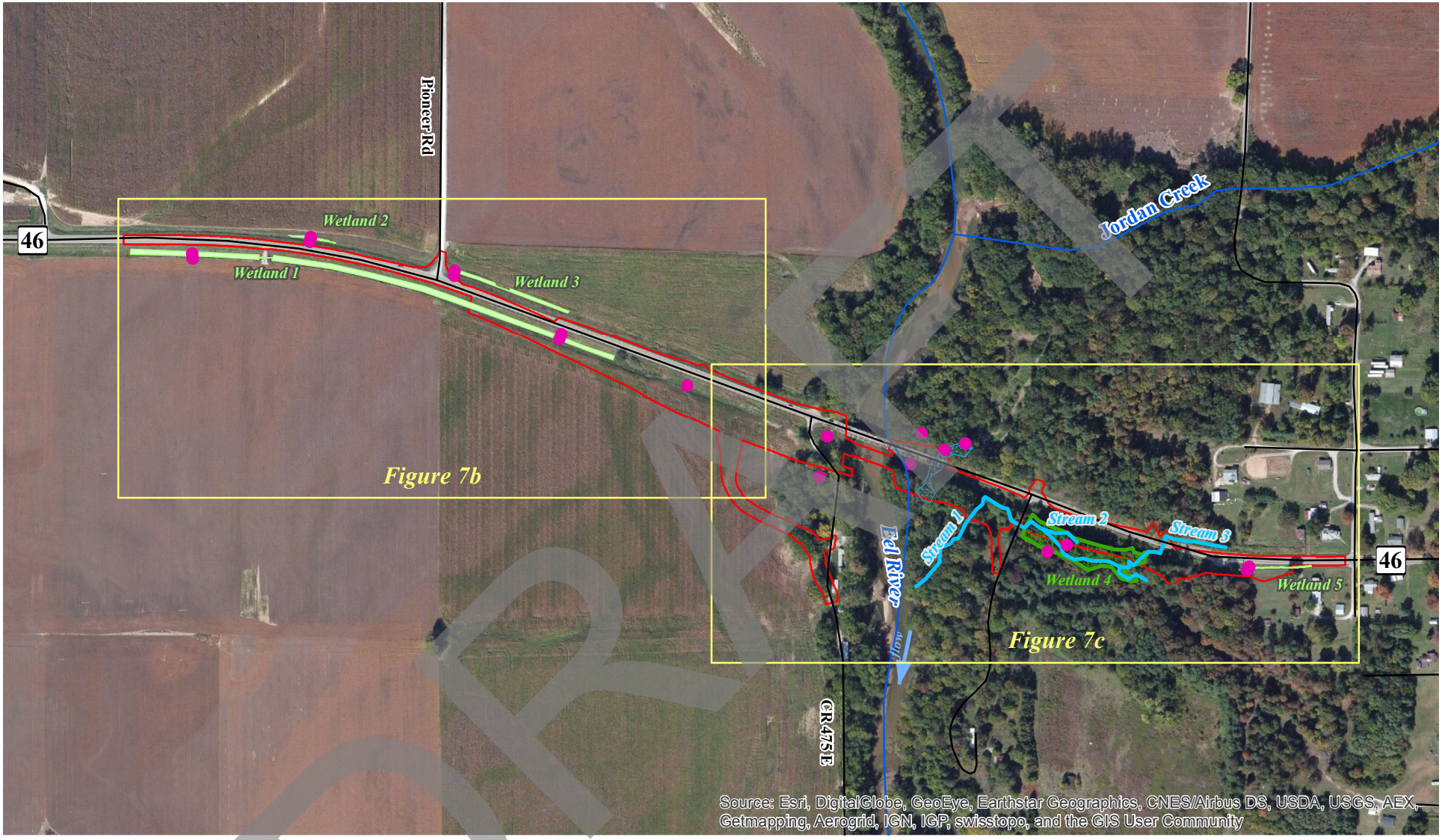
Figure 5 - NRCS Soils Map

PARSONS



Soil Survey of Clay County, Indiana. United States Department of Agriculture, Soil Conservation Service. 1982.

SR 46 over Eel River
Des. No. 0800910
Figure 6 - Historic Drainage Map



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Legend

- Preliminary Construction Limits
- Ephemeral Stream
- Vernal Pool
- Data Point
- Emergent Wetland
- Forested Wetland

N

0 250 500 1,000 Feet

SR 46 over Eel River

Des. No. 0800910

Figure 7a - Water Resources Overview

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Legend

- Preliminary Construction Limits
- Ephemeral Stream
- Data Point
- Emergent Wetland
- Forested Wetland

N

0 100 200 400 Feet

SR 46 over Eel River

Des. No. 0800910

Figure 7b - Water Resources, West

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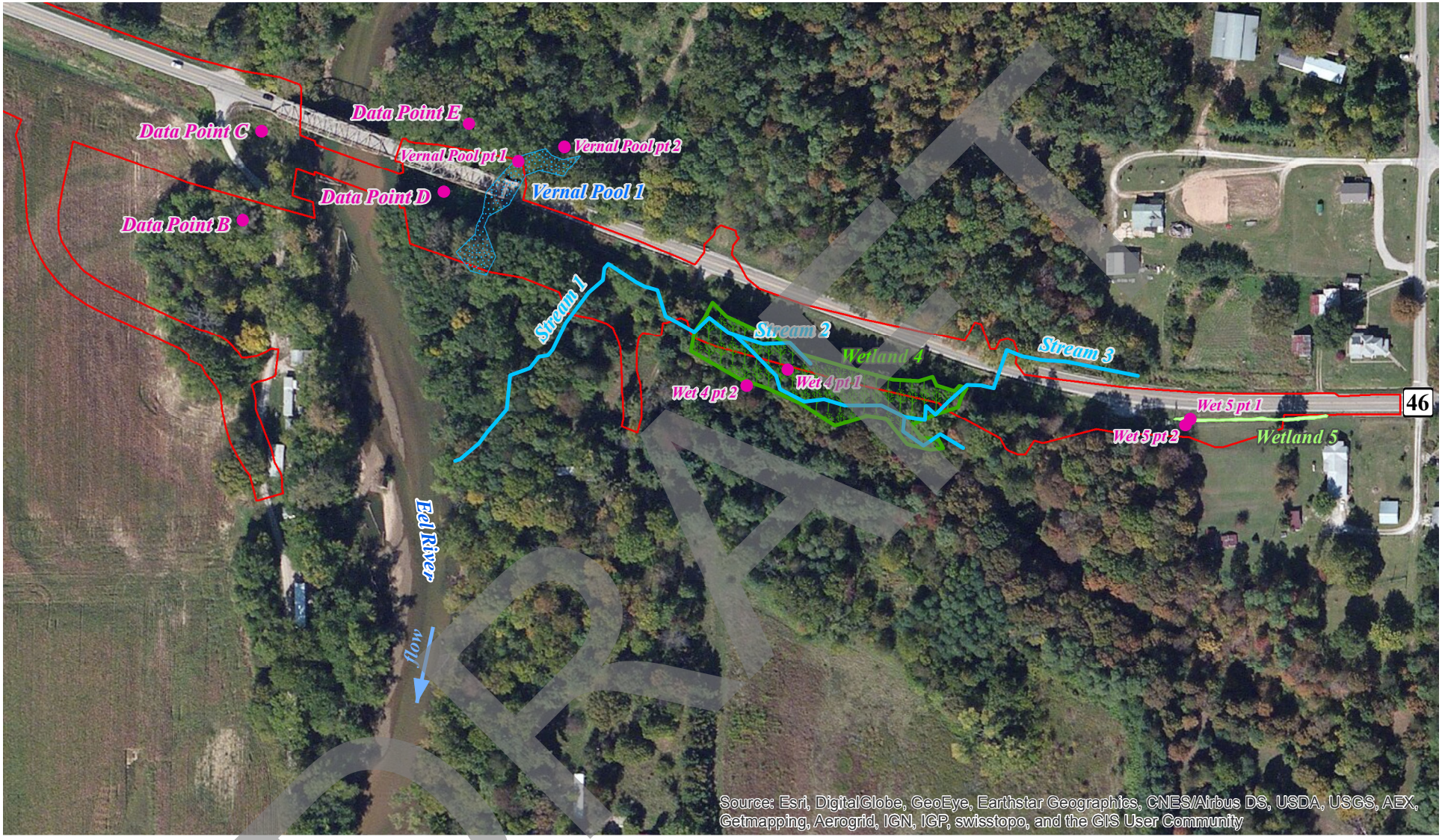

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Legend

- Preliminary Construction Limits
- Ephemeral Stream
- Vernal Pool
- Data Point
- Emergent Wetland
- Forested Wetland

N

0 100 200 400 Feet

SR 46 over Eel River

Des. No. 0800910

Figure 7c - Water Resources, East

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Appendix B

Photo Location Maps

Photo Log

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Legend

- Preliminary Construction Limits
- Ephemeral Stream
- Data Point
- Emergent Wetland
- Forested Wetland
- wetland photo locations

N

0 100 200 400 Feet

SR 46 over Eel River

Des. No. 0800910

Photo Key Map, West

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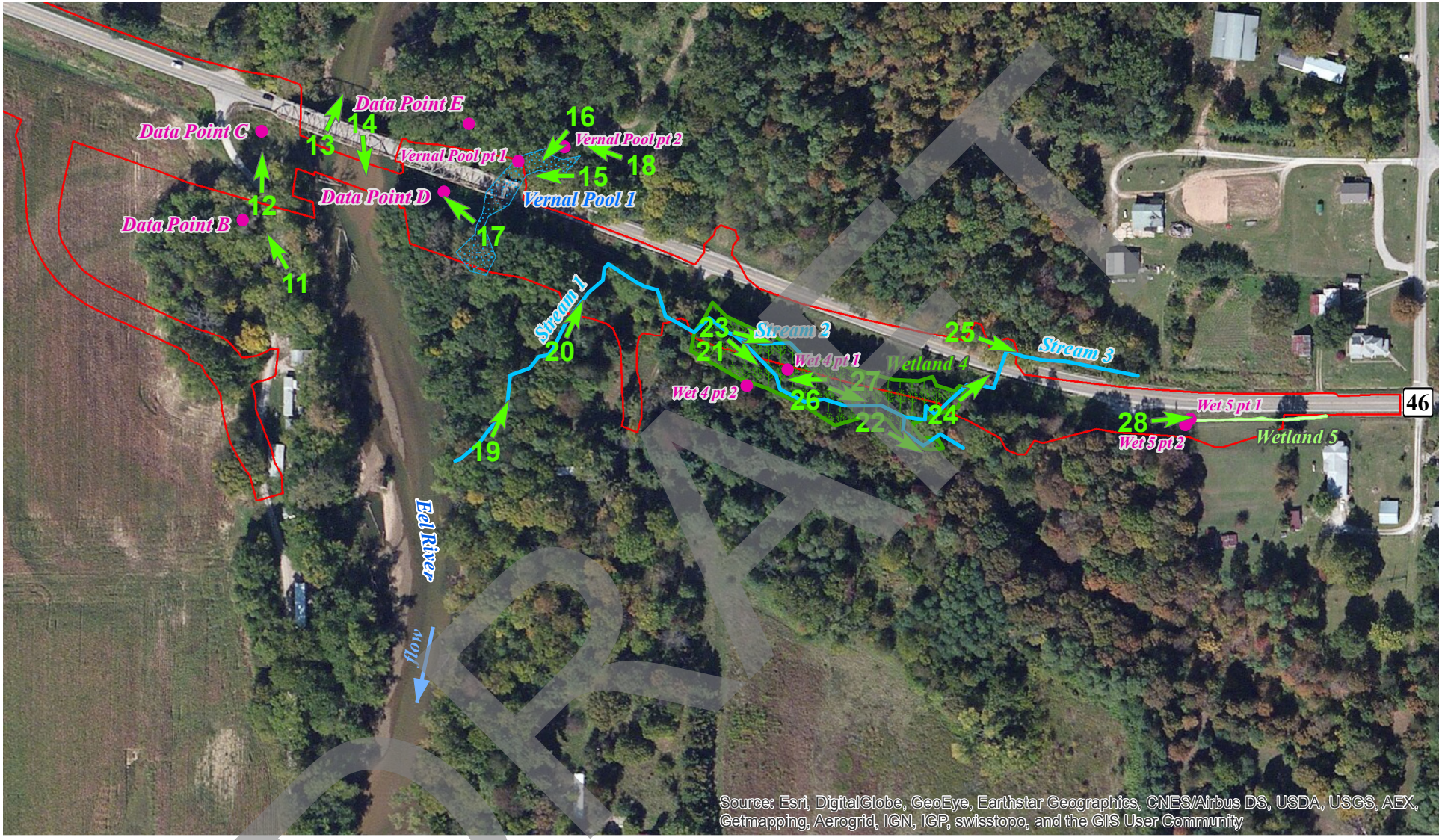

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Legend

- Preliminary Construction Limits
- Ephemeral Stream
- Vernal Pool
- Data Point
- Emergent Wetland
- Forested Wetland
- wetland photo locations

N

0 100 200 400 Feet

SR 46 over Eel River

Des. No. 0800910

Photo Key Map, East

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Photo 1: Looking east at Wetland 1 and data point "wet 1, point 1" (Nov. 10, 2014)

Photo 2: Looking west at western portion of Wetland 1 from farm field access drive (Nov. 10, 2014)

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Photo 3: Looking east at eastern portion of Wetland 1 from farm field access drive (Nov. 10, 2014)

Photo 4: Looking west at a portion of the western part of Wetland 1 (Sept. 4, 2014)

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Photo 5: Looking west at a portion of the western part of Wetland 1 (Sept. 4, 2014)

Photo 6: Looking west at the western part of Wetland 1 near data point "wet 1, point 3" (Sept. 4, 2014)

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Photo 7: Looking east at Wetland 2 and data point "wet 2, point 1" (Nov. 10, 2014)

Photo 8: Looking east at Wetland 3 from Pioneer Road (Nov. 10, 2014)

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Photo 9: Looking west at Wetland 3 from near its eastern boundary (Nov. 10, 2014)

Photo 10: Looking southeast at roadside ditch on south side of SR 46 near "Upland Point A" (Nov. 10, 2014)

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Photo 11: Looking northwest at small woodlot and "Upland Point B" on west side of CR 475E (Nov. 10, 2014)

Photo 12: Looking north at "Upland Point C" and the south side of the west bridge abutment (May 16, 2013)

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Photo 13: Looking upstream (north) at Eel River during low flow, from the existing bridge (Sept. 4, 2014)

Photo 14: Looking downstream (south) at Eel Rier during low flow, from the existing bridge (Sept. 4, 2014)

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Photo 15: Looking west at Vernal Pool 1 when nearly full in spring (May 16, 2013)

Photo 16: Looking southwest at Vernal Pool 1 when nearly empty in late summer (Sept. 4, 2014)

Photo 17: Looking west at "Upland Point D" on the south side of SR 46, just south of the eastern span (Sept. 4, 2014)

Photo 18: Looking west at area on north side of the bride, east of the Eel River, near "Upland Point E" (Nov. 10, 2014)

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Photo 19: Looking northeast at Stream 1 just upstream of its confluence with the Eel River (Sept. 4, 2014)

Photo 20: Looking northeast at Stream 1 just south of the utility corridor along the south side of SR 46 (Sept. 4, 2014)

Photo 21: Looking southeast at Stream 1 within Wetland 4 (Sept. 4, 2014)

Photo 22: Looking southeast at Stream 1 near the eastern limit (upstream end) of Wetland 4 (Sept. 4, 2014)

Photo 23: Looking east at Stream 2 within Wetland 4 (Sept. 4, 2014)

Photo 24: Looking northeast at the south side of the culvert that conveys Stream 3 under SR 46 (Nov. 10, 2014)

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Photo 25: Looking east at Stream 3 where it flows west along the north side of SR 46 to the box culvert under SR 46 (Nov. 10, 2014)

Photo 26: Looking west at the central portion of Wetland 4 (Sept. 4, 2014)

Photo 27: Looking southeast at the central portion of Wetland 4 (Sept. 4, 2014)

Photo 28: Looking east at Wetland 5 on the south side of SR 46 (Nov. 10, 2014)

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Appendix C

Omitted from CE document.
Available upon request

Wetland Data Sheets

Soil Profile Photos

DRAFT

Appendix D

Omitted from CE document.
Available upon request

Stream Evaluation Forms

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Appendix E

Preliminary JD Form and Table

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PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): June 2015

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD: Parsons Transportation Group (Contact: Alan Ball), 101 West Ohio Street, Suite 2121, Indianapolis, IN 46204

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: **Louisville District**

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION: INDOT plans to build a new bridge to carry State Road 46 over the Eel River in Clay County, Indiana (INDOT Des. No. 0800910). The new bridge will be located about 20 feet south of the existing bridge, and will require the realignment of approximately 0.75 mile of SR 46. The old 2-span steel truss bridge will be moved to a trail project in Brown County, Indiana.

(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)

State: IN County/parish/borough: Clay County City: near Bowling Green
Center coordinates of site (lat/long in degree decimal format):
Lat. 39.384200°N, Long. -87.021000° W

Universal Transverse Mercator: Northing 4359413.25, Easting 498191.41 (Zone 16S)

Name of nearest waterbody: Eel River

Identify (estimate) amount of waters in the review area:
Non-wetland waters: 821 linear feet, various widths, 0.95 acre
Wetlands: 0.73 acre
Cowardin Class: See attached table

Name of any water bodies on the site that have been identified as Section 10 waters:
Tidal: None
Non-Tidal: None

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☐ Office (Desk) Determination. Date:

☒ Field Determination. Dates: September 4, 2014, November 10, 2014 (by Consultant)

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1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

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This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

- ☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Various maps (See attached report).
- ☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☐ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps:
- ☐ Corps navigable waters' study:
- ☐ U.S. Geological Survey Hydrologic Atlas:
  - ☐ USGS NHD data.
  - ☐ USGS 8 and 12 digit HUC maps.
- ☒ U.S. Geological Survey map(s). Cite scale & quad name: 24k, Center Point quad (see Figure 3)
- ☒ USDA Natural Resources Conservation Service Soil Survey. Citation: NRCS SSURGO (see Figure 5)
- ☒ National wetlands inventory map(s). Cite name: See Figure 4
- ☐ State/Local wetland inventory map(s):
- ☒ FEMA/FIRM maps: See Figure 2
- ☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- ☒ Photographs: ☒ Aerial (Name & Date): 2005, IN Geographic Information Council.
- ☐ Previous determination(s). File no. and date of response letter:
- ☐ Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

_____	June 2015
Signature and date of Regulatory Project Manager (REQUIRED)	Signature and date of person requesting preliminary JD (REQUIRED, unless obtaining the signature is impracticable)

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PJD Form Table: SR 46 over the Eel River, Clay County, IN – Des. No. 0800910

Site Number	Latitude	Longitude	Cowardin Class	Estimated amount of aquatic resource impacted by construction	Class of aquatic resource
Wetland 1	39.385300	-87.025250	PEM1	0.17 acre	non-section 10 – wetland
Wetland 2	39.386050	-87.027600	PEM1	0.00 acre	non-section 10 – wetland
Wetland 3	39.385500	-87.025000	PEM1	0.00 acre	non-section 10 – wetland
Wetland 4	39.383200	-87.018400	PFO1	0.54 acre	non-section 10 – wetland
Wetland 5	39.382980	-87.015970	PEM1	0.02 acre	non-section 10 – wetland
Eel River	39.384000	-87.020900	Riverine, perennial	92 linear feet	non-section 10 – non-wetland
Stream 1	39.383500	-87.019600	Riverine, ephemeral	405 linear feet	non-section 10 – non-wetland
Stream 2	39.383300	-87.018600	Riverine, ephemeral	133 linear feet	non-section 10 – non-wetland
Stream 3	39.383100	-87.017600	Riverine, ephemeral	191 linear feet	non-section 10 – non-wetland
Vernal Pool 1	39.383950	-87.020050	PUS3C	0.14 acre	non-section 10 – non-wetland

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Appendix F

E-mail Correspondence with IDEM Regarding Cypress Trees/Wetland 4

DRAFT

From: Turner, James
To: Ball, Alan
Subject: reply to Alan: SR 46 over Eel River
Date: Tuesday, June 02, 2015 9:51:00 AM
Attachments: image003.png

Alan,
Yes, I remember our early coordination visit, and yes I will require 4:1 mitigation for the cypress-dominated wetland. I came to the 4:1 conclusion from seeing the cypress in a row-like arrangement and from a discussion with Tom Swinford in which he convinced me the area is a non-remnant, planted community with lower conservative species presence.
Jay

James (Jay) Turner | Wetlands Project Manager
Indiana Department of Environmental Management - Office of Water Quality
100 N. Senate Avenue IGCN 1255
Indianapolis, IN 46204
JTurner2@idem.in.gov | Office: 317-234-6352 | Fax: 317-232-8406
http://www.in.gov/idem/wetlands/index.htm[in.gov]

From: Ball, Alan [mailto:Alan.Ball@parsons.com]
Sent: Monday, June 01, 2015 7:52 AM
To: Turner, James
Subject: SR 46 over Eel River

Project: SR 46 over the Eel River in Clay County, near the unincorporated town of Bowling Green, Indiana, INDOT Des No 0800910

Jay,
Hopefully you remember this project and that we met on-site back in September 2014 to look at a few items, the most interesting of which was the forested wetland dominated by bald cypress. I included the e-mail chain below so you can see what let up to our field visit.

When we met on-site, I recall that you stated that the cypress-dominated wetland wasn't anything too special, and that you would just consider it like any other forested wetland and require 4:1 mitigation. The INDOT permit coordinator for the area, Kristi Todd, asked me to reach out to you for confirmation of our on-site meeting.

We're at the point now where we have a pretty good handle on our impacts. We are still trying to avoid as much as possible, but as of now, we will be impacting about 0.3 acre of the forested wetland, plus an additional 0.2 acre of emergent wetlands contained in roadside ditches. Our stream impacts will be on the order of 800 linear feet. These impacts will require off-site mitigation for both wetland and stream resources. I will be beginning the search for two mitigation sites soon.

Please let me know if you have any additional questions or concerns regarding project impacts or suggestions/requirements for mitigation. I'd be happy to meet with you again to go over the current design elements and impacts.

Alan Ball

DRAFT

Senior Environmental Planner
PARSONS
101 West Ohio Street, Suite 2121
Indianapolis, IN 46204
317-616-1021 (office)
Alan.Ball@parsons.com
www.parsons.com

From: Ball, Alan
Sent: Thursday, September 11, 2014 2:50 PM
To: Turner, James
Subject: RE: 401 WQC Questions

10:30 at the site would be fine.

I leave at 3:30 today, so if you need to talk to me, call me on my mobile number: 765-639-4759. Otherwise, I'll print off a few maps, and see you at the SR 46 Eel River bridge at 10:30 in the morning. Parking is tight, and I would recommend parking on the WEST side of the bridge. There's a small county road just before the West end of the bridge that goes to the south. There's a bit of extra pavement there where we can park a couple of vehicles. It is an actual public roadway though, so make sure you turn towards the bridge (you'll see it when you get there) so other traffic can get through.

Alan Ball
Senior Environmental Planner
PARSONS
101 West Ohio Street, Suite 2121
Indianapolis, IN 46204
317-616-1021 (office)
765-639-4759 mobile
Alan.Ball@parsons.com
www.parsons.com

Please consider the environment before printing this email

From: Turner, James [mailto:JTurner2@idem.IN.gov]
Sent: Thursday, September 11, 2014 2:41 PM
To: Ball, Alan
Subject: RE: 401 WQC Questions

Sounds great. I can be at the site by 10:30 or meet you somewhere along the way earlier if you'd like.

From: Ball, Alan [mailto:Alan.Ball@parsons.com]
Sent: Thursday, September 11, 2014 1:02 PM
To: Turner, James
Subject: RE: 401 WQC Questions

DRAFT

Tomorrow? I live way out in Putnam County anyway, so I can work from home and meet you at the site or somewhere along the way whenever you're available.

From: Turner, James [mailto:JTurner2@idem.IN.gov]
Sent: Thursday, September 11, 2014 12:40 PM
To: Ball, Alan
Subject: RE: 401 WQC Questions

Will the utility lines be moving?
Yes, I definitely want to visit it. I'm free tomorrow, Monday, and Tuesday, but likely not again until the 29th.

From: Ball, Alan [mailto:Alan.Ball@parsons.com]
Sent: Thursday, September 11, 2014 12:11 PM
To: Turner, James
Subject: RE: 401 WQC Questions

Jay,
Concerning the SR 46 bridge over the Eel River in Clay County...
Just a follow-up to let you know that I think I would be worth the time to visit the project area and look at the cypress wetland. I might see if someone from the Indy Corps office can come too, if we decide to go out. The timing may not work out with the Corps, but if you and I can establish a consensus on how to handle the cypress tree area in the next week or so, it would allow me to direct INDOT and our engineering staff on how to proceed with this project.
Alan

From: Ball, Alan
Sent: Thursday, September 11, 2014 7:21 AM
To: 'Turner, James'
Cc: Warrner, Thomas
Subject: RE: 401 WQC Questions

There are overhead utility lines on the south side of SR 46, but they are between the cypress wetland and SR 46. Take a look a the attached image, where I've highlighted in pink the overhead utility lines. The big green area towards the lower right corner of the image is the cypress wetland.

From: Turner, James [mailto:JTurner2@idem.IN.gov]
Sent: Wednesday, September 10, 2014 3:44 PM
To: Ball, Alan
Cc: Warrner, Thomas
Subject: RE: 401 WQC Questions

Are there powerlines on the south side of SR 46 through that area?

From: Ball, Alan [mailto:Alan.Ball@parsons.com]
Sent: Wednesday, September 10, 2014 1:25 PM
To: Turner, James
Cc: Warrner, Thomas

DRAFT

Subject: RE: 401 WQC Questions

If you'd like to visit the site, or review any of my photos or data sheets, just let me know. It sounds like a visit to the site might help you way more than my description and photos. If that's something you want to set up, just let me know.

Alan

From: Turner, James [mailto:JTurner2@idem.IN.gov]
Sent: Wednesday, September 10, 2014 1:18 PM
To: Ball, Alan
Cc: Warrner, Thomas
Subject: RE: 401 WQC Questions

I don't think my stance has changed. Re-reading my email below it sounds like I'm thinking about treating it as a standard forested wetland rather than an ecologically important site. Actually, I asked because I wanted to document why I wasn't pushing harder for avoidance. I'm going to look into it some more. I hope to get a feel for the role this site plays. It's not a standard case of a critical wetland type, but it is rare, and bald cypress is considered a high value tree for wildlife. This is further north then bald cypress normally occurs, but I think that's a result of the suitability of ball cypress to more northern growing conditions rather than an indication of the lack of importance mature bald cypress have to wildlife. I worry it will be hard to replace lost wildlife functions within the watershed, and I'm also concerned about what will happen to the half of the site that is not directly impacted by the road work.

I remembered the soil was different in the cypress stand than it was in the surrounding area which appears to be mapped as a loamy fine sand – well drained or somewhat excessively drained soil.

Thanks for your help,
Jay

From: Ball, Alan [mailto:Alan.Ball@parsons.com]
Sent: Wednesday, September 10, 2014 12:10 PM
To: Turner, James
Cc: Warrner, Thomas
Subject: RE: 401 WQC Questions

I'm pretty certain the cypress trees were planted, but I have no photo evidence of when, nor have I attempted to talk to anybody from the area who might know.

The soils were loamy, and satisfied 2 field indicators of hydric soils... Redox Dark Surface and Depleted Matrix. The soil profile was moist throughout, and standing water was observed in our soil pit after a few minutes. Of all the soil pits we dug in the area, only the soils below the cypress trees exhibited hydrology... that is, none of our other data points in the area had saturated soils or free water in the soil pit.

In the area of the cypress trees, there were very few, if any, other woody species. There was an

DRAFT

herbaceous layer of yellow touch-me-not (Impatiens pallida) and clearweed (Pilea pumila). The canopy trees were definitely all cypress trees within that basin.

It sounds like you may be re-thinking your stance on this area. Would you mind letting me know what you're thinking?

Thanks!
Alan

From: Turner, James [mailto:JTurner2@idem.IN.gov]
Sent: Wednesday, September 10, 2014 9:22 AM
To: Ball, Alan; Warrner, Thomas
Subject: RE: 401 WQC Questions

I'm thinking more about that cypress swamp and wondering if it was likely planted or if it has the characteristics listed in 327 IAC 17-1-3(3)(B). What was the soil like in that area? Were silver maple, green ash, or overcup oak also present?

From: Turner, James [mailto:JTurner2@idem.IN.gov]
Sent: Monday, September 08, 2014 10:53 AM
To: Warrner, Thomas
Cc: Ball, Alan
Subject: RE: 401 WQC Questions

Without looking into it further, I think impacts to a mature bald cypress swamp, even in Clay county, would be greatly discouraged and require more than 4:1 mitigation if allowed. I think if there were impacts I would elevate the project to an individual 401. But you should coordinate further now because we may try to discourage any impacts and you don't want to be surprised if we take that approach.

Even though the pink turtlehead is only on the watch list and not an official state rare species, I think its presence would be enough for me to require coordination, and elevate the project to an individual if it requires special protection, but I think disclosing the presence of a watch list species shows good intent on your part and you ought to be able to help direct measures that are agreeable to both your client and us. With that all said, I don't know of an example of this happening before. You're saying you only saw it in an area that won't be impacted?

Clay County is Samantha's <SGroce@idem.in.gov> territory. I don't think that county is up for a territory change, so you'll likely be dealing with her. Would you like me to forward this on so you can get a response from her?

Take care,
Jay

Jay Turner | Wetlands Project Manager
Indiana Department of Environmental Management - Office of Water Quality
100 N. Senate Avenue IGCN 1255
Indianapolis, IN 46204

DRAFT

JTurner2@idem.in.gov | Office: 317-234-6352 | Fax: 317-232-8406

From: Warrner, Thomas [mailto:Thomas.Warrner@parsons.com]
Sent: Monday, September 08, 2014 9:51 AM
To: Turner, James
Cc: Ball, Alan
Subject: 401 WQC Questions

Hi Jay,

Alan and I were out in the field last Thursday in Clay County. We generated two questions to run by you.

We ran into was a bald cypress swamp. We were very surprised to see this species so far north, and the trees had obviously been there for some time (decades) based on their dbh. Under the RGP conditions, this is called out as a "*critical wetland and critical special aquatic site*." However, the description goes on to say "*associated with the Wabash/Ohio River system*" and "*this community is restricted to extreme southwest Indiana*." Neither of these apply directly, although the river nearby does ultimately drain to the Wabash. Our design is preliminary at this point, but we do anticipate some impact to this area. Would this still be considered a critical wetland even though it is not located in a region of the state where bald cypress is considered native by IDNR? If so, would the mitigation ratio (should we exceed 0.1 acre of impact) be greater than 4:1?

In another area Alan identified a state listed ETR species pink turtlehead (*Chelone obliqua var. speciosa)* which is not listed by IDNR for Clay County. IDNR Nature Preserves, therefore, would not respond that this species has been documented within a ½ mile radius of our project. Have you had this issue come up on another project, and if so how did you resolve it? It is not an endangered/threatened species in the rest of the state if that helps. Would we still need to coordinate with IDNR Nature Preserves and provide documentation that this species would not be impacted significantly by the project?

Thanks for your feedback. It will help us determine what additional efforts, if any, we will need for this project.

Take care,

T.J.

Thomas J. Warrner
Environmental Planner
PARSONS
101 West Ohio Street, Suite 2121
Indianapolis, Indiana 46204
Phone: (317) 616-4671
E-mail: thomas.warrner@parsons.com
Web: www.parsons.com

DRAFT

APPENDIX G – PUBLIC INVOLVEMENT

- Notice of Entry letters
- Public meeting on January 29, 2015 materials
- Minutes of Clay County Commissioners meeting February 2, 2015

INDIANA DEPARTMENT OF TRANSPORTATION
Driving Indiana's Economic Growth

100 North Senate Avenue
Room N642
Indianapolis, Indiana 46204-2216
(317) 232-5348 FAX: (317) 233-4929

MICHAEL R. PENCE, Governor
MICHAEL B. CLINE, Commissioner

Writer's Direct Line
(317) 616-1001

Peter & Kiki Prionas
7075 Jackson St
Indianapolis, IN 46241

RE: Des. No. 0800910
SR 46 Bridge Replacement over Eel River, Washington Township, Clay County, Indiana

Notice of Entry for Survey or Investigation

May 7, 2013

Dear Property Owner:

Our information indicates that you own property near the above proposed transportation project. Representatives of the Indiana Department of Transportation (INDOT) will be conducting environmental surveys of the project area in the near future. It may be necessary for them to enter onto your property to complete this work. This is permitted under Indiana Code § 8-23-7-26. Anyone performing this type of work has been instructed to identify him or herself to you, if you are available, before they enter your property. If you no longer own this property or it is currently occupied by someone else, please let us know the name of the new owner or occupant so that we can contact them about the survey.

Please read the attached notice to inform you of what the "Notice of Entry for Survey or Investigation" means. The survey work may include the identification and mapping of wetlands, archaeological investigations (which may involve the survey, testing, or excavation of identified archaeological sites), and various other environmental studies. The information we obtain from such studies is necessary for the proper planning and design of this highway project. It is our sincere desire to cause you as little inconvenience as possible during this survey.

If any problems do occur, please contact the field crew or contact Ellie Dieckmeyer, the INDOT Project Manager, at 765-361-5258 or edieckmeyer@indot.IN.gov. Her address is INDOT Crawfordsville District, 41 West CR 300 N, Crawfordsville, IN 47933. You may also contact me at 317-616-1001 or at Parsons, 101 W. Ohio, Suite 2121, Indianapolis, IN 46204.

Please be aware that IC 8-23-7-27 and 28 provide that you may seek compensation from INDOT for damages occurring to your property (land or water) that result from INDOT's entry for the purposes mentioned above in IC 8-23-7-26. In this case, a basic procedure that may be followed is for you and/or an INDOT employee or representative to present an account of the damages to Ms. Dieckmeyer. She will check the information and forward it to the appropriate person at INDOT who will contact you to discuss the situation and compensation.

In addition, you may contact, Bert Herron, the Crawfordsville District Real Estate Manager (765-361-5243). Her address is the same as listed above. The District Real Estate Manager (DREM) can provide you with a form to request compensation for damages. After filling out the form, you can return it to the DREM for consideration, and the DREM may be contacted if you have questions regarding the matter, rights, and procedures.

If you are not satisfied with the compensation that INDOT determines is owed to you, Indiana Code 8-23-7-8 provides the following:

> The amount of damages shall be assessed by the county agricultural extension educator of the county in which the land or water is located and two (2) disinterested residents of the county, one (1) appointed by the aggrieved party and one (1) appointed by the department. A written report of the assessment of damages shall be mailed to the aggrieved party and the department by first class United States mail. If either the department or the aggrieved party is not satisfied with the assessment of damages, either or both may file a petition, not later than fifteen (15) days after receiving the report, in the circuit or superior court of the county in which the land or water is located.

It is our sincere desire to cause as little inconvenience as possible during our work, and we thank you in advance for your cooperation.

Sincerely,

M. Sean Porter

Sean Porter, P.E.
Parsons
Consultant Project Manager

Attachment

INDIANA DEPARTMENT OF TRANSPORTATION
Driving Indiana's Economic Growth

100 North Senate Avenue
Room N642
Indianapolis, Indiana 46204-2216
(317) 232-5348 FAX: (317) 233-4929

MICHAEL R. PENCE, Governor
Karl B Browning, Commissioner

Writer's Direct Line
(317) 616-1001

Linn A. Killion
4013 E Ashboro Road
Centerpoint, IN 47840

RE: Des. No. 0800910
SR 46 Bridge Replacement over Eel River, Washington Township, Clay County, Indiana

Notice of Entry for Survey or Investigation

August 11, 2014

Dear Property Owner:

Our information indicates that you own property near the above proposed transportation project. Representatives of the Indiana Department of Transportation (INDOT) will be conducting environmental surveys of the project area in the near future. It may be necessary for them to enter onto your property to complete this work. This is permitted under Indiana Code § 8-23-7-26. Anyone performing this type of work has been instructed to identify him or herself to you, if you are available, before they enter your property. If you no longer own this property or it is currently occupied by someone else, please let us know the name of the new owner or occupant so that we can contact them about the survey.

Please read the attached notice to inform you of what the "Notice of Entry for Survey or Investigation" means. The survey work may include the identification and mapping of wetlands, archaeological investigations (which may involve the survey, testing, or excavation of identified archaeological sites), and various other environmental studies. The information we obtain from such studies is necessary for the proper planning and design of this highway project. It is our sincere desire to cause you as little inconvenience as possible during this survey.

If any problems do occur, please contact the field crew or contact Tony Jones, the INDOT Project Manager, at 317-233-5282 or TWJones@indot.IN.gov. His address is INDOT, 100 N Senate Avenue, N642, Indianapolis, IN 46204. You may also contact me at 317-616-1001 or at Parsons, 101 W. Ohio, Suite 2121, Indianapolis, IN 46204.

Please be aware that IC 8-23-7-27 and 28 provide that you may seek compensation from INDOT for damages occurring to your property (land or water) that result from INDOT's entry for the purposes mentioned above in IC 8-23-7-26. In this case, a basic procedure that may be followed is for you and/or an INDOT employee or representative to present an account of the damages to Ms. Dieckmeyer. She will check the information and forward it to the appropriate person at INDOT who will contact you to discuss the situation and compensation.

In addition, you may contact, Bert Herron, the Crawfordsville District Real Estate Manager (765-361-5243). Her address is the same as listed above. The District Real Estate Manager (DREM) can provide you with a form to request compensation for damages. After filling out the form, you can return it to the DREM for consideration, and the DREM may be contacted if you have questions regarding the matter, rights, and procedures.

If you are not satisfied with the compensation that INDOT determines is owed to you, Indiana Code 8-23-7-8 provides the following:

> The amount of damages shall be assessed by the county agricultural extension educator of the county in which the land or water is located and two (2) disinterested residents of the county, one (1) appointed by the aggrieved party and one (1) appointed by the department. A written report of the assessment of damages shall be mailed to the aggrieved party and the department by first class United States mail. If either the department or the aggrieved party is not satisfied with the assessment of damages, either or both may file a petition, not later than fifteen (15) days after receiving the report, in the circuit or superior court of the county in which the land or water is located.

It is our sincere desire to cause as little inconvenience as possible during our work, and we thank you in advance for your cooperation.

Sincerely,

M. Sean Porter

Sean Porter, P.E.
Parsons
Consultant Project Manager

Attachment

INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N642
Indianapolis, Indiana 46204

PHONE: (317) 232-6601
E-mail: rclark@indot.in.gov

Michael R. Pence, Governor
Karl B. Browning, Commissioner

SR 46 BRIDGE OVER THE EEL RIVER
PUBLIC MEETING
January 29, 2015

Welcome!

Thank you for attending the public meeting this evening. We hope that you find it informative and that you use it as an opportunity to share your opinions regarding the project.

The bridge carrying SR 46 over the Eel River is severely deteriorated and must be improved. Twice in the last four years it has required temporary closure so that repairs could be made. INDOT regularly inspects the bridge and it is safe to use, but a more permanent solution is needed soon.

INDOT, the Federal Highway Administration (FHWA), and the consultant team have evaluated a wide range of options ranging from rehabilitation to replacement. Due to the design of the bridge, it would be cost-prohibitive to rehabilitate the bridge to carry the size and weight of trucks that need to use SR 46. As a result, INDOT and FHWA have determined that a new bridge is needed.

Because the bridge is listed on the National Register of Historic Places and was identified as a "Select" bridge in the Indiana Historic Bridge Inventory completed in 2009, INDOT is obligated to find a new use for the existing bridge. Two appropriate options remain:

- Rehabilitate the existing bridge at its existing location for use as a park, trail, or other public use (Alternative 4)
- Rehabilitate the bridge and relocate it to another location in the State for a similar use (Alternative 5)

Both of these alternatives would provide a new bridge to safely carry SR 46 over the Eel River for several generations and minimize impacts during construction.

The purpose of tonight's meeting is to provide the community with an overview of the project and to gather input regarding the most appropriate re-use for the existing bridge once a new bridge is built to carry traffic on SR 46. INDOT and FHWA are seeking an organization (public or private) that will put the bridge to public use and take responsibility for its upkeep. Specifically, the following is required:

1. The bridge must be put to a public use (park, pier, trail, etc.);
2. The organization must be willing to sign an agreement to take responsibility for the bridge for a minimum of 25 years, with the expectation that it would be maintained beyond that; and
3. The organization must make a firm commitment to sign that agreement within 60 days so that the project can move forward promptly.

There are several ways you can provide comments:

1. Participate during the public comment session following the presentation.
2. Complete one of the comment forms (available at the sign-in table) and return it to any of the INDOT representatives attending the public meeting.

100 North Senate Avenue
Room N642
Indianapolis, Indiana 46204

PHONE: (317) 232-6601
E-mail: rclark@indot.in.gov

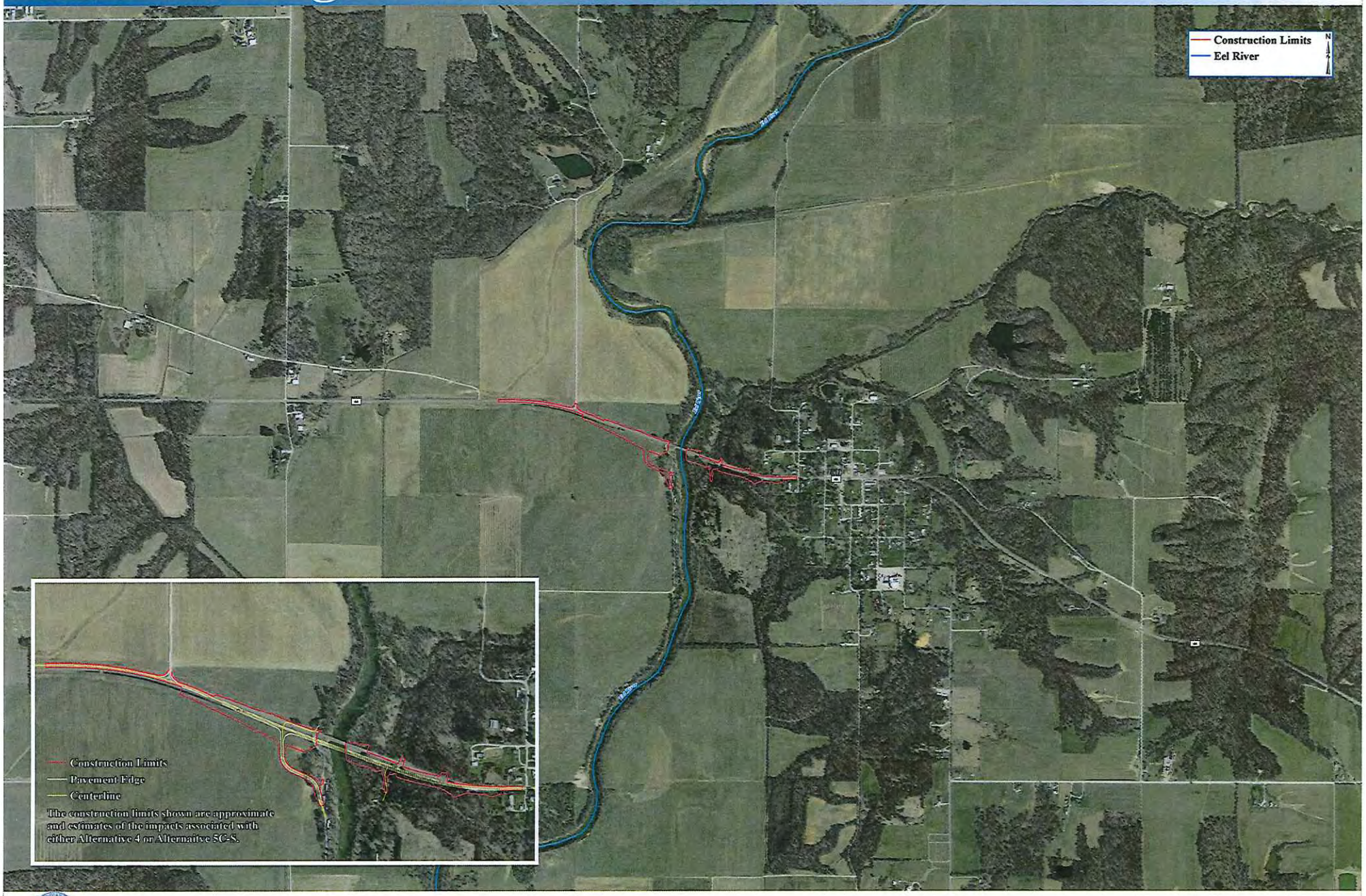
Michael R. Pence, Governor
Karl B. Browning, Commissioner

3. Mail your comments to: S.R. 46-Eel River Project, c/o Parsons, 101 West Ohio Street, Suite 2121, Indianapolis, Indiana 46204; FAX (317) 616-1033. **INDOT respectfully requests comments be submitted by Friday, March 6, 2015.**
4. Comments may be e-mailed to Parsons (INDOT's consultant) at: daniel.prevost@parsons.com.

All public comments submitted during the comment session or during the public comment period will be given full consideration by the INDOT project team as part of the decision making process.

Rickie Clark, INDOT Office of Public Involvement
rclark@indot.in.gov (317) 232-6601

SR 46 Bridge Over the Eel River



Indiana Department of Transportation

PARSONS

State Road 46 Bridge over the Eel River

Bowling Green Community Building

Thursday, January 29, 2015

Welcome

- **Meeting Purpose**
  - Overview of project and alternatives
  - Gather public input
- **Project Team**
  - FHWA
  - INDOT
  - Consultant Team

Presentation Outline

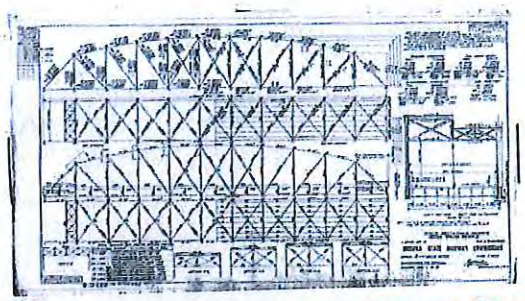
- **Project Overview and History**
- **Section 106 and Historic Bridge Process**
- **Project Alternatives**
- **Schedule**

Project Overview and History

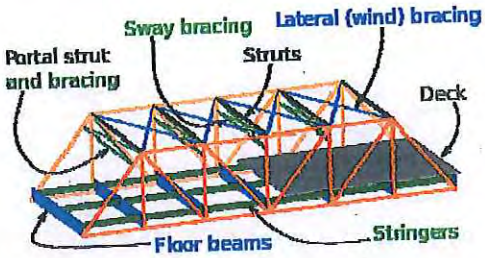
Project Overview and History

Project Overview and History

Original Design



Truss Bridge Terminology

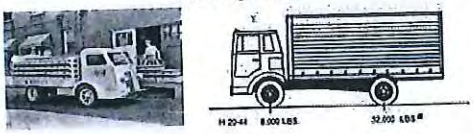


Truss Bridge Terminology

Gusset Plate

Design Loads

1934 Design Truck



2015 Design Truck

Bridge Inspection

- **Inspection Frequency (minimum)**
  - All bridges – every 2 years (FHWA requirement)
  - Fracture Critical Bridges – every year (INDOT requirement)
- **Fracture-Critical**
  - A bridge that has non-redundant features
  - If those key supports fail, the bridge would be in danger of collapse.
  - This does not mean the bridge in inherently unsafe, only that there is a lack of redundancy in its design.

Recent Inspection History

- **2011 Closure, Detour and Repair**
  - Failed gusset plates
  - Closed for 1 month for repair
- **2012 Closure, Detour and Repair**
  - Superstructure at risk
  - Closed for 3 months for repair
  - Repair Service Life: minimum 5 years

Current Condition

Damaged Sway Bracing

Current Condition

Connection Plate

Current Condition

Interior Gusset Plate

Current Condition

Interior Gusset Plate

Current Condition

Lateral Bracing

Current Condition

Truss Vertical

Current Condition

Rusting on Chord

Current Condition

West span of bridge, looking north

Current Condition

SR 46 bridge during 4/19/2013 flood event, looking northeast

Purpose and Need

- **Need for the Project:** Advanced deterioration, section loss, and fatigue affecting critical load-bearing components of this fracture critical bridge
- **Project Purpose:** To provide a safe and structurally sufficient bridge

Purpose and Need

- **Other desired outcomes:**
  - Hydraulic improvements/scour countermeasures
  - Standard lane widths/shoulders
  - Improved intersection at CR 475 East
  - Standard guardrail
  - Minimization of closures for construction, inspection, or repair

SR 46 Bridge is Historic

- **Listed in the National Register of Historic Places**
- **Significant under Criterion A "for its association with events in the settlement and economic development of Clay County, Indiana"**

Section 106 Process

- **National Historic Preservation Act (1966)**
  - Section 106: Federal agency must take into account the effects of the undertaking on historic properties (National Register of Historic Places eligible or listed)
  - Provide Advisory Council on Historic Preservation the opportunity to consult

Historic Bridges in Indiana

- **Modified Section 106 consultation process**
- **All historic bridges in Indiana categorized as Select or Non-Select**
- **Select Bridges: "most suitable for preservation and are excellent examples of a given type of historic bridge"**
- **FHWA will not participate in the demolition of a Select Bridge**
- **Follow procedures for each type outlined in the Programmatic Agreement**

SR 46 Bridge is "Select"

- **Historic Bridge Inventory lists the bridge as "Select" and appropriate for "Non-Vehicular Use"**

Alternatives Analysis

1. **No Build**
2. **Rehab for continued vehicular use**
3. **Rehab for continued vehicular use/one-way pair**
4. **Bypass/non-vehicular use**
5. **Bridge Replacement/Relocation of Historic Bridge**
   - 5A – Replacement on existing alignment, full detour
   - 5B-N – Replacement on existing alignment, temp bridge to the North
   - 5B-S – Replacement on existing alignment, temp bridge to the South
   - 5C-N – Replacement on new alignment to the North
   - 5C-S – Replacement on new alignment to the South

Alternative 1

- **Alternative 1 – No Build**
  - Would make no improvements
  - 2012 repair expected to last 5+ years (INDOT monitoring)
  - Likely closed in 2017 or later
- **INDOT and FHWA have determined that these alternatives would not meet the project's purpose and need**

Alternatives 2 and 3

Alternative 2 – Rehab for continued vehicular use

Alternative 3 – Rehab for continued vehicular use/one-way pair

- **Both would continue vehicular use**
  - *Possible* to rehabilitate the bridge
  - *Cost-prohibitive* to rehabilitate the bridge to carry current standard loads
- **INDOT and FHWA have determined that these alternatives would not meet the project's purpose and need**

Alternative 4

Alternative 4 – Bypass / Non-Vehicular Use

Alternative 4

Alternative 4

Alternative 4

- **New Bridge**
  - Immediately south of existing bridge
- **Two lanes of traffic maintained during construction**
- **Existing Bridge**
  - Rehabilitation for pedestrian use
  - Less intensive repairs than rehab for vehicle use
  - Rehabilitation effective for 25+ years
- **Total Cost: $10,342,000**

Alternative 4

- **Purpose and Need**
  - ✓Structural capacity
- **Other Desired Outcomes**
  - ✗ Hydraulic improvements
  - ✓Standard lane widths/shoulders
  - ✓Improved intersection at CR 475 East
  - ✓Standard guardrail
  - ✓Minimization of closures for construction, inspection, or repair

Alternative 4

- **Hydraulic Issues**
  - West Abutment Location
    - New bridge abutment ideally moved further west
    - If existing bridge remains, the new abutment would be required to be parallel to the existing one
    - Subject to future scour issues requiring maintenance
  - Not practical to address freeboard deficiency
- **Issues are not insurmountable, but would increase future maintenance requirements**

Alternative 5C-S

Alternative 5C-S – Bridge Replacement on New Alignment to the South

Alternative 5C-S

- **New Bridge**
  - Immediately south of existing bridge
  - Properly aligned with and sized for the channel
- **Two lanes of traffic maintained during construction**
- **Existing Bridge Relocated**
- **Cost: $9,745,000**

Alternative 5C-S

- **Purpose and Need**
  - ✓Structural capacity
- **Other Desired Outcomes**
  - ✓Hydraulic improvements
  - ✓Standard lane widths/shoulders
  - ✓Improved intersection at CR 475 East
  - ✓Standard guardrail
  - ✓Minimization of closures for construction, inspection, or repair

Alternatives Summary

	Alternative 4	Alternative 5C-S
Meets Purpose and Need	Yes	Yes
Other Desired Outcomes	Yes, except hydraulics	Yes
Cost	$10,342,000	$9,745,000
Existing Bridge	Pedestrian Use – Existing Location	Pedestrian Use – Alternate Location

Pedestrian Bridge Consultation

- **INDOT Project Manager contacted Clay County in 2010**
- **Clay County was not interested in keeping the bridge or moving it to a park or trail**
- **INDOT contacted IDNR Recreational Trails Program to identify alternate location**
- **Three organizations expressed interest**
- **Salt Creek Trail (Brown County) determined best option**

Salt Creek Trail

Consulting Parties

- **December 2014 Consulting Party Meeting**
- **Interest in keeping bridge in existing location or elsewhere in Clay County**
- **Previous coordination with Clay County was more than 4 years ago**
- **Additional outreach appropriate**

INDOT-FHWA Goals

- **Agree with preference for location in Clay County (existing or other)**
- **Bridge must be put to public use (park, trail, etc.)**
- **Project must move forward promptly**

Requirements

- **In order for Alternative 4 or 5C-S to be considered prudent, FHWA has determined the following requirements must be met:**
  1. Public use of bridge
  2. Public or Private Organization willing to take responsibility of the bridge for a minimum of 25 years, with expectation of longer-term commitment
  3. Firm commitment within 60 days of intent to sign an agreement and demonstrate financial capacity

Financial Requirements

- **INDOT will rehabilitate the Existing Bridge to pedestrian standards**
  - Replacement of deficient members
  - New deck
  - New paint
  - Anticipated life: 25+ years
- **Requirements**
  - Minimal repairs may be required
  - Routine inspections

Schedule

March 30, 2015	Deadline for commitment to take ownership
Spring/Summer 2015	Preliminary engineering/environmental review
Summer 2015	Public Hearing
Fall 2015-Summer 2016	Land acquisition/final design
October 2016	Construction letting
December 2017	New bridge open to traffic
July 2018	Existing bridge rehabilitated (and relocated, if relevant)

Thank You

- **Ways to contact the project team**
  - **Comment forms**
  - **Email/Phone**
- **Thank you for attending**

Dan Prevost
Public Outreach Lead
Parsons
317-616-1017
daniel.prevost@parsons.com

INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N642
Indianapolis, Indiana 46204

PHONE: (317) 232-6601
E-mail: rclark@indot.in.gov

Michael R. Pence, Governor
Karl B. Browning, Commissioner

Please submit written comments by using the comment form provided. **INDOT respectfully requests comments be submitted by Friday, March 6, 2015.** Thank you for your attendance this evening.

PROJECT: S.R. 46-Eel River Project

MEETING DATE: Thursday, January 29, 2015

NAME: _____

COMMENT: _____

SIGNATURE: _____

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2	& TOM PRIONAS PETER & KIKI PRIONAS	7075 W. JACKSON ST INDIANAPOLIS IN 46241	TPRIONAS@AOL.COM } TOM 317-847-8349 317-241-7386 - P&K
3	Vickie Mace	234 E Natural Brazil IN 47834	VMACE72@gmail.com
4	P. J. Nicoson	241 E Co Rd 1005 Center Point	pjnicoson@aol
5	J. Pell	11814 N CR 200 E Brazil, IN 47834	
6	Nias & Bridgett Alltop	471 N County Rd 775 E Bowling Green, In 47833	alltopn@yahoo.com
7	Paul & Lara Horn	2915 Mitten RD Bowling Green In	
8	Madonna Campbell	1636 W County Rd 450 N Brazil Ind 47834	
9	Charles Schroer	1380 Smithville Rd Bowling Green Ind	
10	Bryan Allen	2225 W. Co. 550 N BRAZIL, IN. 47834	

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	NAME	ADDRESS	E-MAIL
1	Janine Mullinix	510 W. Fairway Dr. Brazil IN 47834	jlmullinix@msn.com
2	Greg Mullinix	" "	gregmullinix@msn.com
3	Robert L. Shelton	311 E 7 St. Clay City 47841	
4	Regina R. Roper	325 E Co. RD. 175 S Centre Point 47840	
5	Bill Cardwell	325 E CO RD 175 S Centre Point, In 47840	
6	Joseph Durga	5337 E. Washington St. Bowling Green In	
7	Jim Wilkinson	5141 E ST RD 46 Bowling Green, IN 47833	
8	Robert Gill	375 S. CLAY ST Bowling GREEN, IN. 47833	
9	Robert Lamb	348 Monroe Bowling Green, IN 47833	rlamb@CCRCT.com CCRT.com
10	Kelcy Cook	786 S. CR. 550 E. Bowling Green IN 47833	

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SR 46 Bridge Project over Eel River, Des. No. 0800910

Categorical Exclusion

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	NAME	ADDRESS	E-MAIL
1	Jeanne Navel Troy BARRIX	5453 E. Co. Rd 150S Bowling Green, IN 47833	JEANNENAVEL@YAHOO.COM
2	Katie Barnard	5967 W. St. Rd. 340 Brazil, IN 47834	Krebman1126@yahoo.com
3	W.R MAINES	1843 N. Bowling Green Poland Rd Bowling Green, IN 47833	
4	Jeff Koehler	2544 N Co Rd 200E Center Point, IN 47840	
5	Donna Hostetler	6555 N. State Rd 59 Brazil, In. 47834	
6	OWEN D. CHAMBERS	5987 E. MILL ST. BOWLING GREEN IN 47833	
7	Vernon Sauder	2601 MT Zion Rd Bowling Green, IN 47833	VJ Sauder@yahoo.com
8	Mike & Pat Wilkerson	3477 E. Co Rd 200 N; Center Point, IN	
9	James & Amber Schoppmeyer	175 S Jefferson St BG, IN 47833	
10	Rose Warrell	PO Box 7 Center Point, IN 47840	

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	NAME	ADDRESS	E-MAIL
1	Charles J Johnson	3051 Mt Zion Rd. Bowling Green In	
2	[illegible] Johnson	3051 Mt Zion Rd Bowling Green In	
3	Tony Feingold	7336 W ST RT. 59 BRAZIL	
4	Harvey Roscoe	8267 N. ST Andrews Dr BRAZIL	herv615@aol.com
5	Donna Roscoe	8267 N. St Andrews Dr Brazil IN 47834	djr714@yahoo.com
6	James B Union	T. H.	X
7	[illegible]	Bowling Green	
8	Christie L. Coopridar	5458 E. CR 25 So. B. Green In 47833	N/A
9	James L Anderson	7553 So. CR 900 W Reelsville, IN 46171	NONE
10	Joe A. Hoffman	1471 S. Co. Rd. 375E. Center Point, In. 47840	

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SR 46 Bridge Project over Eel River, Des. No. 0800910
Categorical Exclusion

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	NAME	ADDRESS	E-MAIL
1	Roberta Buell	8100 E St. Rd. 46	
2	Paul Sinders	776 E CR 900 S Clay City 47841	PSinders@gmail.com
3	Ruth Fischer	3153 E Co Rd 100S Centerpoint In.	
4	Erin Pugh	901 Wabash Ave Suite 140 Terre Haute, IN 47807	Erin.Pugh@mail.house.gov
5	John D MARTIN	4301 Anderson Rd Bowling Green IN 47833	
6	Yates Clark	3733 N PR 450E Centerpoint IN 47840	yclark@bemis.com
7	Polly Spiegel	4410 North Pennsylvania St Indianapolis, IN 46205	ppspiegel@gmail.com
8	Ken Killion	0215 County Rd 375E Center Point 47840	sumhillkk@Gmail.com
9	Richard Dierdorf	2599 W Co Rd 300 N Brazil 47834	REDierdorf@joink.com
10			

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	NAME	ADDRESS	E-MAIL
1	Mindy & Doug Huffman	2121 E County Rd 300 N Center Point, IN 47840	
2	Gretchen Stevens	5640 E River Rd B.G. 47833	
3	Paul Miller	276 S Montgomery St BG 47833	
4	Deacha Rector Kenny Rector	786 S Co Rd 375 E Center Point 47840	
5	Robert Hostetler	2454 N Sonnefield Rd CP. IN 47840	
6	Debbie Hostetler	2454 N. Sonnefield Rd. Centerpoint 47840	
7	Josh & Clayton Rector	1078 S. County Rd. 375 E Centerpoint, IN 47840	
8	Elnora & STEVE CARLIN	7241 W. ST. Rd. 46 Bowling Green, IN 47833	
9	Kim Smith	~~2800 Ruth~~ 449 Ohio Terre Haute IN 47807 (Indiana Landmarks)	
10	Wilmadean Scheppper	112. Park PL Drive Brazil, IN	

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	NAME	ADDRESS	E-MAIL
1	Karen E. Stearley	PO BOX 422 Center Point IN 47840	
2	D.J. Smith Jr.	5842 E. C.R. 100 S. Bowling Green, In 47833	djsmithjr@IEndeavor.com
3	Greg Jordan	8386 E. CR. 100 S. Bowling Green, In. 47833	gjordan@ceresllp.com
4	WILLIAM CARLIN	7400 W. ST. RD. 46 BOWLING GREEN, IN. 47833	
5	Steven Carlin	7241 W SR 46 Bowling Green in	
6	Tommy Kleckner - Indiana Landmarks	669 Ohio St. Terre Haute IN. 47807	
7	Wayne Jones	2317 S. Co. Rd 750E Bowling Green, In 47833	
8	Trenity + Megan Shaw	2065 N. B.G. Poland Rd Bowling Green In 47833	
9	Walter Graham	Bowling Green In 47833	—
10	Jennifer Lee	Bowling Green	

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	NAME	ADDRESS	E-MAIL
1	Jackie Woolf	516 S Co 550 E Bowling Green IN	Jackiesuewoolf a Gmail.com
2	Billy Woolf	5295 mulberry Dr Bowling Green	
3	Bert Geswein	11050 N Merom Rd Brazil	bertgeswein@yahoo.com
4	Kim M Erwin	5900 E CR 25 S. Bowling Green	BKERWIN@CCRTC.COM
5	Robert Erwin	5900 E CR 25 S Bowling Green	
6	Jason Kinney	509 N. Washington St. Spencer, IN 47460	jakinney@umail.iu.edu
7	Sue Lightfoot	5748 E CR 100S Bowling Green IN 47833	lightfoot@indeavor.com
8	Nancy Lankford	6275 E Co Rd 100S Bowling Green IN 47833	lankford@ccrtc.com
9	Shondra Barrett	535 E National Ave Brazil, IN 47834	info@claycountychamber.org
10	Susan Barrett	4303 W Co Rd 300S Cory, IN 47846	

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	NAME	ADDRESS	E-MAIL
1	Ross Nelson	9376 Castlegate Dr Indianapolis IN 46256	rnelson@ascgroup.net
2	Dave Stearley	3370 N CR.300 E Center Point IN 47840	David Stearley@hotmail.com
3	Marlin Schopper	6007E Co. Rd. 100S. Bowling Green. IN 47833	
4	Donnida Elaine Brown	1492 N Co Rd 200E Center Point, IN 47840	
5	Edward & Donna Burt	1011 N. Central Ave Brazil IN 47834	EABURT48@GMAIL.com
6	D. Frisz	695 N. Pioneer Rd Center Point IN 47840	friszdjds@iendeavor.com
7	Kristin Scott Michael Scott	457 S CR 800 E Bowling Green IN 47833	Ksunshine17@aol.com
8	Joe Edwards	1592 E. Co. Rd. 400 S. Clay City, IN. 47841	
9	Tiffany & Brent Wheeler	11050 Graham Rd. Bowling Green, In 47833	TWheeler-12@aol.com
10	James + Bethann Price	1402 S. 700 E. Bowling Green, In 47833	jbprice@ccrtc.com

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	NAME	ADDRESS	E-MAIL
1	GARY JENKINS	13759 VAN BUREN PL FISHERS	GARYKJENKINS@GMAIL.COM
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	NAME	ADDRESS	E-MAIL
1	Jessica Miller INDOT	185 Agrico Lane Seymour IN 47274	Jesmiller@indot.in.gov
2			
3			
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INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N642
Indianapolis, Indiana 46204

PHONE: (317) 232-6601
E-mail: rclark@indot.in.gov

Michael R. Pence, Governor
Karl B. Browning, Commissioner

NOTICE OF PUBLIC MEETING

The Indiana Department of Transportation (INDOT) will hold a public meeting on Thursday, January 29, 2015, at 6:00 pm at the Bowling Green Community Building, 5230 East Washington Street, Bowling Green, Indiana 47833.

The purpose of the public meeting is to offer all interested persons an opportunity to comment on alternatives under consideration for the SR 46 Bridge over the Eel River, 2.8 miles east of SR 59, located in Clay County. Improvements to the bridge are required to address the advanced deterioration affecting critical load-bearing components of the bridge. Bridge No. 046-11-01316C, a steel Parker through truss bridge with concrete abutments, a steel superstructure, and a concrete deck, is listed in the National Register of Historic Places (National Register) under Criterion A for its role in the development of Clay County. As part of the Indiana Historic Bridge Inventory project, the bridge was determined to be Select for Non-Vehicular Use. Select bridges are those that are most suitable for preservation and are excellent examples of a given type of historic bridge. The designation as Select for Non-Vehicular Use indicates that the Historic Bridge Inventory recognized that the load capacity and roadway width of this bridge does not make this bridge suitable for continued use.

INDOT has evaluated a range of alternatives for this bridge including: (1) a do-nothing or 'No Build' alternatives, (2) rehabilitation for continued vehicular use, (3) rehabilitating the bridge for use a part of a one-way pair of bridges, (4) bypassing the existing bridge with a new, adjacent bridge, retaining the existing one for non-vehicular use, or (5) constructing a new bridge and relocating the existing bridge to an alternate location for non-vehicular use. INDOT has determined that alternatives 1, 2, and 3 are not prudent, due to the load capacity of the existing bridge. Alternative 4 may be prudent depending on local support for maintaining the bridge and identifying a public use. Alternative 5 is a prudent alternative and could involve relocating the bridge to another location in Clay County or elsewhere in the state. **The goal of this meeting is to determine the public's interest in retaining the bridge in its existing location (Alternative 4) or relocating it to another location (Alternative 5).**

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This meeting is not the last opportunity for agencies or the public to comment on the project. INDOT is in the process of developing conceptual plans and the required environmental documentation under the National Environmental Policy Act and Section 106 of the National Historic Preservation Act. When that documentation is complete, a formal public hearing will be held to provide an opportunity to comment on the preferred

alternative and anticipated impacts prior to INDOT and the Federal Highway Administration making a final decision.

WINTER WEATHER NOTE:

In the event of hazardous winter weather causing hazardous driving conditions, this meeting would be rescheduled (if necessary) on Saturday, January 31, 2015 at the same location as listed above , but a different time of 1:00 p.m.. In the event of inclement weather, please call the INDOT Office of Public Involvement at (317) 232-6601 to find out if the meeting will be held or rescheduled.

In accordance with the "Americans with Disabilities Act", if you have a disability for which the Indiana Department of Transportation would need to provide accommodation for, in terms attendance and participation during the meeting, please contact the Office of Public Involvement by Thursday, January 22, 2015.

INDOT looks forward to meeting with the community on Thursday, January 29, 2015 at 6:00 p.m.

Rickie Clark, Indiana Department of Transportation, Office of Public Involvement / Central Office Communications Division, 100 North Senate Avenue, Room N642, Indianapolis, Indiana 46204
Phone: (317) 232-6601 **Email:** rclark@indot.in.gov

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Phone: (317) 232-6601 **Email:** rclark@indot.in.gov

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January 14th
January 21st

Additionally, our newspaper has a website and this public notice was posted on the same day(s) as it was published in the newspaper.

Edie Burgess

Date: January 21st, 20 15

Title: PUBLISHERS REPRESENTATIVE

Wright, Mary

From: State of Indiana [indiana@subscriptions.in.gov]
Sent: Friday, January 09, 2015 3:13 PM
To: Wright, Mary
Subject: Public Meeting regarding the S.R. 46 Bridge over the Eel River, 2.8 miles east of S.R. 59 in Clay County

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Rickie Clark, Indiana Department of Transportation, Office of Public Involvement / Central Office Communications Division, 100 North Senate Avenue, Room N642, Indianapolis, Indiana 46204; **Phone:** (317) 232-6601 **Email:** rclark@indot.in.gov

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Clark, Rickie

From: State of Indiana [indiana@subscriptions.in.gov]
Sent: Friday, January 09, 2015 3:12 PM
To: Hoff, Andrew; mbuchanan@www.in.gov; Gearlds, Nicole; Clark, Rickie; Daniels, Kathryn; cvia@egov.com; Lubsen, Graig; Akers, Zachary; Watts, Nira; Duncan, Emily (LG)
Subject: Courtesy Copy: Public Meeting regarding the S.R. 46 Bridge over the Eel River, 2.8 miles east of S.R. 59 in Clay County

This is a courtesy copy of an email bulletin sent by Rickie Clark.

This bulletin was sent to the following groups of people:

Subscribers of Transportation - Meetings & Hearings (777 recipients)

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Clark, Rickie

From: Clark, Rickie
Sent: Friday, January 16, 2015 3:59 PM
To: 'bryan.allender@frontier.com'; 'psinders@gmail.com'; 'fenwickt@claycountyin.com'; 'stultzb@claycountyin.gov'; 'maryjo@claycountyin.gov'
Cc: Barbknecht, Nick; Calder, Debbie
Subject: Public Meeting regarding the S.R. 46 Bridge over the Eel River, 2.8 miles east of S.R. 59 in Clay County

INDIANA DEPARTMENT OF TRANSPORTATION

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The purpose of the public meeting is to offer all interested persons an opportunity to comment on alternatives under consideration for the SR 46 Bridge over the Eel River, 2.8 miles east of SR 59, located in Clay County. Improvements to the bridge are required to address the advanced deterioration affecting critical load-bearing components of the bridge. Bridge No. 046-11-01316C, a steel Parker through truss bridge with concrete abutments, a steel superstructure, and a concrete deck, is listed in the National Register of Historic Places (National Register) under Criterion A for its role in the development of Clay County. As part of the Indiana Historic Bridge Inventory project, the bridge was determined to be Select for Non-Vehicular Use. Select bridges are those that are most suitable for preservation and are excellent examples of a given type of historic bridge. The designation as Select for Non-Vehicular Use indicates that the Historic Bridge Inventory recognized that the load capacity and roadway width of this bridge does not make this bridge suitable for continued use.

INDOT has evaluated a range of alternatives for this bridge including: (1) a do-nothing or 'No Build' alternatives, (2) rehabilitation for continued vehicular use, (3) rehabilitating the bridge for use a part of a one-way pair of bridges, (4) bypassing the existing bridge with a new, adjacent bridge, retaining the existing one for non-vehicular use, or (5) constructing a new bridge and relocating the existing bridge to an alternate location for non-vehicular use. INDOT has determined that alternatives 1, 2, and 3 are not prudent, due to the load capacity of the existing bridge. Alternative 4 may be prudent depending on local support for maintaining the bridge and identifying a public use. Alternative 5 is a prudent alternative and could involve relocating the bridge to another location in Clay County or elsewhere in the state. **<u>The goal of this meeting is to determine the public's interest in retaining the bridge in its existing location (Alternative 4) or relocating it to another location (Alternative 5).</u>**

The presentation will begin at 6:00 pm, followed by a public comment session. The presentation and comment session will extend until 7:30 p.m. During the public comment session, interested persons will be afforded an opportunity to express comments, concerns and provide input regarding the project. Following the presentation and comment session, INDOT representatives will be available to address questions and concerns. Comments may also be submitted to: SR 46-Eel River Project, c/o Parsons, 101 West Ohio Street, Suite 2121, Indianapolis, Indiana 46204. You may also elect to fax comments to (fax) 317-616-1033. Comments may be e-mailed to daniel.prevost@parsons.com.

This meeting is not the last opportunity for agencies or the public to comment on the project. INDOT is in the process of developing conceptual plans and the required environmental documentation under the National Environmental Policy Act and Section 106 of the National Historic Preservation Act. At the time that documentation is complete, a formal public hearing will be held to provide an opportunity to comment on the preferred alternative and anticipated impacts prior to INDOT and the Federal Highway Administration making a final decision.

WINTER WEATHER NOTE: In the event of hazardous winter weather causing hazardous driving conditions, this meeting would be rescheduled (if necessary) on Saturday, January 31, 2015 at the same location as listed above , but with a starting time of 1:00 p.m. In the event of inclement weather, please call the INDOT Office of Public Involvement at (317) 232-6601 to find out if the meeting will be held or rescheduled.

In accordance with the "Americans with Disabilities Act", if you have a disability for which the Indiana Department of Transportation would need to provide accommodation for, in terms of attendance and participation during the meeting, please contact the Office of Public Involvement by Thursday, January 22, 2015.

INDOT looks forward to meeting with the community on Thursday, January 29, 2015 at 6:00 p.m.

Rickie Clark, Indiana Department of Transportation
Office of Public Involvement / Central Office Communications Division
100 North Senate Avenue, Room N642
Indianapolis, Indiana 46204
Phone: (317) 232-6601
Email: rclark@indot.in.gov

Clark, Rickie

From:	Clark, Rickie
Sent:	Friday, January 16, 2015 3:54 PM
To:	House District 44; House District 46; House District 43; Senate District 38; Senate District 39
Cc:	Alderman, Robert; Barbknecht, Nick; Calder, Debbie
Subject:	Public Meeting regarding the S.R. 46 Bridge over the Eel River, 2.8 miles east of S.R. 59 in Clay County

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Indianapolis, Indiana 46204
Phone: (317) 232-6601
Email: rclark@indot.in.gov

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[INDOT] Public Meeting regarding the SR 46 Bridge over the Eel River, 2.8 miles east of SR 59 in Clay County

Start Date: 1/29/2015 **Start Time:** 6:00 PM
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Entry Description

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concrete deck, is listed in the National Register of Historic Places (National Register) under Criterion A for its role in the development of Clay County. As part of the Indiana Historic Bridge Inventory project, the bridge was determined to be Select for Non-Vehicular Use. Select bridges are those that are most suitable for preservation and are excellent examples of a given type of historic bridge. The designation as Select for Non-Vehicular Use indicates that the Historic Bridge Inventory recognized that the load capacity and roadway width of this bridge does not make this bridge suitable for continued use.

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SAVE OUR BOWLING GREEN BRIDGE (/)

THE FUTURE.

With a little vision, this grand monument can be a great source of community pride. Located on the Eel River, many possibilities exist for creating a recreational attraction. To accomplish this goal, all we need is to visualize a dream. Here is the beginning of this dream:

Sporting

-Fish from the bridge or your boat.

-Grab a canoe, kayak, or tube to float down the river.

Special Occasions

-Gather for weddings, reunions, and other occasions.

-Capture the historic setting as a perfect backdrop for pictures.

Nature Park

-Picnic with friends or family.

-Hike through the bridge and enjoy the scenic view of the river.

Nearby Attractions

-Explore historic Bowling Green.

-Combine a bridge visit with other nearby locations (McCormick's Creek State Park, Wineries, Historic Tivoli Theater, Owen-Putnam State Forest, and others).

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Troubled bridge is subject of INDOT meeting

Thursday, January 29, 2015
By Frank Phillips, Times Reporter

BOWLING GREEN -- An information meeting was conducted Thursday night about a troubled bridge on S.R. 46 over the Eel River.

The Indiana Department of Transportation (INDOT) conducted the meeting about the structure destined to be replaced or reduced to carrying half the traffic that travels over it now. Or, some hope, it could be used as the centerpiece of a recreational area at the town that served for years as Clay County's seat.

One thing is sure, it will not continue to be the sole means for cars and trucks crossing the Eel River at Bowling Green.

An estimated 140 people crowded into the Bowling Green Community Center by 6 p.m. for the meeting

Rickie Clark, director of public involvement for INDOT, conducted the meeting. A public hearing will be called this summer when a definite plan of attack for the bridge project is presented.

The meeting was separated into two parts: a slide presentation and a time for public comment.

The slide presentation was available in printed form, and, on Thursday, it was posted on the INDOT website, Clark said. The presentation revealed that the existing bridge will continue to be used until a new bridge, likely built of concrete, is constructed.

Because the bridge is listed on the National Register of Historic Places and was identified as a 'Select' bridge in the Indiana Historic Bridge Inventory completed in 2009, INDOT is obligated to find a new use for the existing bridge," stated a handout. "Two appropriate options remain:

"* Rehabilitate the existing bridge at its existing location for use as a park, trail, or other public use.

"* Rehabilitate the bridge and relocate it to another location in the State for a similar use."

The only way the bridge will remain in place for pedestrian traffic is for a public or private group to commit to maintaining it for at least 25 years, according to INDOT.

INDOT projected the cost to a group to keep the bridge in place to be $100,000 in 10 years for periodic repair to the steel structure and $500,000 in 25 years for cleaning and painting the bridge, stated Dan Provost of Parsons Corp., a company that works with INDOT on bridges in this area of Indiana.

Slides were shown depicting damages to the bridge that can only be seen from beneath it.

Five possible outcomes for the bridge were discussed:

* Nothing is done. In that case, the bridge will likely be closed to all traffic in 2017.

* Rehab the bridge for vehicular use. However, INDOT and the Federal Highway Administration have determined it will be "cost-prohibitive" to do so.

* Build a second bridge next to the current bridge that would carry traffic in one direction and the current bridge would carry traffic in the other direction. Again, that alternative was determined to be cost-prohibitive.

* Bypass the current bridge and build a new bridge near the old bridge. The old bridge would be kept for "non-vehicular traffic, including pedestrians, bicycles, etc.

* Build a new bridge and dismantle the old bridge, rehabilitate it and use it for non-vehicular traffic at a new location in Clay County or possibly on the new Salt Creek Trail being built in Brown County to connect the city of Nashville and Brown County State Park.

The new bridge is expected to cost state taxpayers $10.3 million.

Next came the public input portion of the meeting, where many spoke in favor of putting the old bridge out of commission.

"A lot of us around here farm and have big equipment and cross that bridge every day," said Kent Jillian. "Very dangerous, even with safety lights, escorts and whatever. It's a miracle that over the years there hasn't been more accidents and lives lost. What is a life worth?"

Jillian received applause when he said he didn't want his tax dollars to pay for maintaining the old bridge.

Richard Dierdorf likened the bridge to the covered bridges of Parke County. He also asked about the status of a bridge on S.R. 42 at Poland.

That bridge is closed for rehabilitation, an INDOT spokesperson said.

Josh Rector suggested the new bridge be built to the north instead of the south, so it will trap debris in the Eel River. He said the area to the south of the old bridge would "be a great parking lot area" if the old bridge is used for a recreation area.

"We feel the bridge needs to be shut down to heavy trucks immediately," Beth Price said. "I didn't have to see those pictures to know that it's not safe."

That drew agreement from two other people in the meeting.

"I agree with Mrs. Price," said Robert Irwin. "After seeing those pictures, I think every time I go across that bridge, I will be thinking about those pictures and I wonder if there is some way of keeping the semis from going over that until a new bridge is made. I was also wondering if they do keep the old bridge here, if it will become a playground the for kids in the area and that means climbing on it and that means possibly an accident. So I would be in favor of seeing it go."

"As a member of the law enforcement community, we get calls for big trucks coming from the west," said Kim Irwin added. "When they get to the bridge, they stop. They're afraid to go any farther. So, we have to send law enforcement officers down, from doing other duties to block traffic, to back those trucks up down the road. There's no place to turn around. So, I wholeheartedly agree with Mrs. Price."

Tommy Kleckner, director of the Western Regional office of Indiana Landmarks, said it was important to have the meeting in Clay County.

"It was by formal request that Indiana Landmarks wished to have a formal meeting held," Kleckner said. "Up until the Dec. 4 consulting parties meeting, there really had been no input opportunity from Clay County. There was no opportunity for the public to hear about the proposed project or plans for the project and the opportunity Clay County has to possibly keep the historic bridge in place with the new bridge built adjacent to it."

INDOT has set a March 30 deadline for a public or a private organization to commit to maintain the bridge for at least 25 years.

Kleckner called that "unacceptable" and said Historic Landmarks would prefer six months.

"I know that there's concern about taxpayers having to pay to rehabilitate and maintain," Kleckner also said. "Taxpayer money will be going to rehabilitate this bridge if it goes to Brown County."

County Commissioner Bryan Allender said after the meeting he had attended to listen.

County Commissioner Paul Sinders was also reticent to express an opinion.

"I came here for the purpose being informed because I know in the county there are many people who are in favor of this," Sinders said. "I know there are many people very much opposed to this in the county and probably the majority are somewhere in the middle. One of the major factors everybody talks to me about is, 'How much is this going to cost the county?' I think all of us have to look at this very carefully as to what the projected cost to the county is going to be. Where are we going to get the money?"

INDOT projects the new bridge will be open in December 2017, and the old bridge will be rehabilitated and possibly relocated in July 2018.

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Categorical Exclusion SR 46 Bridge Project over Eel River, Des. No. 0800910 546

Residents Hope to Save an Historic Bridge

Lindsey Harrison ()

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01/21/2015 06:23 PM 01/21/2015 06:27 PM

Some folks are trying to raise public support to keep an historic bridge in Clay County. The bridge is over Eel River, on State Road 46 near Bowling Green.

There are big plans for this bridge if the group is successful in saving it. But right now, the state is planning to move it out of Clay County. something these preservists do not want to happen.

The Bowling Green bridge has spanned the Eel River since 1933. It's an iron bridge that has a spot on the National Register of Historic Places.

"It's our bridge, you know. It was right here in this county. I know it's been here my whole life, it was built the year my dad was born... An architecturally significant bridge. An iron bridge! " said Clay County Historian Jeff Koehler.

A few years ago, the state decided to build a new bridge over Eel River and relocate the old one to another county for walking trails. They said Clay County commissioners had no interest in keeping the bridge when the decision was made.

Tommy Kleckner from Indiana Landmarks said, "Following the 2012 decision, consulting parties, Indiana Landmarks, other interested parties... they were unaware of this change in scope."

When local historians found out a few months ago, they began a push to keep the bridge in Clay County.

"We were just wanting to see if there was any support in our county to maybe keep it here and develop a park," said Koehler.

Kleckner added, "Our efforts right now are to make sure Clay County has a say in what happens to this historic bridge."

If the bridge stays in Clay County, this group of residents has big plans for it. Ideally they, would like to see it turned into a recreational park.

Koehler explained, "I'd see maybe a river access point, where we could put canoes on the river and the sportsmen could put their boats on and fish. Or you could fish off the bridge for that matter. Maybe a little place we could park off one side or the other and you could enjoy a picnic lunch."

They believe it can only have a positive effect on the area.

"Right here we have all this history...I don't see how it could have anything but a positive reaction on the community," he said.

Koehler said that he's been talking to residents all over Clay County, and according to him, the reception to this idea has been mostly positive.

INDOT is holding an informational meeting next Thursday, January 29, to hear public opinion about the bridge.

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Group wants support to save Bowling Green bridge

Tuesday, January 13, 2015
By FRANK PHILLIPS, Times Reporter

BOWLING GREEN -- A group of Washington Township residents and their friends are hoping to create a recreational area at the bridge that crosses the Eel River on S.R. 46.

Frank Phillips photos
The Bowling Bridge on S.R. 46 stands over Eel Creek.
[Click to enlarge]
[Order this photo]

They hope to express that vision with the Indiana Department of Transportation during an informational meeting at 6 p.m. Jan. 29 in the Bowling Green Community Building on East Washington Street in Bowling Green.

The group has formed a committee and created a website -- www.saveourbowlinggreenbridge.com -- for the purpose of rallying support for their cause.

A local group hopes to keep in place the Bowling Bridge over S.R. 46 and stop the possible move of the bridge to Brown County.
[Click to enlarge]
[Order this photo]

"In the next two years (2016-17), the Indiana Department of Transportation plans to replace our Bowling Green Bridge over the Eel River," states the group's website. "The new bridge will be built south of the existing bridge. Once the new bridge is constructed, the State has plans to dismantle and relocate the existing bridge to a trail in Brown County (near Nashville, Indiana). Currently, our Bowling Green Bridge is on the National Register of Historic Places. This list includes landmarks that are worthy of preservation. The plans for relocating the bridge to Brown County are not finalized, and we believe there is value in keeping the bridge here in Clay County."

Jeffrey Koehler, county historian, is one of the organizers of the effort to keep the current bridge in Clay County.

"We would like to have a big crowd to show support for the value of keeping the bridge located where it is," Koehler stated in an e-mail to The Brazil Times.

"Ultimately, we have to convince our county officials that we need to keep the bridge in Clay County as a historic landmark and that it will be an asset to all of us. We have to instill in everyone the vision of what a great landmark would have on our county. It would be like no other park that we have, a place for recreation, relaxation and history preservation. Then maybe an even larger theme could develop from this. It may even spark some business to grow in Bowling Green, which we all know was our first county seat. The Bridge will be rehabilitated and made into a pedestrian bridge."

Fishing, canoeing, a location for weddings and reunions, a nature park and a water trail are possible uses of the area, the group envisions.

Along with its placement on the National Register of Historic Places, Historic Landmarks, Indianapolis, has shown an interest in the project to keep the bridge in Clay County.

The waters were troubled about the bridge in 2009 when the structure was found to be stressed and potentially dangerous for daily traffic.

In 2009, INDOT's Crawfordsville District office sent a letter to the Clay County Commissioners to determine if there was any interest in the bridge as a historical structure, said Debbie Calder, communications director for that district.

"There wasn't any interest," she said.

Tommy Kleckner, Historic Landmarks western regional office director, said INDOT determined to rehabilitate the bridge for traffic about 2008 or 2009.

"We didn't hear much, no correspondence after 2010," Kleckner said.

Then, in 2012, the bridge was closed for emergency repairs and traffic on S.R. 46 was detoured around the bridge.

"Unbeknownst to Indiana Landmarks and some of the locals, INDOT made the decision in 2012 to change the scope from rehabilitation for continued use to replacement," Kleckner said.

When the decision was made to replace the bridge, INDOT contacted the Indiana Department of Natural Resources to see if there were any trail projects that could benefit from the two-span bridge over the Eel River, Kleckner said.

It was determined there was a spot on a Brown County trail for the Bowling Bridge, as it is also known.

"State agencies began having these conversations without making it known that they had changed the scope from rehab to replacement," Kleckner said.

In November, notification was sent out of a "meeting of consulting parties," Calder said.

At that meeting, Kleckner and Koehler expressed interest in having a meeting in Clay County so local residents could make their views known, which is the session planned for Jan. 29.

"We feel it was handled poorly," Kleckner said. "We have been pushing for this to remain in Clay County. Moving a bridge and reuse should be considered the last preservation option."

If the bridge will remain in place over Eel River, someone in the county will have to sign an agreement "that they will take over the bridge" once INDOT finishes rehabilitating it, Calder said.

Kleckner said that would be up to the county commissioners. Calder said any group would be considered.

Clay County resident Vickie Mace is also involved in the effort.

"We don't have much time, but we can make this work," she stated. "It's so important that we get people to this meeting!"

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Clark, Rickie

From: Kennedy, Mary
Sent: Friday, January 30, 2015 10:45 AM
To: Carpenter, Patrick A; Branigin, Susan; Clark, Rickie; Wright, Mary
Subject: FW: Links to the news coverage last night.

http://www.mywabashvalley.com/story/d/story/bowling-green-residents-speak-on-sr46-bridge/27281/Mz63JCsq-kS6oKxaWYhN2g

http://wthitv.com/2015/01/29/clay-county-to-decide-historic-bridges-fate/

Clark, Rickie

From: Kennedy, Mary
Sent: Thursday, February 05, 2015 10:47 AM
To: Calder, Debbie; Clark, Rickie
Subject: FW: Public Meeting regarding the S.R. 46 Bridge over the Eel River, 2.8 miles east of S.R. 59 in Clay County

FYI

Mary E. Kennedy
Architectural Historian/History Team Lead
Cultural Resources Office
Environmental Services
100 N. Senate Ave., Room N642
Indianapolis, IN 46201
Office: (317) 232-5215
Email: mkennedy@indot.in.gov

From: Kennedy, Mary
Sent: Thursday, February 05, 2015 10:46 AM
To: Bronson, Bob; Zoll, Mitchell K; Carr, John; 'mdollase@indianalandmarks.org'; 'tkleckner@indianalandmarks.org'; 'rregan@indianalandmarks.org'; 'koehlerjm@frontier.com'; 'Vmace72@gmail.com'; 'Indianabridges@sbcglobal.net'; 'jlcooper@ccrtc.com'; 'psinders@gmail.com'; 'bryan.allender@frontier.com'; 'fenwick56@frontier.com'; 'Bob.kirlin@sbcglobal.net'; 'thompsonme@browncounty-in.us'; 'dlynbid@gmail.com'; 'julia@browncountyhistorycenter.org'; 'thompsonme@browncounty-in.us'
Cc: Jones, Tony W; Branigin, Susan; Carpenter, Patrick A; Ervin, Brock; Heil, Larry; 'Porter, Sean'; 'Matt.kohut@parsons.com'; 'Muellner, Kyle'; 'Ball, Alan'; 'rnelson@ascgroup.net'; 'dterpstra@ascgroup.net'; 'Prevost, Daniel'
Subject: RE: Public Meeting regarding the S.R. 46 Bridge over the Eel River, 2.8 miles east of S.R. 59 in Clay County

All,

There are a couple of items for which the project team wanted to provide an update. First, we would like to thank any consulting parties who attended the public meeting last week. We were pleased with the turnout and we appreciate the feedback received. For any who were not able to attend the meeting, you can find the meeting presentation and hand-out on the INDOT website. Below are links to the Crawfordsville District's page where they are located and also the direct links to the documents.
http://www.in.gov/indot/2701.htm
http://www.in.gov/indot/files/Eel_River_Public_Meeting_Handout_Package.pdf
http://www.in.gov/indot/files/SR_46_Eel_River_Public_Meeting_01_29_15_v2.2_web_posting.pdf

Additionally, here are two links to news coverage of the public meeting:
http://wthitv.com/2015/01/29/clay-county-to-decide-historic-bridges-fate/
http://www.mywabashvalley.com/story/d/story/bowling-green-residents-speak-on-sr46-bridge/27281/Mz63JCsq-kS6oKxaWYhN2g

Please note that INDOT respectfully requests comments on the public meeting be submitted by Friday, March 6, 2015. You can submit them to Parsons: Attn: S.R. 46-Eel River Project, 101 West Ohio Street, Suite 2121, Indianapolis, Indiana 46204; FAX: (317) 616-1033; or email: Daniel.Prevost@parsons.com.

A summary of the public meeting and comments received through the comment period will be distributed at a later date.

Secondly, based on concerns raised through recent outreach efforts, INDOT has revised its timeline for organizations considering taking ownership of the SR 46-Eel River Bridge. INDOT anticipates holding the public hearing for the project approximately the first week of August. The final decision regarding the preferred alternative and/or the future location of the existing bridge will not be made before that time. This provides organizations at least six months from the time of the January 29, 2015 public meeting to formalize their interest. A six-month period is consistent with marketing requirements outlined in the Historic Bridges Programmatic Agreement.

Please note, however, that, due to the urgent need for a permanent solution for this location, **any organization intending to take ownership of this bridge must be prepared to sign a legally binding agreement within a few weeks following the public hearing**. INDOT understands that organizations have numerous factors to consider (re-use plan, inspection and maintenance needs, liability issues, etc.) prior to making a commitment. As a result, INDOT **strongly encourages** organizations considering stepping forward to do so as soon as possible to allow sufficient time to work through these matters. INDOT can provide to any interested organization executed agreements from other bridge projects to help serve as an example for this project. INDOT welcomes interest from any type of organization that has the ability to make a firm commitment for the bridge and will be happy to work one-on-one with organizations to develop a plan that ensures the long-term preservation and public use of the structure.

Thank you for your continued participation in the consultation process for this bridge.

Mary E. Kennedy
Architectural Historian/History Team Lead
Cultural Resources Office
Environmental Services
100 N. Senate Ave., Room N642
Indianapolis, IN 46201
Office: (317) 232-5215
Email: mkennedy@indot.in.gov

From: Kennedy, Mary
Sent: Friday, January 16, 2015 1:33 PM
To: 'Prevost, Daniel'; Bronson, Bob; Zoll, Mitchell K; Carr, John; mdollase@indianalandmarks.org; tkleckner@indianalandmarks.org; rregan@indianalandmarks.org; koehlerjm@frontier.com; Vmace72@gmail.com; Indianabridges@sbcglobal.net; jlcooper@ccrtc.com; psinders@gmail.com; bryan.allender@frontier.com; fenwick56@frontier.com; Bob.kirlin@sbcglobal.net; thompsonme@browncounty-in.us; dlynbid@gmail.com; julia@browncountyhistorycenter.org; thompsonme@browncounty-in.us
Cc: Jones, Tony W; Branigin, Susan; Carpenter, Patrick A; Ervin, Brock; Heil, Larry; Porter, Sean; Matt.kohut@parsons.com; Muellner, Kyle; Ball, Alan; rnelson@ascgroup.net; dterpstra@ascgroup.net; 'Janice.Osadczuk@dot.gov'
Subject: RE: Public Meeting regarding the S.R. 46 Bridge over the Eel River, 2.8 miles east of S.R. 59 in Clay County

All –

There are several items we wanted to update you on as a follow-up to our December 4th Consulting Party meeting and leading up to the January 29th public meeting.

Alternatives Analysis
Since the December 4th Consulting Party meeting, INDOT and FHWA have been discussing both their goals for the SR 46 Eel River Bridge project as well as the process to be applied. The Historic Bridge Programmatic Agreement (PA) provides the framework for that process and the PA Project Development Process provides some additional guidance. It is INDOT and FHWA's joint goal to develop the project in a manner that meets the transportation needs of the corridor as well as

the spirit and intent of the PA, while ensuring long-term use of the historic bridge and that the investment in the bridge provides value to the State of Indiana.

Consideration of the Rehabilitation (Alt 2) and One-Way Pair (Alt 3) Options

As discussed at the December 4th meeting, each of these alternatives would require a Level 1 design exception for structural capacity. Based on further discussions between the consultant team and INDOT and FHWA, both confirmed that a design exception is not appropriate for this structure. This bridge's location on a National Truck Route and the number of heavy trucks known to use the bridge necessitates that the bridge be capable of carrying modern highway loads. Therefore, these alternatives have been determined to not meet the project's purpose and need, and are not feasible alternatives.

Prudence of the Bypass Alternative (Alt 4)

As described in the Alternatives Analysis document, this alternative is feasible – it is possible to construct a new bridge adjacent to the existing one that would safely carry traffic and to rehabilitate the existing bridge in place for non-vehicular use. The appropriateness (or 'prudence' under Section 4(f)) of this alternative, however, has yet to be determined and is dependent on the upcoming community outreach.

INDOT and FHWA have been reevaluating what criteria would make the Bypass Alternative a prudent alternative. As Larry Heil (FHWA) indicated at the December 4th meeting, FHWA wants to ensure that its investment in this bridge provides value to the State of Indiana and ensures the long-term use of the rehabilitated bridge. As noted in the December 4th Meeting Summary, INDOT coordinated with Clay County officials several years ago regarding re-use of the bridge and, at the time, the County was not interested in keeping the bridge at this location or any other location in the County. The offer from IDNR and Brown County to take ownership and responsibility for the bridge as part of the Salt Creek Trail provided INDOT and FHWA with what they felt was an appropriate use of the bridge and a sound investment. The Salt Creek Trail is expected to attract more than 10,000 users per year. That is expected to continue into the indefinite future, and both organizations have the capacity to maintain the bridge for the long term. Part of the sound investment was the willingness of IDNR and Brown County to sign an agreement between INDOT to take ownership of the bridge.

However, given the time that has passed since INDOT reached out to Clay County and the desire to prioritize options that keep the bridge either in its existing location or somewhere else within Clay County, INDOT agreed with comments at the December 4th meeting that additional outreach was appropriate to determine the community's interest in retaining the bridge. This is the purpose of the January 29th public meeting.

To make the determination that the Bypass Alternative or Relocation within Clay County is prudent, FHWA has established a few parameters:

1. There must be an expectation that the bridge will be put to a public use. That use may be in the form of a park, a fishing pier, a trail, or any number of other uses.
2. There must be an organization – public or private – that is willing to sign an agreement to take responsibility for the bridge. INDOT (and FHWA) will make a sizable investment to ensure that the bridge is rehabilitated to non-vehicular standards prior to the transfer of responsibility. The term of the agreement would be for a minimum of 25 years, but there should be an expectation that the bridge would be maintained beyond that 25 year term.
3. We must move forward promptly and prudently in the development of this project in respect of the safety of the public. However, it is recognized that such an agreement will take some time to review and execute by all parties. Therefore, within 60 days, the organization(s) who would take ownership of the bridge must make a firm commitment of their intent to sign the agreement and show that they have the financial capacity to take it on. For a governmental organization, such a commitment might come in the form of passing a resolution (county commission). For a local non-profit or private group, it might come in the form of a vote of their governing board. A signed agreement is ultimately required for a selected alternative to be prudent, and to complete the environmental (NEPA) document.

These parameters will be discussed in the presentation at the public meeting, but INDOT and FHWA felt it was appropriate to share them with this group in advance of the meeting. Following the public meeting and comment period, INDOT will update the Alternatives Analysis document to reflect the input received.

Availability of 2010 Historic Property Report

In their December 9, 2014 letter to INDOT, IDNR-DHPA recommended that INDOT make available the original historic properties report (Branigan 2010) prepared for the project. That document is now available for download from INDOT's INSCOPE website at:

http://netservices.indot.in.gov/Section106Documents/Default.aspx

The easiest way to search for the document (as well as other Section 106 documents related to the project) is by Des. No. (0800910). Please let me know if you have any difficulties accessing the document.

Thank you,

Mary E. Kennedy
Architectural Historian/History Team Lead
Cultural Resources Office
Environmental Services
100 N. Senate Ave., Room N642
Indianapolis, IN 46201
Office: (317) 232-5215
Email: mkennedy@indot.in.gov

From: Prevost, Daniel [mailto:Daniel.Prevost@parsons.com]
Sent: Friday, January 09, 2015 4:49 PM
To: Bronson, Bob; Zoll, Mitchell K; Carr, John; mdollase@indianalandmarks.org; tkleckner@indianalandmarks.org; rregan@indianalandmarks.org; koehlerjm@frontier.com; Vmace72@gmail.com; Indianabridges@sbcglobal.net; jlcooper@ccrtc.com; psinders@gmail.com; bryan.allender@frontier.com; fenwick56@frontier.com; Bob.kirlin@sbcglobal.net; thompsonme@browncounty-in.us; dlynbid@gmail.com; julia@browncountyhistorycenter.org; thompsonme@browncounty-in.us
Cc: Jones, Tony W; Kennedy, Mary; Branigin, Susan; Carpenter, Patrick A; Ervin, Brock; Heil, Larry; Porter, Sean; Matt.kohut@parsons.com; Muellner, Kyle; Prevost, Daniel; Ball, Alan; rnelson@ascgroup.net; dterpstra@ascgroup.net
Subject: FW: Public Meeting regarding the S.R. 46 Bridge over the Eel River, 2.8 miles east of S.R. 59 in Clay County

All –

Based on the discussion at our December 4th Consulting Party meeting and subsequent discussions with Clay County, INDOT will be hosting a public meeting to gather input regarding the alternatives under consideration, including the final location of the rehabilitated structure. Details are below.

- Dan

From: State of Indiana [mailto:indiana@subscriptions.in.gov]
Sent: Friday, January 09, 2015 3:13 PM
To: Prevost, Daniel
Subject: Public Meeting regarding the S.R. 46 Bridge over the Eel River, 2.8 miles east of S.R. 59 in Clay County

The Indiana Department of Transportation (INDOT) will hold a public meeting on Thursday, January 29, 2015, at 6:00 pm at the Bowling Green Community Building, 5230 East Washington Street, Bowling Green, Indiana 47833.

The purpose of the public meeting is to offer all interested persons an opportunity to comment on alternatives under consideration for the SR 46 Bridge over the Eel River, 2.8 miles east of SR 59, located in Clay County. Improvements to the bridge are required to address the advanced deterioration affecting critical load-bearing components of the bridge. Bridge No. 046-11-01316C, a steel Parker through truss bridge with concrete abutments, a steel superstructure, and a concrete deck, is listed in the National Register of Historic Places

(National Register) under Criterion A for its role in the development of Clay County. As part of the Indiana Historic Bridge Inventory project, the bridge was determined to be Select for Non-Vehicular Use. Select bridges are those that are most suitable for preservation and are excellent examples of a given type of historic bridge. The designation as Select for Non-Vehicular Use indicates that the Historic Bridge Inventory recognized that the load capacity and roadway width of this bridge does not make this bridge suitable for continued use.

INDOT has evaluated a range of alternatives for this bridge including: (1) a do-nothing or 'No Build' alternative, (2) rehabilitation for continued vehicular use, (3) rehabilitating the bridge for use a part of a one-way pair of bridges, (4) bypassing the existing bridge with a new, adjacent bridge, retaining the existing one for non-vehicular use, or (5) constructing a new bridge and relocating the existing bridge to an alternate location for non-vehicular use. INDOT has determined that alternatives 1, 2, and 3 are not prudent, due to the load capacity of the existing bridge. Alternative 4 may be prudent depending on local support for maintaining the bridge and identifying a public use. Alternative 5 is a prudent alternative and could involve relocating the bridge to another location in Clay County or elsewhere in the state. **The goal of this meeting is to determine the public's interest in retaining the bridge in its existing location (Alternative 4) or relocating it to another location (Alternative 5).**

The presentation will begin at 6:00 pm, followed by a public comment session. The presentation and comment session will extend until 7:30 p.m. During the public comment session, interested persons will be afforded an opportunity to express comments, concerns and provide input regarding the project. Following the presentation and comment session, INDOT representatives will be available to address questions and concerns. Comments may also be submitted to: SR 46-Eel River Project, c/o Parsons, 101 West Ohio Street, Suite 2121, Indianapolis, Indiana 46204. You may also elect to fax comments to (fax) 317-616-1033. Comments may be e-mailed to daniel.prevost@parsons.com.

This meeting is not the last opportunity for agencies or the public to comment on the project. INDOT is in the process of developing conceptual plans and the required environmental documentation under the National Environmental Policy Act and Section 106 of the National Historic Preservation Act. When that documentation is complete, a formal public hearing will be held to provide an opportunity to comment on the preferred alternative and anticipated impacts prior to INDOT and the Federal Highway Administration making a final decision.

WINTER WEATHER NOTE: In the event of hazardous winter weather causing hazardous driving conditions, this meeting would be rescheduled (if necessary) on Saturday, January 31, 2015 at the same location as listed above , but with a starting time of 1:00 p.m. In the event of inclement weather, please call the INDOT Office of Public Involvement at (317) 232-6601 to find out if the meeting will be held or rescheduled.

In accordance with the "Americans with Disabilities Act", if you have a disability for which the Indiana Department of Transportation would need to provide accommodation for, in terms attendance and participation during the meeting, please contact the Office of Public Involvement by Thursday, January 22, 2015.

INDOT looks forward to meeting with the community on Thursday, January 29, 2015 at 6:00 p.m.

Rickie Clark, Indiana Department of Transportation, Office of Public Involvement / Central Office Communications Division, 100 North Senate Avenue, Room N642, Indianapolis, Indiana 46204; **Phone:** (317) 232-6601 **Email:** rclark@indot.in.gov

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This email was sent to daniel.prevost@parsons.com using GovDelivery, on behalf of: State of Indiana · 402 Washington Street · Indianapolis, IN ·46204 · 800.457.8283

Thursday, January 29, 2015

To the residents of Clay County:

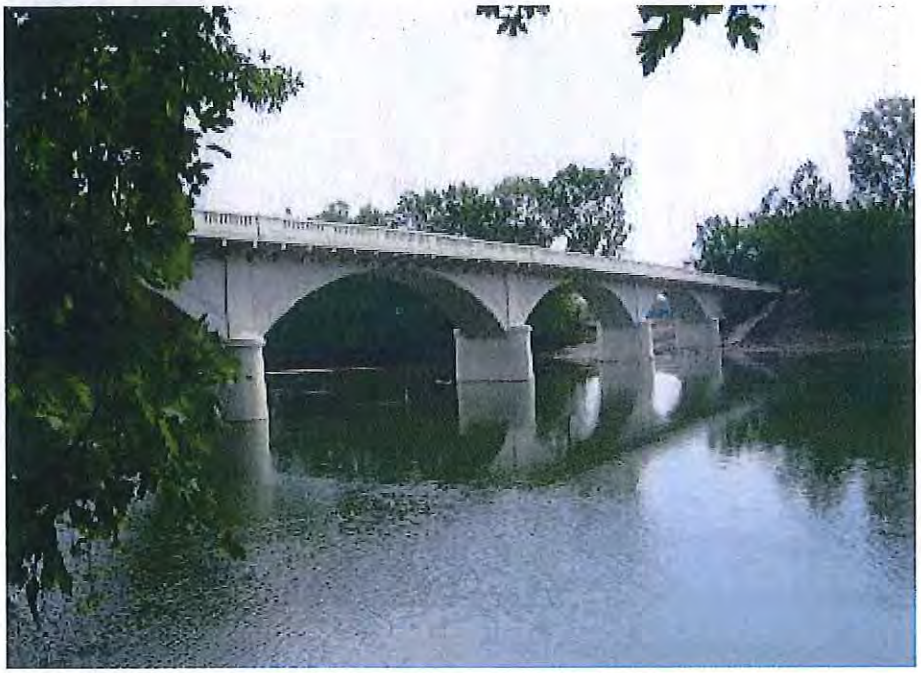
As an outsider from 85 miles away I would like to add some thoughts to your meeting tonight. We in Carroll County in northwestern Indiana have been through similar circumstances with our historic bridges and support a process that involves community participation. Two of our County's bridges in the past decade had been slated for replacement without adequate consideration for public involvement, preservation considerations or possible rehabilitation.

First the iron bridge known locally as Wilson Bridge lays in a quaint area populated by small farms and some horse and buggy German Baptist and the suggestion that a major new "million dollar bridge" be brought to this community was met with local resistance. Even abutting some farmers objected to its replacement. Originally slated for demolition by the Commissioners because of their feeling that it was "old" and therefore couldn't be of any future use. The local residents began a "save Wilsons Bridge" effort and organized numerous events that were held on the banks of Deer Creek to draw attention to the bridge's attributes. They pictured what replacement would mean to the valley. This also brought attention to the rural community with its historic barns and farmsteads which ultimately netted a National Register Rural Historic District to commemorate the historic background of this rural area.

Wilson Bridge was ultimately saved and restored for use by the County Highway and supports bus and local traffic

Second was a concrete bridge built in the 1920s that spanned the Wabash River at a place where the Wabash & Erie Canal Boats once crossed the river on its way from Logansport to Delphi. Again the officials feared the stability and worthiness of the old concrete and were reluctant to restore and re-deck this span. In place would have been a much longer angled bridge that would impact the integrity of historic sites of the canal era AND the cost would be more than three times the cost of rehabilitating and decking this major span.

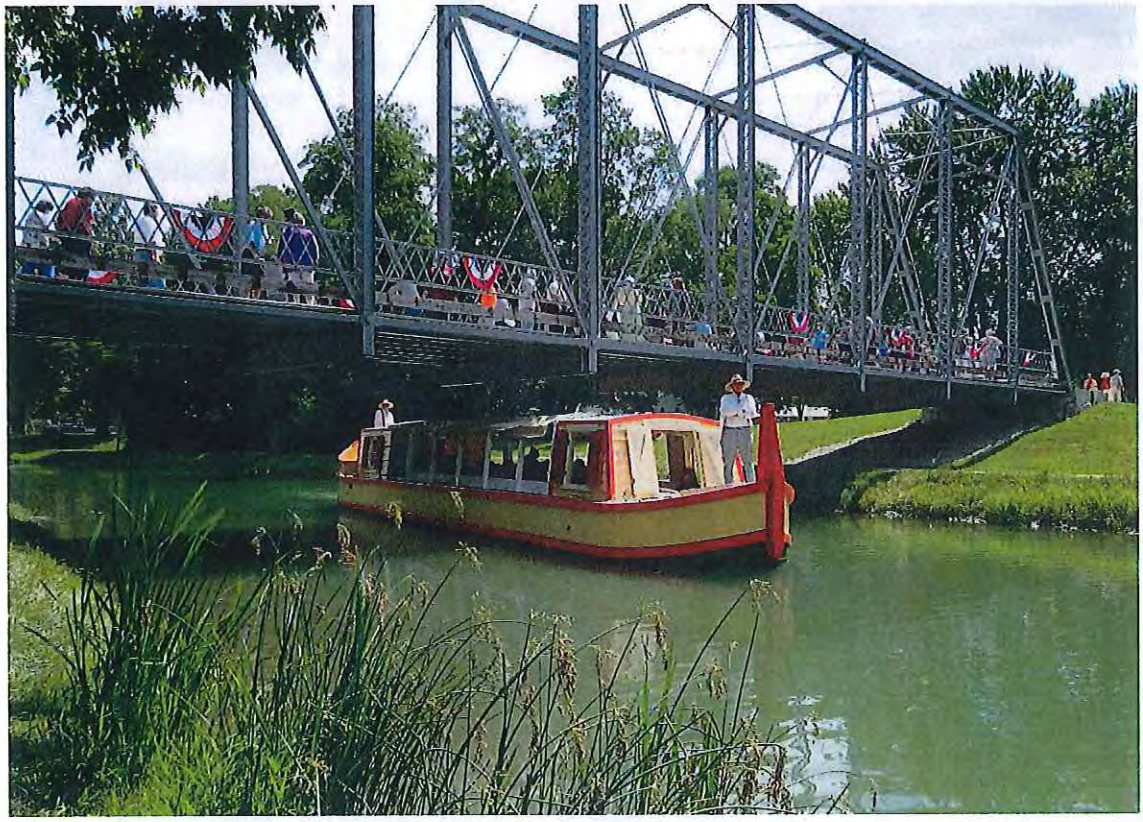
The impetus of saving Carrollton Bridge brought about an awareness for the history of the site. This very spot was the crossing for the Wabash & Erie Canal and held lots of connections to this mode of early travel. As a result two farmers donated land to make an interpretive park on either side of the north end of the bridge. This became a popular spot to recall history and for fishing to access the river.



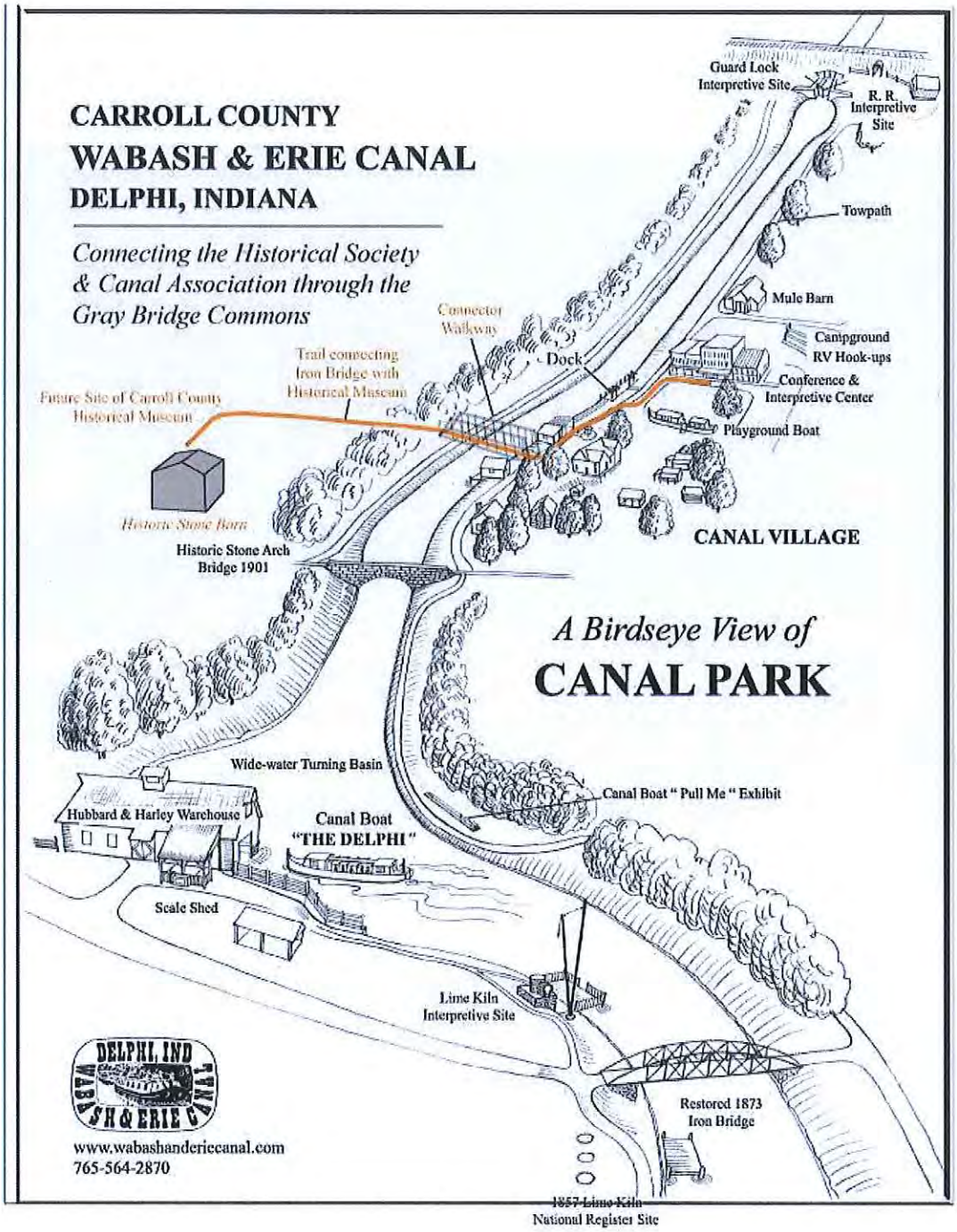
Once completed this span retains its original design and graces the Wabash River just north of Delphi

In addition the Carroll County organization known as the Wabash & Erie Canal Association has led a preservation cavalcade of efforts to preserve additional iron bridges that have been restored by our volunteer crew and placed over the re-watered section of the W&E Canal. They serve as Towpath Trail connectors. This preservation effort has evolved over the last 15 years and now includes these spans:

Our Stone Arch Bridge was saved because of efforts by the County Highway Director to find a mason to stabilize the cut stones



This restored bridge is in Delphi's Canal Park and serves as a trail between downtown and our Park



Canal Park is highlighted with three historic bridges. The 1874 iron bridge in the lower right, the Stone Arch in the middle that also serves as a city street, and the newest restored iron span in the upper section that connects Canal Park with the County Historical Society's potential (new) Museum site.

You are invited to come to Delphi and enjoy the bridges. Good luck with your efforts to make a pedestrian bridge and associated recreational uses in Bowling Green. Never give up hope !!

Lastly our working relationship with INDOT in the planning and construction of the new four lane Hoosier Heartland Highway that borders Delphi gave us reason to find support for maintaining the continuity of our Monon Trail. It involved working diligently with the planners and engineers to secure a very special 300 foot long iron single span bridge that came from Freedom, Indiana. This relic is now finished and open for just another special place for visitors to come and hike our trails.

Freedom Bridge was placed over the new four lane highway last September by INDOT

Dan McCain, President of the Wabash & Erie Canal Association

3198 North 700 West

Delphi, IN 46923

INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N642
Indianapolis, Indiana 46204

PHONE: (317) 232-6601
E-mail: rclark@indot.in.gov

Michael R. Pence, Governor
Karl B. Browning, Commissioner

Please submit written comments by using the comment form provided. **INDOT respectfully requests comments be submitted by Friday, March 6, 2015.** Thank you for your attendance this evening.

PROJECT: S.R. 46-Eel River Project

MEETING DATE: Thursday, January 29, 2015

NAME: Robert Hostetler

COMMENT: See Attched

SIGNATURE:

Reference the Clay County Bridge

We are hoping to preserve the S.R. 46 bridge, as this bridge would be a great addition to Indiana and Clay County Canal history. The area could also serve as a public recreational area with access to the Eel River. It would be a state-wide advantage with both the Boy Scout and Girl Scout camps drawing in campers within a 150 mile area.

The Boy Scout Camp, Camp Krietenstein (Opened on 1922), is a beautiful 224 acre camp located near Poland, Indiana (up river approximately 2 miles from S.R. 42.) They have an over one million dollar facility that resides near the river. They can put in canoes at their camp but must make arrangements to take out canoes on private property. See facebook https://www.facebook.com/CampK1922

The Girl Scout Camp, Camp Na Wa Kwa, offers 259 acres of large open areas and woods in Clay County near Poland, IN which could also resides near the river. See website http://www.girlscoutsindiana.org/council-properties/camp-na-wa-kwa

The history of the bridge reaches nearby to Knox County with the VINCENNES BRIDGE COMPANY, VINCENNES, INDIANA: Frank L. Oliphant, John P. Oliphant, and Jacob L. Riddle incorporated the Vincennes Bridge Company in Indiana in 1898 for the purpose of fabricating structural steel for bridges. Until the 1920s, the firm's work consisted primarily of small I-beam spans and pony truss bridges. Although the firm undertook jobs in twenty-seven states, it primarily practiced in Illinois and Indiana. The firm changed its name in 1932 to the Vincennes Steel Corporation (Cooper 1981;Vincennes Library).

I'm still trying to research how many of the Vincennes Bridges still exist in Indiana.

Also, see attached history from Iron Monuments to Distant Posterity: Indiana's Metal Bridges, 1870-1930 by James L. Cooper

The Eel River Historical bridge access point would serve the state of Indiana and neighboring counties with the 52.8-mile-long waterway which would bring public enjoyment and offer tourism and economic dollars to Indiana and the Clay County area.

Bridges played an important, if decreasing, role in the Rochester company's last decade. The firm bid successfully for a number of the metal structures which northern Indiana counties built in the 1920s, and it built a number of structures for the State Highway Commission. But the company did not survive more than the earliest ravages of the Great Depression of the 1930s.

The Vincennes Bridge Company

Not easy to contain, the Oliphant brothers from Buena Vista in Monroe County ultimately founded one of Indiana's most successful bridge-building firms. John tried hardware and then real estate before focusing on the bridge business. He bought into the New Castle Steel Sewer Pipe Company in 1896, became its Vice President and Secretary, participated in its name change to the New Castle Bridge Company, and sold his interest in the venture in June 1898. John had not lost interest in bridge building during those heady days in New Castle. Instead, he dreamed of running his own company and so he traveled to prospective sites in a dozen states looking for the best deal he could strike. In the end, he returned to southwestern Indiana and settled in Vincennes.[26]

Brother Frank Oliphant prepared for the life of a school teacher. He graduated from the Central Normal College at Danville in 1893 and headed west to Nebraska and Colorado where he quickly became a school principal. John called his brother back home to Indiana in 1899 so they might join forces with Jacob L. Riddle, a merchant neighbor from Cincinnati in Greene County, to operate the Vincennes Bridge Company (VBCo). When the company was dissolved in 1951, the Oliphant family still owned it.[27]

Demand pushed the small initial capital stock of $20,000 to $50,000 in 1902. Capital and profit underwrote a four-fold expansion of the plant. By 1911, the work force's weekly payroll had mounted into the thousands of dollars, and the firm had manufactured more than two thousand miles of spans. Annual production soon reached 1,200 spans with annual sales around $1,000,000. Not surprisingly, VBCo's spans could be found in more than fourteen southern Hoosier counties and in at least eight southern and western states before 1920.[28]

Without training or long experience i
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served as their first Chief Engineer. F
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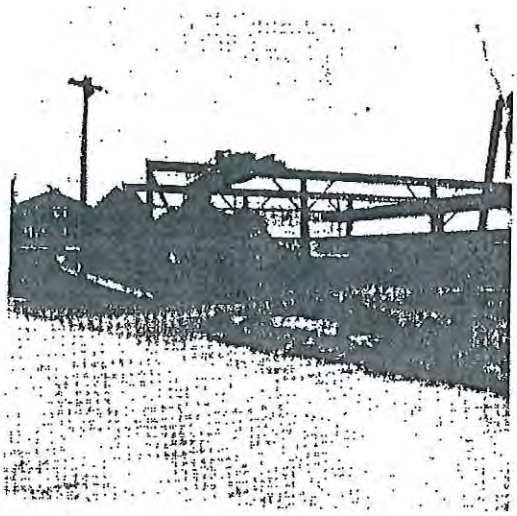
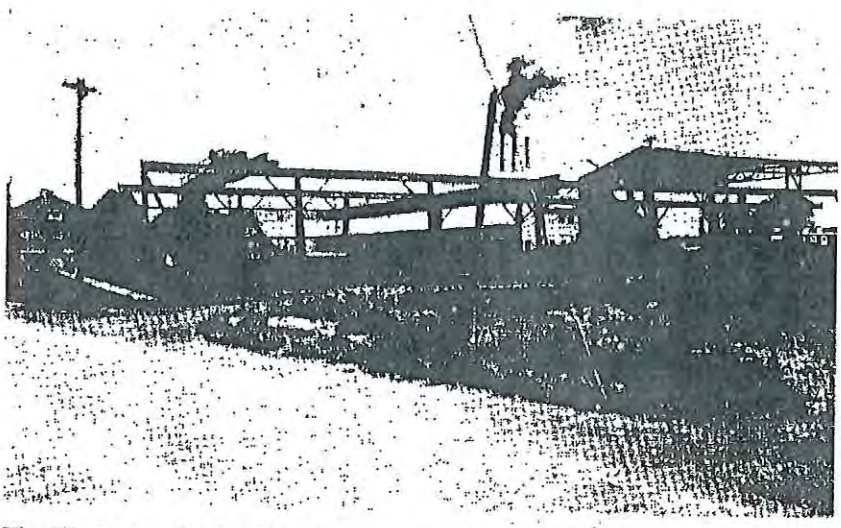


The Vincennes Bridge Company's plant was
Drive. (Vincennes Steel Corporation)

Without training or long experience in engineering, the Oliphants hired the professional expertise they needed. Benjamin F. Nesbit served as their first Chief Engineer. He was succeeded by mostly Purdue graduates: Benjamin B. Johnston, F. R. Sargent, Omer Free, and A. W. Day. They designed many simplified and undecorated standard trusses in a variety of long and short forms. Once again, they emphasized function and economy more than elegance and novelty.

Unlike other metal fabricators in Indiana, the Vincennes Bridge Company continued to focus on full-service bridge-building even after the First World War. While the company welcomed contracts for structural work, it sought bridge work. Instead of acquiescing in an enlarged role for contractors in which the manufacturer became a subcontractor, VBCo continued to bid directly against contractors where circumstances allowed. The firm retained crews prepared to build concrete substructures and it erected its own spans. It aggressively pursued the many contracts which the Indiana Highway Commission and other state highway departments offered in the 1920s, and it won a significant share of the new bridge market.



The Vincennes Bridge Company's plant was located, fittingly, on Oliphant Drive. (Vincennes Steel Corporation)

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Poising themselves for a great leap forward in early 1927, the Oliphants voted to increase their company's capital stock from $50,000 to $750,000, making VBCo the second largest metal fabricator in the state. The view from Buena Vista today would hardly suggest the vision that the Oliphant brothers nourished when, as entrepreneurial visionaries, they roared out of that quiet crossroads community before the turn of the century.

The Elkhart Bridge and Iron Company

Charles Fieldhouse of Elkhart tells a story about a chance meeting of his brother, John, with Frank Brumbaugh, an Elkhart resident and agent for Ohio's Bellefontaine Bridge Company, in an interurban car headed to South Bend:

> John said to Frank: "Why don't you build your bridges in Elkhart?" Frank said: "I would if I had $15,000.00" John said: "Would that be all it would take? One bridge might cost $15,000.00." Frank said: "It might, but the steel could be bought on credit and paid for after the bridge was finished." John said: "Be at my office, Frank, at 4 o'clock this afternoon."
>
> When John got back he phoned everyone he could think of, and at 4 p.m. when Frank walked in the back room of John's office, there were sixteen men to meet him. John told them the story of what was said on the interurban and also stated: "Let us build a bridge plant in Elkhart. H. E. Bucklen will donate five acres of ground for such a factory and Bucklen will also take some stock." William Pratt said: "I will take $1,000.00 worth of stock." Each man in the room agreed to take the same amount, and the Elkhart Bridge Company was started.[29]

Five local men, including Brumbaugh and Bucklen, incorporated the Elkhart Bridge Company with a capital stock of $25,000 in November 1901.[30] Prosperity eluded the fledgling company, and the "total amount of common stock was lost in business transactions the first two years." In June 1902, the stockholders voted an issue of $20,000 of preferred stock, but still the company did not prosper. In May 1904, Brumbaugh and a group of new local investors reorganized the corporate effort as the Elkhart Bridge and Iron Company (EB&ICo) with the modest capital stock of $10,000. The

original investors agr
new firm in October
ferred stock, a "deed

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the beginning of the
twenty-two counties
cater to its growing
office in Madison, Wi
in a number of state
ranged from six to 5

Proud of the currency
the firm monitored
field. It assembled eac

INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N642
Indianapolis, Indiana 46204

PHONE: (317) 232-6601
E-mail: rclark@indot.in.gov

Michael R. Pence, Governor
Karl B. Browning, Commissioner

NOTICE OF PUBLIC MEETING -from Joyce R. Pipes 4819 Garrard Chapel Rd - Bowling Green, IN 47833

The Indiana Department of Transportation (INDOT) will hold a public meeting on Thursday, January 29, 2015, at 6:00 pm at the Bowling Green Community Building, 5230 East Washington Street, Bowling Green, Indiana 47833.

The purpose of the public meeting is to offer all interested persons an opportunity to comment on alternatives under consideration for the SR 46 Bridge over the Eel River, 2.8 miles east of SR 59, located in Clay County. Improvements to the bridge are required to address the advanced deterioration affecting critical load-bearing components of the bridge. Bridge No. 046-11-01316C, a steel Parker through truss bridge with concrete abutments, a steel superstructure, and a concrete deck, is listed in the National Register of Historic Places (National Register) under Criterion A for its role in the development of Clay County. As part of the Indiana Historic Bridge Inventory project, the bridge was determined to be Select for Non-Vehicular Use. Select bridges are those that are most suitable for preservation and are excellent examples of a given type of historic bridge. The designation as Select for Non-Vehicular Use indicates that the Historic Bridge Inventory recognized that the load capacity and roadway width of this bridge does not make this bridge suitable for continued use.

INDOT has evaluated a range of alternatives for this bridge including: (1) a do-nothing or 'No Build' alternatives, (2) rehabilitation for continued vehicular use, (3) rehabilitating the bridge for use a part of a one-way pair of bridges, (4) bypassing the existing bridge with a new, adjacent bridge, retaining the existing one for non-vehicular use, or (5) constructing a new bridge and relocating the existing bridge to an alternate location for non-vehicular use. INDOT has determined that alternatives 1, 2, and 3 are not prudent, due to the load capacity of the existing bridge. Alternative 4 may be prudent depending on local support for maintaining the bridge and identifying a public use. Alternative 5 is a prudent alternative and could involve relocating the bridge to another location in Clay County or elsewhere in the state. **The goal of this meeting is to determine the public's interest in retaining the bridge in its existing location (Alternative 4) or relocating it to another location (Alternative 5).** alternative 4 - is my selection

At this public meeting, a presentation will begin at 6:00 p.m. followed by a public comment session. The presentation and comment session will extend until 7:30 p.m. During the public comment session, interested persons will be afforded an opportunity to express comments, concerns and input regarding the project. Comments may also be submitted to: SR 46-Eel River Project, c/o Parsons, 101 West Ohio Street, Suite 2121, Indianapolis, Indiana 46204. You may also elect to fax comments to (fax) 317-616-1033. Comments may be e-mailed to daniel.prevost@parsons.com. or

This meeting is not the last opportunity for agencies or the public to comment on the project. INDOT is in the process of developing conceptual plans and the required environmental documentation under the National Environmental Policy Act and Section 106 of the National Historic Preservation Act. When that documentation is complete, a formal public hearing will be held to provide an opportunity to comment on the preferred

Michael Kellum

From: "Michael Kellum" <mcdkellum@ccrtc.com>
To: <daniel.prevost@parson.com>
Sent: Monday, January 26, 2015 10:04 AM
Subject: EEL RIVER BRIDGE

Dear Sir,

We believe it would be in the best interest of the community to relocate the bridge. Bowling Green barely has enough support to keep the Church and Fire Dept active. We have been 3yrs trying to raise enough money to build a new Masonic Lodge that fell in disrepair and have only raised half the money so far. The bridge if left standing would fall into further disrepair because there is no local industry to help with the cost of maintaining the structure. Bowling Green already has a picnic area that is close to the playground and baseball diamond. We would like to see a new bridge built in it's place so there would not be another bend in the roadway. We would like to see a one lane bridge with a stop light south of the existing bridge built until the new bridge is complete to keep the road open.

Thank You,

Michael & Cheri Kellum
8475 east state road 46
Bowling Green, Indiana 47833

1/26/2015

Jan 24, 2015

To whom this Concerns. (Unable to attend Jan 29 Thurs)

I am a resident of Bowling Green Washington Twp.

I have not talked to anyone here who is concerned with keeping the bridge over eel river. We are a poor Twp ship and have very few able body people to be able to keep up the maintence on the bridge, Mostly elderly + to young to care. I've lived here 75 years and there is always a problem with flooding There is no way you can put a park at the river. We have no land to put one. There is no money to repair and paint a bridge. If it were a wooden bridge I could see maybe keeping it here, but not an iron one.

You have some people pushing this that does not live here.

There is no way I would vote to let us have it. Thats just a problem for the younger generation to care for.

We have trouble enough to get help to put on the annual picnic. We can do great things but I can't see this.

So I'm saying No to keeping the bridge here at Bowling Green.

Just build use a new one and put the guard rails back up along it like they were or put cable up. This is what I care about mostly.

Serving Others

Linda Schile 359 S. Clay St
Bowling Green In 47833

From: Donna Roscoe
To: Prevost, Daniel
Subject: Bowling Green bridge meeting
Date: Sunday, February 01, 2015 2:57:25 PM

Hello. I attended the meeting and have a few comments. I hope you don't mind.

First, I thought it was organized and respectful. However, there was a bit much of "telling us what we are going to do in the meeting" instead of just doing it. Just a comment, sorry.

Second, four of us that attended together are from Brazil. We were asked to attend by someone very involved in the Clay County Historical Society. We went assuming that the residents would be up in arms NOT to lose their bridge. We thought they would dramatically object to giving it to some other community. We were wrong and VERY VERY surprised at some of the comments.

While those living around the Bowling Green community are most familiar with the bridge, the flooding, the inconvenience when it is closed, it is in Clay County and you would think saving it would be a concern of the whole county. We did not see that. We were quite disappointed. Having said that, as natives of Vigo County, having only lived here less than 10 yrs, I can say that Clay County has always been regarded as non-progressive - it literally took them years - as in 20 plus years - to finally vote for a new high school even though the old one was crumbling around them. Most residents are so conservative and it is all about the money to them.

I've heard the Commissioners are meeting Monday 2/2 at 9:00am to vote on this. Mark my word, they will not vote to support taking on this issue. One commissioner wanted nothing of the meeting (he never gets close to any controversy, so he never even attended) and the other two won't spend the money.

Ok, having said that, I have to say I am disappointed in your handling of this project. If the residents and Commissioners vote this down, that's one thing, and at least they had their say. However, I think the IDOT set things up so that would happen. Here's why:

-I totally agree with the man from the Indiana Landmarks - 60 days is totally ridiculous for any county to find an organization - be it private or the county - do the proper research, budget for the future, vote on the issue, etc. 60 days guaranteed no action. What if the crowd HAD demanded to keep their bridge? How in the world would things have moved that fast? Since you contacted Clay County Commissioners (a difference bunch of officials, granted) 4 yrs ago, it would have almost been better NOT to grant this meeting, than grant it with so little chance for any action. It is clear that IDOT didn't want that to happen.

-The costs involved were of course advertised loud and clear to scare everybody off. I was quite surprised as I'm sure everyone was. Any plan to pay for this cannot be organized by anyone, county or otherwise, in 60 days.

In short, IDOT organized the presentation to scare off the conservative residents of Clay County and it worked. Others of us who value history and would like to see a few things happen in Clay County are again disappointed.

I do have a question. I am not clear on the proposed location of the two bridges in Brown Co. Were they both in the state park or not? If not, has proper research been done insuring that this Bike trail group CAN pay $100,000 in 8-10 yrs (as your group told Clay County) and another $500,000 in 25 yrs? (That's what was said out loud at our meeting.) How can you be sure they are able to do that? If the bridges are in the state park, aren't you dumping that costs on taxpayers all over the state who are unaware?

Thanks for listening.

From:	Sherry Deckard
To:	Prevost, Daniel
Subject:	BRIDGE IN CLAY COUNTY - BRAZIL IN
Date:	Thursday, January 29, 2015 4:12:42 PM

I may not be at the meeting, so I'd like to give my suggestion to you now.
I think it'd be great if the road could be straightened out coming out of Bowling Green - from where it starts to curve just past the house on the hill.
You could then see the bridge from Bowling Green & build the new bridge on the NORTH side of the bridge that exist now - so that the memorial picture and writing
would be on the SAME side of the road. We could still use the bridge as is now until the new road and bridge were completed.
Why take it down and put it in BROWN COUNTY?? Keep it here for this county where it belongs with the memorial!!
With a suggestion like mine, the old bridge stays, could be utilized while building the other, plus it would STAY with the memorial picture.
Straightening the road and putting the bridge on the NORTH side of the existing one would make a better "fit" for the whole situation.

Thank you for considering this!!

Sherry Deckard
2780 S. Co. Rd 700E
Bowling Green, IN. 47833
812-986-2272

From: Andy Rebman
To: Prevost, Daniel
Subject: Comments regarding the Bowling Green Iron Bridge project.
Date: Tuesday, February 03, 2015 3:10:43 PM

Good afternoon Mr. Prevost
First, I wanted to take a moment and say thank you for your time last Thursday at Bowling Green. The meeting was excellent and the information shared was good. I also wanted to send you my comments regarding the replacement project. I am president of the Indiana Covered Bridge Society and while this is not a covered bridge obviously, we as a society still have an interest in keeping all historic properties in their original rightful places. We feel strongly that all historic bridges regardless of building material should stay where they were built originally. I feel that every effort should be made to leave and rehabilitate the bridge in its original location. I personally like the idea of making this bridge a park and allowing it to be used for public gatherings. I have scheduled many trips for the Society and we look for places just like this to host our dinners in the evening. What a wonderful setting this would serve for this purpose. Also with access to the Eel River, it would allow fishing access as well.

With that said, I understand the concern from the community about the cost of maintaining the bridge for just pedestrian use. I am well aware of the costs involved in rehabbing these old bridges rather the material is wood or iron. Therefore I would ask that the state please ensure that this bridge survives one way or the other. If it cannot sadly be maintained at Bowling Green, then we would like to see it moved to Brown County and used on the Salt Creek Trail. It is an important bridge in the history of Indiana and above all we would like it to be preserved.

Thank you for your time.
Regards
Andy Rebman
President, Indiana Covered Bridge Society

From: Prevost, Daniel
To: Ball, Alan
Subject: FW: B.G. Bridge
Date: Tuesday, February 10, 2015 11:24:21 AM

-----Original Message-----
From: GREG JORDAN [mailto:gjordan@ceresllp.com]
Sent: Tuesday, February 10, 2015 11:21 AM
To: Prevost, Daniel
Subject: RE: B.G. Bridge

Dan,
Thank you for clearing things up for me.
Greg Jordan
Greg Jordan

"Prevost, Daniel" <Daniel.Prevost@parsons.com> wrote:

>Mr. Jordan -
>
>Under the Historic Bridge Programmatic Agreement (attached), as you stated, the Federal Highway Administration (FHWA) "will not participate [i.e., provide funding] in a project that would result in the demolition of a Select Bridge" (page 1, last "Whereas" statement). (Note: the Bowling Green bridge is "Select".) However, in Stipulation IV.G (page 10), the Programmatic Agreement states that:
>
>"G. Anticipatory Demolition – If FHWA or Indiana SHPO determine a bridge owner intentionally demolishes or otherwise diminishes the historic integrity of a Select Bridge under the bridge owner's jurisdiction with non-Federal-aid funds, then FHWA will comply with 36 CFR Part 800 for any future federal-aid bridge project proposed by that bridge owner. After the next Bridge Survey update is completed in accordance with Stipulation II.C.2, FHWA may process federal-aid projects in accordance with this Agreement for that bridge owner."
>
>In other words, if INDOT chose to use State-only (non-Federal) funds, INDOT would be prohibited (until the next bridge survey update) from using the Historic Bridge Programmatic Agreement for any future projects involving historic bridges (Select or Non-Select). The cost (in both time and money) of that would far outweigh the benefits of avoiding the Programmatic Agreement requirements for this single bridge project.
>
>If you have any additional questions or comments regarding the project, please let me know.
>
>- Dan
>
>
>Dan Prevost, AICP CTP, ENV-SP
>PARSONS
>Office – 317.616.1017 ♦ Mobile – 513.368.0514
>daniel.prevost@parsons.com ♦ www.parsons.com
>
>
>
>-----Original Message-----
>From: GREG JORDAN [mailto:gjordan@ceresllp.com]
>Sent: Thursday, February 05, 2015 6:18 PM
>To: Prevost, Daniel
>Subject: B.G. Bridge

>
>Dan,
> After speaking to a bordering county historian, he explained that as long as no federal grant money has been spent on a historical item, this item can be disposed of. This is what needs to happen in this case. Use the monies generated from the scrapping, to help replace the existing bridge. Use existing roadbed , with the exception of raising it 6 to 8 ft. Thus, saving tens of thousands of dollars. Make any sense? Response requested.
>
>Thank you,
>Greg Jordan, 812-249-9203

To whom it may concern.

I Carrie Garland would like for you to save the bridge and build an adjacent bridge beside it. It is our historical bridge and needs to be saved and not moved.

Thank you,

Carrie Garland

P.S.

#4 Build Adjacent bridge

Garland
Ms. Carrie ~~Thomas~~
9230 W. State Road 46
Bowling Green, IN 47833

INDIANAPOLIS IN 460
02 FEB 2015 PM 1 L

SR46 - Eel River Project
c/o Parsons, 101 West Ohio St.
Suite 2121
Indianapolis, IN 46204

Feb 21, 2015

To Whom it may concern:

I attended the public meeting held in Bowling Green concerning the fate of the Eel River Bridge.

I was quite pleased with the turnout. I understand some of views expressed against retaining the bridge. I was one of several people attending who want to keep the bridge, if at all possible, but did not speak.

I had forgotten my pen, so I had no means of jotting down questions during the presentation.

During the presentation, you showed "current condition" of the bridge. Agreed, they were truly horrific. This begs the questions:

1) If it's in this bad shape, why will you keep it open for 3 more years?

2) Why was the bridge allowed to get into such a condition?

3) Under "Recent Inspection History", it seems problems were evident in 2011 (or earlier). It seems, to me, that the new bridge could have already been built by now.

4) As I understand it, whether the bridge stays or goes, rehabilitation will take place. When will this take place? It looks like it should be as soon as possible.

"SR 46 Bridge is Historic for its association with events in the settlement and economic development of Clay County, Indiana." That's CLAY County, not Brown County - absolutely every effort to keep it in Clay County should be made!

"Alternatives 4 + 5"

With the exception of the "Hydraulic Issue" and costs, there is very little difference. "Issues are not insurmountable" - I would think that your engineers could figure out how to put the new bridge abutment where you prefer it to be (further west) by figuring a way to solve or minimize the "scour issue." I'd like to see them rise to the occasion and solve the problem!

"Total costs." There is absolutely

no way you can convince me that building the new bridge, rehabilitating and moving the old bridge costs LESS than leaving it where it is! No Way!

"INDOT-FHWA Goals" "Project must move forward promptly" — really? Since when? As far as I'm concerned, the new bridge construction is a separate issue. I can't believe construction won't start for more than year from now!

"Requirements" — You only wanted to allow 60 days for an organization to come forward to take over the bridge (I understand we now have 6 months). This would be a huge commitment — it needed more time to be properly considered.

It wasn't in the handout, but I recall some estimates for costs of inspections and painting of the bridge. Excuse me, but I thought they were inflated — I think it was a scare tactic.

Seriously, as much as I believe in vision for the bridge expressed

on the 'Save Our Bowling Green Bridge' website, I do not trust INDOT to spend our money wisely (I can think of 3 projects that didn't need to be done – that money could have been used elsewhere). I hope I am wrong, but I believe someone in INDOT has already been paid off to send our bridge to Brown County. I will do whatever I can to keep our bridge and make the dream a reality.

As far as the new bridge project, why does it need to be so much higher? It is my understanding that SR 46 will be lowered approaching the bridge. Excuse me, but that area floods out into the fields and the height of that road keeps it open! Lower it and we'll have problems! I suggest you get your "fill dirt" elsewhere.

I understand using the south side for the new bridge (path of least resistance). What I don't

understand is why the Bowling Green sign would be impacted. I looked the area over as I went to the meeting and there is ample room for the "new SR 46" to join the existing road before you get to the sign.

In closing, whatever the fate of the Bowling Green Bridge, everyone agrees a new bridge is needed. (Personally, I don't believe the new bridge will last as long as the old one has) I urge INDOT to get on with it!! Three years to completion is unacceptable of the old bridge is actually this bad. If trucks go over the bridge that are over the limit (and you know some will) and a collapse happens — it's on you're head!!

Sincerely,
Karen E Stearley
PO BOX 422
Center Point IN 47840

KAREN E. STEARLEY
P.O. BOX 422
CENTERPOINT, IN 47840-0422

INDIANAPOLIS IN 460

21 FEB 2015 PM 5 L

SR46-Eel River Project
% Parsons
101 West Ohio St Suite 2121
Indianapolis In 46204

46204420346

Sorry this is a copy but I didn't know there were 2 places to send to. Michele Sent 2/11/15 to

INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N642
Indianapolis, Indiana 46204

PHONE: (317) 232-6601
E-mail: rclark@indot.in.gov

Michael R. Pence, Governor
Karl B. Browning, Commissioner

Please submit written comments by using the comment form provided. INDOT respectfully requests comments be submitted by Friday, March 6, 2015. Thank you for your attendance this evening.

PROJECT: S.R. 46-Eel River Project

MEETING DATE: Thursday, January 29, 2015

NAME: Michele D. Neese

COMMENT: My concern is with many things...

1) Our county was not informed, from the beginning, that there were talks, behind the scenes, about removing our historic bridge to another location. It is a part of our history so I feel we should have been asked before any other options were explored.

2) There seems to be no discussion between the people working on the St. Rd. 46 and St. Rd. 42 bridges. We farm almost 2000 acres in the area and desperately need to be able to use these bridges during the times of Sept. to Dec. for harvest and from Jan to May for hauling grain to market. We were w/o use of the 2 bridges at crucial times in 2010 & 2011 and it put a stranglehold on us... adding 20 miles to each trip... there & back

** Please coordinate the 2 projects ** and don't take any more time

3) We have people asking to get access to the river for recreation, all the time. If there is a way to do it, w/a public access site, that would be a

SIGNATURE: Michele D. Neese

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great thing for people in this area. We farm all along the river (by the St. Rd. 42 bridge) so we know how wonderful it is.. and believe families greatly benefit from usage of the river for canoeing, fishing, etc. but most have no access to it.

March 5, 2015

Dear Sir - Enclosed is a letter I wrote that put into 3 newspapers. These newspapers were in the communites in the area of the Bowling queen bridge or Highway # 46.

At the meeting of January 29, 2014 only statements could be ask or comented on.

No questions were to be asked.

1) will the roadway (Highway 46) east of the bridge be lowered?

2) where are you (State DOT) going to get road material to raise road?

3) Will more flood water be released than before?

4) Durning a flood event will flood cover State Road 46 east of bridge?

Best wishes

P.J. Nicoson

P.J. Nicoson
241 E Co Rd 100 South
Center Point, IN.
47840

Papers in
Clay City News
Brazil Times
Spencer

norts in New York .

Letters To The Editor

State Road 46 Bridge Should Be Saved

Dear Editor:

On January 29, 2015 I attended the meeting concerning the State Road 46 bridge over Eel River at Bowling Green. This was at the community building.

Personally I think the bridge should be saved and maintained as a small roadside park.

The bridge should be preserved not just for history but for the protection of the highly productive bottom farm land.

The new bridge will be nine feet higher and longer than the old bridge.

The old bridge puts a damper on how much flood water can be released from the Cagles Mill Dam.

The present bridge is listed in National Register of Historic Places.

Also as Criterion A for its Association with events in the settlement and economic development of Clay County.

Bowling Green will be celebrating it's 200 year anniversary soon; as not only a small community but also Clay County's first county seat of government.

The Cagles Mill Dam was first built to protect the farm land and homes in the bottoms by flood control. These lands are all connected to the Eel River basin.

As for upkeep we have inmates from the county jail who would volunteer to maintain the old bridge and the park.

Let's keep history and protect the farm ground. Keep the old bridge.

P.J. Nicoson
Center Point

Michael R. Pence, Governor
Cameron F. Clark, Director

DNR Indiana Department of Natural Resources

Division of Historic Preservation & Archaeology • 402 W. Washington Street, W274 · Indianapolis, IN 46204-2739
Phone 317-232-1646 • Fax 317-232-0693 · dhpa@dnr.IN.gov

March 5, 2015

SR 46-Eel River Project
c/o Parsons Transportation Group
101 West Ohio Street, Suite 2121
Indianapolis, Indiana 46204

Federal Agency: Federal Highway Administration ("FHWA")

State Agency: Indiana Department of Transportation ("INDOT")

Re: DUAL REVIEW: January 29, 2015, public meeting about the SR 46 bridge over the Eel River (INDOT Bridge No. 046-11-01316C/NBI No. 17050) near the community of Bowling Green, in Washington Township, Clay County, Indiana (Des. No. 0800910; DHPA No. 10596)

Dear Sir or Madam:

The Indiana Department of Natural Resources, Division of Historic Preservation and Archaeology ("DHPA"), which also serves as the staff of the Indiana State Historic Preservation Officer ("Indiana SHPO"), wishes to comment on the January 29 public meeting in Bowling Green, pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended (recently recodified at 54 U.S.C. § 306108), implementing regulations at 36 C.F.R. Part 800, and pertinent Section 106 programmatic agreements, as well as under Indiana Code 14-21-1-18 and 312 Indiana Administrative Code 20-4.

We thank FHWA, INDOT, and Parsons Transportation Group for having held the January 29 public meeting. Giving the residents of Clay County and others from that part of the state an opportunity to learn about and to comment on the project and how it might affect this Select Bridge is important.

Similarly, we welcome INDOT's extension of the timeframe in which another party could propose taking ownership of the SR 46 bridge over the Eel River from only 60 days after the January 29 meeting until approximately the first week of August 2015, when the public hearing on the project is anticipated to be held.

While accurately depicting the condition of some of the rusted connections and braces on the current bridge, the slides used in the presentation on January 29 might have given some in the audience the impression that such deterioration is not just widespread but typical of the connection plates, interior gusset plates, lateral bracing, truss vertical members, and chords. Some commented that all trucks (not just those over 14 tons, as the posted signs indicate) should be prohibited from using that crossing until the replacement bridge is open to traffic, and some in the audience expressed the opinion that the bridge should be closed to all traffic. A misimpression about the bridge's condition could cause the public to believe that the bridge would be unsafe for all uses, even pedestrian. Our understanding is that, while the condition of the bridge is poor, it is not yet such a safety risk that it would need to be closed until at least 2017. However, if the condition deteriorates more rapidly than expected, we would ask that all Section 106 consulting parties be notified of that discovery immediately.

During the explanation on January 29 of how the bridge could be moved, it was stated that the two trusses act independently and can be used separately. That is true from a purely engineering perspective, but it overlooks the reality that the bridge is listed in the National Register of Historic Places as a two-span structure. Emphasizing that the trusses can be used separately could cause the public to infer that using the trusses in two different locations also would result in

two historic bridges being saved. That seems unlikely. In our experience, two halves of a National Register-eligible and -listed structure do not equate to either one listed or eligible structure or two listed or eligible structures.

Furthermore, as the U.S. Department of the Interior has written:

> Properties listed in the National Register should be moved only when there is no feasible alternative for preservation. When a property is moved, every effort should be made to reestablish its historic orientation, immediate setting, and general environment. [36 C.F.R. § 60.14(b)(1)]

The National Register nomination, which refers to the bridge as Indiana State Highway Bridge 46-11-1316 or the Bowling Bridge, indicates that the bridge is listed under Criterion A for its transportation significance in the settlement and development of Clay County. If the bridge must be moved, then we would want it to remain listed during and after the move if at all possible (see 36 C.F.R. § 60.14[b][2]). If the bridge were to be moved before that procedure involving the Keeper of the Register is completed, it automatically would be deleted from the National Register (36 C.F.R. § 60.14[b][4]).

We think it is possible that the bridge, as it exists currently, also might be eligible under Criterion C for engineering significance, and we think it would be essential for INDOT to make a case for Criterion C significance when it submits to the Indiana SHPO the information necessary to attempt to keep the bridge listed in the National Register, if relocation is proven to be the only feasible alternative. Recent experience with moved properties has informed us that the U.S. Department of the Interior, National Park Service, considers them eligible under Criterion C, only, if at all. Although integrity of location and setting are not irrelevant to a property's being eligible under Criterion C, those kinds of integrity might not be as important as they would be to a property that is eligible only under Criterion A. Even though many Parker through trusses once stood on state and Federal highways in Indiana, they are becoming increasingly rare, as INDOT has been actively replacing them in recent years. The historical value of a once-plentiful type of bridge rises as the numbers of examples of that type decrease. Thus, the reference during the presentation to this bridge's having been built from a standard design may understate its current engineering significance.

The various requirements for keeping a property that will be moved listed in the National Register are spelled out in 36 C.F.R. § 60.14(b), and we will not discuss them all in this letter. We would look to INDOT to provide the necessary documentation in support of the move and of retention on the National Register. However, we should mention that since the SR 46 bridge was nominated to the National Register as a State nomination (i.e., the nomination originated in Indiana, rather than in the Federal government), the Indiana Historic Preservation Review Board, in addition to the Indiana SHPO, also would need to review the proposed move. Then the Indiana SHPO would submit the documentation to the Keeper of the National Register in the National Park Service, and await the Keeper's response. If that response is favorable, then documentation of the bridge after the move also would need to be prepared by INDOT and submitted to the Keeper by the Indiana SHPO. Given the short timeframe that INDOT has laid out for constructing a new bridge at this crossing of the Eel River, we would encourage INDOT not to wait until time to move the bridge has almost expired before beginning this National Register retention approval process, as it could take several months.

My staff recalls hearing during the January 29 presentation that 25 years after the bridge spans are moved, the two spans would need about $500,000 worth of cleaning and painting, although we are unable to find that in the slides of the presentation. We assume that figure takes into account anticipated inflation of the dollar over 25 years, or, in other words, that the present value of that cost figure would be considerably less. In any event, it is not a figure that we recall having heard or read before. We wonder whether that figure also includes desirable, but not necessarily essential, maintenance measures that even a vehicular bridge would be unlikely to receive just 25 years after a thorough rehabilitation. Are INDOT's metal truss bridges typically cleaned and painted every 25 years? Our concern is that if the $500,000 figure is what the cleaning and painting would cost in 2040 or includes work that might not be essential, then stating that in another 25 years $500,000 would have to be spent could present such a bleak picture of what it would take to preserve the bridge for the long term that it would diminish the chances that anyone would want to take responsibility for this bridge—or any other metal truss bridge that is, or will become, available for new ownership or relocation.

It is apparent that INDOT does not want to retain ownership of this Select bridge after it is bypassed to the south by the new bridge, but we ask that FHWA and INDOT give that option serious consideration. That option would be a second variation on a combination of Alternative 4 (leaving the current bridge in place and restricting it to non-vehicular use) and

Alternative 5C-S (bypassing the current bridge's location to the south with a new vehicular bridge—the preliminary preferred alternative). The first variation, which was discussed on January 29, was for another entity, such as Clay County, to take responsibility for the current bridge. Under the second variation, INDOT could maintain the current bridge as a roadside park. We sense that INDOT is reluctant to do so. However, if a bridge owner wants to replace a Select bridge that it owns using FHWA funds, it appears to us that, according to the 2006 Indiana Historic Bridges Programmatic Agreement, the bridge owner must preserve that bridge if no outside party comes forward to take ownership of and responsibility for the bridge. If moving pieces of a National Register-listed Select bridge to different locations would destroy the bridge's listing and eligibility for listing (for probably 50 years), is that a prudent alternative as long as the bridge owner's preserving the bridge in place as a unit is feasible and prudent?

A member of the audience commented that if the SR 46 bridge were left in place after being bypassed, children could play on it and possibly get hurt. We acknowledge that possibility. It would be true for a bridge on a trail, as well. Injury of that kind is usually a possibility to some degree, even on bridges that are still in vehicular use. We think that the possibility here might be somewhat less than usual, given that the new bypass bridge would be immediately adjacent to the current bridge, rather than in a remote location that, for the most part, is out of the public view.

The January 29 presentation also brought up hydraulics issues that leaving the current SR 46 bridge in place while bypassing it with a new bridge are thought by the engineers to create. One of those was the anticipated need to align the new bridge's west abutment so as to be parallel with the west abutment of the current bridge. As a result, scouring of the new abutment is anticipated, which would require placement of rip-rap for protection. In our experience, rip-rap placement, for either new or rehabilitated bridges, is not unusual. Furthermore, the historic bridge alternatives analysis (Prevost, 11/17/2014) acknowledged that a detailed hydraulic analysis had not been done at that time. The January 29 presenters seemed to be more certain of the need to properly align the two bridges' west abutments than did the November alternatives analysis. Has that detailed hydraulic analysis been completed since November?

We would like to be informed of any formal decision that the Board of Commissioners of Clay County might have made or yet make and reported to you regarding the possibility of the County's taking ownership of the SR 46 bridge. Similarly, if any other party has requested to take ownership and responsibility for the bridge (in addition to Salt Creek Trail/Board of Commissioners of Brown County and Brown County State Park), we would appreciate being advised of that request.

If you have any questions regarding our Dual Review of the SR 46-Eel River Project near the community of Bowling Green in Washington Township, Clay County, please contact DHPA. Questions about historic buildings or structures pertaining to this review should be directed to John Carr at (317) 233-1949 or jcarr@dnr.IN.gov. Questions about archaeological issues should be directed to Mitch Zoll at (317) 232-3492 or mzoll@dnr.IN.gov.

In all future correspondence regarding this SR 46-Eel River Project (Des. No. 0800910), please refer to DHPA No. 10596.

Very truly yours,

Mitchell K. Zoll
Deputy State Historic Preservation Officer
Director, Division of Historic Preservation & Archaeology

MKZ:JLC:PCD:jlc

cc: Preservation Association of Clay County

emc: Daniel Prevost, Parsons Transportation Group
Allan Ball, Parsons Transportation Group
Sean Porter, Parsons Transportation Group
Andrew Campbell, ASC Group, Inc.
Ross Nelson, ASC Group, Inc.
Kevin Schwarz, Ph.D., RPA, ASC Group, Inc.

Lawrence Heil, P.E., Federal Highway Administration, Indiana Division
Rickie Clark, Indiana Department of Transportation
Tony Jones, Indiana Department of Transportation
Jessica Miller, Indiana Department of Transportation
Brock Ervin, Indiana Department of Transportation
Patrick Carpenter, Indiana Department of Transportation
Shaun Miller, Indiana Department of Transportation
Mary Kennedy, Indiana Department of Transportation
Susan Branigin, Indiana Department of Transportation
David Moffatt, Indiana Department of Transportation
Shirley Clark, Indiana Department of Transportation
Bryan Allender, Clay County Commissioner
Tony Fenwick, Clay County Commissioner
Paul Sinders, Clay County Commissioner
Board of Commissioners of Clay County, c/o Mary Jo Alumbaugh, County Recorder
Jeffrey Koehler, Clay County Historian
Vickie Mace, Clay County Historical Society
Bob Kirlin, Salt Creek Trail
Board of Commissioners of Brown County, c/o Dr. Michael Thompson, Administrator
Town Council, Town of Nashville, c/o Brenda Young, Clerk-Treasurer
Brown County Schools
Julia Pearson, Brown County Historical Society
Bob Bronson, Indiana Department of Natural Resources, Division of Outdoor Recreation
Dan Bortner, Indiana Department of Natural Resources, Division of State Parks & Reservoirs
Benjamin Clark, Indiana Department of Natural Resources, Division of State Parks & Reservoirs
Mark Dollase, Indiana Landmarks, Central Regional Office
Tommy Kleckner, Indiana Landmarks, Western Regional Office
Paul Brandenburg, Indiana Historic Spans Task Force
Dr. James L. Cooper, Professor Emeritus of History, DePauw University
Joshua Palmer, Indiana Historic Preservation Review Board
Daniel Kloc, Indiana Historic Preservation Review Board
Jim Corridan, Indiana Historic Preservation Review Board
Richard Butler, Indiana Historic Preservation Review Board
Kevin Orme, Indiana Historic Preservation Review Board
Beth McCord, Indiana Historic Preservation Review Board
Cameron Clark, Director, Indiana Department of Natural Resources and Indiana State Historic Preservation Officer
Christopher Smith, Deputy Director, Indiana Department of Natural Resources
Mitchell Zoll, Indiana Department of Natural Resources, Division of Historic Preservation & Archaeology
Chad Slider, Indiana Department of Natural Resources, Division of Historic Preservation & Archaeology
Paul Diehold, Indiana Department of Natural Resources, Division of Historic Preservation & Archaeology
John Carr, Indiana Department of Natural Resources, Division of Historic Preservation & Archaeology

STATE OF INDIANA)
SS)
COUNTY OF CLAY)

The February 2, 2015, regular meeting of the Clay County Commissioners was called to order by President Tony Fenwick at 9:00 a.m. Those present included Commissioners Paul Sinders, Tony Fenwick and Bryan Allender. Also attending was Eric Somheil, Attorney for the County Executive. Jennifer M Flater made a record of the proceedings to wit:

Tony Fenwick led the Pledge to the Flag, followed with prayer by Paul Sinders.

A motion to approve the January 5, 2015, regular meeting minutes as well as the special meeting minutes for January 21, 2015, was made by Bryan Allender, seconded by Paul Sinders. Motion carried 3 ayes.

IN THE MATTER OF QUALITY CORRECTIONAL CARE CONTRACT

Sheriff Paul Harden requested the Commissioners to approve the Clay County Inmate Healthcare Service Agreement in the amount of $187,904.00. This will give us two Registered Nurses which is now a requirement for the ICE program.

Motion to approve Quality Correctional Care Contract was made by Paul Sinders and seconded by Tony Fenwick. Motion carried 3 ayes.

IN THE MATTER OF PDF TAX ABATEMENT

Tracy Orman requested the Commissioners approve an abatement calculation agreement for PDF Personal Property Tax Abatement. This would allow Clay County to have the ability to do a claw back agreement.

Motion to approve PDF Abatement Calculation Agreement was made by Bryan Allender and seconded by Paul Sinders. Motion carried 3 ayes.

IN THE MATTER OF INDOT (RE: STATE ROAD 46 BRIDGE)

Don Prevost with INDOT was here to answer any questions the Commissioners might have concerning the State Road 46 Bridge. There was a meeting at the Bowling Green Community Building on January 29, 2015, and the Commissioners felt their questions had been answered. Several citizens were present and Robert Hostetler was granted permission to ask a couple follow up questions. Dan answered them and thanked the Commissioners for their time.

IN THE MATTER OF ESTABLISHING ADVISORY COUNCIL FOR EMA

Bryan Husband explained his request for an Advisory Council; it is a law that the State is now enforcing. The board would consist of President of Commissioner's, President of Council, Mayor of each city located in the County, an individual representing the legislative bodies of all towns located in the County, and representatives of private and public agencies. Advisory Council would meet either monthly or quarterly. All three Commissioners were supportive of Bryan going forward with the establishment of the Advisory Council.

IN THE MATTER OF APPOINTING AN ADVISORY COMMITTEE FOR CENTRALIZED 911 PROGRAM WITH CLAY COUNTY AND BRAZIL CITY

Tony Fenwick would like to make the following recommendation to have Sheriff Paul Harden, Josh Clarke Chief Deputy, Karen Joyce-Zink Chief Dispatcher, Mayor Brian Wyndham, Clint McQueen Chief of Police, Dennis Archer, Toni Carter, and Tony Fenwick as the members of the committee.

Motion to accept the above names for an Advisory Committee was made by Paul Sinders and seconded by Bryan Allender. Motion carried 3 ayes.

IN THE MATTER OF ADJOURNMENT

There being no further business, a motion to adjourn was made by Paul Sinders, and seconded by Bryan Allender. Motion carried 3 ayes.

_____

_____

_____
Clay County Commissioners

Attest:

_____
Clay County Auditor

APPENDIX H – AIR QUALITY

- 2016-2019 STIP cover page and page with project listing

Statewide Transportation Improvement Program (STIP)

Fiscal Year 2016-2019

SPONSOR	DES	STIP NAME	ROUTE	WORK TYPE	LOCATION	DISTRICT	MILES	FEDERAL CATEGORY	Estimated Cost left to Complete Project*	PROGRAM	PHASE	FEDERAL	MATCH	2016	2017	2018	2019
Brown County																	
Indiana Department of Transportation	0800146	Init.	SR 135	Bridge Deck Barrier Wall	1.71miles N SR 45, bridge over Little Bean Blossom Creek	Seymour	0	STP		Bridge ROW	RW	$5,600.00	$1,400.00	$7,000.00			
										Bridge Construction	CN	$612,608.80	$153,152.20		$765,761.00		
Indiana Department of Transportation	0800147	Init.	SR 135	Bridge Deck Barrier Wall	1.57 miles N SR 45, bridge over Moser Branch	Seymour	0	STP		Bridge ROW	RW	$12,000.00	$3,000.00	$15,000.00			
										Bridge Construction	CN	$419,012.80	$104,753.20		$523,766.00		
Brown County	0901654	Init.	IR 1001	Road Rehabilitation (3R/4R Standards)	Yellowwood Lake Rd from SR-45/Lanam Ridge Rd to Yellowwood State Forest	Seymour	3.5	STP		Access Roads - Consulting	PE	$167,120.00	$41,780.00	$208,900.00			
										Access Roads - Construction	CN	$1,785,600.00	$446,400.00	$2,232,000.00			
Brown County	1298693	Init.	IR 1006	New Bridge, Other Construction	Yellowwood Lake Road over Jackson Creek, 3.0 miles north of Yellowwood Road	Seymour	0	STP		Access Roads - Construction	CN	$303,200.00	$75,800.00		$379,000.00		
Indiana Department of Transportation	1006398	Init.	SR 46	Small Structure Replacement	SR 46 EAST OF SR 446 AT RP 69+04.	Seymour	0	NHPP		Bridge Construction	CN	$510,022.40	$127,505.60		$20,000.00	$617,528.00	
										Bridge ROW	RW	$20,000.00	$5,000.00	$25,000.00			
Indiana Department of Transportation	1296953	Init.	SR 135	HMA Overlay, Preventive Maintenance	From the west junction of SR 46 to Ridgeway Drive	Seymour	1.138	STP		Road Construction	CN	$259,200.00	$64,800.00	$324,000.00			
Indiana Department of Transportation	1296567	Init.	SR 135	Small Structure Replacement	7.85 miles N of the N SR -135/SR-58 junction	Seymour	0	STP		Bridge Construction	CN	$204,800.00	$51,200.00	$25,000.00	$231,000.00		
										Bridge ROW	RW	$10,400.00	$2,600.00	$13,000.00			
Indiana Department of Transportation	1296672	Init.	SR 135	Bridge Deck Overlay	9.45 miles N of SR-58 over Hamilton Creek on SR-135	Seymour	0	STP		Bridge ROW	RW	$0.00	$0.00	$0.00			
										Bridge Construction	CN	$181,600.00	$45,400.00	$0.00	$227,000.00		
Indiana Department of Transportation	1298437	Init.	SR 45	Small Structure Replacement	1.30 miles West of SR 135	Seymour	0	STP		Bridge ROW	RW	$24,000.00	$6,000.00		$30,000.00		
										Bridge Construction	CN	$208,642.40	$52,160.60		$10,000.00	$250,803.00	
Indiana Department of Transportation	1400311	Init.	MS 3	New Bridge, Steel Construction	Span 1 over Salt Creek (Brown County SP), 0.04 mi N of N Pool Parking Lot	Seymour	0	STP		Bridge Construction	CN	$1,325,600.00	$331,400.00		$1,657,000.00		
Indiana Department of Transportation	1400365	Init.	MS 1	New Bridge, Steel Construction	Span 2 over Salt Creek(Brown County SP), 0.65 mi W of N Pool Parking Lot	Seymour	0	STP		Bridge Construction	CN	$1,325,600.00	$331,400.00		$1,657,000.00		

*Estimated Costs left to Complete Project column is for costs that may extend beyond the four years of a STIP. This column is not fiscally constrained and is for information purposes.

Indiana Department of Transportation (INDOT)
State Preservation and Local Initiated Projects FY 2016 - 2019

SPONSOR	DES	STIP NAME	ROUTE	WORK TYPE	LOCATION	DISTRICT	MILES	FEDERAL CATEGORY	Estimated Cost left to Complete Project*	PROGRAM	PHASE	FEDERAL	MATCH	2016	2017	2018	2019
Indiana Department of Transportation	1006290	Init.	SR 246	Replace Superstructure	3.00 mi E of SR 159 (Eel River)	Crawfordsville	0	STP		Bridge ROW	RW	$60,000.00	$15,000.00	$75,000.00			
Indiana Department of Transportation	1296404	Init.	SR 59	Scour Protection (Erosion)	4.65 mi S of SR 246 over Eel River	Crawfordsville	0	STP		Bridge Construction	CN	$1,124,800.00	$281,200.00		$1,406,000.00		
Indiana Department of Transportation	1296226	Init.	SR 59	Small Structure Replacement	2.56 mi S of SR 246	Crawfordsville	0	STP		Bridge Consulting	PE	$16,000.00	$4,000.00	$20,000.00			
										Bridge Construction	CN	$442,400.00	$110,600.00		$553,000.00		
										Bridge ROW	RW	$48,000.00	$12,000.00	$60,000.00			
Indiana Department of Transportation	0800910	Init.	SR 46	Bridge Replacement, Concrete	BR over Eel River, 4.84 mi E of SR 59	Crawfordsville	0	STP		District Other Consulting	PE	$57,600.00	$14,400.00	$72,000.00			
										Bridge ROW	RW	$200,000.00	$50,000.00	$250,000.00			
										Bridge Construction	CN	$6,243,200.00	$1,560,800.00		$7,804,000.00		
Clay County	1382587	Init.	VA VARI	Bridge Inspections	Clay County Bridge inspections	Crawfordsville	0	Multiple		Local Bridge Program	CN	$0.00	$0.00	$0.00			
										Local Bridge Program	PE	$9,488.00	$0.00	$9,488.00			
										100% Local Funds	PE	$0.00	$2,372.00	$2,372.00			
Indiana Department of Transportation	1298346	Init.	SR 46	Bridge Replacement, Other Construction	Bridge over Crooked Creek, 1.86 mi W of SR 59	Crawfordsville	0	STP		Bridge Construction	CN	$1,049,600.00	$262,400.00			$1,312,000.00	
										Bridge ROW	RW	$32,000.00	$8,000.00		$40,000.00		
										Bridge Consulting	PE	$24,000.00	$6,000.00	$30,000.00			
Indiana Department of Transportation	1298348	Init.	SR 46	Bridge Replacement, Other Construction	Bridge over Killon Ditch, 4.03 mi E of SR 59	Crawfordsville	0	STP		Bridge ROW	RW	$32,000.00	$8,000.00		$40,000.00		
										Bridge Construction	CN	$1,569,600.00	$392,400.00			$1,962,000.00	
										Bridge Consulting	PE	$16,000.00	$4,000.00	$20,000.00			
Indiana Department of Transportation	1298343	Init.	SR 159	New Br, Pipe Arch Or Culvert	2.35 mi S of SR 246	Crawfordsville	0	STP		Bridge Construction	CN	$379,200.00	$94,800.00			$474,000.00	

*Estimated Costs left to Complete Project column is for costs that may extend beyond the four years of a STIP. This column is not fiscally constrained and is for information purposes.

APPENDIX I – ADDITIONAL STUDIES

- Section 4(f) Alternatives Analysis (draft)

HISTORIC BRIDGE ALTERNATIVES ANALYSIS

Bridge Number: 046-11-01316C
Designation Number: 0800910

SR 46 OVER EEL RIVER
Clay County
NBI Number: 017050

Eel River, 4.84 miles east of SR 59 at reference post 22+05

PREPARED BY:

PARSONS

Dan Prevost, AICP CTP, ENV-SP

July 17, 2015

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- D-2: INDOT Bridge Inspection Report (2014)

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- E-1: National Register of Historic Places Registration Form
- E-2: SHAARD Structural Survey Report
- E-3: Excerpt from *Indiana Historic Bridge Inventory, Volume 2: Listing of Historic and Non-Historic Bridges*, August 2009
- E-4: Indiana Historic Bridge Inventory Condition Score Calculation
- E-5: Indiana Historic Bridge Inventory Individual Review Form
- E-6: Excerpt from *Indiana Historic Bridge Inventory, Volume 4: List of Select and Non-Select Bridges*, August 2009

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- F-2: Email from John Bawcum, Friends of the Panhandle Pathway, Inc. (March 8, 2013)
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- F-5: Email from Mike List, Indiana State Parks & Reservoirs
- F-6: Meeting Minutes (April 10, 2013)
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I. INTRODUCTION

A. Section 4(f) Alternatives Analysis Framework

The Indiana Department of Transportation (INDOT) has identified a need to improve the structural and operational condition of the SR 46 bridge over the Eel River in Clay County (Appendix A, Figures 1-4). The bridge is listed on the National Register of Historic Places (NRHP) and was identified in the Indiana Historic Bridge Inventory (August 2009) as "Select". Select bridges are those "that are most suitable for preservation and are excellent examples of a given type of historic bridge."[1]

Section 106 of the National Historic Preservation Act of 1966 (Title 16, USC Section 470f) requires Federal agencies to take into account the effects of their undertakings on historic properties, and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment. In 2006, INDOT, the Federal Highway Administration (FHWA), the ACHP, and the Indiana Department of Natural Resources-Division of Historic Preservation and Archaeology (IDNR-DHPA), the designated State Historic Preservation Officer (SHPO) in Indiana, developed the Historic Bridge PA to define a process to efficiently and cost-effectively address the need for INDOT to maintain a safe and functional transportation system while ensuring that the State's historic resources were preserved to the extent practicable.

Alternatives for this project were developed in accordance with INDOT's *Historic Bridge Programmatic Agreement Project Development Process* (Historic Bridge PA PDP) and include no build, rehabilitation, and replacement options, with and without relocation of the existing bridge. The evaluation below follows INDOT's *Historic Bridge Alternatives Analysis Layout* for documentation of this process.

Section 4(f) of the US Department of Transportation Act of 1966 (Title 49, USC, Section 303) requires special considerations be made regarding the "use" of any publicly owned park, recreation area, wildlife/waterfowl refuge or historic property that is listed in or eligible for the NRHP. Prior to any "use" of a Section 4(f) property, an alternatives analysis must be conducted that confirms that there are no "feasible and prudent" alternatives to the "use" of the resource.

This analysis also meets the requirements of FHWA's *Programmatic Section 4(f) Evaluation and Approval for FHWA Projects that Necessitate the Use of Historic Bridges* (Nationwide Programmatic Section 4(f) Evaluation). Like the Historic Bridge PA PDP, this national agreement provides a framework for the evaluation of alternatives that avoid the use of the historic bridge; alternatives to be evaluated include: do nothing (i.e., no build), build on new location without using the old bridge, and rehabilitation without affecting the historic integrity of the bridge.

Finally, FHWA's Nationwide Programmatic Section 4(f) Evaluation requires that the proposed action includes all possible planning to minimize harm. This has occurred when:

1. For bridges that are to be rehabilitated, the historic integrity of the bridge is preserved, to the greatest extent possible, consistent with unavoidable transportation needs, safety, and load requirements;
2. For bridges that are to be rehabilitated to the point that the historic integrity is affected or that are to be moved or demolished, the FHWA ensures that, in accordance with the

[1] *Programmatic Agreement Regarding Management and Preservation of Indiana's Historic Bridges*, July 17, 2006 (Historic Bridge PA).

Historic American Engineering Record (HAER) standards, or other suitable means developed through consultation, fully adequate records are made of the bridge;

3. For bridges that are to be replaced, the existing bridge is made available for an alternative use, provided a responsible party agrees to maintain and preserve the bridge; and
4. For bridges that are adversely affected, agreement among the SHPO, ACHP, and FHWA is reached through the Section 106 process of the NHPA on measures to minimize harm and those measures are incorporated into the project. This programmatic Section 4(f) evaluation does not apply to projects where such an agreement cannot be reached.

B. Indiana Historic Bridge Inventory

As noted above, the SR 46 bridge over the Eel River was evaluated as part of INDOT's Historic Bridge Inventory survey. That process, developed in conjunction with FHWA and IDNR-DHPA, evaluated the NRHP-eligibility of every state-owned bridge in Indiana and established a systematic framework for how historic bridges shall be considered in the project development process.

Because the SR 46 bridge was already listed in the NRHP, its historic eligibility was not reevaluated (see Appendices E-1, E-2, and E-3). Determination of a bridge's Select or Non-Select status involves a multi-step process that incorporates both the historic eligibility and the current condition of the bridge. The SR 46 bridge received a "high" eligibility rating (based on its NRHP listing), but a "low" condition rating (29 out a possible 45) (See Appendix E-4). Bridges with this combination of ratings received an "Individual Review" that considered its condition, the feasibility of rehabilitation, and the potential to correct nonstandard elements without affecting its historic integrity. The Individual Review also considered whether the bridge was suitable for reuse as a non-vehicular (bicycle/pedestrian) structure either in its existing location or at a new location.

Through the Individual Review, the SR 46 bridge was found to be Select, based largely on the fact that the structural deficiencies could be corrected without jeopardizing the character-defining features that made it NRHP-eligible (see Appendix E-5). However, the Individual Review also recognized that while a major rehabilitation could make the bridge structurally sound, some deficiencies could not be corrected. As a result, the Historic Bridge Inventory identified the SR 46 bridge as Select for Non-Vehicular Use, indicating it may be better suited for bicycle and/or pedestrian use than for vehicles (see Appendix E-6).

C. Project Development History

In 2009, INDOT determined that action was required to address the deteriorated condition of the bridge. At the time, the Historic Bridge Inventory was not yet complete; however, the bridge was already listed on the NRHP. Due to the condition of the bridge, it was not yet known whether the bridge would be listed as Select or Non-Select. In August 2009, INDOT conducted a field check, during which it was decided that the deterioration was so severe that replacement was appropriate. INDOT reached out to Clay County regarding the possibility of relocating the bridge immediately adjacent to the existing location so that the County could create a park with the bridge as a feature. Clay County indicated that they had no interest in creating a park facility utilizing the bridge.

Volume 4 of the Indiana Historic Bridge Inventory finalized the list of Select and Non-Select bridges, identifying the Eel River Bridge as "Select for Non-Vehicular Use" as described above. While the "Select" designation effectively requires that the bridge remain in use (vehicular or

non-vehicular), the "Non-Vehicular Use" label was utilized for bridges that may be more suitable for non-vehicular use due to condition and/or nonstandard geometric features. The Indiana Historic Bridge Inventory did not evaluate whether non-vehicular use was appropriate at the bridge's existing site, but did consider whether the bridge type was suitable for relocation. In 2009, based on the lack of interest from Clay County to take ownership of the bridge for a park, INDOT reversed its previous decision and decided to proceed with a rehabilitation project.

During 2011, INDOT's system-wide approach to fracture-critical bridge inspections became more rigorous due to an increased concern that risks were not being fully identified. Prior to that change, the bridge was inspected primarily via climbing from the bridge deck, the use of ladders where possible, and binoculars for inspecting the areas over the water. The use of under-bridge inspection trucks had previously been minimal due to their availability (INDOT owns only two) and the difficulty of threading the truck's inspection bucket through the truss members. The 2011 inspection used an under-bridge inspection truck allowing the inspector to remove rust and make a more accurate assessment of the condition of the floor beams.

In 2011, Parsons was selected to prepare design plans for the rehabilitation of the Eel River Bridge. During INDOT's inspection of the Eel River Bridge in November 2011, applying these more rigorous inspection techniques, failed gusset plates and a close-to-failure floor beam were identified, resulting in closure of the bridge. In December 2011, INDOT completed an expedited repair that allowed the structure to reopen, although it still required a more permanent repair. On July 31 and August 1, 2012, Parsons performed an in-depth inspection to determine the scope of the rehabilitation effort. During that inspection, Parsons identified additional concerns regarding the condition of the bridge, including serious deterioration of additional gusset plates and bottom chord splice plates. Based on these findings, Parsons requested the bridge be closed until additional repairs could be designed and implemented. The bridge was closed July 31, 2012 and reopened November 2, 2012 after the repair was complete.

The 2011 and 2012 inspections identified structural deficiencies that were far more serious than those identified previously. During each of the closures numerous complaints from the public and businesses were received due to the long (21.9 miles) detour route. This bridge carries more than 3,300 vehicles per day and is an arterial route and part of the National Truck Network. Based on the public's negative response to the detour during those closures INDOT determined that it would be prudent to select an option that requires no (or very limited) closure. The severity of the deterioration and need to minimize closures led INDOT to reconsider the appropriateness of rehabilitation and reevaluate all alternatives, which is the purpose of this document.

II. EXISTING STRUCTURE DATA

This section provides a summary of the structural and geometric features of the existing SR 46 bridge over the Eel River.

A. Identification/History

Bridge No.	046-11-01316C
NBI Number	017050
Project Location	SR 46 over the Eel River, Clay County, INDOT Crawfordsville District
Designation No.	0800910
Year Built	1933
Years Repaired	1977, 2011, 2012
Most Recent Field Inspection Date	5/1/2014

Average Daily Traffic (ADT)/Year of ADT	3,310 (2011) / 4,071 (2034)
Percentage of Commercial Vehicles	9%
Low volume road?	No
Functional Classification	Rural Minor Arterial
Detour Length	21.9 miles
Load Rating	14 tons
Sufficiency Rating	7.0
National Register of Historic Places Status	Listed
Historic Bridge Prioritization Status	Select

B. Structure/Dimensions

Surface Type	1 ½" modified concrete overlay placed on a 6 ½" concrete deck (1977)
Out to Out of Copings	25'-0"
Out to Out of Bridge Floor	402'-4"
Clear Roadway Width	24'-0"
Number of Lanes on Structure	2
Skew	0 degrees
Type of Superstructure	Parker steel through truss
Spans	2 – 198'-0" each
Type of Substructure/Foundation	End bents are reinforced concrete wall on spread footings; Intermediate pier is a solid reinforced concrete wall on piles
Seismic Zone	Zone 1

C. Appurtenances

Bridge Railing	C6 x 8.2 steel channel handrail, 2'-10 ¾" height
Curbs	Concrete 6" wide by 5" high, both sides
Sidewalks	None
Utilities	Overhead electric to south; Buried fiber optic to north
Railroad	None

D. Approaches

Roadway Width	24'-0"
Surface Type	Asphalt over concrete
Guardrail	Steel W-beam, class D-S
Guardrail End Treatment	Curved terminals on the west approach, type OS on the east approach

III. EXISTING CONDITIONS

This section summarizes the condition of the bridge's structural elements. Except where noted, the information below was obtained from the May 1, 2014 *Bridge Inspection Report* (see

Appendix D-2) prepared by INDOT, the most recent INDOT inspection report available. Representative photos from the Inspection Report are provided in Appendix B.

The numerical or condition ratings assigned to each bridge element are on a scale from 0 through 9 in accordance with the Federal Highway Administration's *Recording and Coding Guide for the Inventory and Appraisal of the Nations Bridges*. The condition ratings are as follows:

9	Excellent or new condition
8	Very good condition—no problems noted
7	Good condition—some minor problems
6	Satisfactory condition—structural elements show some minor deterioration
5	Fair condition—all primary structural elements are sound but have minor section loss, cracking, spall or scour
4	Poor condition—advanced section loss, deterioration, spall or scour
3	Serious condition—loss of section, deterioration, spall or scour have seriously 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—Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but repairs may put back into light service
0	Failed—out of service and beyond repair

A. Roadway Geometrics

State Road 46 is on Indiana's "3R" (Resurfacing, Restoration, and Rehabilitation) System and it is not anticipated that the route would require any change in that status in the next 25 years. 3R design criteria, as outlined in Chapter 55 and Figure 55-3A of the *Indiana Design Manual*, are appropriate for the existing bridge and approaches and would apply if the bridge were rehabilitated. If the bridge is replaced, "4R" (Resurfacing, Restoration, Rehabilitation, and Reconstruction) design criteria, provided in Chapter 53 and Figure 53-2 would apply. The table below shows the Level 1 design criteria (3R) as well as the bridge's existing dimensions. Level 1 criteria are those that are the most critical indicators of a highway's safety and serviceability.

SR 46 runs due east-west across most of Clay County, with very few curves. The bridge lies within the tangent section between a slight reverse curve (radii of 8,596 and 11,458) with a computed design speed at or above the posted 55 mph speed limit. The approach roadway is generally flat to either side of the bridge, with grades less than 1%. All curves meet the minimum design speed of 55 mph based on Figures 43-3A(3) (horizontal), 44-3A (crest curves), and 55-4A (sag curves) of the *Indiana Design Manual*.

TABLE 1: LEVEL 1 DESIGN CRITERIA AND EXISTING BRIDGE VALUES

Criteria	Minimum Design Criteria (1)	Existing Value	Meets Standard	Possible to Reconstruct to Standard
Travel Lane Width	12’	11’	No	Yes(2)
Usable Shoulder	6’	1’	No	No
Paved Shoulder	2’	1’	No	No(2)
Cross Slope	2%	1.5%	No	No(3)
Structural Capacity	HS-20	H-20	No	No
Clear Road Width	39’4”(4)	24’0”	No	No
Vertical Clearance	14’	14’-8”56)	Yes	N/A

(1) *Indiana Design Manual*, Chapter 55 and Figure 55-3A
(2) If travel lanes were marked at 12’, the usable shoulder width on the bridge would be 0. It is not feasible to widen a through truss bridge without replacing nearly all of the structural components with larger, stronger members.
(3) This truss is unlikely to be able to support additional dead load from increased deck thickness without decreasing the live load capacity.
(4) This is based on two 12’ travel lanes, 7’ shy line offset distance and 8” barrier offset either side.
(5) This clearance has been obtained by removing the lower sway bracing, which has impacted the historic material integrity of the bridge.

B. Bridge Deck

The deck is in overall satisfactory condition. The wearing surface has transverse cracking over top of every floor beam along with longitudinal cracking. There are a total of 31 patches in the wearing surface, numerous areas of delamination, and several spalls. The curbs exhibit vertical cracking and require repair. Several of the downspouts have rusted off entirely.

TABLE 2: BRIDGE DECK CONDITION RATINGS

	Condition Rating
Wearing Surface	5
Deck Underside	6
Curbs	6
Copings	6
Railings	5
Painted Lines	5
Drains	7
Downspouts	4
Joints	6
Deck (overall)	**6**

C. Superstructure

The deteriorated condition of the superstructure has required two closures of the bridge in the past three years. During an inspection of the bridge by INDOT in November 2011, failed gusset plates and a close-to-failure floor beam were identified, resulting in a rating of 1 (“Imminent Failure”) and closure of the bridge. In December 2011, INDOT completed an expedited repair that allowed the structure to reopen, although it still had an overall rating of 4 (“Poor”) and required a more permanent repair. On July 31 and August 1, 2012, Parsons performed an inspection to determine the scope of the rehabilitation effort (see Appendix D-1). During that inspection, Parsons identified additional concerns regarding the condition of the bridge and requested the bridge be closed until an additional expedited repair could be designed and

implemented. The bridge was closed July 31, 2012 and reopened November 2, 2012 after the repair was complete.

Following these repairs, the condition of the bridge has been reevaluated. The stringers are in Fair condition with minor section loss and continued rusting. Most of the floor beams have some section loss, with individual beams exhibiting section loss ranging from 10-50%. Several of the lower bracing laterals have section loss of 50% or more. Vertical truss members have minor section loss and several members have been damaged by collision. Nearly all steel members show some amount of rusting and/or minor section loss. The lower portion of all sway bracing was removed due to continued collision damage (Appendix B, Photos 26-27). Every gusset plate shows some section loss, while some exhibit significant or complete section loss resulting in a condition rating of 1 ("Imminent Failure"). The most serious of these gusset plate deficiencies were addressed by the temporary repair, which left the gusset plates in place, but secured the structure through a temporary retrofit. The paint is failing in many areas and was rated as Poor. Photos 20-36 in Appendix B show the generally deteriorated nature of the superstructure.

The 2012 repair designed by Parsons (Appendix B, Photo 37) is anticipated to have a service life of a minimum of 5 years (2017). Following that repair, and based on the findings of Parsons' 2012 inspection, the superstructure condition was given a rating of 3 in its 2013 inspection (see Appendix D-2). INDOT continues to inspect this bridge annually to monitor its condition.

TABLE 3: SUPERSTRUCTURE CONDITION RATINGS

	Condition Rating		Condition Rating
Bearings	5	Gusset Plates	1
Stringers	5	Stay/Batten Plates	4
Floor Beams	4	Lacings	4
Knee Braces	N/A	Rivets	5
Trusses	4	Bolts	5
Verticals	4	Splice Plates	5
Diagonals	6	Brackets	6
Upper Chords	6	Pins	5
Lower Chords	4	Nuts	6
Upper Bracings	6	Collision Damage	5
Portals	4	Alignment of Members	6
Top Laterals	6	Deflections	6
Lateral Strut	6	Vibrations	6
Sway Bracing	4	Impact	6
Lower Bracing Laterals	3	Noise	6
Connection Plates	3		
Superstructure (overall)	**3**		
Paint	**4**		

D. Substructures and Foundations

The substructure is in overall Good condition with some cracking and spalling identified. The river flows from north to south and the channel runs along the west face of the center pier. Originally, the river channel was located under the east span of the bridge. However, due to the high velocity of the river, it has migrated to the west, eroding and destabilizing the channel bank, causing large trees to fall into the river. Today, during a Q100 storm, a rain event that has a 1 percent chance of occurring in a given year, water overtops the west bank by 5000 feet and

causes approximately 2 feet of backwater (Appendix B, Photos 16-17), During Parsons' 2012 inspection, significant erosion was noted on the west bank under the bridge. The calculated scour depths exceed the pier footing depth and it is likely that within 20 years the west abutment and approach embankment will become unstable. Without proper bank protection, the end bent would eventually be undermined and the bridge would require closure.

The lowest point of the existing bridge is located at approximately elevation 574.05 feet above sea level. The Q_{100} for this bridge is 573.00 above sea level. The *Indiana Design Manual* requires a minimum of 2 feet of freeboard, clearance between the Q_{100} and the bottom of the bridge, to allow for passage of ice and debris.

TABLE 4: SUBSTRUCTURE AND CHANNEL CONDITION RATINGS

	Condition Rating		Condition Rating
Abutments		Channel	
Bridge Seat	7	Scour upstream	7
Backwall	7	Scour downstream	6
Breastwall	7	Drift	7
Wing Walls	5	Vegetation	7
Scour	7	Channel Change	7
Erosion/Undermining	6	Adequacy of Opening	7
Settlement	7	Channel Protection	5
Intermediate Pier		Waterway Adequacy	6
Pier Cap	7	**Channel (overall)**	**5**
Column	7		
Erosion/Undermining	7		
Scour/Undermining	7		
Settlement	7		
General			
Concrete	6		
Debris on Bridge Seat	7		
Substructure (overall)	**7**		

E. Approaches

The roadway approaches are in overall good condition following a road resurfacing project approximately 10 years ago (Appendix B, Photos 2, 3, and 6).

TABLE 5: APPROACH CONDITION RATINGS

	Condition Rating
Alignment	8
Approach Slab	7
Approach Guardrail	7
Approach Pavement	7
Approach Shoulders	7
Approach (overall)	**7**

IV. PURPOSE AND NEED

The purpose of this project is to provide a safe and structurally sufficient bridge to carry SR 46 over the Eel River.

The primary need for the project is to provide a safe and structurally sufficient bridge to carry SR 46 over the Eel River, one that meets legal structural requirements for an arterial route on the National Truck Network. The existing bridge was designed to carry vehicles up to 20 tons; due to the structure's deterioration, current loads are limited to 14 tons. The nature and volume of existing and proposed traffic on SR 46 necessitates that the bridge be capable of safely carrying modern highway loadings (36 ton vehicles) including commercial vehicles, grain haulers, school buses, and emergency vehicles. The SR 46 bridge has been closed to traffic twice—once in 2011 and once in 2012—due to an 'imminent failure' condition of fracture critical components discovered during inspections by INDOT and Parsons. Expedited repairs were made on both occasions sufficient to reopen the bridge to traffic; however much more extensive reconstruction would be needed for the bridge to remain in long-term service. The bridge is considered structurally deficient and has a sufficiency rating of 7.0 out of 100.

A secondary need for the project is for improvements to the hydraulic capacity of the bridge and implementation of scour countermeasures. The high velocity of the river has caused it to migrate to the west, eroding and destabilizing the channel bank; over time scour could undermine the bridge abutment. Additionally, the bridge does not meet freeboard requirements, placing it at risk for damage from debris.

In addition to this need, other desired outcomes of the project include:

- A bridge that provides standard lane widths and shoulders and can safely accommodate agricultural equipment;
- An improved intersection at CR 475 East that provides sufficient sight distance;
- Guardrail transitions and end treatments that meet current standards; and
- A bridge that is not subject to frequent or long-term closures for construction, maintenance, or inspection due to the lack of safe, efficient alternative routes and high user costs.

Alternatives meeting this purpose and need will be weighed based on their ability to balance feasibility, cost-effectiveness, and environmental impacts.

V. ALTERNATIVES

Alternatives for this project were developed in accordance with INDOT's Historic Bridge PA PDP and include no build, rehabilitation, and replacement options, with and without relocation of the existing bridge. This analysis also meets the requirements of FHWA's *Programmatic Section 4(f) Evaluation and Approval for FHWA Projects that Necessitate the Use of Historic Bridges* (Nationwide Programmatic Section 4(f) Evaluation). Like the Historic Bridge PA PDP, this national agreement provides a framework for the evaluation of alternatives that avoid the use of the historic bridge; alternatives to be evaluated include: do nothing (i.e., no build), build on new location without using the old bridge, and rehabilitation without affecting the historic integrity of the bridge.

As stipulated in the Historic Bridge PA, an Alternatives Analysis was developed in accordance with INDOT's *Historic Bridge Alternatives Analysis Layout* (see Appendix I). Those alternatives satisfy the requirements of the Nationwide Programmatic Section 4(f) Evaluation as follows:

Nationwide Programmatic Alternative	Historic Bridge PA PDP Alternative
Do Nothing	No Build (Alternative 1)
Build on new location without using the old bridge	One Way Pair (Alternative 3) Bypass (Alternative 4)
Rehabilitation without affecting historic integrity	Rehabilitation (Alternative 2)

As described above, Section 4(f) and the INDOT Historic Bridge PA PDP require the systematic evaluation of alternatives for this project. The alternatives analysis must prove why each alternative either is or is not feasible and prudent, and it should document the justification for the decision to proceed with the preferred alternative. The regulations state that a potential avoidance alternative is not "feasible" if it cannot be built as a matter of sound engineering judgment (23 CFR 774.17), it is not possible to engineer, design and build. The term "prudent" means there are no unique problems or unusual factors involved with the use of such alternatives. Per 23 CFR 774.17, an alternative is not prudent if:

- It compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need;
- It results in unacceptable safety or operational problems;
- After reasonable mitigation, it still causes:
    - Severe social, economic, or environmental impacts;
    - Severe disruption to established communities;
    - Severe disproportionate impacts to minority or low income populations; or
    - Severe impacts to environmental resources protected under other Federal statutes;
- It results in additional construction, maintenance, or operational costs of an extraordinary magnitude;
- It causes other unique problems or unusual factors; or
- It involves multiple factors that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.

The Historic Bridge PA PDP establishes the criteria for determining feasibility and prudence for projects involving historic bridges in Indiana. The Historic Bridge PA PDP is available at: http://www.in.gov/indot/2531.htm.

A. Alternative 1: No Build

Alternative Description

The No Build alternative would make no improvements to this bridge at this time (Appendix A, Figure 5). INDOT would continue its current inspection program to identify structural deficiencies and would address issues as required. As described in Section III above, the expedited repair implemented by INDOT in 2012 has an anticipated minimum lifespan of five years. Therefore, it is anticipated that sometime in 2017 or later, the bridge would require a permanent solution or would need to be closed to traffic. INDOT would continue to monitor the structure to ensure the safety of motorists.

Because of the age and condition of this structure, it is impossible to anticipate the cost of repairs that would be needed or when the bridge would require closure.

Compliance with Design Standards

The No Build Alternative would make no improvements to the structure, leaving all design elements in their current state. As shown in Table 6, the bridge does not meet INDOT Design Criteria for travel lane width and shoulder width on the bridge and approaches, clear roadway width and structural capacity on the bridge, and cross slope on the approaches.

TABLE 6 - DESIGN CRITERIA FOR ALTERNATIVE 1

Design Element	Minimum Design Criteria (1)	Existing Condition	Proposed Condition	Level 1 Design Exception Required
Bridge Features				
Travel Lane	12’	11’	11’	Yes
Shoulder	6’ (minimum)	1’	1’	Yes
Structural Capacity	HS-20	H-20	H-20	Yes
Clear Roadway Width	40’	24’	24’	Yes
Vertical Clearance	14’	14’-8”(2)	14’-8”	No
Roadway Features				
Travel Lane	12’	11’	11’	Yes
Shoulder Width	6’	1’	1’	Yes
Stopping Sight Distance at Vertical Curve	495’	1,124’	1,124’	No
Maximum Grade	5%	0.59%	0.59%	No
Through Lane Cross Slope	2%	1.5%	1.5%	Yes

(1) *Indiana Design Manual*, Chapter 55 and Figure 55-3A
(2) Vertical clearance has been achieved through the removal of the lower sway bracing.

Hydraulics

The No Build Alternative would make no changes to the elevation of the bridge, the substructure, or the channel. As such, this alternative would not meet the 2-foot freeboard requirement. Nor would it include any scour countermeasures, leaving the west abutment at risk.

Historic Bridge Effects

This alternative would not alter the historic elements of the structure. The lower sway bracing, which was removed by INDOT, would remain as-is. However, the bridge would continue to deteriorate until closure was required.

Right-of-Way

The No Build alternative would require no right-of-way.

Utilities

The No Build alternative would have no impact on existing utilities in the corridor.

Maintenance of Traffic

Because there is no construction associated with this alternative, no maintenance of traffic plan is required. However, if, as a result of its continued deterioration, the bridge was closed temporarily for repairs or permanently, the official detour would use SR 59 and SR 246 (see Appendix C, page 53), adding 7 miles to a through trip. SR 246 is a narrow, winding rural roadway not well suited to carry 159 commercial vehicles a day. When the bridge was closed in 2011 due to the condition of the bridge, the district received complaints and safety concerns from the public about the number of trucks on SR 246. When SR 46 was closed again in 2012, commercial traffic was routed along SR 59, I-70 and US 231 through Spencer, an additional approximately 22.5 miles. The district again received complaints from users and elected officials due to the additional distance. There is no adequate local road detour. CR 200 crosses the Eel

River to the southwest, but doesn't afford significant time or mileage savings over the SR 59 and SR 246 official state detour.

Environmental Issues

This alternative would cause no direct environmental impacts. If the bridge required closure for a long duration, the diversion of traffic could have traffic-related impacts on other communities along the alternative route(s) that vehicles utilized.

Cost

The No Build Alternative does not include any improvements and, therefore, has no cost. As noted above, it is not possible to estimate the costs associated with any repairs that would be required or the user costs associated with any temporary or permanent closures. If the structure were closed for a long duration (or permanently) it may be necessary to make improvements to other roadways in the area to improve access or to allow them to accommodate the additional traffic.

Section 4(f) Evaluation

The No Build Alternative would make no modifications to the existing bridge; therefore **it would avoid a use of the Section 4(f) resource**. However, it is possible that, should no improvements be made and the bridge fall into such disrepair that it loses its historic integrity, a use could occur at that time.

The No Build Alternative requires no design or construction; therefore, **it is a feasible alternative**. It would, however, retain the non-standard features identified above and the hydraulic capacity would remain insufficient. Further, this alternative does not provide a safe, reliable transportation facility for the SR 46 corridor. **It does not, therefore, meet the project's purpose and need** and is **not a prudent alternative**. It will, however, be retained throughout the project's development for comparison purposes as required by the National Environmental Policy Act.

B. Alternative 2: Rehabilitation for Continued Vehicular Use

Alternative Description

The scope of the rehabilitation described here is based on visual inspection and engineering judgment only. A detailed three-dimensional model could be used to refine the extent of improvements if this alternative was to be investigated further. This alternative would undertake a major rehabilitation of the existing bridge (Appendix A, Figure 6) including:

- Replacement of approximately 80% of lower chord members;
- Replacement of all gusset plates at the end bents and center pier;
- Replacement of approximately 50% of other gusset plates;
- Replacement of approximately 75% of splice plates, cover plates, and batten plates;
- Replacement of approximately 50% of the lower lateral cross bracing and corner support angles;
- Replacement of approximately 25% of vertical members;
- Replacement of the floor beams at each end bent and pier;
- Replacement of the existing bridge deck;
- Replacement of exterior stringers (once the deck is removed additional stringers may be identified for replacement);
- Reinstallation of portal and sway bracing (will be thicker, more compact section to allow vertical clearance requirement to be met);

- Replacement of all bridge railing;
- Replacement of rivets with round-headed bolts where members are replaced;
- Cleaning and painting of the entire bridge; and
- Patching of concrete on the abutments and center pier.

This alternative would be expected to extend the life of the structure by approximately 25 years. If the work was completed in 2016, the bridge would require additional rehabilitation in 2041, when major remaining elements would be 108 years old.

On the east side of the bridge, the approach roadway would be reconstructed for a length of approximately 300 feet to provide wider shoulders, add guardrail, and modify the driveway entrance to improve sight distance. On the west side, the reconstruction would also include relocating the intersection of CR 475 E and SR 46 approximately 200 feet to the west in order to improve the sight distance for vehicles entering from CR 475 E.

Compliance with Design Standards

This alternative would be designed to meet 3R standards as defined in the *Indiana Design Manual*. Due to the nature of truss bridges, it is not possible to address deficiencies related to the width of the structure without completely reconstructing the bridge (see Table 7). As such, design exceptions for lane, shoulder, and clear roadway width would be required. The bridge was originally designed with an H-20 structural capacity (20-ton truck) and the rehabilitation would restore this capacity. However, current design standards require accommodation for HS-20 structural capacity (36 ton truck); therefore, this alternative would require a Level 1 design exception from INDOT and FHWA. Based on this bridge's location on a National Truck Route and the number of heavy trucks known to use the bridge, INDOT and FHWA have indicated that this design exception would not be approved.

Hydraulics

Alternative 2 would make no changes to the elevation of the bridge, the substructure, or the channel. As such, this alternative would not meet the 2-foot freeboard requirement. It would include the installation of scour countermeasures, such as riprap, at the west abutment. However, these would require continued maintenance and, while it would protect the pier, it would not prevent the continued scouring of the west bank of the river.

Historic Bridge Effects

No formal determination has been made as to whether the improvements described above would meet the *Secretary of the Interior's Standards for Rehabilitation*. However, it is anticipated that structural materials would be replaced in-kind and the integrity of the truss would be retained. Rivets would be replaced with round-headed bolts to retain visual similarity. Sway bracing would be re-installed – with some modifications – so as to not recreate the clearance issues that led to its removal.

Right-of-Way

Alternative 2 would require approximately 2.0 acres of new right-of-way from adjacent properties to allow for the improvements to the bridge, its approaches, and the realignment of CR 475 E.

Utilities

Overhead utility lines parallel the roadway to the south. Alternative 2 would require the relocation of approximately 2 utility poles as part of the realignment of CR 475 E.

TABLE 7 - DESIGN CRITERIA FOR ALTERNATIVE 2

Design Element	Minimum Design Criteria (1)	Existing Condition	Proposed Condition	Level 1 Design Exception Required
Bridge Features				
Travel Lane	12’	11’	11’	Yes
Shoulder	6’ (minimum)	1’	1’	Yes
Structural Capacity	HS-20	H-20	H-20	Yes
Clear Roadway Width	40’	24’	24’	Yes
Vertical Clearance	14’	14’-8”(2)	14’-8”	No
Roadway Features				
Travel Lane	12’	11’	12’	No
Shoulder Width	6’	1’	8’	No
Stopping Sight Distance at Vertical Curve	495’	415’	501’	No
Maximum Grade	5%	3.7%	3.7%	No
Through Lane Cross Slope	2%	1.5%	2%	No

(1) *Indiana Design Manual*, Chapter 55 and Figure 55-3A
(2) Vertical clearance has been achieved through the removal of the lower sway bracing.

Maintenance of Traffic

Rehabilitation of the existing bridge would require the full closure of SR 46 for approximately 9 months. During this time, the posted detour would use SR 59 and SR 246 (see Appendix C, page 53), adding 7 miles to a through trip. This is the same detour route used during the closure in 2011. As noted previously, SR 246 is a narrow, winding rural roadway not well suited to large trucks, resulting in numerous complaints from the public when this was used as a detour route during the 2011 repair project.

Environmental Issues

Environmental surveys, including the Waters of the U.S. Determination Report, are still in progress; therefore, this assessment is preliminary and qualitative. Reconstruction work on the approaches to the bridge would potentially cause minor impacts to a stream located in the southeast quadrant of the bridge. The jurisdictional status of other water features in the area has not been determined. Minimal tree clearing may also be required. Impacts could potentially be minimized or eliminated during final design through the use of steeper slopes or retaining walls. Impacts to Waters of the US would be mitigated as required through the Section 404/401 permitting process. Potential impacts to other resources, including threatened and endangered species and the Eel River floodway will be reported in the project’s Categorical Exclusion (CE) document and mitigated as appropriate. This alternative would also result in traffic-related impacts on other communities along the alternative route(s) that vehicles utilized during construction.

Cost

Alternative 2 would cost $4,838,780 to construct and would have user costs[2], resulting from time and operating expenses associated with the longer, slower detour of $4,848,363, for a total project cost of $9,687,143. Additional cost details are provided in Appendix C, pages 1-4 and pages 49-50. Due to its fracture critical nature, the bridge would continue to be inspected at one-year intervals (instead of the typical two-year interval for non-fracture-critical bridges), requiring expenditures not captured above.

Construction Cost*	$4,768,780
ROW/Utilities	$70,000
Project Cost	**$4,838,780**
User Costs	$4,848,363
TOTAL COST	**$9,687,143**

*Includes bridge rehabilitation and roadway improvements

Section 4(f) Evaluation

Pending a formal assessment of whether the extent of the rehabilitation would degrade the integrity of the historic structure, **this alternative would avoid a use of the Section 4(f) resource**.

It would be possible to design and build Alternative 2; therefore, **it is a feasible alternative**.

Alternative 2 would rehabilitate the existing bridge, but the bridge's H-20 load rating would not meet the structural capacity needs of the corridor. The alternative would also fail to address the secondary need: the freeboard would remain insufficient, and the location of the west abutment would leave it subject to scour and the need for countermeasure maintenance. Therefore, **this alternative does not meet the project's purpose and need**. The Individual Review for this bridge as part of the Historic Bridge Inventory Select/Non-Select analysis recognized that this bridge could not be rehabilitated to meet current applicable design standards and that design exceptions would not be appropriate for this bridge. As a result, the Individual Review designated the bridge Select for Non-Vehicular Use, indicating it may be better suited for bicycle and/or pedestrian use than for vehicles.

Because the bridge would be closed for approximately 9 months during construction, this alterative would result in user costs estimated at almost $4.9 million. The Historic Bridge PA PDP establishes that if the cost of rehabilitation is equal to or greater than 80% of the replacement cost, it may not be suitable for rehabilitation. Alternative 2 exceeds this threshold when compared to several of the replacement alternatives (see Table 14).

Based on this evaluation, Alternative 2 is **not a prudent alternative**.

Measures to Minimize Harm

In accordance with the requirements of the Nationwide Programmatic Section 4(f) Evaluation, Alternative 2 would, to the extent possible, preserve the historic integrity of the existing bridge. As plans for the rehabilitation are developed, INDOT would coordinate with SHPO to determine if additional documentation, in accordance with HAER standards, is appropriate.

[2] User costs were included in the evaluation due to the concerns raised by businesses and the public regarding safety and delays during the short-term closures associated with the 2011 and 2012 repair projects. User costs were calculated based on the methodology provided in the *Indiana Design Manual*, Section 81-4.02(2). User cost calculations for each alternative are provided in Appendix C.

C. Alternative 3: Rehabilitation for Continued Vehicular Use/One-Way Pair

Alternative Description

This alternative would construct a new bridge parallel to the existing bridge and rehabilitate the existing bridge, with each structure carrying a single lane of traffic. This alternative includes constructing a new bridge approximately 20' to the south of the existing structure (Appendix A, Figure 7) to carry eastbound traffic, retaining westbound traffic on the existing structure. To accommodate this directional split, the eastbound SR 46 roadway would shift to the south starting approximately 0.5 mile west of the bridge, travel across the new bridge over the Eel River, and re-join the existing SR 46 alignment approximately 0.25 mile east of the river. Due to hydraulic requirements, the new bridge would be a 2-span, 400-foot long structure, likely utilizing steel beams in order to accommodate the span lengths, with an estimated service life of 75 years. In accordance with the *Historic Bridge Alternatives Analysis Layout*, the new bridge would be constructed to accommodate future 2-way travel, for the time when the existing bridge can no longer be maintained.

To allow for the additional structure depth of a new bridge and to provide a minimum 2 feet of freeboard, the profile of the existing roadway would need to be raised approximately 8 feet.

The existing bridge would be rehabilitated in the same way described above for Alternative 2, with the same service life expectations (25 years).

Compliance with Design Standards

The new bridge would be designed to meet 4R standards as defined in the *Indiana Design Manual*, while the existing bridge would be rehabilitated to 3R standards, as shown in Table 8.

TABLE 8 - DESIGN CRITERIA FOR ALTERNATIVE 3

Design Element	Minimum Design Criteria	Existing Condition	Proposed Condition(1)	Level 1 Design Exception Required
Bridge Features – Existing Bridge (2)				
Travel Lane	12’	11’	12’	No
Shoulder	6’ (minimum)	1’	6’	No
Structural Capacity	HS-20	H-20	H-20	Yes
Clear Roadway Width	40’	24’	24’	No
Vertical Clearance	14’	14’-8”(3)	14’-8”	No
Bridge Features – New Bridge (4)				
Travel Lane	12’	11’	12’	No
Shoulder	6’ (minimum)	1’	8’	No
Structural Capacity	HL-93	H-20	HL-93	No
Clear Roadway Width	40’	24’	40’	No
Vertical Clearance	14’	14’-8”(3)	N/A (5)	No
Roadway Features (1)				
Travel Lane	12’	11’	12’	No
Shoulder Width	6’	1’	10’	No
Stopping Sight Distance at Vertical Curve	495’	415’	501’	No
Maximum Grade	5%	6.74	7.16%	Yes
Through Lane Cross Slope	2%	2%	2%	No

(1) Proposed conditions are for the existing bridge (carrying only one lane); the new bridge would meet all applicable design standards.
(2) *Indiana Design Manual*, Chapter 55 and Figure 55-3A
(3) Vertical clearance has been achieved through the removal of the lower sway bracing.
(4) *Indiana Design Manual*, Chapter 53 and Figure 53-2
(5) The new bridge will have no vertical obstructions.

The new bridge would meet all applicable design criteria. With only one lane utilizing the 24-foot wide bridge, the rehabilitated existing bridge would meet design standards for lane width and shoulders. The existing bridge was originally designed with an H-20 structural capacity (20-ton truck) and the rehabilitation would restore this capacity. However, current design standards require accommodation for HS-20 structural capacity (36 ton truck); therefore, this alternative would require a Level 1 design exception from INDOT and FHWA. Based on this bridge’s location on a National Truck Route and the number of heavy trucks known to use the bridge, INDOT and FHWA have indicated that this design exception would not be approved.

The approach roadways would meet all design criteria, except for maximum grade at the eastern end of the project as the roadway approaches Bowling Green. This grade exists today and correcting it would be cost-prohibitive.

Hydraulics

The new bridge would be constructed with a low elevation of 576.00 feet above sea level, providing more than 3 feet of freeboard above the Q100 elevation (573.00 feet above sea level). Alternative 3, however, would make no changes to the elevation of the existing bridge, its substructure, or the channel. As such, the rehabilitated existing bridge would not meet the 2 foot freeboard requirement. Further, while a detailed hydraulic analysis has not been

completed, preliminary evaluation indicates that the new bridge's west abutment would be required to line up with the existing bridge's abutment. Therefore, it would be subject to the same scour issues experienced by the existing bridge and would require regular maintenance of the installed countermeasures (likely riprap). As per the Historic Bridge PA, the existing bridge would be maintained for a minimum of 25 years; however, should it be removed after that time, the new bridge would remain in its hydraulically undesirable location for the rest of its service life (75 years).

Historic Bridge Effects

No formal determination has been made as to whether the improvements described above would meet the *Secretary of the Interior's Standards for Rehabilitation*. However, it is anticipated that structural materials would be replaced in-kind and the integrity of the truss would be retained. Rivets would be replaced with round-headed bolts to retain visual similarity. Sway bracing would be re-installed – with some modifications – so as to not recreate the clearance issues that led to its removal.

Right-of-Way

Alternative 3 would require approximately 13.9 acres of new right-of-way from 7 parcels to allow for the construction of the new eastbound bridge and approach roadways and the realignment of CR 475 E.

Utilities

Overhead utility lines parallel the roadway to the south. Alternative 3 would require the relocation of approximately 8 utility poles.

Maintenance of Traffic

During construction of the new bridge and approaches traffic would be maintained on the existing SR 46 roadway and bridge. All traffic would then be shifted to the new bridge during the rehabilitation of the existing bridge. No disruption to SR 46 traffic is anticipated except at the location where the new road is tied into the existing one. At no time is it anticipated that SR 46 would be completely closed to traffic.

Environmental Issues

Environmental surveys, including the Waters of the U.S. Determination Report, are still in progress; therefore, this assessment is preliminary and qualitative. Construction of the new bridge to the south would potentially cause moderate impacts to a stream located in the southeast quadrant of the bridge and would require moderate tree clearing. The jurisdictional status of other water features in the area has not been determined. Impacts to Waters of the US would be mitigated as required through the Section 404/401 permitting process. Potential impacts to other resources, including threatened and endangered species and the Eel River floodway will be reported in the project's CE document and mitigated as appropriate.

Cost

Alternative 3 would cost $11,311,843 to construct and would have user costs, resulting from time and operating expenses associated with reduced speeds through the construction zone of $81,081, for a total project cost of $11,392,924. Additional cost details are provided in Appendix C, pages 5-10 and page 52. Due to its fracture critical

Construction Cost*	$11,037,843
ROW/Utilities	$274,000
Project Cost	**$11,311,843**
User Costs	$81,081
TOTAL COST	**$11,392,924**

*Includes rehabilitation of existing bridge, the new bridge, and roadway improvements

nature, the bridge would continue to be inspected at one-year intervals (instead of the typical two-year interval for non-fracture-critical bridges), requiring expenditures not captured above.

Section 4(f) Evaluation

Pending a formal assessment of whether the extent of the rehabilitation would degrade the integrity of the historic structure, **this alternative would avoid a use of the Section 4(f) resource**.

It would be possible to design and build Alternative 3; therefore, **it is a feasible alternative**.

Alternative 3 would rehabilitate the existing bridge, but the existing bridge's H-20 load rating would not meet the structural capacity needs of the corridor. The project would also fail to address the secondary need: the freeboard would remain insufficient, and the location of the west abutment would leave it subject to scour and the need for countermeasure maintenance. Further, the new bridge's west abutment would be located in a manner that would, even after the existing bridge was removed, leave it subject to continued scour maintenance for its life, likely 50 or more additional years. Therefore, **this alternative does not meet the project's purpose and need**. The Individual Review for this bridge as part of the Historic Bridge Inventory Select/Non-Select analysis recognized that this bridge could not be rehabilitated to meet current applicable design standards and that design exceptions would not be appropriate for this bridge. As a result, the Individual Review designated the bridge Select for Non-Vehicular Use, indicating it may be better suited for bicycle and/or pedestrian use than for vehicles.

Based on this evaluation, Alternative 3 is **not a prudent alternative**.

Measures to Minimize Harm

In accordance with the requirements of the Nationwide Programmatic Section 4(f) Evaluation, Alternative 3 would, to the extent possible, preserve the historic integrity of the existing bridge. As plans for the rehabilitation are developed, INDOT would coordinate with SHPO to determine if additional documentation, in accordance with HAER standards, is appropriate.

D. Alternative 4: Bypass/Non-Vehicular Use

Alternative Description

This alternative includes constructing a new bridge approximately 20' to the south of the existing structure (Appendix A, Figure 8). The alignment of SR 46 would need to be adapted to access this new structure. Starting about 0.5 mile west of the bridge, SR 46 would diverge to the south of the existing alignment and require a reverse curve formation in order to merge back into the existing roadway alignment approximately 0.25 mile east of the bridge. To allow for the additional structure depth of a new bridge and to provide a minimum 2 feet of freeboard, the profile of the existing roadway would need to be raised approximately 8 feet. Due to hydraulic requirements, the new bridge would be a 2-span, 400-foot long structure, likely utilizing steel beams in order to accommodate the span lengths, with an estimated service life of 75 years.

Once complete, all SR 46 traffic would utilize the new structure. The existing bridge would be retained for non-vehicular (pedestrian) use. Given the decreased loading associated with pedestrian use, the extent of rehabilitation would not be quite as extensive as required for vehicular use. The scope of the rehabilitation described here is based on visual inspection and engineering judgment only. A detailed three-dimensional model could be used to refine the extent of improvements if this alternative was to be investigated further. Based on this review, the following improvements are proposed:

- Replacement of approximately 25% of lower chord members;
- Replacement of all gusset plates at the end bents and center pier;
- Replacement of approximately 50% of other gusset plates;
- Replacement of approximately 25% of splice plates, cover plates, and batten plates;
- Replacement of approximately 10% of the lower lateral cross bracing and corner support angles;
- Replacement of approximately 10% of vertical members;
- Replacement of the floor beams at each end bent and pier;
- Replacement of the existing bridge deck;
- Replacement of exterior stringers (once the deck is removed additional stringers may be identified for replacement);
- Reinstallation of portal and sway bracing;
- Replacement of bridge railing;
- Replacement of rivets with round-headed bolts where members are replaced; and
- Cleaning and painting of the entire bridge.

The existing roadway approaches would provide an area for vehicles to pull-off SR 46 and park in order to access the existing bridge. While not included in the current design, a sidewalk or multi-use path could be provided from Bowling Green as well. The unincorporated town of Bowling Green, located approximately 0.25 mile to the east of the existing bridge with a population of approximately 250, is the closest population center and does not commonly draw visitors from other areas.

At a December 4, 2014 meeting with Consulting Parties, a request was made to INDOT to conduct outreach to Clay County and the public to determine the level of interest in retaining the bridge in its current location. On January 29, 2015, INDOT held a public meeting in Bowling Green to provide an overview of the project, including the bridge's condition, the alternatives under consideration, and the potential to relocate the bridge to Brown County. The presentation also included the requirements for a party seeking to take ownership of the bridge. A copy of the materials presented at the meeting, as well as the comments received is provided in Appendix F-7.

The deadline for a party to step forward was originally set as March 30, 2015; however, based on comments received at the meeting and during the comment period, INDOT extended this deadline to the time of the public hearing, currently anticipated for the first week of August 2015, a period of more than six months from the date of the public meeting.

To date, no parties have stepped forward to take responsibility for the structure and retain it in place.

Compliance with Design Standards

The new bridge would be designed to meet 4R standards as defined in the *Indiana Design Manual* as shown in Table 9.

The new bridge would meet all applicable design criteria. The approach roadways would meet all design criteria, except for maximum grade at the eastern end of the project as the roadway approaches Bowling Green. The steep grade exists today and correcting it would be cost-prohibitive.

The structural capacity of the pedestrian bridge is based on an H10 design vehicle, which would accommodate typical maintenance vehicles that may need to utilize the bridge.

Hydraulics

The new bridge would be constructed with a low elevation of 576.00 feet above sea level, providing more than 3 feet of freeboard above the Q100 elevation (573.00 feet above sea level). Alternative 4, however, would make no changes to the elevation of the existing bridge, its substructure, or the channel. As such, the existing bridge, repurposed for pedestrian use, would not meet the 2 foot freeboard requirement. Further, while a detailed hydraulic analysis has not been completed, preliminary evaluation indicates that the new bridge's west abutment would be required to line up with the existing bridge's abutment. Therefore, it would be subject to the same scour issues experienced by the existing bridge and would require regular maintenance of the installed countermeasures (likely riprap). As per the Historic Bridge PA, the existing bridge would be maintained for a minimum of 25 years; however, should it be removed after that time, the new bridge would remain in its hydraulically undesirable location for the rest of its service life (75 years).

TABLE 9 - DESIGN CRITERIA FOR ALTERNATIVE 4

Design Element	Minimum Design Criteria	Existing Condition	Proposed Condition	Level 1 Design Exception Required
New Bridge Features (1)				
Travel Lane	12’	11’	12’	No
Shoulder	10’	1’	10’	No
Structural Capacity	HL-93	H-20	HL-93	No
Clear Roadway Width	44’	24’	44’	No
Vertical Clearance	16.5’	14’-8”(2)	N/A (3)	No
Pedestrian Bridge Features (4)				
Structural Capacity	H-10	H-20	H-10	No
Roadway Features (1)				
Travel Lane	12’	11’	12’	No
Shoulder Width	10’	1’	10’	No
Stopping Sight Distance at Vertical Curve	570’	415’	579’	No
Maximum Grade	3%	2.74%	7.16%	Yes
Through Lane Cross Slope	2%	2%	2%	No

(1) *Indiana Design Manual*, Chapter 53 and Figure 53-2
(2) Vertical clearance has been achieved through the removal of the lower sway bracing.
(3) The new bridge will have no vertical obstructions.
(4) LRFD Guide Specifications for the Design of Pedestrian Bridges

Historic Bridge Effects

No formal determination has been made as to whether the improvements described above would meet the *Secretary of the Interior’s Standards for Rehabilitation*. However, it is anticipated that structural materials would be replaced in-kind and the integrity of the truss would be retained. Rivets would be replaced with round-headed bolts to retain visual similarity and sway bracing would be re-installed.

Right-of-Way

Alternative 4 would require approximately 13.9 acres of new right-of-way from 7 parcels to allow for the construction of the new eastbound bridge and approach roadways and the realignment of CR 475 E.

Utilities

Overhead utility lines parallel the roadway to the south. Alternative 4 would require the relocation of approximately 8 utility poles.

Maintenance of Traffic

During construction of the new bridge and approaches traffic would be maintained on the existing SR 46 roadway and bridge. No disruption to SR 46 traffic is anticipated except at the location where the new road is tied into the existing one. At no time is it anticipated that SR 46 would be completely closed to traffic.

Environmental Issues

Environmental surveys, including the Waters of the U.S. Determination Report, are still in progress; therefore, this assessment is preliminary and qualitative. Construction of the new bridge to the south would potentially cause moderate impacts to a stream located in the southeast quadrant of the bridge and would require moderate tree clearing. The jurisdictional status of other water features in the area has not been determined. Impacts to Waters of the US would be mitigated as required through the Section 404/401 permitting process. Potential impacts to other resources, including threatened and endangered species and the Eel River floodway will be reported in the project's CE document and mitigated as appropriate.

Cost

Alternative 4 would cost $10,180,451 to construct and would have user costs, resulting from time and operating expenses associated with reduced speeds through the construction zone of $81,081, for a total cost of $10,261,532. Additional cost details are provided in Appendix C, pages 11-16 and page 52.

Construction Cost*	$9,906,451
ROW/Utilities	$274,000
Project Cost	**$10,180,451**
User Costs	$81,081
TOTAL COST	**$10,261,532**

*Includes rehabilitation of existing bridge, the new bridge, and roadway improvements

Section 4(f) Evaluation

Pending a formal assessment of whether the extent of the rehabilitation would degrade the integrity of the historic structure, **Alternative 4 would avoid a use of the Section 4(f) resource**.

It would be possible to design and build Alternative 4; therefore, **it is a feasible alternative**.

Alternative 4 would address the project's structural need through the construction of a new bridge to carry vehicular traffic and the existing bridge's rehabilitation. The bridge and roadway would meet nearly all design criteria, with a design exception required only for the grade approaching Bowling Green. It would not, however, address the project's secondary need regarding hydraulic capacity and scour. The existing bridge, repurposed for pedestrian use, would retain its insufficient freeboard, leaving it at risk for damage due to ice or debris, and the location of the west abutment would leave it subject to scour and the need for countermeasure maintenance. Further, the new bridge's west abutment would be located in a manner that would, even after the existing bridge was removed, leave it at risk for continued scour for its life,

likely 50 or more additional years. Therefore, **this alternative does not meet the project's purpose and need**.

Based on the location of the bridge in a sparsely populated area, INDOT and FHWA believe that pedestrian use of the existing bridge would be minimal and provide little value to the general public as a historic site compared to its potential use at other locations. As described below, several groups expressed interest in utilizing the bridge as part of planned, high-demand trail networks. If the bridge was left in place, in the absence of a group taking responsibility for it, INDOT would be responsible for ongoing maintenance (using Federal and State funds) for the next 25 years. At the end of the 25 years, it would likely be removed as INDOT's commitment under the Historic Bridge PA would be satisfied. INDOT and FHWA feel that a higher-use location, where a responsible party has the ability and desire to maintain it far beyond 25 years would be a better use of funds.

INDOT and FHWA held a public meeting on January 29, 2015 to update the community on the project and provide the opportunity for a responsible party to assume responsibility for the bridge at its existing location. A six month period has been provided to allow parties to step forward, however, to date, none have done so. If a responsible party is not identified, prior to approval of this CE document, FHWA will conclude that this alternative is Based on the reasons above, Alternative 4 has been identified as not prudent, unless a responsible party comes forward to assume long-term responsibility for the bridge at its current location in accordance with finding 2d of the Nationwide Programmatic Section 4(f) Evaluation. ***Measures to Minimize Harm***

In accordance with the requirements of the Nationwide Programmatic Section 4(f) Evaluation, Alternative 4 would, to the extent possible, preserve the historic integrity of the existing bridge. As plans for the rehabilitation are developed, INDOT would coordinate with SHPO to determine if additional documentation, in accordance with HAER standards, is appropriate.

E. Alternative 5: Bridge Replacement/Relocation of Historic Bridge

Alternative Description

This alternative includes the construction of a new bridge over the Eel River and relocation of the existing bridge to a new location for use as a pedestrian/bicycle facility. As is the case in any bridge replacement project, there are several options for construction methods and alignment. Five options – or subalternatives – were developed for consideration under this alternative:

- 5A – Bridge Replacement on Existing Alignment – Full Detour
- 5B-S – Bridge Replacement on Existing Alignment – Temporary Bridge to South
- 5B-N – Bridge Replacement on Existing Alignment – Temporary Bridge to North
- 5C-S – Bridge Replacement on New Alignment to South (Preliminary Preferred Alternative)
- 5C-N – Bridge Replacement on New Alignment to North

Each option would provide a new bridge that would provide a safe, reliable, cost-effective structure for vehicles in the SR 46 corridor. The new bridge would be a 3-span, 435-foot long structure, likely utilizing concrete beams, with an estimated service life of 75 years. Each would also relocate the existing historic bridge to a new location where it would be highly utilized and maintained for a minimum of 25 years. The primary differences are in the location of the new bridge, the approach to maintaining traffic during construction, and potential user costs.

Bridge Relocation Options

This alternative would require the identification of a suitable location for the structure, as well as an organization willing to commit to taking ownership and maintenance responsibility. It would also require INDOT, as the bridge's current owner, to pay for the cost to rehabilitate and relocate the structure. The IDNR Division of Outdoor Recreation maintains an email list of individuals and organizations involved in the development and improvement of recreational trails. At INDOT's request, information regarding the existing SR 46 bridge, including dimensions, conditions, and adoption requirements, was distributed to more than 300 people (see Appendix F-1).

Three interested parties responded to IDNR's solicitation: John Bawcum, Friends of the Panhandle Pathway, Inc. (see Appendices F-2 and F-3); Cliff Kunze, Covered Bridge Gateway Trails Association (see Appendix F-4); and Mike List, Indiana State Parks & Reservoirs (see Appendix F-5). The Panhandle Pathway was interested in using the SR 46 bridge (or more likely, one of the spans) to provide a grade-separated trail crossing of SR 14 in Winamac, Indiana. The Covered Bridge Gateway Trails Association expressed interest in relocating the SR 46 bridge as part of a rails-to-trails project in Parke County. The proposal from Indiana State Parks & Reservoirs was to use the bridges at two locations of the Salt Creek Trail, which is under development near Brown County State Park.

INDOT and FHWA reviewed the three requests and determined that the Salt Creek Trail option was the best option for preserving the bridge and in the best interest of the State (see Appendix F-6). The Salt Creek Trail project has been under development for approximately 10 years and, as of this year, one segment is open and three of its four remaining segments (including the one where the bridges would be placed) are fully funded. A Categorical Exclusion (CE) document was completed in 2007 for the entire trail; due to some alignment changes a portion of the trail will be re-evaluated in a new CE document within the next year. The anticipated high usage (10,000 people per year) and the location of one of the bridge spans immediately adjacent to SR 46 at Eagle Park would provide a high level of visibility for the spans. While using the bridge for the Salt Creek Trail project would require separation of the bridge into its two component spans, based on the other responses received and INDOT's past experience with bridge relocation for recreational trails, any other proposal to relocate the bridge would likely do the same.

Since selecting the Salt Creek Trail location as the proposed relocation option, additional investigations and analyses have been conducted in the areas where the two spans would be placed. A hydraulic analysis has been conducted to confirm the requirements for span lengths and location and preliminary field investigations have been conducted to identify potential environmental resources. An approach that would keep the two spans together as part of the Salt Creek Trail was evaluated; however, the topography, hydraulic conditions, and presence of wetlands in the area, make that option impractical. These preliminary investigations confirmed that using the spans at two separate locations was the only practical option.

Because of the bridge's role in the development of Clay County, it would be preferable for the bridge to be relocated within Clay County. However, to date, no organization has come forward with a proposal to take responsibility for the bridge and put it to public use in Clay County. Should such a proposal be made prior to (or at) the project's public hearing (tentatively scheduled for the first week of August 2015), INDOT and FHWA would reevaluate the decision.

The Salt Creek Trail

Under each of the Alternative 5 options (A, B-S, B-N, C-S, and C-N), the existing bridge would be rehabilitated and relocated for use on the Salt Creek Trail, a 2.5-mile multi-use trail

connecting Nashville, Indiana to Brown County State Park, two heavily visited tourist destinations (See Figure 9). The purpose of the trail project is to provide an alternative transportation mode for pedestrians that are currently using State Road 46 to travel to land uses in and between Nashville and Brown County State Park. The conflict between pedestrians and the motoring public is currently unsafe. The trail will reduce traffic congestion between the County's three largest motels and the shops in Nashville by providing pedestrian access rather than visitors driving to the shopping areas. In addition, the trail will provide a safe means of transportation for the youth of Nashville and Brown County, as the trail will connect with the Brown County School Corporation sports facilities.

The trail has been under development for several years, with construction of the first phase breaking ground earlier this year. The project includes two crossings of Salt Creek, approximately 0.7 mile apart from one another. The SR 46 bridge is comprised of two 198 foot long trusses that are structurally independent and are of an appropriate length to span the two Salt Creek crossings. The current cost estimate for the trail project, assuming the construction of new bridges at the two stream crossings, is $5,000,000 with construction to be completed in 2018 or 2019.[3] **When complete, it is anticipated that approximately 10,000 people will use the trail each year.**

While a formal agreement will be developed later in the project process, it is currently anticipated that INDOT, which is obligated under the Historic Bridge PA to ensure the bridge is preserved, will pay to dismantle the existing bridge, replace or rehabilitate any elements that require it, construct new foundations, and install the truss spans in their new locations. It is anticipated that the span to be located adjacent to SR 46 at Eagle Park would be owned and maintained by Brown County, while the span located within Brown County State Park would be owned and maintained by IDNR. Each agency will be required to sign an agreement committing to maintain their respective structures for a minimum of 25 years. However, it is anticipated that, based on the anticipated visitation levels, the bridges would be retained far beyond that minimum. IDNR and Brown County have each submitted a letter of intent to take responsibility for the bridge spans (see Appendix F-8). INDOT has prepared draft Interlocal Agreements to be executed with IDNR and Brown County that will dictate the terms of their obligation to maintain the bridges. These agreements are still being reviewed by all parties involved and may be revised before execution. Agreements with each of the receiving parties must be executed prior to the final approval of this CE document by FHWA.

Compliance with Design Standards

Each of the Alternative 5 options would be designed to meet 4R standards as defined in the *Indiana Design Manual*. None of the options would address the maximum grade on the approach into Bowling Green and a design exception would be required to maintain the existing grade. Design standard compliance details for each option are provided in the sections below.

Hydraulics

Under each Alternative 5 option, the new bridge would be constructed with a low elevation of 576.00 feet above sea level, providing more than 3 feet of freeboard above the Q100 elevation (573.00 feet above sea level). The west abutment of the new, longer structure would be located such that scour would not be a concern.

[3] The trail project is being built in segments as funding becomes available. This cost estimate was developed prior to the availability of the Eel River spans and assumed construction of two new bridges at these locations. As such, the cost estimate for the trail would be reduced by some amount if the Eel River spans were relocated to the trail.

Historic Bridge Effects

No formal determination has been made as to whether the improvements described above would meet the *Secretary of the Interior's Standards for Rehabilitation*. However, it is anticipated that structural materials would be replaced in-kind and the integrity of the trusses would be retained. Rivets would be replaced with round-headed bolts to retain visual similarity and sway bracing would be re-installed. In accordance with Attachment B of the Historic Bridge PA, the rehabilitation plans will be reviewed by SHPO to ensure compliance with the Secretary of Interior's Standards for Rehabilitation and to incorporate context sensitive design features, where practicable.

Based on coordination with SHPO, there is concern that relocation of the trusses would result in their immediate removal from the NRHP. There is also concern that, because the bridge is listed under Criterion A for its transportation significance in the settlement and development of Clay County, that its relocation to another county would make it ineligible for continued listing. SHPO has requested that INDOT initiate a request that the bridge also be considered under Criterion C based on its engineering significance as well as its continued listing during and following any relocation. That request has been initiated and is currently under review.

Right-of-Way

Each of the Alternative 5 options would require right-of-way, ranging from 7-16 acres. No relocations would be required. Details for each option are provided in the sections below.

Utilities

Each option would require the relocation of some utilities; details for each option are provided below. None of these relocations are anticipated to be complicated or excessively costly.

Maintenance of Traffic

Alternative 5A would require a full detour resulting in high user costs. Each of the other options would maintain traffic on SR 46 except for limited periods. Details for each option are provided in the sections below.

Environmental Issues

Environmental surveys, including the Waters of the U.S. Determination Report, are still in progress; therefore, this assessment is preliminary and qualitative. Each of the alternatives would result in minor to moderate impacts to environmental resources, but would not impact any unique or exceptional resources for which mitigation is not possible. Additional information is provided in the sections below.

Cost

Estimated project costs (right-of-way, utilities, construction, and rehabilitation/relocation of the existing bridge) for the Alternative 5 options range from $8.2 – 11.0 million. User costs associated with closures and detours range from $80,000 to $4.8 million, the latter associated with the 9-month closure required to construct Alternative 5A. Total estimated costs range from $9.7 million to $13.0 million.

Section 4(f) Evaluation

The project meets the requirements of FHWA's Nationwide Programmatic Section 4(f) Evaluation. The bridge will be rehabilitated and preserved in accordance with the Historic Bridge PA and the Nationwide Programmatic Section 4(f) Evaluation. FHWA is seeking a determination from the Keeper of the National Register within the National Park Service to determine if the bridge would remain eligible for the NRHP after it has been rehabilitated and

relocated. If it is determined that the bridge would remain eligible for the NRHP, FHWA would find that there is no use of the Section 4(f) resource (see FHWA's Section 4(f) Policy Paper, Question 8C, at http://www.environment.fhwa.dot.gov/4f/4fpolicy.asp).

It would be possible to design and build each of the Alternative 5 options; therefore, **each is a feasible alternative**.

Each of the Alternative 5 options would construct a safe, reliable structure to carry all traffic in the SR 46 corridor, thus **meeting the project's purpose and need**. Under each, the existing bridge would be relocated to the Salt Creek Trail, where there is a strong demand for a pedestrian facility and the truss spans can be installed to meet all hydraulic requirements.

Impacts associated with each of the Alternative 5 options vary; however, none would be considered severe. Long-term operation and maintenance costs would be similar for each and, while construction and user costs vary, none are of an extraordinary magnitude. Based on this evaluation, **each is a prudent alternative**.

The Section 4(f) analysis for each alternative is summarized in Table 14.

The sections below provide additional details about each Alternative 5 option and provide the basis for the selection of the preliminary preferred alternative.

Measures to Minimize Harm

In accordance with the requirements of the Nationwide Programmatic Section 4(f) Evaluation, Alternative 5 would, to the extent possible, preserve the historic integrity of the relocated existing bridge. As plans for the rehabilitation are developed, INDOT would coordinate with SHPO to determine if additional documentation, in accordance with HAER standards, is appropriate.

Alternative 5A – Bridge Replacement on Existing Alignment – Full Detour

Alternative 5A would replace the bridge over the Eel River utilizing the existing SR 46 alignment (Appendix A, Figure 10). The roadway would be closed throughout construction and all traffic detoured. To allow for the additional structure depth of a new bridge and to provide a minimum 2 feet of freeboard, the profile of the existing roadway would need to be raised approximately 8 feet. This would require reconstruction of SR 46 for approximately 800 feet to the west of the existing bridge and approximately 600 feet to the east in order to transition back to existing grade.

Accelerated Bridge Construction (ABC) techniques were investigated in an effort to minimize the duration of the closure. These methods include the use of prefabricated bridge elements or construction of the bridge offline and then sliding it into place. These techniques are typically applied when a structure is being replaced on its existing alignment and closures incur substantial impacts. At this location, both prefabricated elements and slide-in structures were considered. However, as noted earlier, the roadway profile at this location must be raised by 6-8 feet to accommodate the additional structure depth of a new bridge and provide adequate freeboard above the river. Additionally, any new bridge would need to be longer than the existing one, likely with a different span arrangement, to satisfy hydraulic requirements. While these techniques could be applied to the SR 46 bridge, they would be cost-prohibitive compared to alternative methods of maintaining traffic. As such, Alternative 5A did not include any of these techniques.

Compliance with Design Standards

The new bridge would be designed to meet 4R as defined in the *Indiana Design Manual* as shown in Table 10.

The new bridge would meet all applicable design criteria. The approach roadways would also meet all design criteria; however, it should be noted that the nonstandard grade on the approach to Bowling Green identified in other alternatives would exist under this alternative as well, but would lie outside the project limits and, therefore, not require a Level 1 design exception.

Right-of-Way

Alternative 5A would require approximately 7.0 acres of new right-of-way from 5 parcels to allow for the grading required to raise the roadway profile and the realignment of CR 475 E.

Utilities

Overhead utility lines parallel the roadway to the south. Alternative 5A would require the relocation of approximately 2 utility poles to allow for the realignment of CR 475 E.

Maintenance of Traffic

Alternative 5A would require the full closure of SR 46 for approximately 9 months. During this time, the posted detour would use SR 59 and SR 246 (see Appendix C, page 53), adding 7 miles to a through trip. This is the same detour route used during the closure in 2011. As noted previously, SR 246 is a narrow, winding rural roadway not well suited to large trucks, resulting in numerous complaints from the public when this was used as a detour route during the 2011 repair project.

TABLE 10 - DESIGN CRITERIA FOR ALTERNATIVE 5A

Design Element	Minimum Design Criteria	Existing Condition	Proposed Condition	Level 1 Design Exception Required
New Bridge Features (1)				
Travel Lane	12’	11’	12’	No
Shoulder	10’	1’	10’	No
Structural Capacity	HL-93	H-20	HL-93	No
Clear Roadway Width	44’	24’	44’	No
Vertical Clearance	16.5’	14’-8”(2)	N/A (3)	No
Pedestrian Bridge Features (4)				
Structural Capacity	H-10	H-20	H-10	No
Roadway Features (1)				
Travel Lane	12’	11’	12’	No
Shoulder Width	10’	1’	10’	No
Stopping Sight Distance at Vertical Curve	570’	415’	588’	No
Maximum Grade	3%	3.7%	2.8%	No
Through Lane Cross Slope	2%	2%	2%	No

(1) *Indiana Design Manual*, Chapter 53 and Figure 53-2
(2) Vertical clearance has been achieved through the removal of the lower sway bracing.
(3) The new bridge will have no vertical obstructions.
(4) LRFD Guide Specifications for the Design of Pedestrian Bridges

Environmental Issues

Environmental surveys, including the Waters of the U.S. Determination Report, are still in progress; therefore, this assessment is preliminary and qualitative. Reconstruction work on the

approaches to the bridge would potentially cause minor impacts to a stream located in the southeast quadrant of the bridge. The jurisdictional status of other water features in the area has not been determined. Minimal tree clearing may also be required. Impacts to Waters of the US would be mitigated as required through the Section 404/401 permitting process. Potential impacts to other resources, including threatened and endangered species and the Eel River floodway will be reported in the project's CE document and mitigated as appropriate. This alternative would also result in traffic-related impacts on other communities along the alternative route(s) that vehicles utilized.

Cost

Alternative 5A would cost $7,774,297 to construct and would have user costs, resulting from time and operating expenses associated with the longer, slower detour of $4,848,363, for a total cost of $12,772,660. Additional cost details are provided in Appendix C, pages 17-22 and pages 49-50.

Construction Cost*	$7,774,297
ROW/Utilities	$150,000
Project Cost	**$7,924,297**
User Costs	$4,848,363
TOTAL COST	**$12,772,660**

*Includes rehabilitation and relocation of existing bridge, the new bridge, and roadway improvements

Alternative 5B-S – Bridge Replacement on Existing Alignment – Temporary Bridge to South

Alternative 5B-S would replace the bridge over the Eel River utilizing the existing SR 46 alignment (Appendix A, Figure 11). In order to maintain traffic during construction, a temporary bridge would be constructed to the south of the existing bridge. To allow for the additional structure depth of a new bridge and to provide a minimum 2 feet of freeboard, the profile of the existing roadway would need to be raised approximately 8 feet. This would require reconstruction of SR 46 for approximately 800 feet to the west of the existing bridge and approximately 600 feet to the east in order to transition back to existing grade.

The temporary bridge would be designed as a 6-span, 372-foot long, single lane structure with temporary signals on either end to control traffic flow. The temporary bridge would be constructed with a low structure elevation of 567.6. This elevation, equivalent to the Q_2 storm event (a storm that has a 50% chance of occurrence in any given year), would allow water to overtop the roadway and not create a backwater issue upstream. In the event of a storm greater than the Q_2 storm, the bridge would be closed to traffic. Throughout construction, the temporary bridge would need to be monitored for the accumulation of debris at the piers that could create scour concerns. The contractor would be required to remove debris immediately.

Compliance with Design Standards

The new bridge would be designed to meet 4R as defined in the *Indiana Design Manual* as shown in Table 11.

The new bridge would meet all applicable design criteria. The approach roadways would also meet all design criteria; however, it should be noted that the nonstandard grade identified in other alternatives would exist under this alternative as well, but would lie outside the project limits and, therefore, not require a Level 1 design exception.

Right-of-Way

Alternative 5B-S would require approximately 10.6 acres of new right-of-way from 5 parcels to allow for the construction of the temporary bridge, the grading required to raise the roadway profile, and the realignment of CR 475 E.

Utilities

Overhead utility lines parallel the roadway to the south. Alternative 5B-S would require the relocation of approximately 5 utility poles.

Maintenance of Traffic

As described above, a single-lane temporary bridge would be in place throughout construction, with temporary signals at either end controlling traffic. While vehicles would experience some delay associated with the signals, reduced speeds, and roadway curvature, SR 46 would remain open to all traffic.

TABLE 11 - DESIGN CRITERIA FOR ALTERNATIVE 5B-S

Design Element	Minimum Design Criteria	Existing Condition	Proposed Condition	Level 1 Design Exception Required
New Bridge Features (1)				
Travel Lane	12’	11’	12’	No
Shoulder	10’	1’	10’	No
Structural Capacity	HL-93	H-20	HL-93	No
Clear Roadway Width	44’	24’	44’	No
Vertical Clearance	16.5’	14’-8”(2)	N/A (3)	No
Pedestrian Bridge Features (4)				
Structural Capacity	H-10	H-20	H-10	No
Roadway Features (1)				
Travel Lane	12’	11’	12’	No
Shoulder Width	10’	1’	10’	No
Stopping Sight Distance at Vertical Curve	570’	415’	588’	No
Maximum Grade	3%	3.7%	2.8%	No
Through Lane Cross Slope	2%	2%	2%	No

(1) *Indiana Design Manual*, Chapter 53 and Figure 53-2
(2) Vertical clearance has been achieved through the removal of the lower sway bracing.
(3) The new bridge will have no vertical obstructions.
(4) LRFD Guide Specifications for the Design of Pedestrian Bridges

Environmental Issues

Environmental surveys, including the Waters of the U.S. Determination Report, are still in progress; therefore, this assessment is preliminary and qualitative. Construction of the temporary bridge to the south would potentially cause moderate impacts to a stream located in the southeast quadrant of the bridge and would require moderate tree clearing. The jurisdictional status of other water features in the area has not been determined. Impacts to Waters of the US would be mitigated through the Section 404/401 permitting process. Potential impacts to other resources, including threatened and endangered species and the Eel River floodway will be reported in the project’s CE document and mitigated as appropriate.

Cost

Alternative 5B-S would cost $10,759,552 to construct and would have user costs, resulting from time and operating expenses associated with the construction zone of $576,445, for a total cost of $11,335,997. Additional cost details are provided in Appendix C, pages 23-29 and page 51. Note the user costs presented here do not include the costs associated the closure of the temporary bridge due to a large storm event. Depending on the magnitude and duration of the event the user cost could increase substantially.

Construction Cost*	$10,548,552
ROW/Utilities	$211,000
Project Cost	**$10,759,552**
User Costs	$576,445
TOTAL COST	**$11,335,997**
*Includes rehabilitation and relocation of existing bridge, the new bridge, and roadway improvements	

Alternative 5B-N – Bridge Replacement on Existing Alignment – Temporary Bridge to North

Alternative 5B-N would be similar to Alternative 5B-S except that the temporary structure would be built to the north of the existing bridge (Appendix A, Figure 12). Only features that differ from Alternative 5B-S are described below.

Right-of-Way

Alternative 5B-N would require approximately 11.0 acres of new right-of-way from 5 parcels to allow for the construction of the temporary bridge, the grading required to raise the roadway profile, and the realignment of CR 475 E.

Utilities

Buried fiber optic lines parallel the roadway to the north. Alternative 5B-N would require the lines to be relocated. This alternative would also require the relocation of approximately 2 utility poles on the south side of the roadway in order to realign CR 475 E.

Environmental Issues

Environmental surveys, including the Waters of the U.S. Determination Report, are still in progress; therefore, this assessment is preliminary and qualitative. Reconstruction of the roadway approaches would potentially cause moderate impacts to a stream located in the southeast quadrant of the bridge and would require moderate tree clearing. Construction of the temporary bridge to the north would require additional tree clearing. The jurisdictional status of other water features in the area has not been determined. Impacts to Waters of the US would be mitigated as required through the Section 404/401 permitting process. Potential impacts to other resources, including threatened and endangered species and the Eel River floodway will be reported in the project's CE document and mitigated as appropriate.

Cost

Alternative 5B-N would cost $10,762,580 to construct and would have user costs, resulting from time and operating expenses associated with the construction zone of $576,445, for a total cost of$11,339,025. Additional cost details are provided in Appendix C, pages 30-36 and page 51. Note the user costs presented here do not include the costs associated the closure of

Construction Cost*	$10,562,580
ROW/Utilities	$200,000
Project Cost	**$10,762,580**
User Costs	$576,445
TOTAL COST	**$11,339,025**
*Includes rehabilitation and relocation of existing bridge, the new bridge, and roadway improvements	

the temporary bridge due to a large storm event. Depending on the magnitude and duration of the event the user cost could increase substantially.

Alternative 5C-S – Bridge Replacement on New Alignment to South (Preliminary Preferred Alternative)

Alternative 5C-S would construct a new bridge over the Eel River approximately 20 feet to the south of the existing bridge and permanently realign the SR 46 roadway (Appendix A, Figure 13). To allow for the additional structure depth of a new bridge and to provide a minimum 2 feet of freeboard, the profile of the existing roadway would need to be raised approximately 8 feet.

The alignment of SR 46 would need to be adapted to access this new structure. Starting about 0.5 mile west of the bridge, SR 46 would diverge to the south of the existing alignment and require a reverse curve formation in order to merge back into the existing roadway alignment approximately 0.25 mile east of the bridge.

Compliance with Design Standards

The new bridge would meet all applicable design criteria. The approach roadways would meet all design criteria, except for maximum grade at the eastern end of the project as the roadway approaches Bowling Green as shown in Table 12. The steep grade exists today and correcting it would be cost-prohibitive.

TABLE 12 - DESIGN CRITERIA FOR ALTERNATIVE 5C-S

Design Element	Minimum Design Criteria	Existing Condition	Proposed Condition	Level 1 Design Exception Required
Bridge Features (1)				
Travel Lane	12’	11’	12’	No
Shoulder	10’	1’	10’	No
Structural Capacity	HL-93	H-20	HL-93	No
Clear Roadway Width	44’	24’	44’	No
Vertical Clearance	16.5’	14’-8”(2)	N/A (3)	No
Pedestrian Bridge Features (4)				
Structural Capacity	H-10	H-20	H-10	No
Roadway Features (1)				
Travel Lane	12’	11’	12’	No
Shoulder Width	10’	1’	10’	No
Stopping Sight Distance at Vertical Curve	570’	415’	588’	No
Maximum Grade	3%	6.74%	7.16%	Yes
Through Lane Cross Slope	2%	2%	2%	No

(1) *Indiana Design Manual*, Chapter 53 and Figure 53-2
(2) Vertical clearance has been achieved through the removal of the lower sway bracing.
(3) The new bridge will have no vertical obstructions.
(4) LRFD Guide Specifications for the Design of Pedestrian Bridges

Right-of-Way

Alternative 5C-S would require approximately 13.9 acres of new right-of-way from 7 parcels to allow for the construction of the bridge and the realignment of SR 46 and CR 475 E.

Utilities

Overhead utility lines parallel the roadway to the south. Alternative 5C-S would require the relocation of approximately 8 utility poles.

Maintenance of Traffic

During construction of the new bridge and approaches traffic would be maintained on the existing SR 46 roadway and bridge. No disruption to SR 46 traffic is anticipated except at the location where the new road is tied into the existing one. At no time is it anticipated that SR 46 would be completely closed to traffic.

Environmental Issues

Environmental surveys, including the Waters of the U.S. Determination Report, are still in progress; therefore, this assessment is preliminary and qualitative. Construction of the new bridge to the south would potentially cause moderate impacts to a stream located in the southeast quadrant of the bridge and would require moderate tree clearing. The jurisdictional status of other water features in the area has not been determined. Impacts to Waters of the US would be mitigated as required through the Section 404/401 permitting process. Potential impacts to other resources, including threatened and endangered species and the Eel River floodway will be reported in the project's CE document and mitigated as appropriate.

Cost

Alternative 5C-S would cost $9,594,088 to construct and would have user costs, resulting from time and operating expenses associated with reduced speeds through the construction zone of $81,081, for a total cost of $9,675,169. Additional cost details are provided in Appendix C, pages 37-42 and page 52.

Construction Cost*	$9,320,088
ROW/Utilities	$274,000
Project Cost	**$9,594,088**
User Costs	$81,081
TOTAL COST	**$9,675,169**
*Includes rehabilitation and relocation of existing bridge, the new bridge, and roadway improvements	

Alternative 5C-N – Bridge Replacement on New Alignment to North

Alternative 5C-N would be similar to Alternative 5C-S except that the new bridge would be built to the north of the existing bridge (Appendix A, Figure 14). Only features that differ from Alternative 5C-S are described below.

Compliance with Design Standards

Like Alternative 5C-S, this alternative would require a Level 1 design exception for maximum grade based on the grade approaching Bowling Green, as shown in Table 13. Alternative 5C-N would also require a Level 1 design exception for the curve radius in the same area. While a full sight distance analysis has not been completed, it is likely that sight distance would be further compromised due to the likely need to install guardrail on the inside of this curve. Flattening out this curve to make it standard would require acquisition of right-of-way from multiple residential parcels in Bowling Green.

Right-of-Way

Alternative 5C-N would require approximately 16.1 acres of new right-of-way from 13 parcels to allow for the construction of the bridge and the realignment of SR 46 and CR 475 E. It is also likely that this alternative would require the relocation of one residence in Bowling Green.

Utilities

Buried fiber optic lines parallel the roadway to the north. Alternative 5B-N would require the lines to be relocated. This alternative would also require the relocation of approximately 2 utility poles in order to realign CR 475 E.

Environmental Issues

Environmental surveys, including the Waters of the U.S. Determination Report, are still in progress; therefore, this assessment is preliminary and qualitative. Construction of the new bridge to the north would require moderate tree clearing. The jurisdictional status of water features in the area has not been determined. Impacts to Waters of the US would be mitigated as required through the Section 404/401 permitting process. Potential impacts to other resources, including threatened and endangered species and the Eel River floodway will be reported in the project's CE document and mitigated as appropriate.

TABLE 13 - DESIGN CRITERIA FOR ALTERNATIVE 5C-N

Design Element	Minimum Design Criteria	Existing Condition	Proposed Condition	Level 1 Design Exception Required
Bridge Features (1)				
Travel Lane	12'	11'	12'	No
Shoulder	10'	1'	10'	No
Structural Capacity	HL-93	H-20	HL-93	No
Clear Roadway Width	44'	24'	44'	No
Vertical Clearance	16.5'	14'-8"(2)	N/A (3)	No
Pedestrian Bridge Features (4)				
Structural Capacity	H-10	H-20	H-10	No
Roadway Features (1)				
Travel Lane	12'	11'	12'	No
Shoulder Width	10'	1'	10'	No
Horizontal Curvature	1200'	1,432'	1000'	Yes
Stopping Sight Distance at Vertical Curve	570'	415'	588'	No
Maximum Grade	3%	6.74%	7.36%	Yes
Through Lane Cross Slope	2%	2%	2%	No

(1) *Indiana Design Manual*, Chapter 53 and Figure 53-2
(2) Vertical clearance has been achieved through the removal of the lower sway bracing.
(3) The new bridge will have no vertical obstructions.
(4) LRFD Guide Specifications for the Design of Pedestrian Bridges

Cost

Alternative 5C-N would cost $10,015,307 to construct and would have user costs, resulting from time and operating expenses associated with reduced speeds through the construction zone of $81,081, for a total cost of $10,096,388. Additional cost details are provided in Appendix C, pages 43-48 and page 52.

Construction Cost*	$9,388,993
ROW/Utilities	$371,000
Project Cost	**$9,759,993**
User Costs	$81,081
TOTAL COST	**$9,841,074**
*Includes rehabilitation and relocation of existing bridge, the new bridge, and roadway improvements	

Alternatives Evaluation

While the project cost of Alternative 5A is the lowest of these options, it would cause substantial user costs ($4.8 million) as a result of the closure of SR 46 for approximately 9 months. Based on the response to the previous closures, both of which were much shorter, INDOT has determined that this alternative is not in the interest of the traveling public and eliminated it from consideration.

Alternatives 5B-N and 5B-S would each utilize a temporary bridge and signal to construct a new bridge on the existing alignment. Either alternative would reduce the user costs compared to Alternative 5A, with only a couple short term closures required. However, the temporary bridge's low elevation would introduce a risk that it would be overtopped requiring additional closures. Finally, these options would cost more than $1 million more than Alternative 5C-S or 5C-N.

Alternatives 5C-N and 5C-S would each maintain traffic on the existing bridge and roadway throughout construction, minimizing user costs associated with delay or detours. Project costs are similar for each, as are environmental and right-of-way impacts. Both would require a Level 1 design exception for the maximum grade approaching Bowling Green; Alternative 5C-N, would introduce a horizontal curve on its approach to Bowling Green that would require an additional Level 1 design exception. Eliminating this non-standard curve would require impacts to several residential properties.

Based on the analysis above, INDOT has identified Alternative 5C-S as the preliminary preferred alternative. A comparison of all alternatives is provided in Table 14.

VI. MINIMIZATION AND MITIGATION

In accordance with the requirements of the Nationwide Programmatic Section 4(f) Evaluation, the project will include all possible planning to minimize harm to the Section 4(f) resource:

1. Alternative 5 would, to the extent possible, preserve the historic integrity of the relocated existing bridge.
2. Because the bridge will be moved from its original location, INDOT and FHWA will ensure that, in accordance with the Historic American Engineering Record (HAER) standards, or other suitable means developed through consultation, fully adequate records of the bridge will be made.
3. INDOT and FHWA have identified a new location for the bridge that will ensure its continued use and preservation. Prior to approval of this CE document and the application of the Nationwide Programmatic Section 4(f) Evaluation, INDOT and FHWA will execute Interlocal agreements with the agencies taking responsibility for the bridge that establish the requirements of its preservation.
4. INDOT and FHWA will consult with SHPO and ACHP to obtain agreement on the measures to minimize harm.

VII. PRELIMINARY PREFERRED ALTERNATIVE

As noted above, Alternative 5C-S was found to be both feasible and prudent and has been identified as the preliminary preferred alternative.

TABLE 14: ALTERNATIVES ANALYSIS SUMMARY

Alternative		Meets Project Purpose & Need	Project Cost	User Cost	Total Cost	Feasible & Prudent
1	No Build	No (does not address structural deterioration, structural capacity, hydraulics, non-standard features,)	N/A*	$6,482,243 per year of closure*	N/A*	Feasible: Yes Prudent: No – Does not meet purpose and need; cost associated with road closure
2	Rehabilitation for Continued Vehicular Use	No (does not address structural capacity, hydraulics)	$4,838,780	$4,848,363	$9,687,143	Feasible: Yes Prudent: No – Structural capacity, hydraulics, non-standard features, user costs
3	Rehabilitation for Continued Vehicular Use/ One-Way Pair	No (does not address structural capacity, hydraulics)	$11,311,843	$81,081	$11,392,924	Feasible: Yes Prudent: No – Structural capacity, hydraulics, non-standard features
4	Bypass/Non-Vehicular Use	No (does not address hydraulics)	$10,180,451	$81,081	$10,261,532	Feasible: Yes Prudent: No – Hydraulics; very low pedestrian usage
5A	Bridge Replacement on Existing Alignment – Full Detour	Yes	$7,924,297	$4,848,363	$12,772,660	**Feasible: Yes** **Prudent: Yes**
5B-S	Bridge Replacement on Existing Alignment – Temporary Bridge to South	Yes	$10,759,552	$576,445	$11,335,997	
5B-N	Bridge Replacement on Existing Alignment – Temporary Bridge to North	Yes	$10,762,580	$576,445	$11,339,025	
5C-S	Bridge Replacement on New Alignment to South (Preliminary Preferred Alternative)	Yes	$9,594,088	$81,081	$9,675,169	
5C-N	Bridge Replacement on New Alignment to North	Yes	$9,759,993	$81,081	$9,841,074	

* While the No Build Alternative does not include any improvements, it is not possible to estimate the costs associated with any repairs that would be required or the user costs associated with any temporary or permanent closures.

Appendix A

Figures

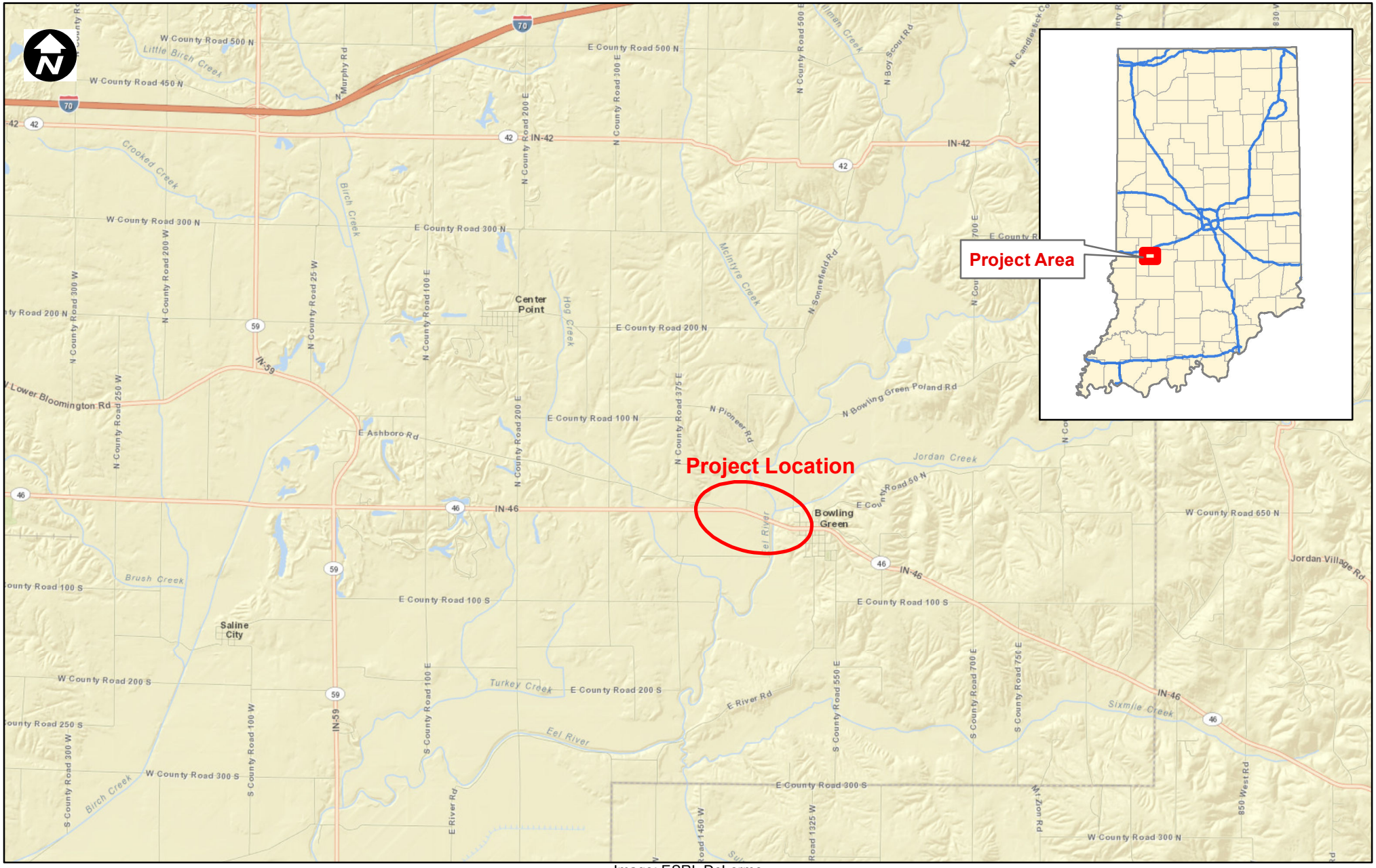


Image: ESRI, DeLorme

0 1 2 4 Miles

PARSONS

Fig. 1: Project Location
SR 46 over Eel River
Des. No. 0800910

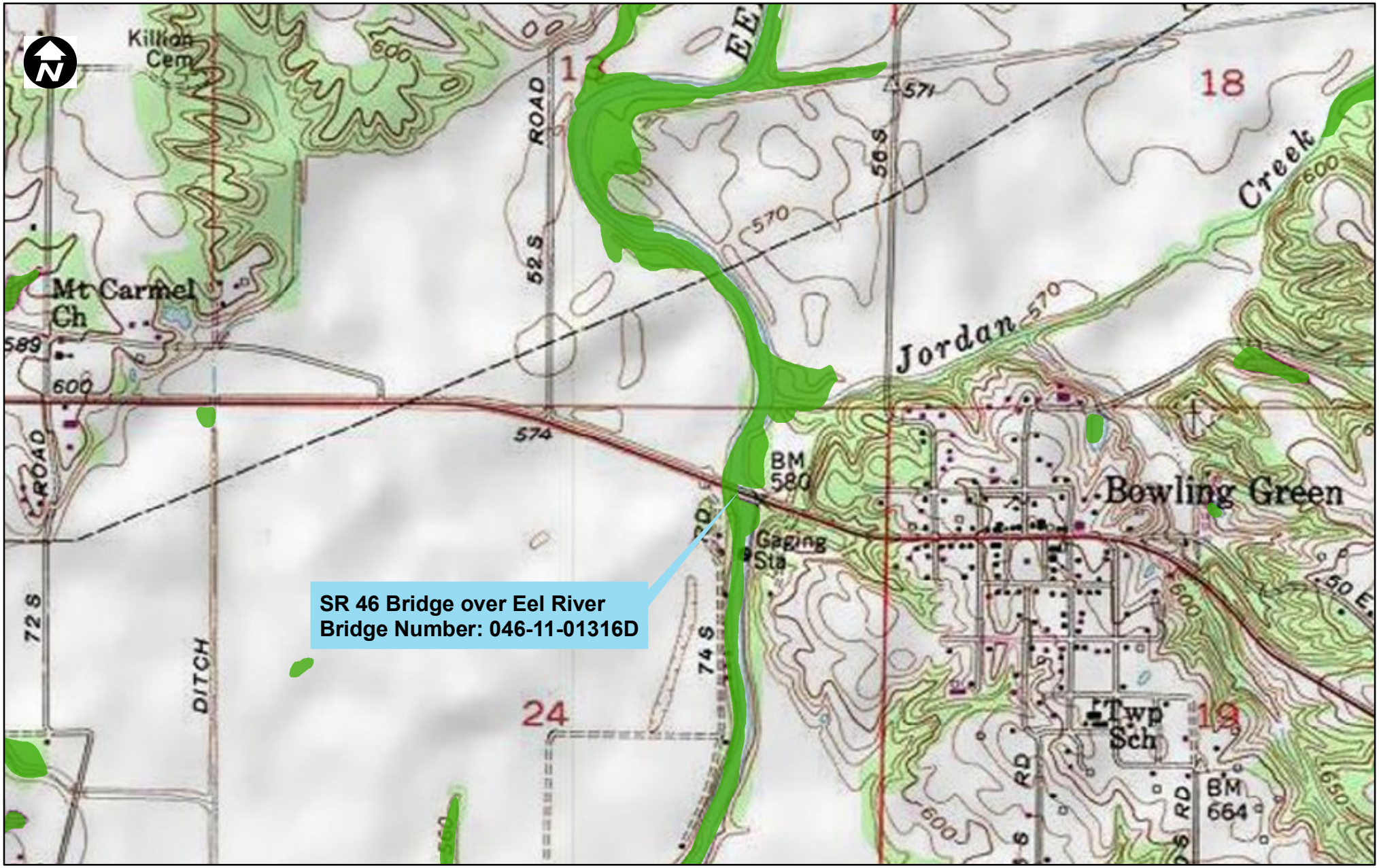


Image: USGS, Center Point quad
Data: USFWS, National Wetlands Inventory

0 500 1,000 2,000 Feet

Legend

NWI Polygons

PARSONS

Fig. 2: Topographic and NWI
SR 46 over Eel River
Des No. 0800910

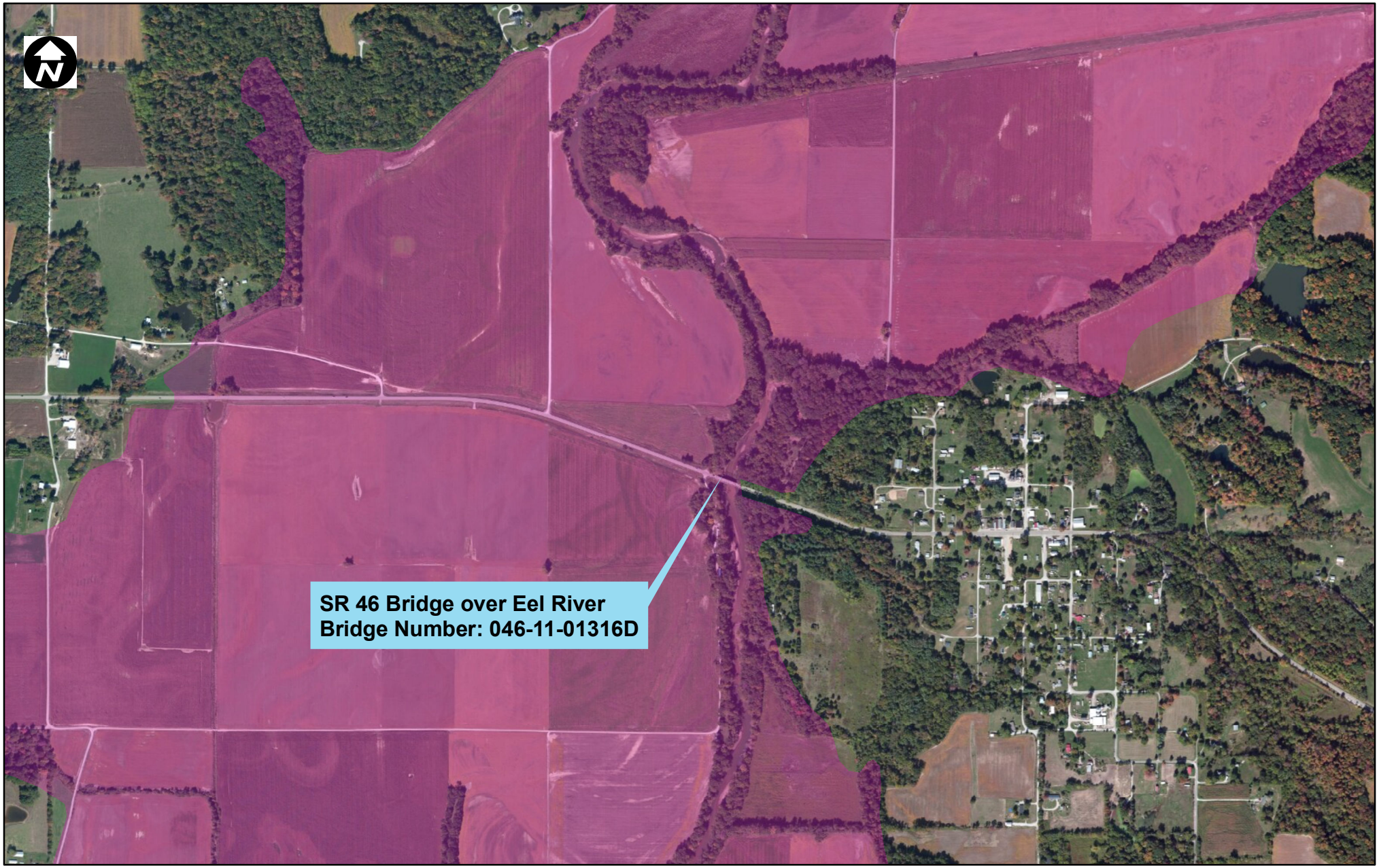


Image: ESRI, 2010
Data: Indiana DNR

0 500 1,000 2,000 Feet

Legend

Eel River Floodplain

Fig. 3: Eel River Floodplain
SR 46 over Eel River
Des No. 0800910

Image: Indiana Geographic Information Council, 2005

0 250 500 1,000 Feet

PARSONS

Fig. 4: Aerial image
SR 46 over Eel River
Des No. 0800910

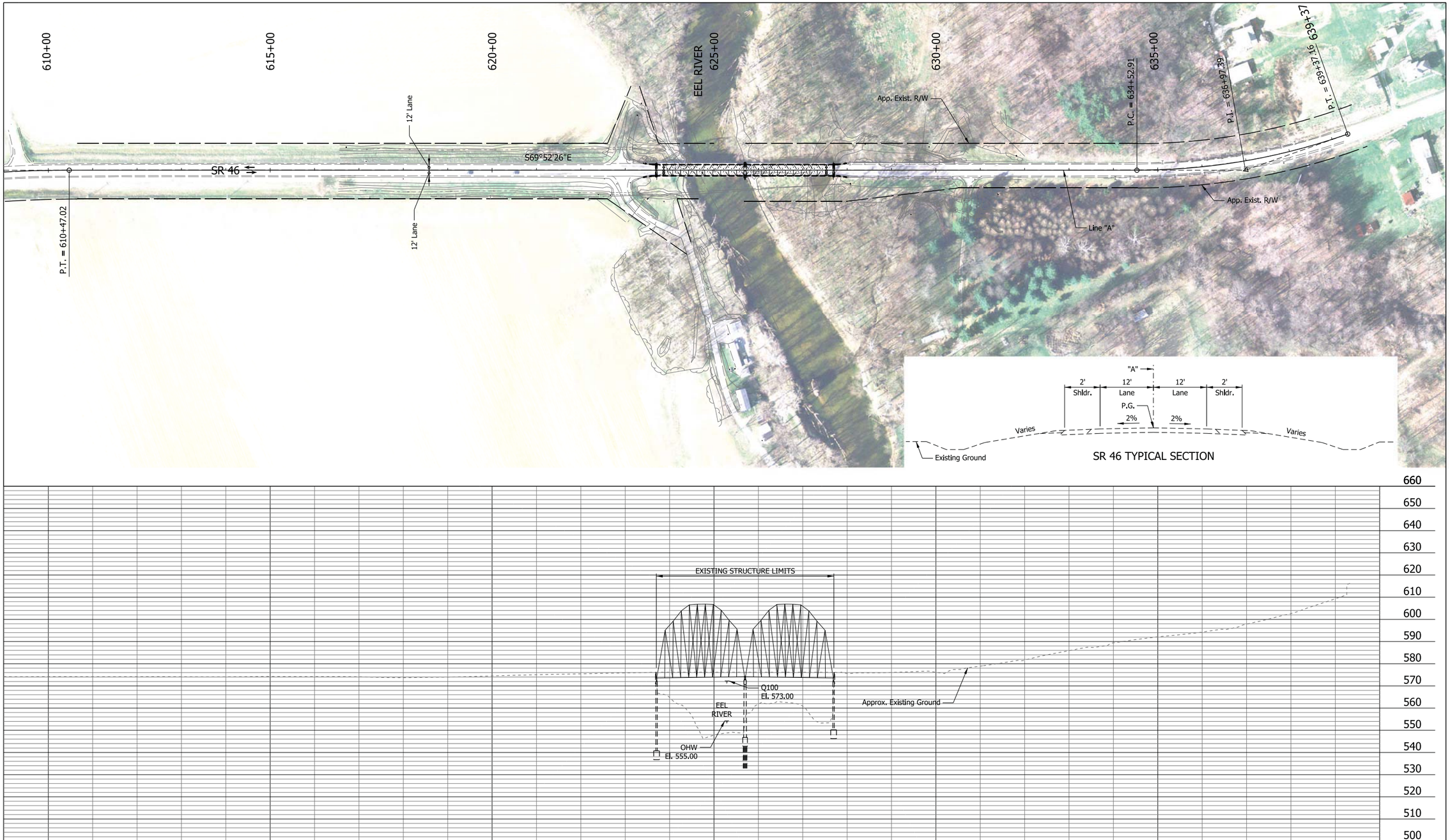


Figure 5
Alternative 1 - No Build

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE		INDIANA DEPARTMENT OF TRANSPORTATION	SCALE: 1" = 100' / BRIDGE FILE
			DESIGNATION: XXX
DESIGNED: XXX	DRAWN: ALF	SR 46 OVER EEL RIVER PLAN & PROFILE ALTERNATIVE 1	SURVEY BOOK / SHEETS of
CHECKED: XXX	CHECKED: XXX		CONTRACT: XXX / PROJECT: XXX

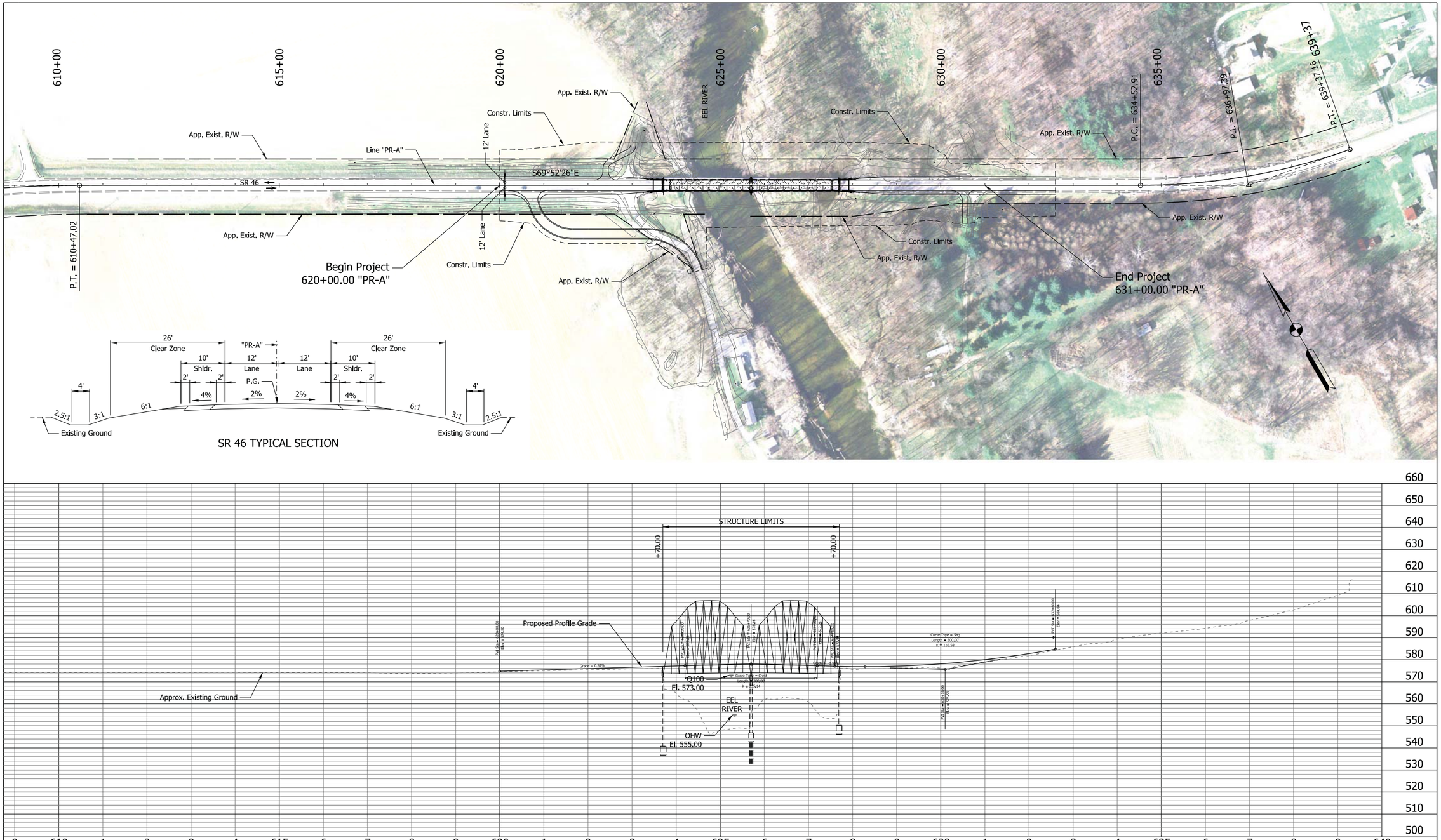


Figure 6
Alternative 2 - Rehabilitation for Continued Vehicular Use

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	SCALE 1" = 100'	BRIDGE FILE
			DESIGNATION xxx
DESIGNED: xxx DRAWN: ALF	SR 46 OVER EEL RIVER PLAN & PROFILE ALTERNATIVE 2	SURVEY BOOK	SHEETS of
CHECKED: xxx CHECKED: xxx		CONTRACT xxx	PROJECT xxx

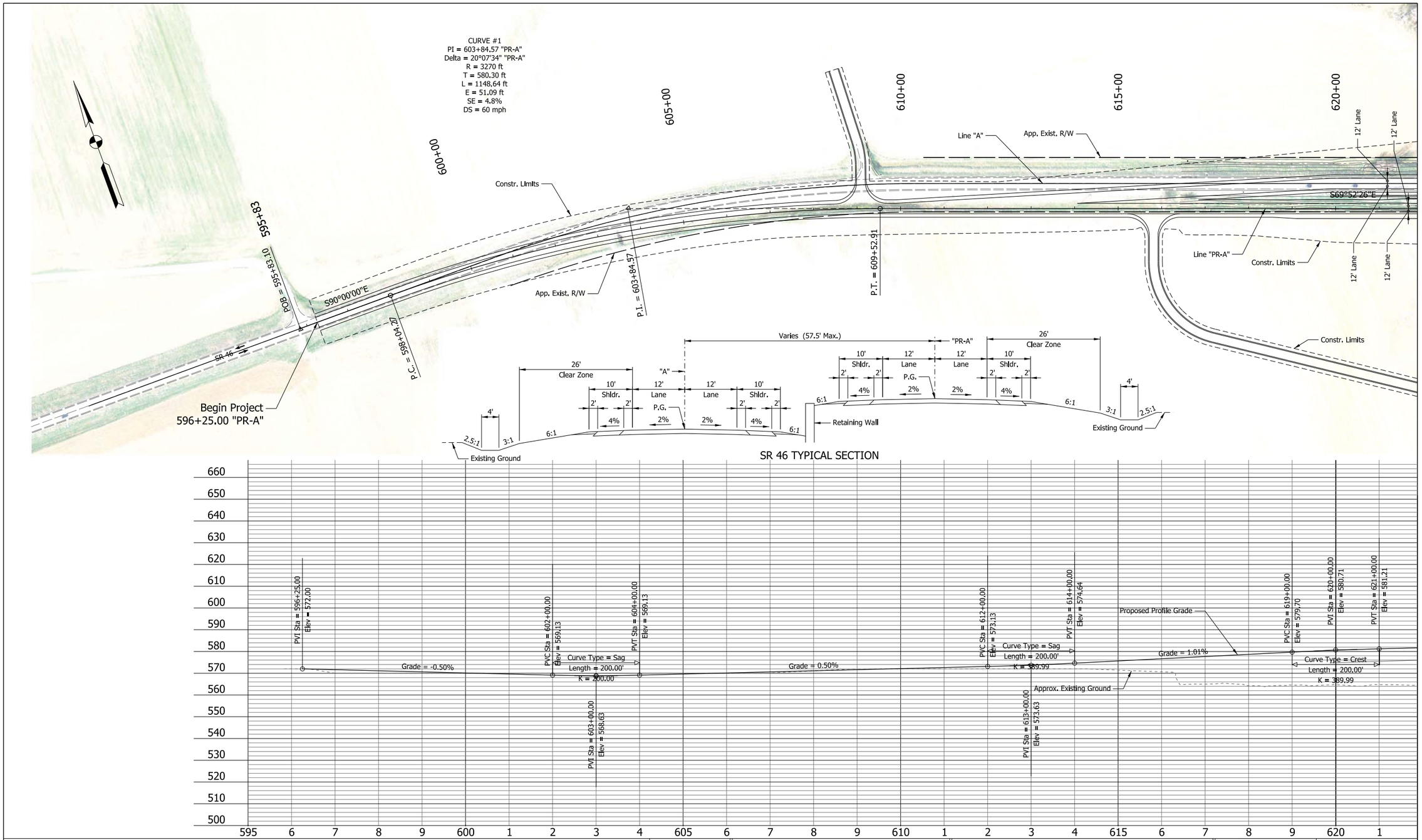


Figure 7 (Sheet 1)
Alternative 3 - Rehabilitation for Continued Vehicular Use (One-Way Pair)

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	SCALE 1" = 100'	BRIDGE FILE
			DESIGNATION XXX
DESIGNED: XXX DRAWN: ALF	SR 46 OVER EEL RIVER PLAN & PROFILE ALTERNATIVE 3	SURVEY BOOK	SHEETS of
CHECKED: XXX CHECKED: XXX		CONTRACT XXX	PROJECT XXX

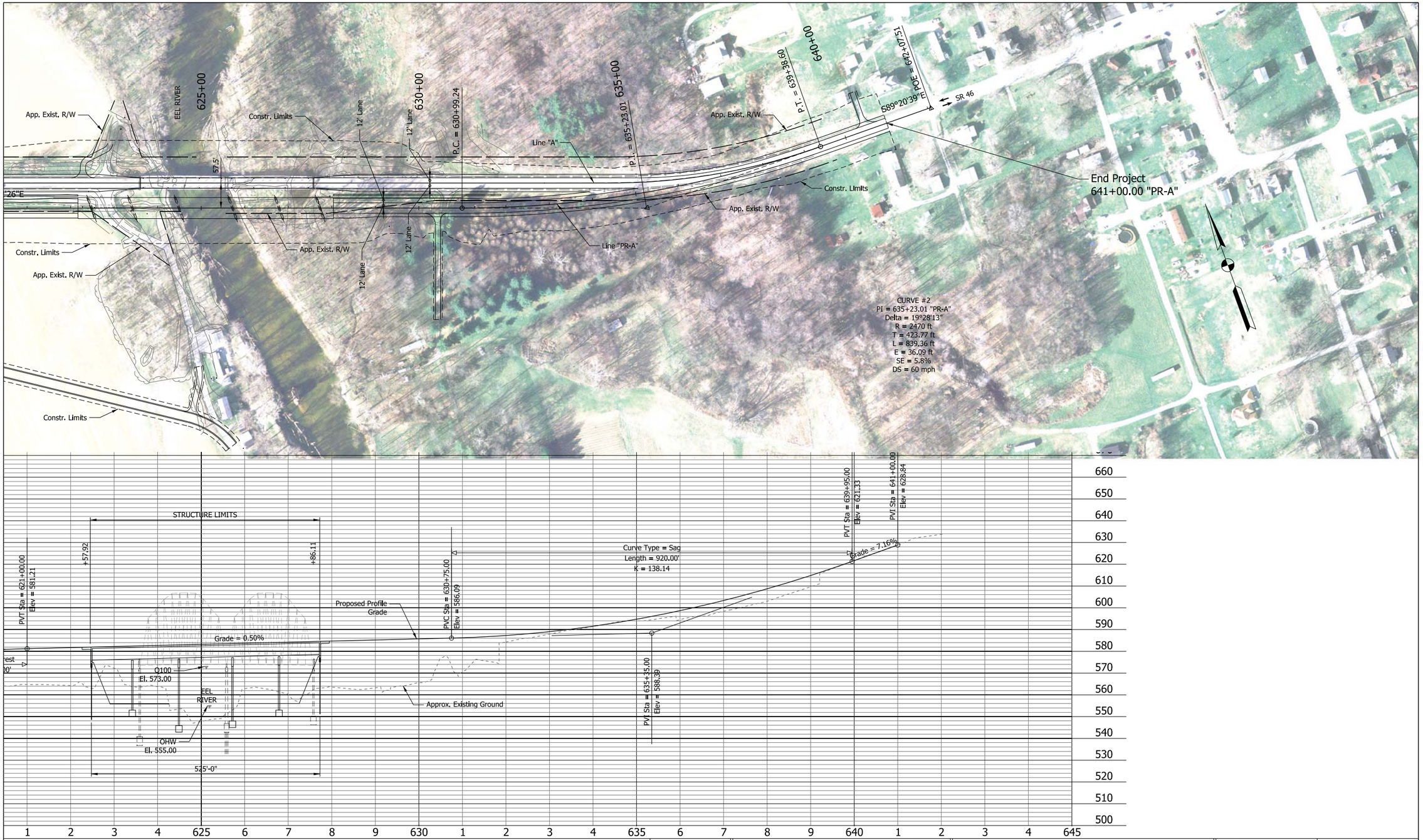


Figure 7 (Sheet 2)
Alternative 3 - Rehabilitation for Continued Vehicular Use (One-Way Pair)

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	SCALE: 1" = 100'	BRIDGE FILE
			DESIGNATION: XXX
DESIGNED: XXX / DRAWN: ALF	SR 46 OVER EEL RIVER PLAN & PROFILE ALTERNATIVE 3	SURVEY BOOK	SHEETS of
CHECKED: XXX / CHECKED: XXX		CONTRACT: XXX	PROJECT: XXX

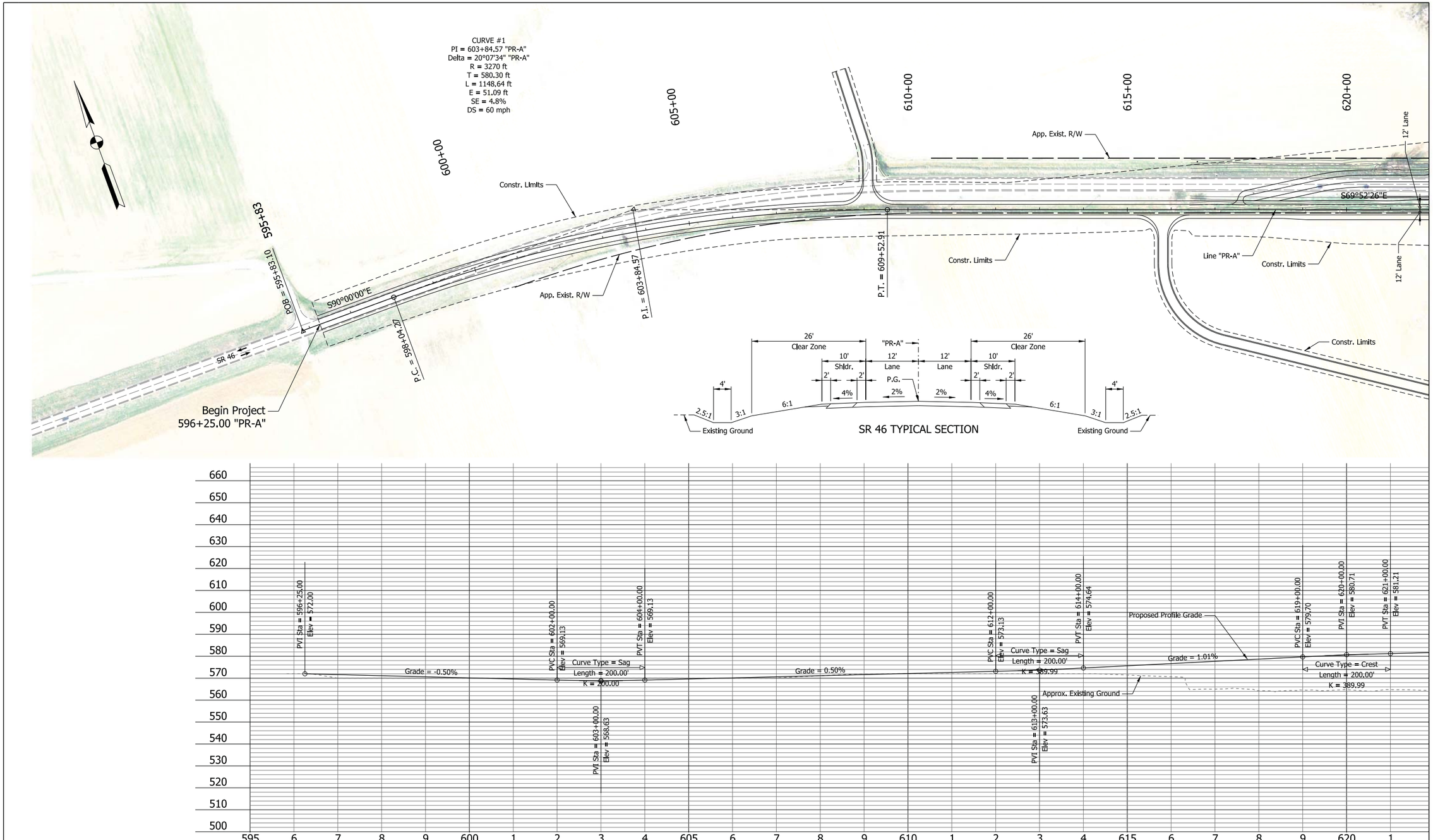


Figure 8 (Sheet 1)
Alternative 4 - Bypass/Non-Vehicular Use

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	SCALE: 1" = 100'	BRIDGE FILE
			DESIGNATION: XXX
DESIGNED: XXX / DRAWN: ALF	SR 46 OVER EEL RIVER PLAN & PROFILE ALTERNATIVE 4	SURVEY BOOK	SHEETS of
CHECKED: XXX / CHECKED: XXX		CONTRACT: XXX	PROJECT: XXX

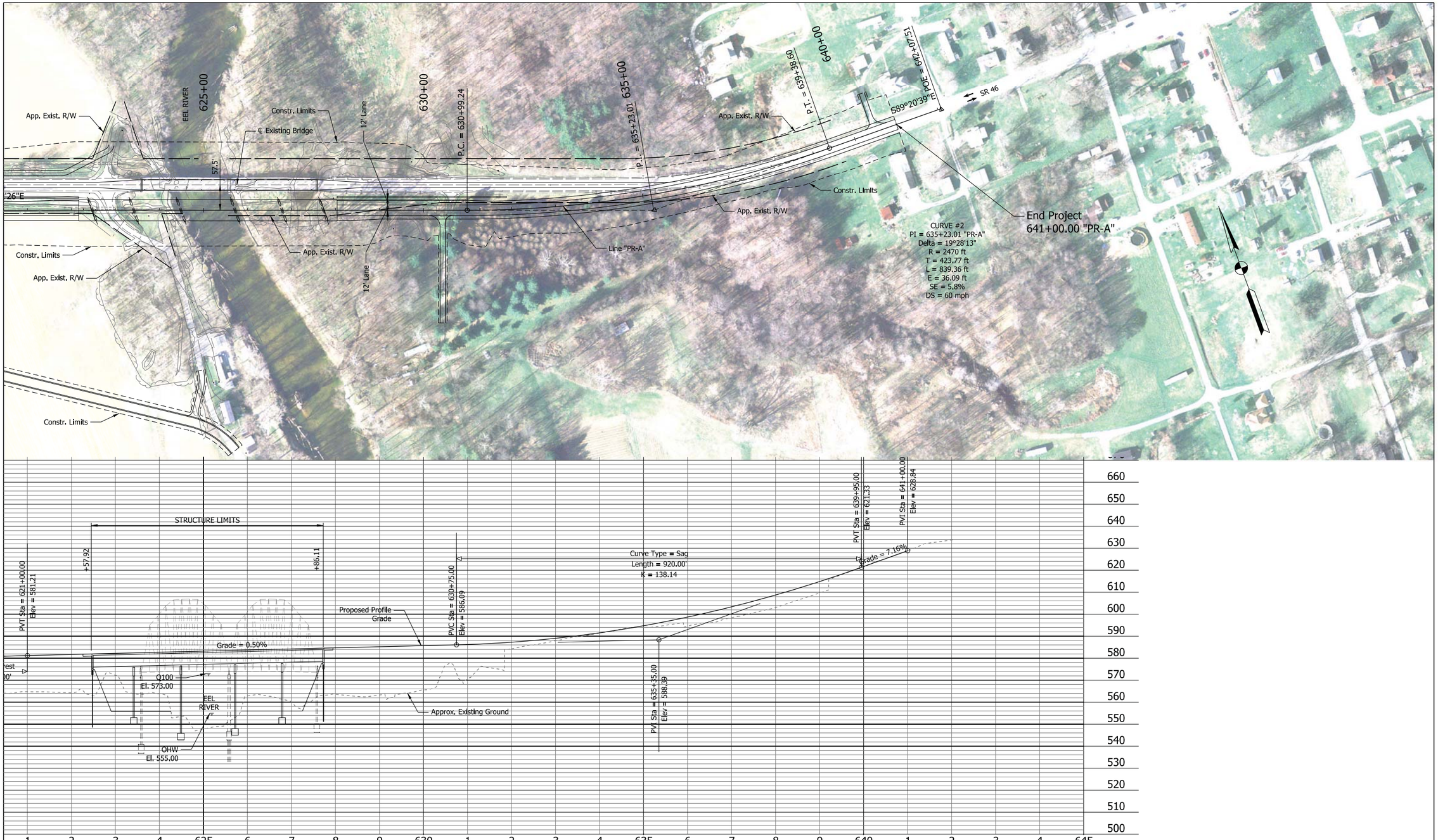


Figure 8 (Sheet 2)
Alternative 4 - Bypass/Non-Vehicular Use

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	SCALE: 1" = 100'	BRIDGE FILE
			DESIGNATION: XXX
DESIGNED: XXX / DRAWN: ALF	SR 46 OVER EEL RIVER PLAN & PROFILE ALTERNATIVE 4	SURVEY BOOK	SHEETS of
CHECKED: XXX / CHECKED: XXX		CONTRACT: XXX	PROJECT: XXX

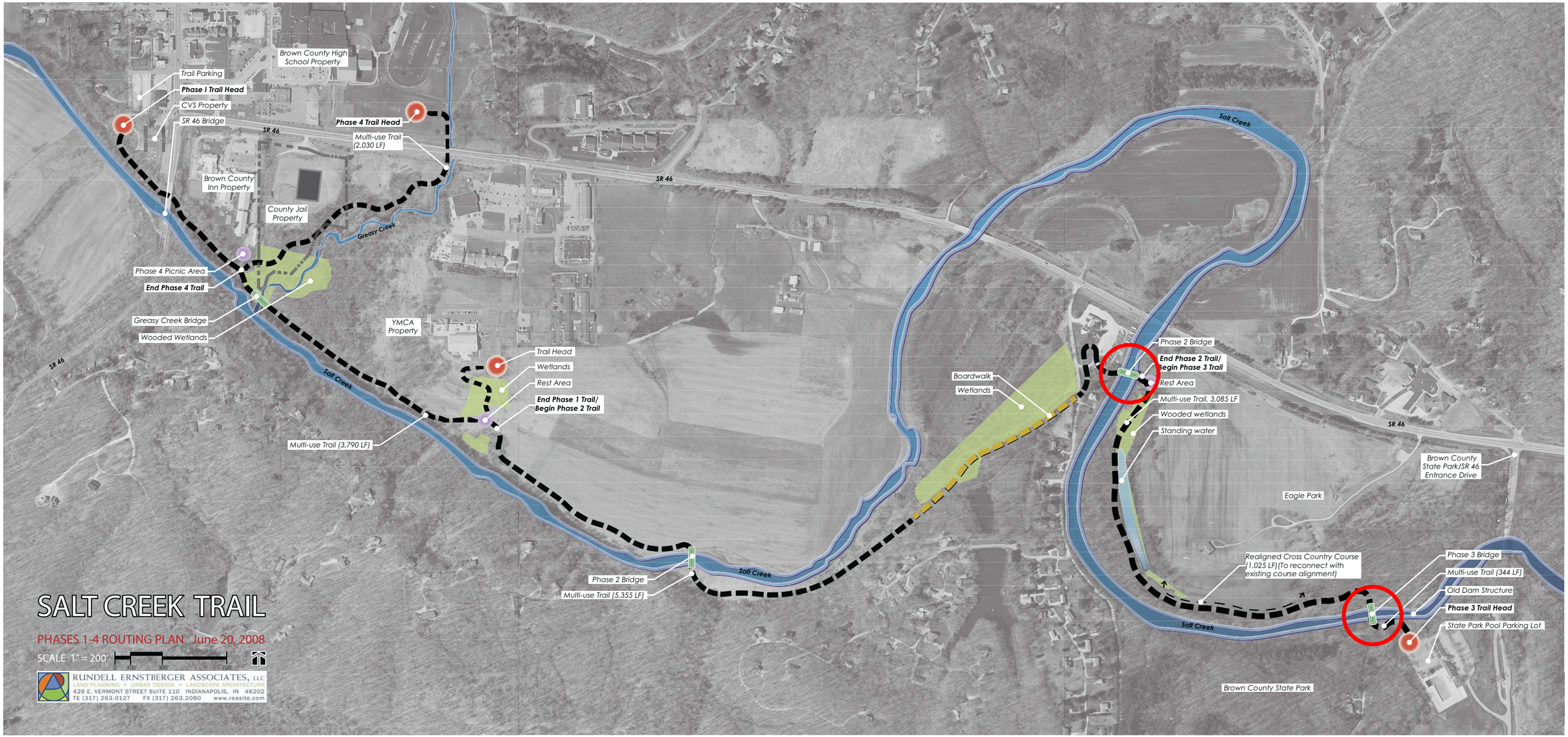


Figure 9
Salt Creek Trail Plan

Proposed location of Relocated Eel River Bridge Span

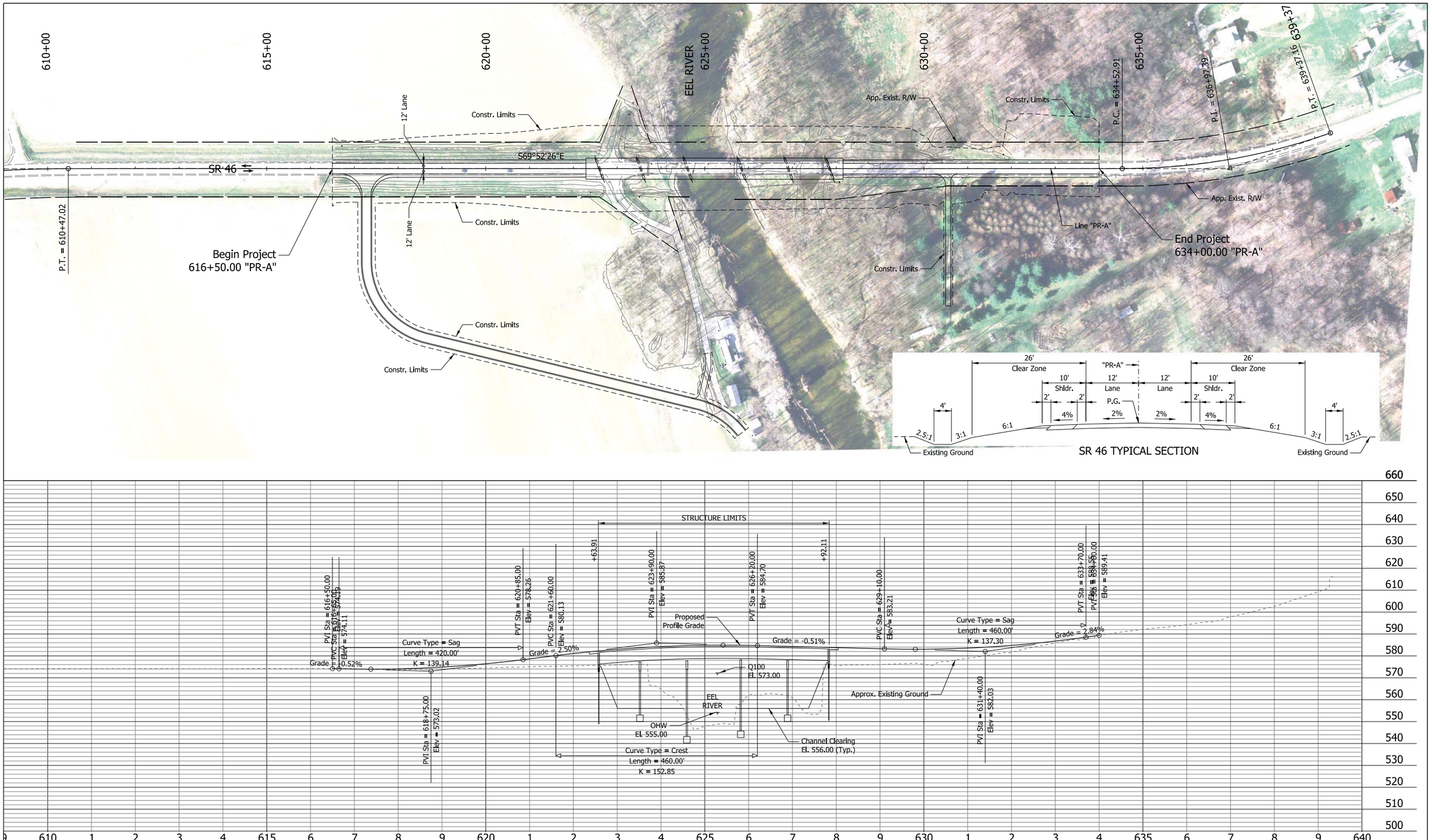


Figure 10
Alternative 5A - Bridge Replacement on Existing Alignment - Full Detour

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	SCALE 1" = 100'	BRIDGE FILE
			DESIGNATION xxx
DESIGNED: xxx DRAWN: ALF	SR 46 OVER EEL RIVER PLAN & PROFILE ALTERNATIVE 5A	SURVEY BOOK	SHEETS of
CHECKED: xxx CHECKED: xxx		CONTRACT xxx	PROJECT xxx

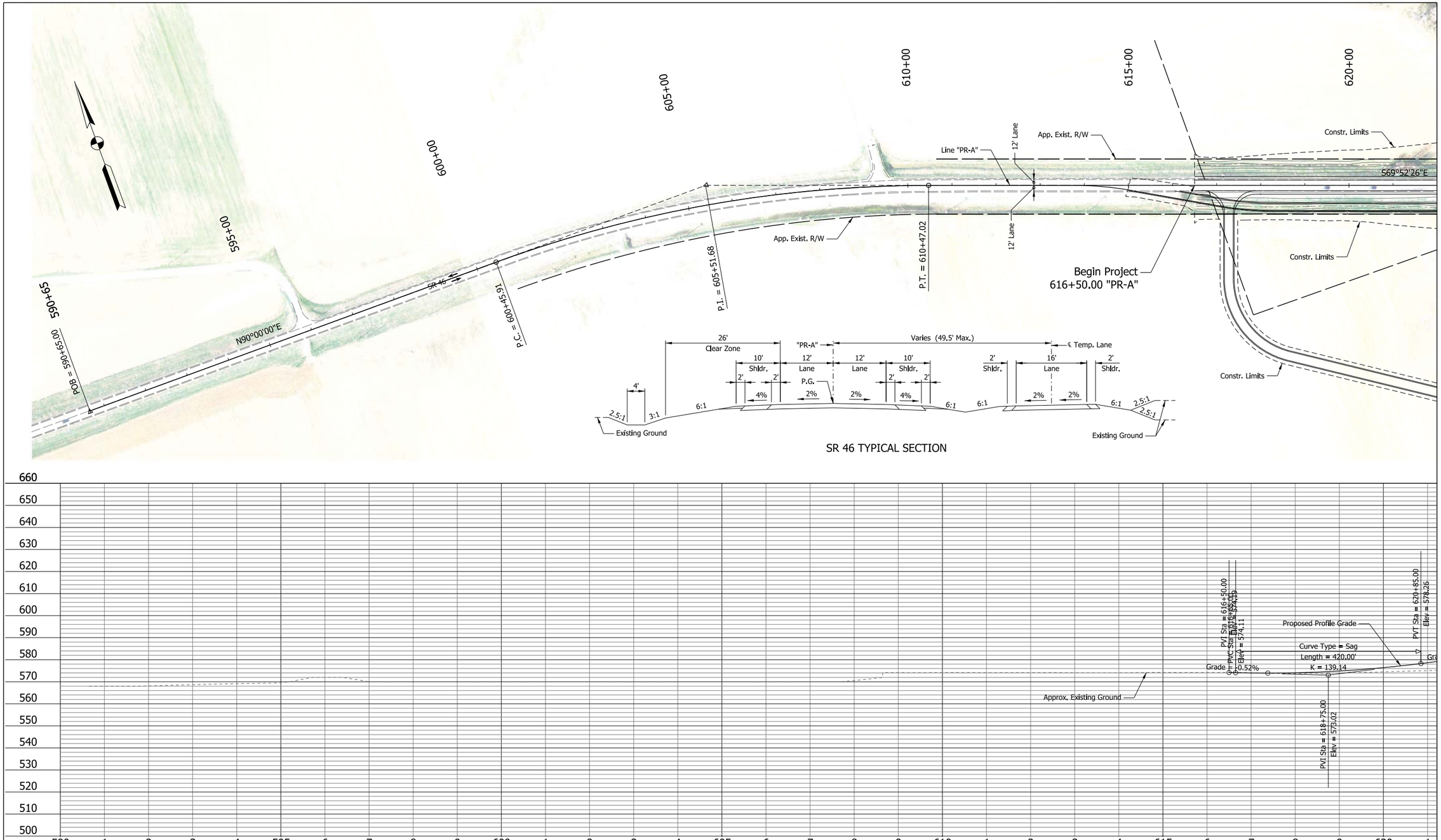


Figure 11 (Sheet 1)
Alternative 5B-S - Bridge Replacement on Existing Alignment - Temporary Bridge to South

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	SCALE 1" = 100'	BRIDGE FILE
			DESIGNATION xxx
DESIGNED: xxx DRAWN: ALF	SR 46 OVER EEL RIVER PLAN & PROFILE ALTERNATIVE 5B SOUTH TEMP.	SURVEY BOOK	SHEETS of
CHECKED: xxx CHECKED: xxx		CONTRACT xxx	PROJECT xxx

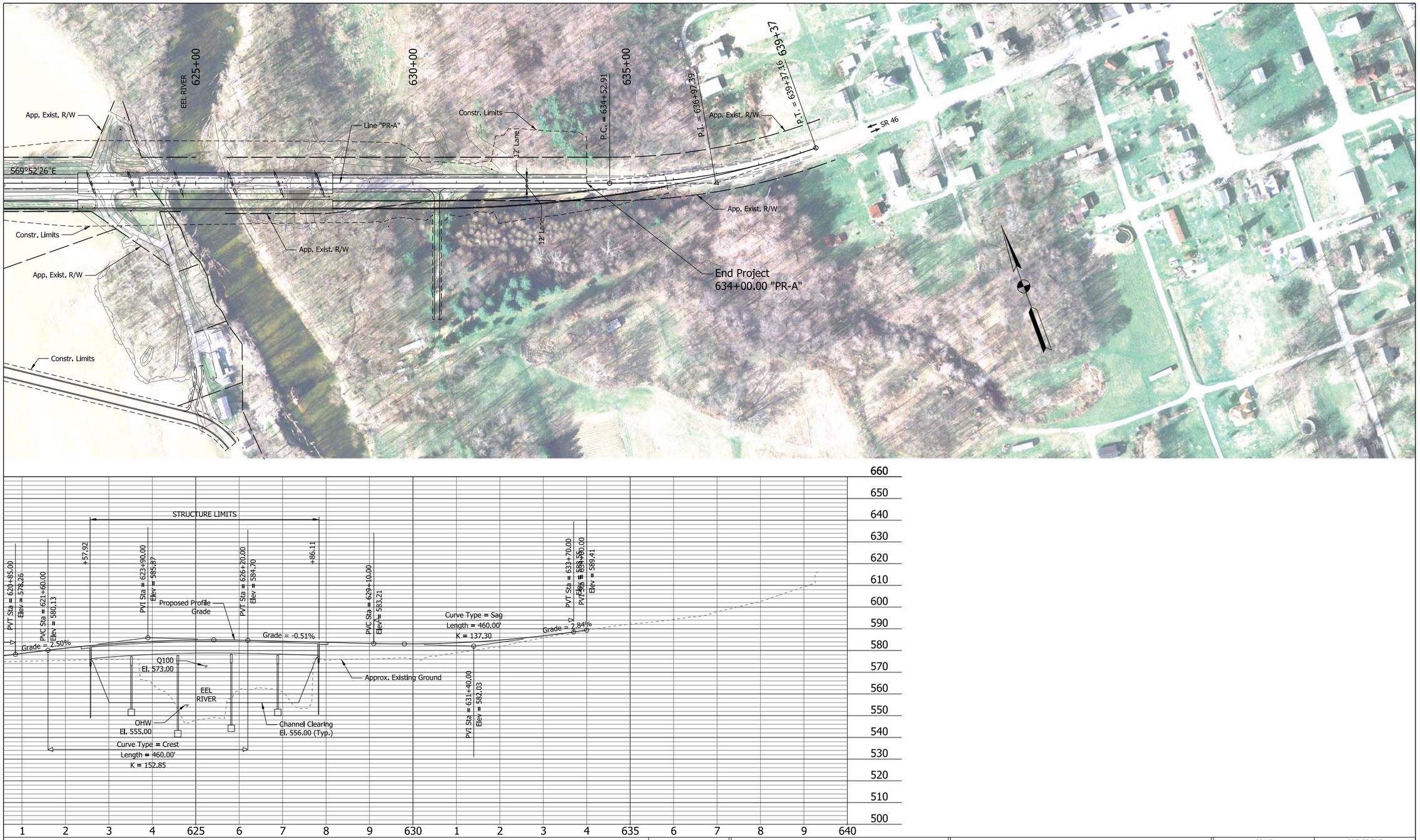


Figure 11 (Sheet 2)
Alternative 5B-S - Bridge Replacement on Existing Alignment - Temporary Bridge to South

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	SCALE 1" = 100'	BRIDGE FILE
			DESIGNATION XXX
DESIGNED: XXX DRAWN: ALF	SR 46 OVER EEL RIVER PLAN & PROFILE ALTERNATIVE 5B SOUTH TEMP.	SURVEY BOOK	SHEETS of
CHECKED: XXX CHECKED: XXX		CONTRACT XXX	PROJECT XXX

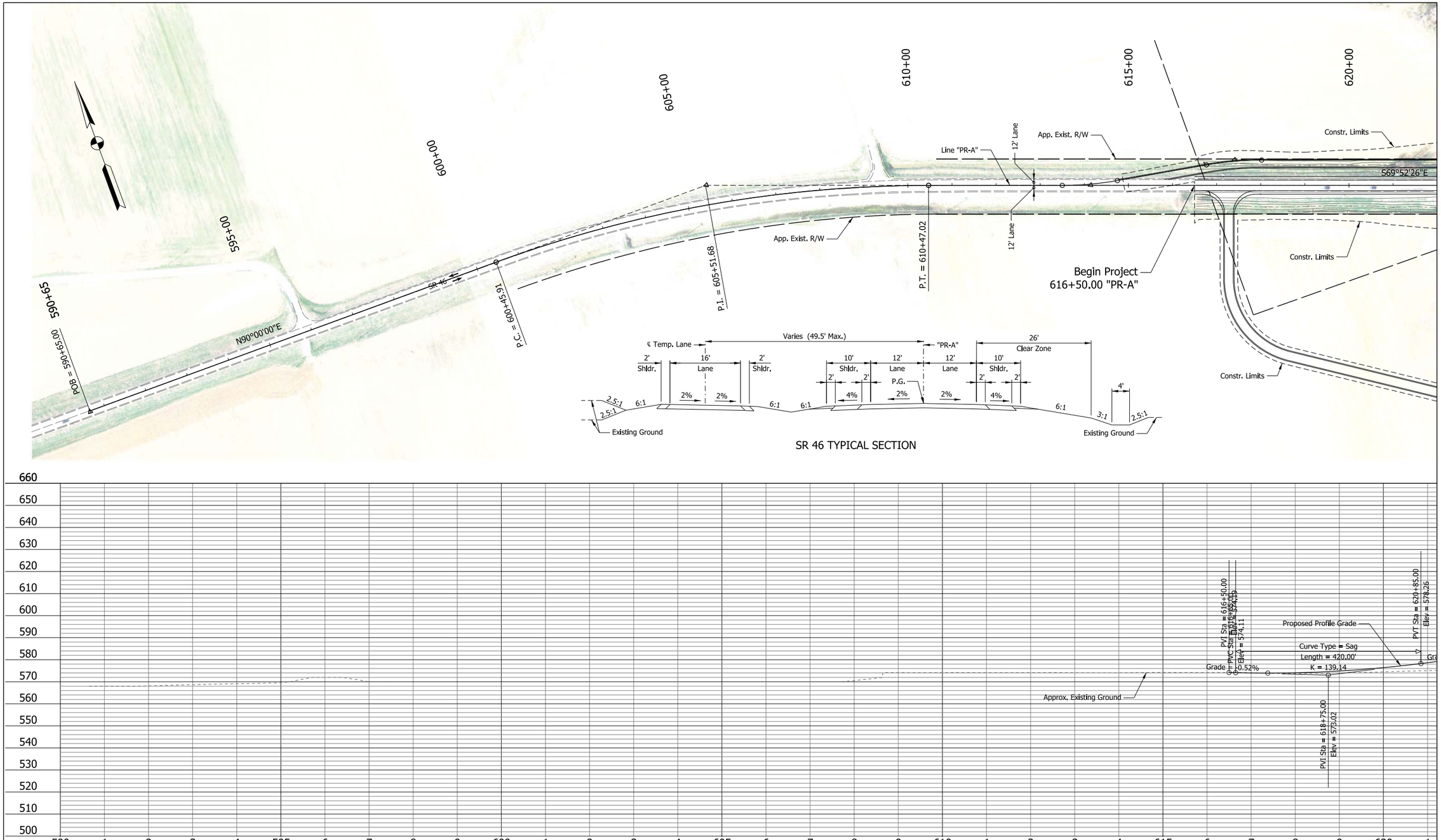
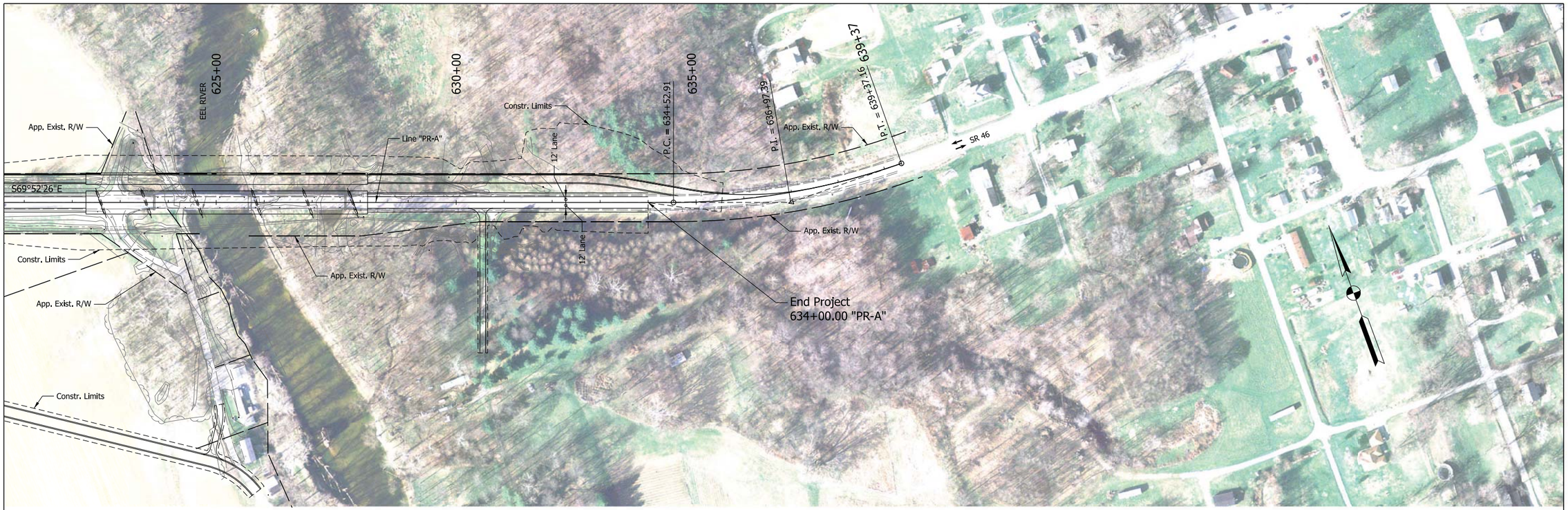


Figure 12 (Sheet 1)
Alternative 5B-N - Bridge Replacement on Existing Alignment - Temporary Bridge to North

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	SCALE 1" = 100'	BRIDGE FILE
			DESIGNATION XXX
DESIGNED: XXX DRAWN: ALF	SR 46 OVER EEL RIVER PLAN & PROFILE ALTERNATIVE 5B NORTH TEMP.	SURVEY BOOK	SHEETS of
CHECKED: XXX CHECKED: XXX		CONTRACT XXX	PROJECT XXX



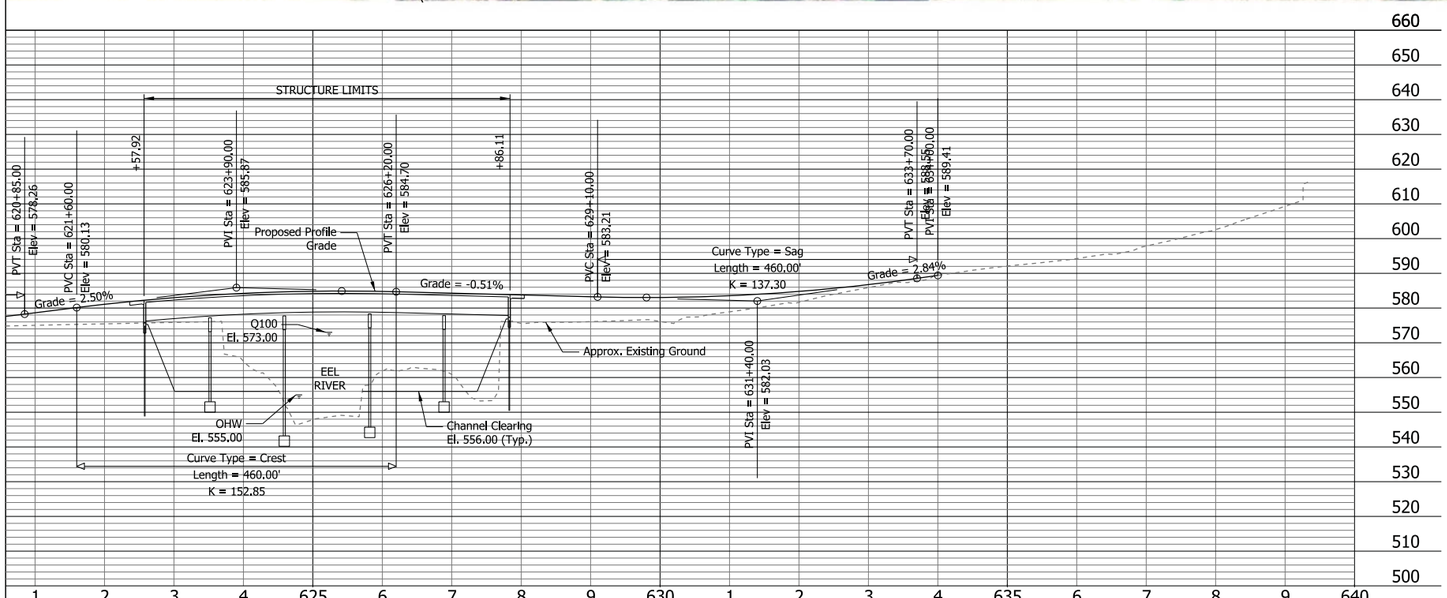


Figure 12 (Sheet 2)
Alternative 5B-N - Bridge Replacement on Existing Alignment - Temporary Bridge to North

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE		INDIANA DEPARTMENT OF TRANSPORTATION	SCALE: 1" = 100' / BRIDGE FILE / DESIGNATION: XXX
DESIGNED: XXX	DRAWN: ALF	SR 46 OVER EEL RIVER PLAN & PROFILE ALTERNATIVE 5B NORTH TEMP.	SURVEY BOOK / SHEETS of
CHECKED: XXX	CHECKED: XXX		CONTRACT: XXX / PROJECT: XXX

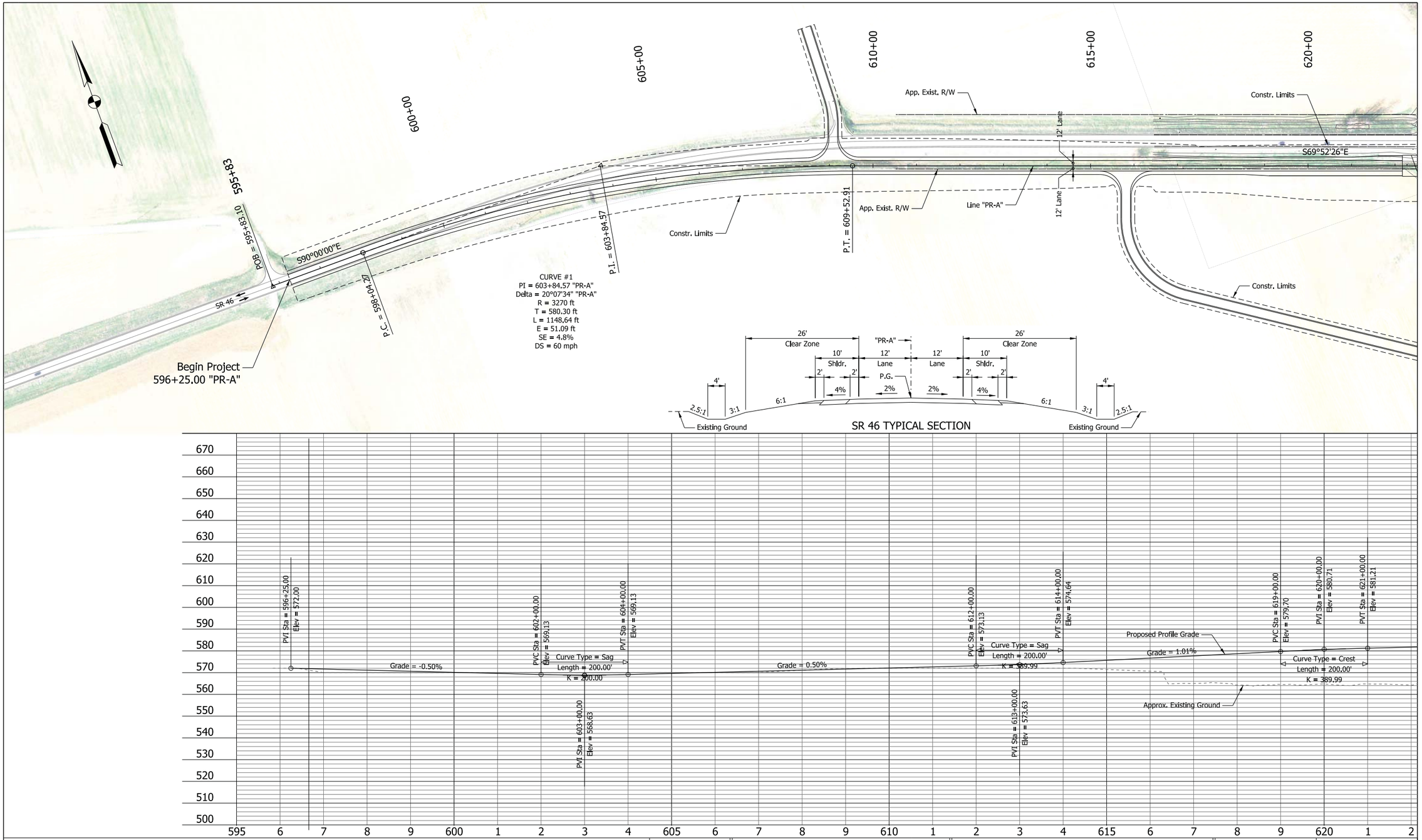


Figure 13 (Sheet 1)
Alternative 5C-S - Bridge Replacement on New Alignment to South

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	SCALE 1" = 100'	BRIDGE FILE
			DESIGNATION XXX
DESIGNED: XXX DRAWN: ALF	SR 46 OVER EEL RIVER PLAN & PROFILE ALTERNATIVE 5C SOUTH	SURVEY BOOK	SHEETS of
CHECKED: XXX CHECKED: XXX		CONTRACT XXX	PROJECT XXX

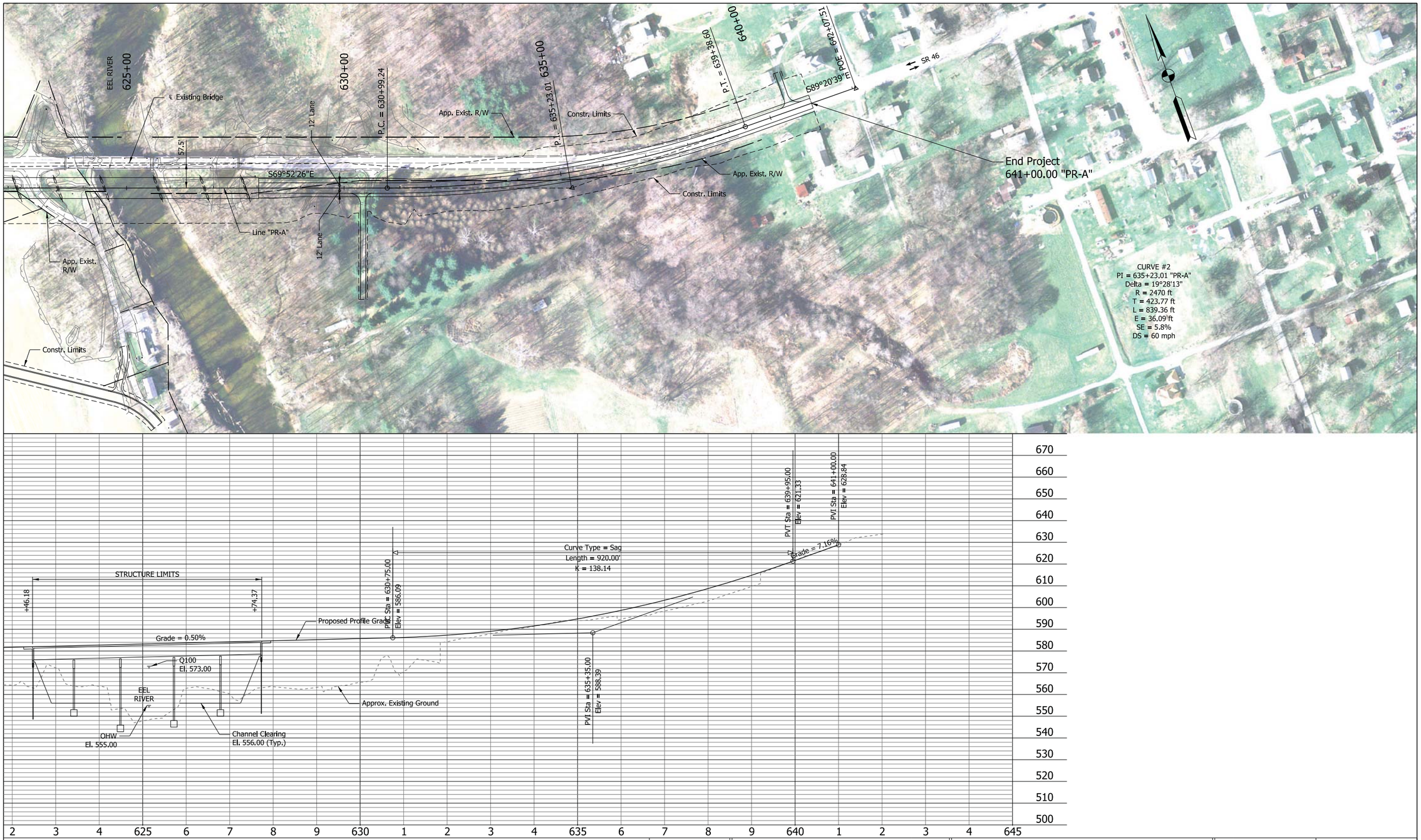


Figure 13 (Sheet 2)
Alternative 5C-S - Bridge Replacement on New Alignment to South

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	SCALE 1" = 100'	BRIDGE FILE
			DESIGNATION XXX
DESIGNED: XXX / DRAWN: ALF	SR 46 OVER EEL RIVER PLAN & PROFILE ALTERNATIVE 5C SOUTH	SURVEY BOOK	SHEETS of
CHECKED: XXX / CHECKED: XXX		CONTRACT XXX	PROJECT XXX

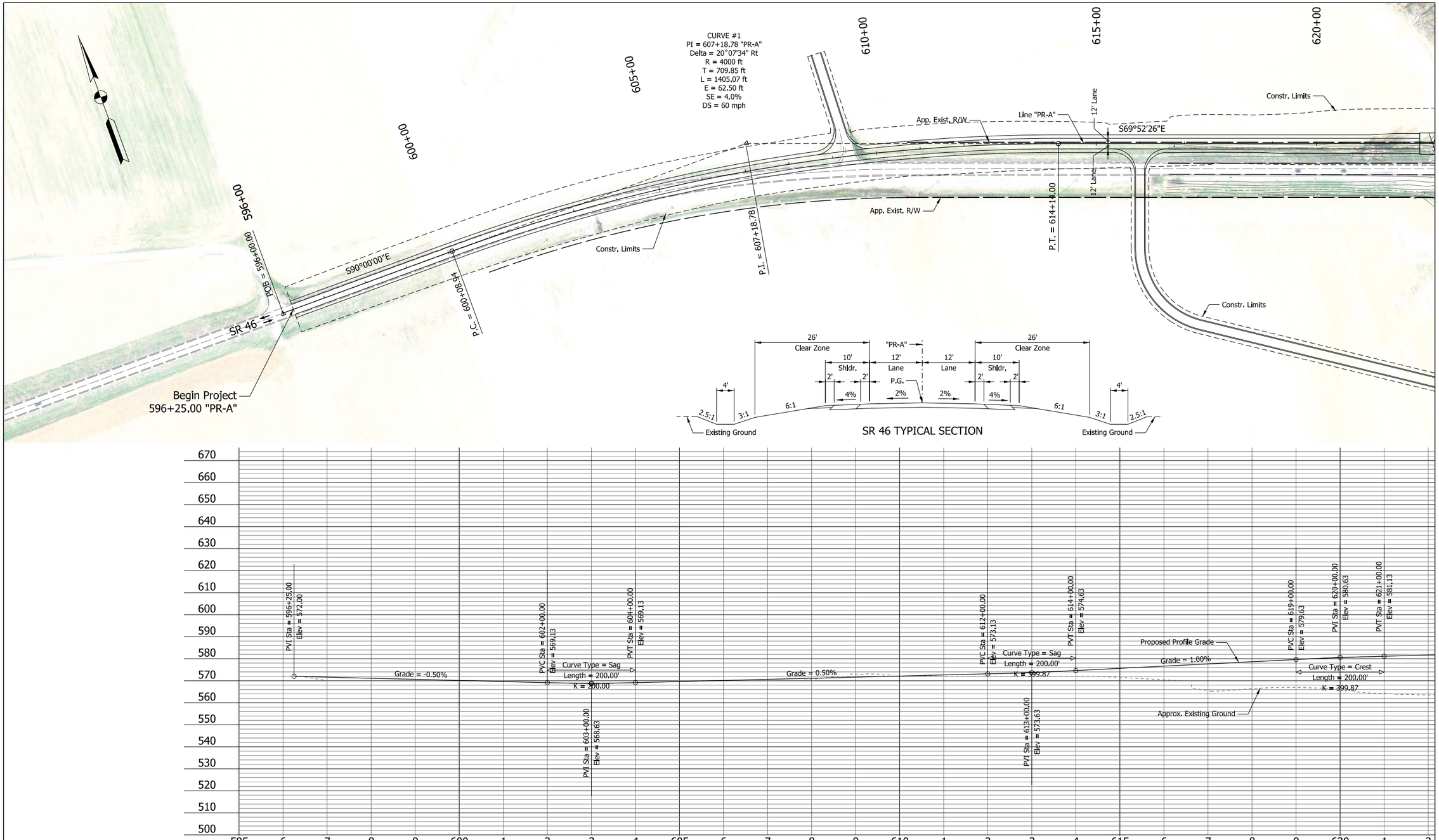


Figure 14 (Sheet 1)
Alternative 5C-N - Bridge Replacement on New Alignment to North

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	SCALE 1" = 100'	BRIDGE FILE
			DESIGNATION XXX
DESIGNED: XXX DRAWN: ALF	SR 46 OVER EEL RIVER PLAN & PROFILE ALTERNATIVE 5C NORTH	SURVEY BOOK	SHEETS of
CHECKED: XXX CHECKED: XXX		CONTRACT XXX	PROJECT XXX

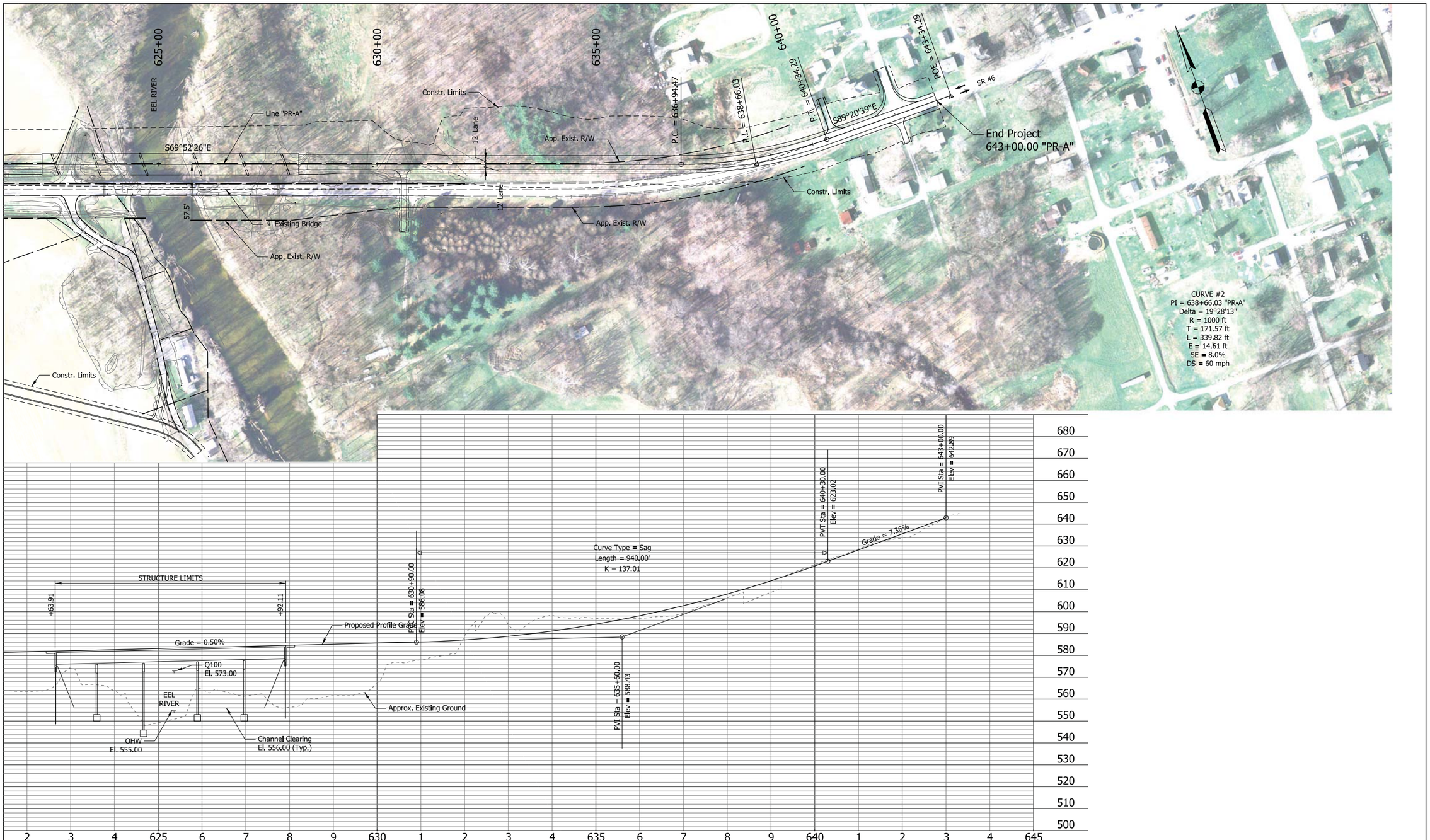


Figure 14 (Sheet 2)
Alternative 5C-N - Bridge Replacement on New Alignment to North

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	SCALE: 1" = 100'	BRIDGE FILE
			DESIGNATION: XXX
DESIGNED: XXX / DRAWN: ALF	SR 46 OVER EEL RIVER PLAN & PROFILE ALTERNATIVE 5C NORTH	SURVEY BOOK	SHEETS of
CHECKED: XXX / CHECKED: XXX		CONTRACT: XXX	PROJECT: XXX

Appendix B

Photographs

PHOTO 1: SR 46 bridge looking northeast

PHOTO 2: SR 46 looking east across bridge

PHOTO 3: SR 46 looking west across bridge

PHOTO 4: West span of bridge, looking north

PHOTO 5: East span of bridge, looking northeast

PHOTO 6: East approach to bridge, looking west

PHOTO 7: Looking upstream from bridge

PHOTO 8: Looking downstream from bridge

PHOTO 9: Northwest quadrant of bridge, looking northwest from bridge

PHOTO 10: Northwest quadrant of bridge and SR 46, looking northwest from just west of bridge

PHOTO 11: Southwest quadrant and SR 46 looking west from CR 475 E

PHOTO 12: Southeast quadrant of bridge looking southeast from bridge

PHOTO 13: Stream in southeast quadrant of bridge, looking west

PHOTO 14: Northeast quadrant of bridge, looking northeast from bridge

PHOTO 15: Northeast quadrant of bridge, looking north

PHOTO 16: SR 46 bridge during 4/19/2013 flood event, looking northeast

PHOTO 17: SR 46 during 4/19/2013 flood event, looking east

PHOTO 18: Southwest quadrant of bridge during 4/19/2013 flood event, looking east from CR 475 E

PHOTO 19: CR 475 E (submerged) during 4/19/2013 flood event, looking south from SR 46

PHOTO 20: L0 Down Stream Bearing Inside Gusset Plate Looking South

PHOTO 21: L1 Down Stream Connection Plate Looking West

PHOTO 22: L4 Down Stream Connection Plate Looking East

PHOTO 23: L10 Up Stream Connection Plate Looking West

PHOTO 24: L3 Down Stream Splice Bottom

PHOTO 25: West Truss Looking West

PHOTO 26: Damaged Sway Bracing at U2

PHOTO 27: Damaged Portal Bracing at U10

PHOTO 28: L0 Up Stream Interior Gusset Plate Looking South

PHOTO 29: L1 Up Stream Connection Plate Looking East

PHOTO 30: L8 Up Stream Connection Plate Looking West

PHOTO 31: L5 Down Stream Splice Bottom

PHOTO 32: Rusting of Up Stream Chord at Pier 2

PHOTO 33: Rust holes in Up Stream L1 Post

PHOTO 34: Rusting in L11 post on Downstream Side

PHOTO 35: Hole in East Span Upstream Interior Gusset Plate L0

PHOTO 36: Hole in West Span Upstream Interior Gusset Plate L0

PHOTO 37: Expedited repair installed September 2012

Appendix C

Cost Estimates

Alternative Analysis Estimate - ALT 2 (Rehab/Two-Way)

Road Construction Estimate	$342,706
Bridge Rehabilitation Construction Estimate	$3,434,546
Contingency (25%)	$944,313
MOT	$47,216
Subtotal - Construction Costs	**$4,768,780**
ROW (2.0 Ac)	$20,000
ROW Engineering (3 parcels)	$45,000
Utility Relocation	$5,000
Subtotal - Project Costs	**$4,838,780**
User Costs	$4,848,363
Total Alternative Cost	**$9,687,143**

Assumptions

MOT = 1% of construction cost (single phase of construction)
Daily detour costs: Full closure = $17,759/day (see user cost calculations)
MOT duration: 273

SR46 over Eel River- Rehab Alternative (On Alignment)

Item	Description	Quantity	Unit	Unit Price	Price
105-06845	CONSTRUCTION ENGINEERING	1	LS	$64,197.12	$64,197.12
110-01001	MOBILIZATION AND DEMOBILIZATION	1	LS	$160,492.80	$160,492.80
202-51328	PRESENT STRUCTURE, REMOVE PORTIONS	1	LS	$85,524.63	$85,524.63
619-51859	PAINT STEEL BRIDGE, TYPE 3	1	LS	$153,271.67	$153,271.67
619-11052	CLEAN STEEL BRIDGE, QP-2, TYPE 3	1	LS	$326,565.32	$326,565.32
712-11618	ENVIRONMENTAL CONTROL	1	LS	$75,255.01	$75,255.01
704-51002	CONCRETE, C, SUPERSTRUCTURE	247.1	CYS	$595.00	$147,035.89
703-06028	REINFORCING BARS, EPOXY COATED	66,905	LBS	$0.95	$63,559.54
609-06259	REINFORCED CONCRETE BRIDGE APPROACH, 12 IN	114	SYS	$80.00	$9,111.11
302-07455	DENSE GRADED SUBBASE	19	CYS	$62.00	$1,176.85
709-51821	SURFACE SEAL	1	LS	$12,043.35	$12,043.35
711-51876	JACKING AND SUPPORTING TRUSS	1	LS	$750,000.00	$750,000.00
724-51925	STRUCTURAL EXPANSION JOINT, SS	75.00	LFT	$161.00	$12,075.00
711-96800	STUD SHEAR CONNECTORS	792	EACH	$3.00	$2,376.00
702-51110	GRATES, BASINS, AND FITTINGS, CAST IRON	3,072	LBS	$3.75	$11,520.00
710-09158	PATCHING CONCRETE STRUCTURES	500	SFT	$75.00	$37,500.00
711-51035	STRUCTURAL STEEL	380,710	LBS	$4.00	$1,522,841.57

Total	$3,434,545.87
Contingency (25%)	$858,636.47
Rehab Total	$4,293,182.34

PRICING REPORT

Date: 06/28/2013
Time: 02:04:16

Project: ***Alternative 2***
Location:
County: ***CLAY***
District: ***Crawfordsville***

Project ID: ***0800910 ALT 2***
Bid Date: ***/ /*** State: ***IN***
Route:

SortCd	Sect	Pay Item	Description	Quantity	Unit	Bid Price	Extension	Std. Deviation	#	Comparison #1	Extension	Std. De
1	100	105-06845	construction engineering	1.000	L.S.	20,000.00	20,000.00	0.00	0	20,063.62	20,063.62	
2	100	110-01001	mobilization and demobilization	1.000	L.S.	90,000.00	90,000.00	0.00	0	80,698.97	80,698.97	
		GENERAL PROVISIONS SUBTOTALS					**110,000.00** **32.1%**				**100,762.59** **26.0%**	
3	200	201-52370	clearing right of way	1.000	L.S.	30,000.00	30,000.00	0.00	0	32,153.20	32,153.20	
4	200	203-02000	excavation, common	2,849.000	C.Y.	8.00	22,792.00	0.00	0	10.87	30,968.63	
5	200	207-08263	subgrade treatment, type ia	4,562.890	SYS	4.75	21,673.73	0.00	0	5.41	24,685.23	
		EARTHWORK SUBTOTALS					**74,465.73** **21.7%**				**87,807.06** **22.6%**	
6	300	301-07448	compacted aggregate, no. 53, base	1,098.000	TON	16.00	17,568.00	0.00	0	18.41	20,214.18	
		AGGREGATE PAVEMENT AND BASES SUBTOTALS					**17,568.00** **5.1%**				**20,214.18** **5.2%**	
7	400	402-07433	hma surface, type b	343.000	TON	75.00	25,725.00	0.00	0	184.71	63,355.53	
8	400	402-07438	hma intermediate, type b	512.000	TON	70.00	35,840.00	0.00	0	73.64	37,703.68	
9	400	402-07441	hma base, type b	778.000	TON	65.00	50,570.00	0.00	0	67.00	52,126.00	
10	400	406-05520	asphalt for tack coat	2.000	TON	750.00	1,500.00	0.00	0	311.41	622.82	
		ASPHALT PAVEMENT SUBTOTALS					**113,635.00** **33.2%**				**153,808.03** **39.7%**	
11	600	601-04150	guardrail, thrie beam, 6 ft 3 in spacing	868.000	L.F.	15.00	13,020.00	0.00	0	15.00	13,020.00	
12	600	616-02320	geotextiles	160.000	SYS	4.00	640.00	0.00	0	2.20	352.00	
13	600	616-06405	riprap, revetment	81.000	TON	29.05	2,353.05	0.00	0	29.05	2,353.05	
		INCIDENTAL CONSTRUCTION SUBTOTALS					**16,013.05** **4.7%**				**15,725.05** **4.1%**	

PRICING REPORT

Date: 06/28/2013
Time: 02:04:16

Project: ***Alternative 2***
Location:
County: ***CLAY***
District: ***Crawfordsville***

Project ID: ***0800910 ALT 2***
Bid Date: ***/ /*** State: ***IN***
Route:

SortCd	Sect	Pay Item	Description	Quantity	Unit	Bid Price	Extension	Std. Deviation	#	Comparison #1	Extension	Std. De
14	700	715-05019	pipe, type 1 circular 36 in	65.000	L.F.	76.00	4,940.00	0.00	0	76.00	4,940.00	
15	700	715-46040	pipe end section, dia 36 in	2.000	EACH	500.00	1,000.00	0.00	0	1,136.17	2,272.34	
		STRUCTURES SUBTOTALS					**5,940.00** **1.7%**				**7,212.34** **1.9%**	
16	800	808-06703	line, thermoplastic, solid, white, 4 in.	2,236.000	L.F.	1.00	2,236.00	0.00	0	0.34	760.24	
17	800	808-10033	line, multi-component, solid, white, 4 in	874.000	L.F.	0.34	297.16	0.00	0	0.34	297.16	
18	800	808-10034	line, multi-component, solid, yellow, 4 in	874.000	L.F.	0.36	314.64	0.00	0	0.36	314.64	
19	800	808-75245	line, thermoplastic, solid, yellow, 4 in	2,236.000	L.F.	1.00	2,236.00	0.00	0	0.37	827.32	
		TRAFFICE CONTROL DEVICES AND LIGHTING SUBTOTALS					**5,083.80** **1.5%**				**2,199.36** **0.6%**	
		TOTALS					**342,705.58** **100.0%**				**387,728.61** **100.0%**	

LOADED PRICES

Alternate #1: Spec PayItem/All Contractors/Only Low Prices/Last 36 MonthsCounty:CLARK

Alternative Analysis Estimate - ALT 3 (Rehab/One-Way Pair)

Road Construction Estimate	$2,064,035
New Bridge Construction Estimate	$3,245,416
Bridge Rehabilitation Construction Estimate	$3,263,631
Contingency (25%)	$2,143,270
MOT	$321,491
Subtotal - Construction Costs	**$11,037,843**
ROW (13.9 Ac)	$139,000
ROW Engineering (7 parcels)	$105,000
Utility Relocation	$30,000
Subtotal - Project Costs	**$11,311,843**
User Costs	$81,081
Total Alternative Cost	**$11,392,924**

Assumptions

MOT = 3% of construction cost (two construction phases)
Daily detour costs: Maintain two lanes = $297/day (see user cost calculations)
MOT duration: 273

PARSONS

Calculation Sheet

Made By TMB Date: 12/08/2011					Job No. ---
					Sheet No. L - 1
Rev	Input By	Date	Input Chk By	Date	Title: SR 46 over Eel River
-	MJK	6/11/2013	-	-	SUMMARY

Proposed Structure Number: **46-11-1316D**

Description: **SR 46** over **Eel River**

PRELIMINARY COST ESTIMATE - STEEL GIRDER

Pay Item	Pay Item Description	Quantity	Unit	Unit Price	Extension
105-06845	CONSTRUCTION ENGINEERING	1	LS	2%	$ 60,661.98
110-01001	MOBILIZATION AND DEMOBILIZATION	1	LS	5%	$ 151,654.96
206-51220	EXCAVATION, WET	401	CYS	$ 34.00	$ 13,645.33
206-51225	EXCAVATION, DRY	100	CYS	$ 30.00	$ 3,010.00
211-06467	AGGREGATE FOR END BENT BACKFILL	85	CYS	$ 60.00	$ 5,119.45
302-07455	DENSE GRADED SUBBASE	42	CYS	$ 90.00	$ 3,780.00
601-01522	GUARDRAIL TRANSITION TYPE TGB	4	EACH	$ 1,900.00	$ 7,600.00
602-06729	BARRIER DELINEATOR	24	EACH	$ 13.00	$ 312.00
609-06259	REINFORCED CONCRETE BRIDGE APPROACH, 12 IN.	250	SYS	$ 75.00	$ 18,750.00
616-02320	GEOTEXTILES	1,231	SYS	$ 3.00	$ 3,693.00
616-06405	RIPRAP, REVETMENT	681	TON	$ 25.00	$ 17,025.00
621-06574	SODDING	72	SYS	$ 19.00	$ 1,368.00
701-06011	DYNAMIC PILE LOAD TEST	3	EACH	$ 2,300.00	$ 6,900.00
701-08253	PILE SLEEVES	20	EACH	$ 605.00	$ 12,100.00
701-09557	TEST PILE, DYNAMIC, PRODUCTION	230	LFT	$ 60.00	$ 13,800.00
701-09559	TEST PILE, DYNAMIC, RESTRIKE	3	EACH	$ 1,900.00	$ 5,700.00
701-09683	PILE SHOE HP 12 X 74	56	EACH	$ 115.00	$ 6,440.00
701-95780	PILE, STEEL H, HP 12 IN X 74	3,100	LFT	$ 60.00	$ 186,000.00
702-51005	CONCRETE, A, SUBSTRUCTURE	164.9	CYS	$ 505.00	$ 83,268.89
702-51015	CONCRETE,B,FOOTINGS	133.3	CYS	$ 430.00	$ 57,333.33
703-06028	REINFORCING BARS	62,801	LBS	$ 0.90	$ 56,520.90
703-06029	REINFORCING BARS, EPOXY COATED	268,334	LBS	$ 0.95	$ 254,917.30
704-51002	CONCRETE, C, SUPERSTRUCTURE	609.3	CYS	$ 550.00	$ 335,115.00
706-05732	CONCRETE BRIDGE RAILING TRANSITION, TFC	4	CYS	$ 2,100.00	$ 8,400.00
706-09960	RAILING, CONCRETE, FC	807	LFT	$ 55.00	$ 44,385.00
709-51821	SURFACE SEAL	1	LS	$ 20,281	$ 20,281.00
711-51035	STRUCTURAL STEEL	848,925	LBS	$ 2.20	$ 1,867,635.00
			SUBTOTAL		**$ 3,245,416**
			CONTINGENCY	**25%**	**$ 758,275**
			TOTAL		**$ 4,003,691**

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SR46 over Eel River- Rehab Alternative (One Way Traffic)

Item	Description	Quantity	Unit	Unit Price	Price
105-06845	CONSTRUCTION ENGINEERING	1	LS	$61,002.45	$61,002.45
110-01001	MOBILIZATION AND DEMOBILIZATION	1	LS	$152,506.12	$152,506.12
202-51328	PRESENT STRUCTURE, REMOVE PORTIONS	1	LS	$85,524.63	$85,524.63
619-51859	PAINT STEEL BRIDGE, TYPE 3	1	LS	$153,271.67	$153,271.67
619-11052	CLEAN STEEL BRIDGE, QP-2, TYPE 3	1	LS	$326,565.32	$326,565.32
712-11618	ENVIRONMENTAL CONTROL	1	LS	$75,255.01	$75,255.01
704-51002	CONCRETE, C, SUPERSTRUCTURE	247.1	CYS	$595.00	$147,035.89
703-06028	REINFORCING BARS, EPOXY COATED	66,905	LBS	$0.95	$63,559.54
609-06259	REINFORCED CONCRETE BRIDGE APPROACH, 12 IN	114	SYS	$80.00	$9,111.11
302-07455	DENSE GRADED SUBBASE	19	CYS	$62.00	$1,176.85
709-51821	SURFACE SEAL	1	LS	$12,043.35	$12,043.35
711-51876	JACKING AND SUPPORTING TRUSS	1	LS	$750,000.00	$750,000.00
724-51925	STRUCTURAL EXPANSION JOINT, SS	75.00	LFT	$161.00	$12,075.00
711-96800	STUD SHEAR CONNECTORS	792	EACH	$3.00	$2,376.00
702-51110	GRATES, BASINS, AND FITTINGS, CAST IRON	3,072	LBS	$3.75	$11,520.00
714-05562	RETAINING WALL	3,100	SFT	$50.00	$155,000.00
710-09158	PATCHING CONCRETE STRUCTURES	500	SFT	$75.00	$37,500.00
711-51035	STRUCTURAL STEEL	302,027	LBS	$4.00	$1,208,107.99

Total	$3,263,630.94
Contingency (25%)	$815,907.74
Rehab Total	$4,079,538.68

PRICING REPORT

Project: ***Alt 3 (One Way Pair)***
Location:
County: ***CLAY***
District: ***Crawfordsville***

Project ID: ***0800910 ALT 3***
Bid Date: ***/ /*** State: ***IN***
Route:

SortCd	Sect	Pay Item	Description	Quantity	Unit	Bid Price	Extension	Std. Deviation	#	Comparison #1	Extension	Std. De
1	100	105-06845	construction engineering	1.000	L.S.	20,000.00	20,000.00	0.00	34	20,063.62	20,063.62	
2	100	110-01001	mobilization and demobilization	1.000	L.S.	90,000.00	90,000.00	0.00	34	80,698.97	80,698.97	
		GENERAL PROVISIONS SUBTOTALS					**110,000.00** **5.3%**				**100,762.59** **4.4%**	
3	200	201-52370	clearing right of way	1.000	L.S.	30,000.00	30,000.00	0.00	22	32,153.20	32,153.20	
4	200	203-02000	excavation, common	25,627.000	C.Y.	8.00	205,016.00	0.00	22	10.87	278,565.49	
5	200	203-02070	borrow	39,110.000	C.Y.	7.50	293,325.00	0.00	12	7.23	282,765.30	
6	200	207-08263	subgrade treatment, type ia	23,803.000	S.Y.	4.75	113,064.25	0.00	10	5.41	128,774.23	
7	200	207-08267	subgrade treatment, type iiia	4,379.000	S.Y.	9.00	39,411.00	0.00	12	10.47	45,848.13	
		EARTHWORK SUBTOTALS					**680,816.25** **33.0%**				**768,106.35** **33.9%**	
8	300	301-07448	compacted aggregate, no. 53, base	3,010.000	TON	16.00	48,160.00	0.00	20	18.41	55,414.10	
9	300	303-01180	compacted aggregate, no. 53	2,998.000	TON	16.50	49,467.00	0.00	12	20.56	61,638.88	
		AGGREGATE PAVEMENT AND BASES SUBTOTALS					**97,627.00** **4.7%**				**117,052.98** **5.2%**	
10	400	401-06264	profilograph, hma	1.000	L.S.	3,000.00	3,000.00	0.00	2	2,289.51	2,289.51	
11	400	401-07320	qc/qa-hma, 1, 64, surface, 9.5 mm	438.000	TON	55.55	24,330.90	0.00	21	55.55	24,330.90	
12	400	401-07328	qc/qa-hma, 3, 70, surface, 9.5 mm	999.000	TON	74.65	74,575.35	0.00	4	74.65	74,575.35	
13	400	401-07398	qc/qa-hma, 3, 70, intermediate, 19.0 mm	1,670.000	TON	57.96	96,793.20	0.00	4	57.96	96,793.20	
14	400	401-07406	qc/qa-hma, 1, 64, base, 25.0 mm	1,312.000	TON	47.24	61,978.88	0.00	9	47.24	61,978.88	
15	400	401-07424	qc/qa-hma, 3, 64, base, 19.0 mm	4,009.000	TON	57.05	228,713.45	0.00	6	57.05	228,713.45	
16	400	401-07429	qc/qa-hma, 5, 76, intermediate, og, 19.0 mm	1,552.000	TON	58.93	91,459.36	0.00	6	58.93	91,459.36	

PRICING REPORT

Project: ***Alt 3 (One Way Pair)***
Location:
County: ***CLAY***
District: ***Crawfordsville***

Project ID: ***0800910 ALT 3***
Bid Date: ***/ /*** State: ***IN***
Route:

SortCd	Sect	Pay Item	Description	Quantity	Unit	Bid Price	Extension	Std. Deviation	#	Comparison #1	Extension	Std. De
17	400	402-07432	hma surface, type a	283.000	TON	70.00	19,810.00	0.00	8	76.15	21,550.45	
18	400	402-07433	hma surface, type b	343.000	TON	75.00	25,725.00	0.00	0	184.71	63,355.53	
19	400	402-07435	hma intermediate, type a	472.000	TON	60.00	28,320.00	0.00	10	63.67	30,052.24	
20	400	402-07438	hma intermediate, type b	512.000	TON	70.00	35,840.00	0.00	0	73.64	37,703.68	
21	400	402-07440	hma base, type a	755.000	TON	50.00	37,750.00	0.00	6	69.61	52,555.55	
22	400	402-07441	hma base, type b	778.000	TON	65.00	50,570.00	0.00	0	67.00	52,126.00	
23	400	402-10087	hma for temporary pavement, d	4,517.000	TON	45.00	203,265.00	0.00	6	46.62	210,582.54	
24	400	406-05520	asphalt for tack coat	2.000	TON	750.00	1,500.00	0.00	0	311.41	622.82	
		ASPHALT PAVEMENT SUBTOTALS					**983,631.14** **47.7%**				**1,048,689.46** **46.3%**	
25	600	601-01522	guardrail, transition type tgb	4.000	EACH	1,984.38	7,937.52	0.00	4	1,984.38	7,937.52	
26	600	601-04150	guardrail, thrie beam, 6 ft 3 in spacing	868.000	L.F.	15.00	13,020.00	0.00	0	15.00	13,020.00	
27	600	601-94689	guardrail end treatment, os	4.000	EACH	2,683.63	10,734.52	0.00	10	2,683.63	10,734.52	
28	600	601-99105	guardrail, w-beam, 6 ft 3 in spacing	700.000	L.F.	18.25	12,775.00	0.00	10	18.25	12,775.00	
29	600	610-07486	hma for approaches, type a	697.000	TON	70.00	48,790.00	0.00	4	103.05	71,825.85	
30	600	616-02320	geotextiles	160.000	SYS	4.00	640.00	0.00	0	2.20	352.00	
31	600	616-06405	riprap, revetment	522.000	TON	29.05	15,164.10	0.00	12	29.05	15,164.10	
		INCIDENTAL CONSTRUCTION SUBTOTALS					**109,061.14** **5.3%**				**131,808.99** **5.8%**	
32	700	715-05019	pipe, type 1 circular 36 in	65.000	L.F.	76.00	4,940.00	0.00	0	76.00	4,940.00	
33	700	715-05048	pipe, type 4 circular 6 in	7,777.000	L.F.	2.50	19,442.50	0.00	10	3.42	26,597.34	
34	700	715-05053	pipe, underdrain, outlet 6 in	1,100.000	L.F.	12.25	13,475.00	0.00	6	14.18	15,598.00	

PRICING REPORT

Date: 06/28/2013
Time: 02:05:13

Project: ***Alt 3 (One Way Pair)***
Location:
County: ***CLAY***
District: ***Crawfordsville***

Project ID: ***0800910 ALT 3***
Bid Date: ***/ /*** State: ***IN***
Route:

SortCd	Sect	Pay Item	Description	Quantity	Unit	Bid Price	Extension	Std. Deviation	#	Comparison #1	Extension	Std. De
35	700	715-46040	pipe end section, dia 36 in	2.000	EACH	500.00	1,000.00	0.00	0	1,136.17	2,272.34	
36	700	718-06528	outlet protector, 1	22.000	EACH	525.00	11,550.00	0.00	2	606.00	13,332.00	
37	700	718-52610	aggregate for underdrains	701.000	C.Y.	30.00	21,030.00	0.00	8	38.14	26,736.14	
		STRUCTURES SUBTOTALS					**71,437.50** **3.5%**				**89,475.82** **4.0%**	
38	800	808-06703	line, thermoplastic, solid, white, 4 in.	2,236.000	L.F.	1.00	2,236.00	0.00	0	0.34	760.24	
39	800	808-10033	line, multi-component, solid, white, 4 in	8,651.000	L.F.	0.34	2,941.34	0.00	14	0.34	2,941.34	
40	800	808-10034	line, multi-component, solid, yellow, 4 in	8,651.000	L.F.	0.36	3,114.36	0.00	12	0.36	3,114.36	
41	800	808-75245	line, thermoplastic, solid, yellow, 4 in	2,236.000	L.F.	1.00	2,236.00	0.00	0	0.37	827.32	
42	800	808-75998	snowplowable raised pavement marker	56.000	EACH	16.68	934.08	0.00	22	16.68	934.08	
		TRAFFICE CONTROL DEVICES AND LIGHTING SUBTOTALS					**11,461.78** **0.6%**				**8,577.34** **0.4%**	
		TOTALS					**2,064,034.81** **100.0%**				**2,264,473.53** **100.0%**	

LOADED PRICES

Alternate #1: DOT District 1/Low 2 Prices/Last 6 Months

Alternative Analysis Estimate - Alt 4 (Bypass/Pedestrian Bridge)

Road Construction Estimate	$1,927,374
New Bridge Construction Estimate	$3,411,266
Ped. Bridge Rehab Construction Estimate (Existing Location)	$2,431,126
Contingency (25%)	$1,942,441
MOT	$194,244
Subtotal - Construction Costs	**$9,906,451**
ROW (13.9 Ac)	$139,000
ROW Engineering (7 parcels)	$105,000
Utility Relocation	$30,000
Subtotal - Project Costs	**$10,180,451**
User Costs	$81,081
Total Alternative Cost	**$10,261,532**

Assumptions

MOT = 2% of construction cost
Daily detour costs: Maintain two lanes = $297/day (see user cost calculations)
MOT duration: 273

PARSONS

Calculation Sheet

Made By TMB Date: 12/08/2011					Job No. ---
					Sheet No. L - 1
Rev	Input By	Date	Input Chk By	Date	Title: SR 46 over Eel River
-	MJK	6/11/2013	-	-	SUMMARY

Proposed Structure Number: **46-11-1316D**

Description: **SR 46** over **Eel River**

PRELIMINARY COST ESTIMATE - STEEL GIRDER

Pay Item	Pay Item Description	Quantity	Unit	Unit Price	Extension
105-06845	CONSTRUCTION ENGINEERING	1	LS	2%	$ 63,761.98
110-01001	MOBILIZATION AND DEMOBILIZATION	1	LS	5%	$ 159,404.96
206-51220	EXCAVATION, WET	401	CYS	$ 34.00	$ 13,645.33
206-51225	EXCAVATION, DRY	100	CYS	$ 30.00	$ 3,010.00
211-06467	AGGREGATE FOR END BENT BACKFILL	85	CYS	$ 60.00	$ 5,119.45
302-07455	DENSE GRADED SUBBASE	42	CYS	$ 90.00	$ 3,780.00
601-01522	GUARDRAIL TRANSITION TYPE TGB	4	EACH	$ 1,900.00	$ 7,600.00
602-06729	BARRIER DELINEATOR	24	EACH	$ 13.00	$ 312.00
609-06259	REINFORCED CONCRETE BRIDGE APPROACH, 12 IN.	250	SYS	$ 75.00	$ 18,750.00
616-02320	GEOTEXTILES	1,231	SYS	$ 3.00	$ 3,693.00
616-06405	RIPRAP, REVETMENT	681	TON	$ 25.00	$ 17,025.00
621-06574	SODDING	72	SYS	$ 19.00	$ 1,368.00
701-06011	DYNAMIC PILE LOAD TEST	3	EACH	$ 2,300.00	$ 6,900.00
701-08253	PILE SLEEVES	20	EACH	$ 605.00	$ 12,100.00
701-09557	TEST PILE, DYNAMIC, PRODUCTION	230	LFT	$ 60.00	$ 13,800.00
701-09559	TEST PILE, DYNAMIC, RESTRIKE	3	EACH	$ 1,900.00	$ 5,700.00
701-09683	PILE SHOE HP 12 X 74	56	EACH	$ 115.00	$ 6,440.00
701-95780	PILE, STEEL H, HP 12 IN X 74	3,100	LFT	$ 60.00	$ 186,000.00
702-51005	CONCRETE, A, SUBSTRUCTURE	164.9	CYS	$ 505.00	$ 83,268.89
702-51015	CONCRETE,B,FOOTINGS	133.3	CYS	$ 430.00	$ 57,333.33
703-06028	REINFORCING BARS	62,801	LBS	$ 0.90	$ 56,520.90
703-06029	REINFORCING BARS, EPOXY COATED	268,334	LBS	$ 0.95	$ 254,917.30
704-51002	CONCRETE, C, SUPERSTRUCTURE	609.3	CYS	$ 550.00	$ 335,115.00
706-05732	CONCRETE BRIDGE RAILING TRANSITION, TFC	4	CYS	$ 2,100.00	$ 8,400.00
706-09960	RAILING, CONCRETE, FC	807	LFT	$ 55.00	$ 44,385.00
709-51821	SURFACE SEAL	1	LS	$ 20,281	$ 20,281.00
711-51035	STRUCTURAL STEEL	848,925	LBS	$ 2.20	$ 1,867,635.00
714-05562	RETAINING WALL - PERMANENT	3,100	SFT	$ 50.00	$ 155,000.00
			SUBTOTAL		**$ 3,411,266**
			CONTINGENCY	**25%**	**$ 797,025**
			TOTAL		**$ 4,208,291**

Printed 2:54 PM 6/23/2015

SR46 over Eel River- Pedestrian Rehab Alternative (Left in Existing Location)

Item	Description	Quantity	Unit	Unit Price	Price
105-06845	CONSTRUCTION ENGINEERING	1	LS	$22,662.81	$22,662.81
110-01001	MOBILIZATION AND DEMOBILIZATION	1	LS	$56,657.03	$56,657.03
202-51328	PRESENT STRUCTURE, REMOVE PORTIONS	1	LS	$85,525.00	$85,525.00
619-51859	PAINT STEEL BRIDGE, TYPE 3	1	LS	$153,271.67	$153,271.67
619-11052	CLEAN STEEL BRIDGE, QP-2, TYPE 3	1	LS	$326,565.32	$326,565.32
712-11618	ENVIRONMENTAL CONTROL	1	LS	$75,255.01	$75,255.01
704-51002	CONCRETE, C, SUPERSTRUCTURE	154.4	CYS	$550.00	$84,947.20
703-06029	REINFORCING BARS, EPOXY COATED	38,612	LBS	$0.95	$36,681.75
709-51821	SURFACE SEAL	1	LS	$12,043.35	$12,043.35
724-51925	STRUCTURAL EXPANSION JOINT, SS	50.00	LFT	$145.00	$7,250.00
702-51110	GRATES, BASINS, AND FITTINGS, CAST IRON	1,536	LBS	$3.75	$5,760.00
710-09158	PATCHING CONCRETE STRUCTURES	500	SFT	$75.00	$37,500.00
711-51876	JACKING AND SUPPORTING TRUSS	1	LS	$750,000.00	$750,000.00
711-51035	STRUCTURAL STEEL	194,252	LBS	$4.00	$777,007.09

Total	$2,431,126.25
Contingency (25%)	$607,781.56
Rehab Total	$3,038,907.81

PRICING REPORT

Date: 06/28/2013
Time: 02:06:12

Project: ***pedestrian / new alignment***
Location:
County: ***CLAY***
District: ***Crawfordsville***

Project ID: ***0800910 ALT 4***
Bid Date: ***/ /*** State: ***IN***
Route:

SortCd	Sect	Pay Item	Description	Quantity	Unit	Bid Price	Extension	Std. Deviation	#	Comparison #1	Extension	Std. De
1	100	105-06845	construction engineering	1.000	L.S.	20,000.00	20,000.00	0.00	34	20,063.62	20,063.62	
2	100	110-01001	mobilization and demobilization	1.000	L.S.	90,000.00	90,000.00	0.00	34	80,698.97	80,698.97	
		GENERAL PROVISIONS SUBTOTALS					**110,000.00** **5.7%**				**100,762.59** **4.9%**	
3	200	201-52370	clearing right of way	1.000	L.S.	30,000.00	30,000.00	0.00	22	32,153.20	32,153.20	
4	200	203-02000	excavation, common	22,778.000	C.Y.	8.00	182,224.00	0.00	22	10.87	247,596.86	
5	200	203-02070	borrow	39,110.000	C.Y.	7.50	293,325.00	0.00	12	7.23	282,765.30	
6	200	207-08263	subgrade treatment, type ia	19,240.000	S.Y.	4.75	91,390.00	0.00	10	5.41	104,088.40	
7	200	207-08267	subgrade treatment, type iiia	4,379.000	S.Y.	9.00	39,411.00	0.00	12	10.47	45,848.13	
		EARTHWORK SUBTOTALS					**636,350.00** **33.0%**				**712,451.89** **34.3%**	
8	300	301-07448	compacted aggregate, no. 53, base	1,912.000	TON	16.00	30,592.00	0.00	20	18.41	35,199.92	
9	300	303-01180	compacted aggregate, no. 53	2,998.000	TON	16.50	49,467.00	0.00	12	20.56	61,638.88	
		AGGREGATE PAVEMENT AND BASES SUBTOTALS					**80,059.00** **4.2%**				**96,838.80** **4.7%**	
10	400	401-06264	profilograph, hma	1.000	L.S.	3,000.00	3,000.00	0.00	2	2,289.51	2,289.51	
11	400	401-07320	qc/qa-hma, 1, 64, surface, 9.5 mm	438.000	TON	55.55	24,330.90	0.00	21	55.55	24,330.90	
12	400	401-07328	qc/qa-hma, 3, 70, surface, 9.5 mm	999.000	TON	74.65	74,575.35	0.00	4	74.65	74,575.35	
13	400	401-07398	qc/qa-hma, 3, 70, intermediate, 19.0 mm	1,670.000	TON	57.96	96,793.20	0.00	4	57.96	96,793.20	
14	400	401-07406	qc/qa-hma, 1, 64, base, 25.0 mm	1,312.000	TON	47.24	61,978.88	0.00	9	47.24	61,978.88	
15	400	401-07424	qc/qa-hma, 3, 64, base, 19.0 mm	4,009.000	TON	57.05	228,713.45	0.00	6	57.05	228,713.45	
16	400	401-07429	qc/qa-hma, 5, 76, intermediate, og, 19.0 mm	1,552.000	TON	58.93	91,459.36	0.00	6	58.93	91,459.36	

PRICING REPORT

Project: ***pedestrian / new alignment***
Location:
County: ***CLAY***
District: ***Crawfordsville***

Project ID: ***0800910 ALT 4***
Bid Date: ***/ /*** State: ***IN***
Route:

SortCd	Sect	Pay Item	Description	Quantity	Unit	Bid Price	Extension	Std. Deviation	#	Comparison #1	Extension	Std. De
17	400	402-07432	hma surface, type a	283.000	TON	70.00	19,810.00	0.00	8	76.15	21,550.45	
18	400	402-07435	hma intermediate, type a	472.000	TON	60.00	28,320.00	0.00	10	63.67	30,052.24	
19	400	402-07440	hma base, type a	755.000	TON	50.00	37,750.00	0.00	6	69.61	52,555.55	
20	400	402-10087	hma for temporary pavement, d	4,517.000	TON	45.00	203,265.00	0.00	6	46.62	210,582.54	
		ASPHALT PAVEMENT SUBTOTALS					**869,996.14** **45.1%**				**894,881.43** **43.1%**	
21	600	601-01522	guardrail, transition type tgb	4.000	EACH	1,984.38	7,937.52	0.00	4	1,984.38	7,937.52	
22	600	601-94689	guardrail end treatment, os	4.000	EACH	2,683.63	10,734.52	0.00	10	2,683.63	10,734.52	
23	600	601-99105	guardrail, w-beam, 6 ft 3 in spacing	700.000	L.F.	18.25	12,775.00	0.00	10	18.25	12,775.00	
24	600	604-06070	sidewalk, concrete	1,887.000	SYS	35.00	66,045.00	0.00	0	35.43	66,856.41	
25	600	610-07486	hma for approaches, type a	697.000	TON	70.00	48,790.00	0.00	4	103.05	71,825.85	
26	600	616-06405	riprap, revetment	441.000	TON	29.05	12,811.05	0.00	12	29.05	12,811.05	
		INCIDENTAL CONSTRUCTION SUBTOTALS					**159,093.09** **8.3%**				**182,940.35** **8.8%**	
27	700	715-05048	pipe, type 4 circular 6 in	7,777.000	L.F.	2.50	19,442.50	0.00	10	3.42	26,597.34	
28	700	715-05053	pipe, underdrain, outlet 6 in	1,100.000	L.F.	12.25	13,475.00	0.00	6	14.18	15,598.00	
29	700	718-06528	outlet protector, 1	22.000	EACH	525.00	11,550.00	0.00	2	606.00	13,332.00	
30	700	718-52610	aggregate for underdrains	701.000	C.Y.	30.00	21,030.00	0.00	8	38.14	26,736.14	
		STRUCTURES SUBTOTALS					**65,497.50** **3.4%**				**82,263.48** **4.0%**	
31	800	808-10033	line, multi-component, solid, white, 4 in	7,777.000	L.F.	0.34	2,644.18	0.00	14	0.34	2,644.18	
32	800	808-10034	line, multi-component, solid, yellow, 4 in	7,777.000	L.F.	0.36	2,799.72	0.00	12	0.36	2,799.72	

PRICING REPORT

Date: 06/28/2013
Time: 02:06:13

Project: ***pedestrian / new alignment***
Location:
County: ***CLAY***
District: ***Crawfordsville***

Project ID: ***0800910 ALT 4***
Bid Date: ***/ /*** State: ***IN***
Route:

SortCd	Sect	Pay Item	Description	Quantity	Unit	Bid Price	Extension	Std. Deviation	#	Comparison #1	Extension	Std. De
33	800	808-75998	snowplowable raised pavement marker	56.000	EACH	16.68	934.08	0.00	22	16.68	934.08	
		TRAFFICE CONTROL DEVICES AND LIGHTING SUBTOTALS					**6,377.98** **0.3%**				**6,377.98** **0.3%**	
		TOTALS					**1,927,373.71** **100.0%**				**2,076,516.52** **100.0%**	

LOADED PRICES

Alternate #1: DOT District 1/Low 2 Prices/Last 6 Months

Alternative Analysis Estimate - On Alignment 5A (Detour)

Road Construction Estimate	$856,975
New Bridge Construction Estimate	$2,495,621
Ped. Bridge Rehab Construction Estimate (Relocate)	$2,805,263
Contingency (25%)	$1,539,465
MOT	$76,973
Subtotal - Construction Costs	**$7,774,297**
ROW (7.0 Ac)	$70,000
ROW Engineering (5 parcels)	$75,000
Utility Relocation	$5,000
Subtotal - Project Costs	**$7,924,297**
User Costs	$4,848,363
Total Alternative Cost	**$12,772,660**

Assumptions

Pedestrian bridge rehab includes rehabilitation, relocation, and new substructure (no other trail work)
MOT = 1% of construction cost
Daily detour costs: Full closure = $17,759/day (see user cost calculations)
MOT duration: 273

PARSONS

Calculation Sheet

Made By TMB Date: 12/08/2011					Job No. ---
					Sheet No. L - 1
Rev	Input By	Date	Input Chk By	Date	Title: SR 46 over Eel River
-	MJK	6/11/2013	-	-	SUMMARY

Proposed Structure Number: **46-11-1316D**

Description: **SR 46** over **Eel River**

PRELIMINARY COST ESTIMATE - BULB T BEAM

Pay Item	Pay Item Description	Quantity	Unit	Unit Price	Extension
105-06845	CONSTRUCTION ENGINEERING	1	LS	2%	$ 42,908.81
110-01001	MOBILIZATION AND DEMOBILIZATION	1	LS	5%	$ 107,272.02
202-51330	PRESENT STRUCTURE, REMOVE	1	LS	$ 200,000.00	$ 200,000.00
206-51220	EXCAVATION, WET	803	CYS	$ 34.00	$ 27,290.67
206-51225	EXCAVATION, DRY	201	CYS	$ 30.00	$ 6,020.00
211-06467	AGGREGATE FOR END BENT BACKFILL	85	CYS	$ 60.00	$ 5,119.45
302-07455	DENSE GRADED SUBBASE	42	CYS	$ 90.00	$ 3,780.00
601-01522	GUARDRAIL TRANSITION TYPE TGB	4	EACH	$ 1,900.00	$ 7,600.00
602-06729	BARRIER DELINEATOR	24	EACH	$ 13.00	$ 312.00
609-06259	REINFORCED CONCRETE BRIDGE APPROACH, 12 IN.	250	SYS	$ 75.00	$ 18,750.00
616-02320	GEOTEXTILES	1,231	SYS	$ 3.00	$ 3,693.00
616-06405	RIPRAP, REVETMENT	681	TON	$ 25.00	$ 17,025.00
621-06574	SODDING	72	SYS	$ 19.00	$ 1,368.00
701-06011	DYNAMIC PILE LOAD TEST	4	EACH	$ 2,300.00	$ 9,200.00
701-08253	PILE SLEEVES	20	EACH	$ 605.00	$ 12,100.00
701-09557	TEST PILE, DYNAMIC, PRODUCTION	290	LFT	$ 60.00	$ 17,400.00
701-09559	TEST PILE, DYNAMIC, RESTRIKE	4	EACH	$ 1,900.00	$ 7,600.00
701-09683	PILE SHOE HP 12 X 74	92	EACH	$ 115.00	$ 10,580.00
701-95780	PILE, STEEL H, HP 12 IN X 74	4,850	LFT	$ 60.00	$ 291,000.00
702-51005	CONCRETE, A, SUBSTRUCTURE	329.8	CYS	$ 505.00	$ 166,537.78
702-51015	CONCRETE,B,FOOTINGS	266.7	CYS	$ 430.00	$ 114,666.67
703-06028	REINFORCING BARS	125,601	LBS	$ 0.90	$ 113,040.90
703-06029	REINFORCING BARS, EPOXY COATED	300,042	LBS	$ 0.95	$ 285,039.90
704-51002	CONCRETE, C, SUPERSTRUCTURE	679.6	CYS	$ 550.00	$ 373,780.00
706-05732	CONCRETE BRIDGE RAILING TRANSITION, TFC	4	CYS	$ 2,100.00	$ 8,400.00
706-09960	RAILING, CONCRETE, FC	877	LFT	$ 55.00	$ 48,235.00
707-10176	STRUCTURAL MEMBER, CONCRETE BULB-T BEAM, 72 IN X 49 IN	1742	LFT	$ 330.00	$ 574,860.00
709-51821	SURFACE SEAL	1	LS	$ 22,042	$ 22,042.00
			SUBTOTAL		**$ 2,495,621**
			CONTINGENCY	**25%**	**$ 536,360**
			TOTAL		**$ 3,031,981**

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SR46 over Eel River- Pedestrian Rehab Alternative (At New Location)

Item	Description	Quantity	Unit	Unit Price	Price
105-06845	CONSTRUCTION ENGINEERING	1	LS	$23,379.11	$23,379.11
110-01001	MOBILIZATION AND DEMOBILIZATION	1	LS	$58,447.77	$58,447.77
202-51328	PRESENT STRUCTURE, REMOVE PORTIONS	1	LS	$385,525.00	$385,525.00
619-51859	PAINT STEEL BRIDGE, TYPE 3	1	LS	$153,271.67	$153,271.67
619-11052	CLEAN STEEL BRIDGE, QP-2, TYPE 3	1	LS	$326,565.32	$326,565.32
712-11618	ENVIRONMENTAL CONTROL	1	LS	$75,255.01	$75,255.01
701-51195	PILE, STEEL H, HP 12 IN X 53	1400	LFT	$45.00	$63,000.00
702-51005	CONCRETE, A, SUBSTRUCTURE	53.3	CYS	$505.00	$26,895.93
704-51002	CONCRETE, C, SUPERSTRUCTURE	154.4	CYS	$550.00	$84,947.20
703-06028	REINFORCING BARS	13,315	LBS	$0.90	$11,983.33
703-06029	REINFORCING BARS, EPOXY COATED	38,612	LBS	$0.95	$36,681.75
709-51821	SURFACE SEAL	1	LS	$12,043.35	$12,043.35
724-51925	STRUCTURAL EXPANSION JOINT, SS	100.00	LFT	$145.00	$14,500.00
702-51110	GRATES, BASINS, AND FITTINGS, CAST IRON	1,536	LBS	$3.75	$5,760.00
711-51876	JACKING AND SUPPORTING TRUSS	1	LS	$750,000.00	$750,000.00
711-51035	STRUCTURAL STEEL	194,252	LBS	$4.00	$777,007.09

Total	$2,805,262.53
Contingency (25%)	$701,315.63
Rehab Total	$3,506,578.17

PRICING REPORT

Date: 06/28/2013
Time: 02:06:40

Project: ***On Alignment Detour***
Location:
County: ***CLAY***
District: ***Crawfordsville***

Project ID: ***ALT 5A***
Bid Date: ***/ /***
Route:
State: ***IN***

SortCd	Sect	Pay Item	Description	Quantity	Unit	Bid Price	Extension	Std. Deviation	#	district: crawfordsville	Extension	Std. De
1	100	105-06845	construction engineering	1.000	L.S.	20,000.00	20,000.00	0.00	34	20,063.62	20,063.62	
2	100	110-01001	mobilization and demobilization	1.000	L.S.	90,000.00	90,000.00	0.00	34	80,698.97	80,698.97	
		CATEGORY 100 SUBTOTALS					**110,000.00** **12.8%**				**100,762.59** **10.8%**	
3	200	201-52370	clearing right of way	1.000	L.S.	30,000.00	30,000.00	0.00	22	32,153.20	32,153.20	
4	200	203-02000	excavation, common	15,132.000	C.Y.	8.00	121,056.00	0.00	22	10.87	164,484.84	
5	200	203-02070	borrow	27,562.000	C.Y.	7.50	206,715.00	0.00	12	7.23	199,273.26	
6	200	207-08263	subgrade treatment, type ia	5,688.000	S.Y.	4.75	27,018.00	0.00	10	5.41	30,772.08	
7	200	207-08267	subgrade treatment, type iiia	2,696.000	S.Y.	9.00	24,264.00	0.00	12	10.47	28,227.12	
		CATEGORY 200 SUBTOTALS					**409,053.00** **47.7%**				**454,910.50** **48.6%**	
8	300	301-07448	compacted aggregate, no. 53, base	566.000	TON	16.00	9,056.00	0.00	20	18.41	10,420.06	
9	300	303-01180	compacted aggregate, no. 53	470.000	TON	16.50	7,755.00	0.00	12	20.56	9,663.20	
		CATEGORY 300 SUBTOTALS					**16,811.00** **2.0%**				**20,083.26** **2.1%**	
10	400	401-06264	profilograph, hma	1.000	L.S.	3,000.00	3,000.00	0.00	2	2,289.51	2,289.51	
11	400	401-07320	qc/qa-hma, 1, 64, surface, 9.5 mm	130.000	TON	55.55	7,221.50	0.00	4	53.29	6,927.70	
12	400	401-07328	qc/qa-hma, 3, 70, surface, 9.5 mm	301.000	TON	74.65	22,469.65	0.00	4	74.65	22,469.65	
13	400	401-07398	qc/qa-hma, 3, 70, intermediate, 19.0 mm	501.000	TON	57.96	29,037.96	0.00	4	57.96	29,037.96	
14	400	401-07406	qc/qa-hma, 1, 64, base, 25.0 mm	388.000	TON	47.24	18,329.12	0.00	16	48.47	18,806.36	
15	400	401-07424	qc/qa-hma, 3, 64, base, 19.0 mm	1,203.000	TON	57.05	68,631.15	0.00	6	57.05	68,631.15	

PRICING REPORT

Project: ***On Alignment Detour***
Location:
County: ***CLAY***
District: ***Crawfordsville***

Project ID: ***ALT 5A***
Bid Date: ***/ /***
Route:
State: ***IN***

SortCd	Sect	Pay Item	Description	Quantity	Unit	Bid Price	Extension	Std. Deviation	#	district: crawfordsville	Extension	Std. De
16	400	401-07429	qc/qa-hma, 5, 76, intermediate, og, 19.0 mm	466.000	TON	58.93	27,461.38	0.00	6	58.93	27,461.38	
17	400	402-07432	hma surface, type a	223.000	TON	70.00	15,610.00	0.00	8	76.15	16,981.45	
18	400	402-07435	hma intermediate, type a	371.000	TON	60.00	22,260.00	0.00	10	63.67	23,621.57	
19	400	402-07440	hma base, type a	593.000	TON	50.00	29,650.00	0.00	2	89.00	52,777.00	
		CATEGORY 400 SUBTOTALS					**243,670.76** **28.4%**				**269,003.73** **28.8%**	
21	600	601-01522	guardrail, transition type tgb	4.000	EACH	1,984.38	7,937.52	0.00	4	1,984.38	7,937.52	
22	600	601-94689	guardrail end treatment, os	4.000	EACH	2,683.63	10,734.52	0.00	10	2,683.63	10,734.52	
23	600	601-99105	guardrail, w-beam, 6 ft 3 in spacing	700.000	L.F.	18.25	12,775.00	0.00	10	18.25	12,775.00	
24	600	610-07486	hma for approaches, type a	242.000	TON	70.00	16,940.00	0.00	4	103.05	24,938.10	
25	600	616-06405	riprap, revetment	200.000	TON	29.05	5,810.00	0.00	12	29.05	5,810.00	
		CATEGORY 600 SUBTOTALS					**54,197.04** **6.3%**				**62,195.14** **6.6%**	
26	700	715-05048	pipe, type 4 circular 6 in	2,327.000	L.F.	2.50	5,817.50	0.00	10	3.42	7,958.34	
27	700	715-05053	pipe, underdrain, outlet 6 in	400.000	L.F.	12.25	4,900.00	0.00	6	14.18	5,672.00	
28	700	718-06528	outlet protector, 1	8.000	EACH	525.00	4,200.00	0.00	2	606.00	4,848.00	
29	700	718-52610	aggregate for underdrains	211.000	C.Y.	30.00	6,330.00	0.00	8	38.14	8,047.54	
		CATEGORY 700 SUBTOTALS					**21,247.50** **2.5%**				**26,525.88** **2.8%**	
30	800	808-10033	line, multi-component, solid, white, 4 in	2,327.000	L.F.	0.34	791.18	0.00	14	0.34	791.18	
31	800	808-10034	line, multi-component, solid, yellow, 4 in	2,327.000	L.F.	0.36	837.72	0.00	12	0.36	837.72	

PRICING REPORT

Date: 06/28/2013
Time: 02:06:40

Project: ***On Alignment Detour***
Location:
County: ***CLAY***
District: ***Crawfordsville***

Project ID: ***ALT 5A***
Bid Date: ***/ /***
State: ***IN***
Route:

SortCd	Sect	Pay Item	Description	Quantity	Unit	Bid Price	Extension	Std. Deviation	#	district: crawfordsville	Extension	Std. De
32	800	808-75998	snowplowable raised pavement marker	22.000	EACH	16.68	366.96	0.00	22	16.68	366.96	
		CATEGORY 800 SUBTOTALS					**1,995.86** **0.2%**				**1,995.86** **0.2%**	
		TOTALS					**856,975.16** **100.0%**				**935,476.96** **100.0%**	

LOADED PRICES

Alternate #1: Spec PayItem/All Contractors/Low 2 Prices/Last 12 Months

Alternative Analysis Estimate - On Alignment Temp South 5B

Road Construction Estimate	$948,235
New Bridge Construction Estimate	$2,495,621
Temporary Bridge Construction Estimate	$1,787,873
Ped. Bridge Rehab Construction Estimate (Relocate)	$2,805,263
Contingency (25%)	$2,009,248
MOT	$502,312
Subtotal - Construction Costs	**$10,548,552**
ROW (10.6 Ac)	$106,000
ROW Engineering (5 parcels)	$75,000
Utility Relocation	$30,000
Subtotal - Project Costs	**$10,759,552**
User Costs	$576,445
Total Alternative Cost	**$11,335,997**

Assumptions

Pedestrian bridge rehab includes rehabilitation, relocation, and new substructure (no other trail work)
MOT = 5% of construction cost
Daily detour costs: Temporary Bridge = $2,111/day (see user cost calculations)
MOT duration: 273

PARSONS

Calculation Sheet

Made By TMB Date: 12/08/2011					Job No. ---
					Sheet No. L - 1
Rev	Input By	Date	Input Chk By	Date	Title: SR 46 over Eel River
-	MJK	6/11/2013	-	-	SUMMARY

Proposed Structure Number: **46-11-1316D**

Description: **SR 46** over **Eel River**

PRELIMINARY COST ESTIMATE - BULB T BEAM

Pay Item	Pay Item Description	Quantity	Unit	Unit Price	Extension
105-06845	CONSTRUCTION ENGINEERING	1	LS	2%	$ 42,908.81
110-01001	MOBILIZATION AND DEMOBILIZATION	1	LS	5%	$ 107,272.02
202-51330	PRESENT STRUCTURE, REMOVE	1	LS	$ 200,000.00	$ 200,000.00
206-51220	EXCAVATION, WET	803	CYS	$ 34.00	$ 27,290.67
206-51225	EXCAVATION, DRY	201	CYS	$ 30.00	$ 6,020.00
211-06467	AGGREGATE FOR END BENT BACKFILL	85	CYS	$ 60.00	$ 5,119.45
302-07455	DENSE GRADED SUBBASE	42	CYS	$ 90.00	$ 3,780.00
601-01522	GUARDRAIL TRANSITION TYPE TGB	4	EACH	$ 1,900.00	$ 7,600.00
602-06729	BARRIER DELINEATOR	24	EACH	$ 13.00	$ 312.00
609-06259	REINFORCED CONCRETE BRIDGE APPROACH, 12 IN.	250	SYS	$ 75.00	$ 18,750.00
616-02320	GEOTEXTILES	1,231	SYS	$ 3.00	$ 3,693.00
616-06405	RIPRAP, REVETMENT	681	TON	$ 25.00	$ 17,025.00
621-06574	SODDING	72	SYS	$ 19.00	$ 1,368.00
701-06011	DYNAMIC PILE LOAD TEST	4	EACH	$ 2,300.00	$ 9,200.00
701-08253	PILE SLEEVES	20	EACH	$ 605.00	$ 12,100.00
701-09557	TEST PILE, DYNAMIC, PRODUCTION	290	LFT	$ 60.00	$ 17,400.00
701-09559	TEST PILE, DYNAMIC, RESTRIKE	4	EACH	$ 1,900.00	$ 7,600.00
701-09683	PILE SHOE HP 12 X 74	92	EACH	$ 115.00	$ 10,580.00
701-95780	PILE, STEEL H, HP 12 IN X 74	4,850	LFT	$ 60.00	$ 291,000.00
702-51005	CONCRETE, A, SUBSTRUCTURE	329.8	CYS	$ 505.00	$ 166,537.78
702-51015	CONCRETE,B,FOOTINGS	266.7	CYS	$ 430.00	$ 114,666.67
703-06028	REINFORCING BARS	125,601	LBS	$ 0.90	$ 113,040.90
703-06029	REINFORCING BARS, EPOXY COATED	300,042	LBS	$ 0.95	$ 285,039.90
704-51002	CONCRETE, C, SUPERSTRUCTURE	679.6	CYS	$ 550.00	$ 373,780.00
706-05732	CONCRETE BRIDGE RAILING TRANSITION, TFC	4	CYS	$ 2,100.00	$ 8,400.00
706-09960	RAILING, CONCRETE, FC	877	LFT	$ 55.00	$ 48,235.00
707-10176	STRUCTURAL MEMBER, CONCRETE BULB-T BEAM, 72 IN X 49 IN	1742	LFT	$ 330.00	$ 574,860.00
709-51821	SURFACE SEAL	1	LS	$ 22,042	$ 22,042.00
			SUBTOTAL		**$ 2,495,621**
			CONTINGENCY	**25%**	**$ 536,360**
			TOTAL		**$ 3,031,981**

Printed 2:55 PM 6/23/2015

SR46 over Eel River- Pedestrian Rehab Alternative (At New Location)

Item	Description	Quantity	Unit	Unit Price	Price
105-06845	CONSTRUCTION ENGINEERING	1	LS	$23,379.11	$23,379.11
110-01001	MOBILIZATION AND DEMOBILIZATION	1	LS	$58,447.77	$58,447.77
202-51328	PRESENT STRUCTURE, REMOVE PORTIONS	1	LS	$385,525.00	$385,525.00
619-51859	PAINT STEEL BRIDGE, TYPE 3	1	LS	$153,271.67	$153,271.67
619-11052	CLEAN STEEL BRIDGE, QP-2, TYPE 3	1	LS	$326,565.32	$326,565.32
712-11618	ENVIRONMENTAL CONTROL	1	LS	$75,255.01	$75,255.01
701-51195	PILE, STEEL H, HP 12 IN X 53	1400	LFT	$45.00	$63,000.00
702-51005	CONCRETE, A, SUBSTRUCTURE	53.3	CYS	$505.00	$26,895.93
704-51002	CONCRETE, C, SUPERSTRUCTURE	154.4	CYS	$550.00	$84,947.20
703-06028	REINFORCING BARS	13,315	LBS	$0.90	$11,983.33
703-06029	REINFORCING BARS, EPOXY COATED	38,612	LBS	$0.95	$36,681.75
709-51821	SURFACE SEAL	1	LS	$12,043.35	$12,043.35
724-51925	STRUCTURAL EXPANSION JOINT, SS	100.00	LFT	$145.00	$14,500.00
702-51110	GRATES, BASINS, AND FITTINGS, CAST IRON	1,536	LBS	$3.75	$5,760.00
711-51876	JACKING AND SUPPORTING TRUSS	1	LS	$750,000.00	$750,000.00
711-51035	STRUCTURAL STEEL	194,252	LBS	$4.00	$777,007.09

Total	$2,805,262.53
Contingency (25%)	$701,315.63
Rehab Total	$3,506,578.17

PARSONS

Calculation Sheet

Made By TMB Date: 12/08/2011					Job No. ---
					Sheet No. L - 1
Rev	Input By	Date	Input Chk By	Date	Title: SR 46 over Eel River - Temporary Bridge
-	MJK	6/11/2013	-	-	
					SUMMARY

Proposed Structure Number: **46-11-1316D**

Description: **SR 46** over **Eel River**

PRELIMINARY COST ESTIMATE - TEMPORARY BRIDGE

Pay Item	Pay Item Description	Quantity	Unit	Unit Price	Extension
105-06845	CONSTRUCTION ENGINEERING	1	LS	2%	$ 23,771.25
110-01001	MOBILIZATION AND DEMOBILIZATION	1	LS	5%	$ 59,428.12
202-51330	PRESENT STRUCTURE, REMOVE	1	LS	$ 89,300.00	$ 89,300.00
211-06467	AGGREGATE FOR END BENT BACKFILL	22	CYS	$ 60.00	$ 1,311.70
302-07455	DENSE GRADED SUBBASE	24	CYS	$ 90.00	$ 2,160.00
601-01522	GUARDRAIL TRANSITION TYPE TGB	4	EACH	$ 1,900.00	$ 7,600.00
601-04150	GUARDRAIL, THRIE BEAM, 6 FT 3 IN SPACING	749	LFT	$ 34.00	$ 25,466.00
609-06259	REINFORCED CONCRETE BRIDGE APPROACH, 12 IN.	134	SYS	$ 75.00	$ 10,050.00
616-02320	GEOTEXTILES	414	SYS	$ 3.00	$ 1,242.00
616-06405	RIPRAP, REVETMENT	240	TON	$ 25.00	$ 6,000.00
701-06011	DYNAMIC PILE LOAD TEST	7	EACH	$ 2,300.00	$ 16,100.00
701-08253	PILE SLEEVES	12	EACH	$ 605.00	$ 7,260.00
701-09557	TEST PILE, DYNAMIC, PRODUCTION	415	LFT	$ 60.00	$ 24,900.00
701-09559	TEST PILE, DYNAMIC, RESTRIKE	7	EACH	$ 1,900.00	$ 13,300.00
701-09683	PILE SHOE HP 12 X 53	87	EACH	$ 110.00	$ 9,570.00
701-51195	PILE, STEEL H, HP 12 IN X 53	3,750	LFT	$ 45.00	$ 168,750.00
702-51005	CONCRETE, A, SUBSTRUCTURE	124.4	CYS	$ 525.00	$ 65,333.33
703-06028	REINFORCING BARS	37,334	LBS	$ 0.90	$ 33,600.60
703-06029	REINFORCING BARS, EPOXY COATED	70,805	LBS	$ 0.95	$ 67,264.75
704-51002	CONCRETE, C, SUPERSTRUCTURE	259.1	CYS	$ 550.00	$ 142,505.00
707-09862	STRUCTURAL MEMBER, CONCRETE BOX BEAM, 27 IN X 48 IN	2223	LFT	$ 260.00	$ 577,980.00
709-51821	SURFACE SEAL	1	LS	$ 8,169	$ 8,169.00
701-92043	CORED HOLE IN ROCK, 18 IN	750	LFT	$ 325.00	$ 243,750.00
714-05562	RETAINING WALL - TEMPORARY	6102	SFT	$ 30.00	$ 183,061.00
			TOTAL		**$ 1,787,873**

PRICING REPORT

Date: 06/10/2013
Time: 03:45:21

Project: ***SR 46 South Alt Temp***
Location:
County: ***CLAY***
District: ***Crawfordsville***

Project ID: ***0800910***
Bid Date: ***/ /***
Route:
State: ***IN***

SortCd	Sect	Pay Item	Description	Quantity	Unit	Bid Price	Extension	Std. Deviation	#	district: crawfordsville	Extension	Std. De
1	100	105-06845	construction engineering	1.000	L.S.	20,000.00	20,000.00	0.00	34	20,063.62	20,063.62	
2	100	110-01001	mobilization and demobilization	1.000	L.S.	90,000.00	90,000.00	0.00	34	80,698.97	80,698.97	
		CATEGORY 100 SUBTOTALS					**110,000.00** **11.6%**				**100,762.59** **9.8%**	
3	200	201-52370	clearing right of way	1.000	L.S.	30,000.00	30,000.00	0.00	22	32,153.20	32,153.20	
4	200	203-02000	excavation, common	15,132.000	C.Y.	8.00	121,056.00	0.00	22	10.87	164,484.84	
5	200	203-02070	borrow	27,562.000	C.Y.	7.50	206,715.00	0.00	12	7.23	199,273.26	
6	200	207-08263	subgrade treatment, type ia	5,688.000	S.Y.	4.75	27,018.00	0.00	10	5.41	30,772.08	
7	200	207-08267	subgrade treatment, type iiia	2,696.000	S.Y.	9.00	24,264.00	0.00	12	10.47	28,227.12	
		CATEGORY 200 SUBTOTALS					**409,053.00** **43.1%**				**454,910.50** **44.1%**	
8	300	301-07448	compacted aggregate, no. 53, base	566.000	TON	16.00	9,056.00	0.00	20	18.41	10,420.06	
9	300	303-01180	compacted aggregate, no. 53	470.000	TON	16.50	7,755.00	0.00	12	20.56	9,663.20	
		CATEGORY 300 SUBTOTALS					**16,811.00** **1.8%**				**20,083.26** **1.9%**	
10	400	401-06264	profilograph, hma	1.000	L.S.	3,000.00	3,000.00	0.00	2	2,289.51	2,289.51	
11	400	401-07320	qc/qa-hma, 1, 64, surface, 9.5 mm	130.000	TON	55.55	7,221.50	0.00	4	53.29	6,927.70	
12	400	401-07328	qc/qa-hma, 3, 70, surface, 9.5 mm	301.000	TON	74.65	22,469.65	0.00	4	74.65	22,469.65	
13	400	401-07398	qc/qa-hma, 3, 70, intermediate, 19.0 mm	501.000	TON	57.96	29,037.96	0.00	4	57.96	29,037.96	
14	400	401-07406	qc/qa-hma, 1, 64, base, 25.0 mm	388.000	TON	47.24	18,329.12	0.00	16	48.47	18,806.36	
15	400	401-07424	qc/qa-hma, 3, 64, base, 19.0 mm	1,203.000	TON	57.05	68,631.15	0.00	6	57.05	68,631.15	

PRICING REPORT

Date: 06/10/2013
Time: 03:45:21

Project: ***SR 46 South Alt Temp***
Location:
County: ***CLAY***
District: ***Crawfordsville***

Project ID: ***0800910***
Bid Date: ***/ /***
Route:
State: ***IN***

SortCd	Sect	Pay Item	Description	Quantity	Unit	Bid Price	Extension	Std. Deviation	#	district: crawfordsville	Extension	Std. De
16	400	401-07429	qc/qa-hma, 5, 76, intermediate, og, 19.0 mm	466.000	TON	58.93	27,461.38	0.00	6	58.93	27,461.38	
17	400	402-07432	hma surface, type a	223.000	TON	70.00	15,610.00	0.00	8	76.15	16,981.45	
18	400	402-07435	hma intermediate, type a	371.000	TON	60.00	22,260.00	0.00	10	63.67	23,621.57	
19	400	402-07440	hma base, type a	593.000	TON	50.00	29,650.00	0.00	2	89.00	52,777.00	
20	400	402-10087	hma for temporary pavement, d	2,028.000	TON	45.00	91,260.00	0.00	8	47.69	96,715.32	
		CATEGORY 400 SUBTOTALS					**334,930.76** **35.3%**				**365,719.05** **35.4%**	
21	600	601-01522	guardrail, transition type tgb	4.000	EACH	1,984.38	7,937.52	0.00	4	1,984.38	7,937.52	
22	600	601-94689	guardrail end treatment, os	4.000	EACH	2,683.63	10,734.52	0.00	10	2,683.63	10,734.52	
23	600	601-99105	guardrail, w-beam, 6 ft 3 in spacing	700.000	L.F.	18.25	12,775.00	0.00	10	18.25	12,775.00	
24	600	610-07486	hma for approaches, type a	242.000	TON	70.00	16,940.00	0.00	4	103.05	24,938.10	
25	600	616-06405	riprap, revetment	200.000	TON	29.05	5,810.00	0.00	12	29.05	5,810.00	
		CATEGORY 600 SUBTOTALS					**54,197.04** **5.7%**				**62,195.14** **6.0%**	
26	700	715-05048	pipe, type 4 circular 6 in	2,327.000	L.F.	2.50	5,817.50	0.00	10	3.42	7,958.34	
27	700	715-05053	pipe, underdrain, outlet 6 in	400.000	L.F.	12.25	4,900.00	0.00	6	14.18	5,672.00	
28	700	718-06528	outlet protector, 1	8.000	EACH	525.00	4,200.00	0.00	2	606.00	4,848.00	
29	700	718-52610	aggregate for underdrains	211.000	C.Y.	30.00	6,330.00	0.00	8	38.14	8,047.54	
		CATEGORY 700 SUBTOTALS					**21,247.50** **2.2%**				**26,525.88** **2.6%**	
30	800	808-10033	line, multi-component, solid, white, 4 in	2,327.000	L.F.	0.34	791.18	0.00	14	0.34	791.18	

PRICING REPORT

Date: 06/10/2013
Time: 03:45:21

Project: ***SR 46 South Alt Temp***
Location:
County: ***CLAY***
District: ***Crawfordsville***

Project ID: ***0800910***
Bid Date: ***/ /***
State: ***IN***
Route:

SortCd	Sect	Pay Item	Description	Quantity	Unit	Bid Price	Extension	Std. Deviation	#	district: crawfordsville	Extension	Std. De
31	800	808-10034	line, multi-component, solid, yellow, 4 in	2,327.000	L.F.	0.36	837.72	0.00	12	0.36	837.72	
32	800	808-75998	snowplowable raised pavement marker	22.000	EACH	16.68	366.96	0.00	22	16.68	366.96	
		CATEGORY 800 SUBTOTALS					**1,995.86** **0.2%**				**1,995.86** **0.2%**	
		TOTALS					**948,235.16** **100.0%**				**1,032,192.28** **100.0%**	

LOADED PRICES

Alternate #1: Spec PayItem/All Contractors/Low 2 Prices/Last 12 Months

Alternate #2: User Entered Prices

Alternate #3: User Entered Prices

Alternative Analysis Estimate - On Alignment Temp North 5B

Road Construction Estimate	$958,923
New Bridge Construction Estimate	$2,495,621
Temporary Bridge Construction Estimate	$1,787,873
Ped. Bridge Rehab Construction Estimate (Relocate)	$2,805,263
Contingency (25%)	$2,011,920
MOT	$502,980
Subtotal - Construction Costs	**$10,562,580**
ROW (11.0 Ac)	$110,000
ROW Engineering (5 parcels)	$75,000
Utility Relocation	$15,000
Subtotal - Project Costs	**$10,762,580**
User Costs	$576,445
Total Alternative Cost	**$11,339,025**

Assumptions

Pedestrian bridge rehab includes rehabilitation, relocation, and new substructure (no other trail work)
MOT = 5% of construction cost
Daily detour costs: Temporary Bridge = $2,111/day (see user cost calculations)
MOT duration: 273

PARSONS

Calculation Sheet

Made By TMB Date: 12/08/2011					Job No. ---
					Sheet No. L - 1
Rev	Input By	Date	Input Chk By	Date	Title: SR 46 over Eel River
-	MJK	6/11/2013	-	-	SUMMARY

Proposed Structure Number: **46-11-1316D**

Description: **SR 46** over **Eel River**

PRELIMINARY COST ESTIMATE - BULB T BEAM

Pay Item	Pay Item Description	Quantity	Unit	Unit Price	Extension
105-06845	CONSTRUCTION ENGINEERING	1	LS	2%	$ 42,908.81
110-01001	MOBILIZATION AND DEMOBILIZATION	1	LS	5%	$ 107,272.02
202-51330	PRESENT STRUCTURE, REMOVE	1	LS	$ 200,000.00	$ 200,000.00
206-51220	EXCAVATION, WET	803	CYS	$ 34.00	$ 27,290.67
206-51225	EXCAVATION, DRY	201	CYS	$ 30.00	$ 6,020.00
211-06467	AGGREGATE FOR END BENT BACKFILL	85	CYS	$ 60.00	$ 5,119.45
302-07455	DENSE GRADED SUBBASE	42	CYS	$ 90.00	$ 3,780.00
601-01522	GUARDRAIL TRANSITION TYPE TGB	4	EACH	$ 1,900.00	$ 7,600.00
602-06729	BARRIER DELINEATOR	24	EACH	$ 13.00	$ 312.00
609-06259	REINFORCED CONCRETE BRIDGE APPROACH, 12 IN.	250	SYS	$ 75.00	$ 18,750.00
616-02320	GEOTEXTILES	1,231	SYS	$ 3.00	$ 3,693.00
616-06405	RIPRAP, REVETMENT	681	TON	$ 25.00	$ 17,025.00
621-06574	SODDING	72	SYS	$ 19.00	$ 1,368.00
701-06011	DYNAMIC PILE LOAD TEST	4	EACH	$ 2,300.00	$ 9,200.00
701-08253	PILE SLEEVES	20	EACH	$ 605.00	$ 12,100.00
701-09557	TEST PILE, DYNAMIC, PRODUCTION	290	LFT	$ 60.00	$ 17,400.00
701-09559	TEST PILE, DYNAMIC, RESTRIKE	4	EACH	$ 1,900.00	$ 7,600.00
701-09683	PILE SHOE HP 12 X 74	92	EACH	$ 115.00	$ 10,580.00
701-95780	PILE, STEEL H, HP 12 IN X 74	4,850	LFT	$ 60.00	$ 291,000.00
702-51005	CONCRETE, A, SUBSTRUCTURE	329.8	CYS	$ 505.00	$ 166,537.78
702-51015	CONCRETE,B,FOOTINGS	266.7	CYS	$ 430.00	$ 114,666.67
703-06028	REINFORCING BARS	125,601	LBS	$ 0.90	$ 113,040.90
703-06029	REINFORCING BARS, EPOXY COATED	300,042	LBS	$ 0.95	$ 285,039.90
704-51002	CONCRETE, C, SUPERSTRUCTURE	679.6	CYS	$ 550.00	$ 373,780.00
706-05732	CONCRETE BRIDGE RAILING TRANSITION, TFC	4	CYS	$ 2,100.00	$ 8,400.00
706-09960	RAILING, CONCRETE, FC	877	LFT	$ 55.00	$ 48,235.00
707-10176	STRUCTURAL MEMBER, CONCRETE BULB-T BEAM, 72 IN X 49 IN	1742	LFT	$ 330.00	$ 574,860.00
709-51821	SURFACE SEAL	1	LS	$ 22,042	$ 22,042.00
			SUBTOTAL		**$ 2,495,621**
			CONTINGENCY	**25%**	**$ 536,360**
			TOTAL		**$ 3,031,981**

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SR46 over Eel River- Pedestrian Rehab Alternative (At New Location)

Item	Description	Quantity	Unit	Unit Price	Price
105-06845	CONSTRUCTION ENGINEERING	1	LS	$23,379.11	$23,379.11
110-01001	MOBILIZATION AND DEMOBILIZATION	1	LS	$58,447.77	$58,447.77
202-51328	PRESENT STRUCTURE, REMOVE PORTIONS	1	LS	$385,525.00	$385,525.00
619-51859	PAINT STEEL BRIDGE, TYPE 3	1	LS	$153,271.67	$153,271.67
619-11052	CLEAN STEEL BRIDGE, QP-2, TYPE 3	1	LS	$326,565.32	$326,565.32
712-11618	ENVIRONMENTAL CONTROL	1	LS	$75,255.01	$75,255.01
701-51195	PILE, STEEL H, HP 12 IN X 53	1400	LFT	$45.00	$63,000.00
702-51005	CONCRETE, A, SUBSTRUCTURE	53.3	CYS	$505.00	$26,895.93
704-51002	CONCRETE, C, SUPERSTRUCTURE	154.4	CYS	$550.00	$84,947.20
703-06028	REINFORCING BARS	13,315	LBS	$0.90	$11,983.33
703-06029	REINFORCING BARS, EPOXY COATED	38,612	LBS	$0.95	$36,681.75
709-51821	SURFACE SEAL	1	LS	$12,043.35	$12,043.35
724-51925	STRUCTURAL EXPANSION JOINT, SS	100.00	LFT	$145.00	$14,500.00
702-51110	GRATES, BASINS, AND FITTINGS, CAST IRON	1,536	LBS	$3.75	$5,760.00
711-51876	JACKING AND SUPPORTING TRUSS	1	LS	$750,000.00	$750,000.00
711-51035	STRUCTURAL STEEL	194,252	LBS	$4.00	$777,007.09

Total	$2,805,262.53
Contingency (25%)	$701,315.63
Rehab Total	$3,506,578.17

PARSONS

Calculation Sheet

Made By TMB Date: 12/08/2011					Job No. ---
					Sheet No. L - 1
Rev	Input By	Date	Input Chk By	Date	Title: SR 46 over Eel River - Temporary Bridge
-	MJK	6/11/2013	-	-	
					SUMMARY

Proposed Structure Number: **46-11-1316D**

Description: **SR 46** over **Eel River**

PRELIMINARY COST ESTIMATE - TEMPORARY BRIDGE

Pay Item	Pay Item Description	Quantity	Unit	Unit Price	Extension
105-06845	CONSTRUCTION ENGINEERING	1	LS	2%	$ 23,771.25
110-01001	MOBILIZATION AND DEMOBILIZATION	1	LS	5%	$ 59,428.12
202-51330	PRESENT STRUCTURE, REMOVE	1	LS	$ 89,300.00	$ 89,300.00
211-06467	AGGREGATE FOR END BENT BACKFILL	22	CYS	$ 60.00	$ 1,311.70
302-07455	DENSE GRADED SUBBASE	24	CYS	$ 90.00	$ 2,160.00
601-01522	GUARDRAIL TRANSITION TYPE TGB	4	EACH	$ 1,900.00	$ 7,600.00
601-04150	GUARDRAIL, THRIE BEAM, 6 FT 3 IN SPACING	749	LFT	$ 34.00	$ 25,466.00
609-06259	REINFORCED CONCRETE BRIDGE APPROACH, 12 IN.	134	SYS	$ 75.00	$ 10,050.00
616-02320	GEOTEXTILES	414	SYS	$ 3.00	$ 1,242.00
616-06405	RIPRAP, REVETMENT	240	TON	$ 25.00	$ 6,000.00
701-06011	DYNAMIC PILE LOAD TEST	7	EACH	$ 2,300.00	$ 16,100.00
701-08253	PILE SLEEVES	12	EACH	$ 605.00	$ 7,260.00
701-09557	TEST PILE, DYNAMIC, PRODUCTION	415	LFT	$ 60.00	$ 24,900.00
701-09559	TEST PILE, DYNAMIC, RESTRIKE	7	EACH	$ 1,900.00	$ 13,300.00
701-09683	PILE SHOE HP 12 X 53	87	EACH	$ 110.00	$ 9,570.00
701-51195	PILE, STEEL H, HP 12 IN X 53	3,750	LFT	$ 45.00	$ 168,750.00
702-51005	CONCRETE, A, SUBSTRUCTURE	124.4	CYS	$ 525.00	$ 65,333.33
703-06028	REINFORCING BARS	37,334	LBS	$ 0.90	$ 33,600.60
703-06029	REINFORCING BARS, EPOXY COATED	70,805	LBS	$ 0.95	$ 67,264.75
704-51002	CONCRETE, C, SUPERSTRUCTURE	259.1	CYS	$ 550.00	$ 142,505.00
707-09862	STRUCTURAL MEMBER, CONCRETE BOX BEAM, 27 IN X 48 IN	2223	LFT	$ 260.00	$ 577,980.00
709-51821	SURFACE SEAL	1	LS	$ 8,169	$ 8,169.00
701-92043	CORED HOLE IN ROCK, 18 IN	750	LFT	$ 325.00	$ 243,750.00
714-05562	RETAINING WALL - TEMPORARY	6102	SFT	$ 30.00	$ 183,061.00
			TOTAL		**$ 1,787,873**

PRICING REPORT

Date: 06/10/2013
Time: 03:45:53

Project: ***SR 46 North Alt Temp***
Location:
County: ***CLAY***
District: ***Crawfordsville***

Project ID: ***0800910 OA N***
Bid Date: ***/ /*** State: ***IN***
Route:

SortCd	Sect	Pay Item	Description	Quantity	Unit	Bid Price	Extension	Std. Deviation	#	Comparison #1	Extension	Std. De
1	100	105-06845	construction engineering	1.000	L.S.	20,000.00	20,000.00	0.00	34	20,063.62	20,063.62	
2	100	110-01001	mobilization and demobilization	1.000	L.S.	90,000.00	90,000.00	0.00	34	80,698.97	80,698.97	
		GENERAL PROVISIONS SUBTOTALS					**110,000.00** **11.5%**				**100,762.59** **9.3%**	
3	200	201-52370	clearing right of way	1.000	L.S.	30,000.00	30,000.00	0.00	22	32,153.20	32,153.20	
4	200	203-02000	excavation, common	29,458.000	C.Y.	8.00	235,664.00	0.00	22	10.87	320,208.46	
5	200	203-02070	borrow	13,652.000	C.Y.	7.50	102,390.00	0.00	12	7.23	98,703.96	
6	200	207-08263	subgrade treatment, type ia	5,688.000	S.Y.	4.75	27,018.00	0.00	10	5.41	30,772.08	
7	200	207-08267	subgrade treatment, type iiia	2,696.000	S.Y.	9.00	24,264.00	0.00	12	10.47	28,227.12	
		EARTHWORK SUBTOTALS					**419,336.00** **43.7%**				**510,064.82** **46.9%**	
8	300	301-07448	compacted aggregate, no. 53, base	566.000	TON	16.00	9,056.00	0.00	20	18.41	10,420.06	
9	300	303-01180	compacted aggregate, no. 53	470.000	TON	16.50	7,755.00	0.00	12	20.56	9,663.20	
		AGGREGATE PAVEMENT AND BASES SUBTOTALS					**16,811.00** **1.8%**				**20,083.26** **1.8%**	
10	400	401-06264	profilograph, hma	1.000	L.S.	3,000.00	3,000.00	0.00	2	2,289.51	2,289.51	
11	400	401-07320	qc/qa-hma, 1, 64, surface, 9.5 mm	130.000	TON	55.55	7,221.50	0.00	4	53.29	6,927.70	
12	400	401-07328	qc/qa-hma, 3, 70, surface, 9.5 mm	301.000	TON	74.65	22,469.65	0.00	4	74.65	22,469.65	
13	400	401-07398	qc/qa-hma, 3, 70, intermediate, 19.0 mm	501.000	TON	57.96	29,037.96	0.00	4	57.96	29,037.96	
14	400	401-07406	qc/qa-hma, 1, 64, base, 25.0 mm	388.000	TON	47.24	18,329.12	0.00	9	47.24	18,329.12	
15	400	401-07424	qc/qa-hma, 3, 64, base, 19.0 mm	1,203.000	TON	57.05	68,631.15	0.00	6	57.05	68,631.15	
16	400	401-07429	qc/qa-hma, 5, 76, intermediate, og, 19.0 mm	466.000	TON	58.93	27,461.38	0.00	6	58.93	27,461.38	

PRICING REPORT

Date: 06/10/2013
Time: 03:45:53

Project: ***SR 46 North Alt Temp***
Location:
County: ***CLAY***
District: ***Crawfordsville***

Project ID: ***0800910 OA N***
Bid Date: ***/ /*** State: ***IN***
Route:

SortCd	Sect	Pay Item	Description	Quantity	Unit	Bid Price	Extension	Std. Deviation	#	Comparison #1	Extension	Std. De
17	400	402-07432	hma surface, type a	223.000	TON	70.00	15,610.00	0.00	8	76.15	16,981.45	
18	400	402-07435	hma intermediate, type a	371.000	TON	60.00	22,260.00	0.00	10	63.67	23,621.57	
19	400	402-07440	hma base, type a	593.000	TON	50.00	29,650.00	0.00	2	89.00	52,777.00	
20	400	402-10087	hma for temporary pavement, d	2,037.000	TON	45.00	91,665.00	0.00	8	47.69	97,144.53	
		ASPHALT PAVEMENT SUBTOTALS					**335,335.76** **35.0%**				**365,671.02** **33.6%**	
21	600	601-01522	guardrail, transition type tgb	4.000	EACH	1,984.38	7,937.52	0.00	4	1,984.38	7,937.52	
22	600	601-94689	guardrail end treatment, os	4.000	EACH	2,683.63	10,734.52	0.00	10	2,683.63	10,734.52	
23	600	601-99105	guardrail, w-beam, 6 ft 3 in spacing	700.000	L.F.	18.25	12,775.00	0.00	10	18.25	12,775.00	
24	600	610-07486	hma for approaches, type a	242.000	TON	70.00	16,940.00	0.00	4	103.05	24,938.10	
25	600	616-06405	riprap, revetment	200.000	TON	29.05	5,810.00	0.00	12	29.05	5,810.00	
		INCIDENTAL CONSTRUCTION SUBTOTALS					**54,197.04** **5.7%**				**62,195.14** **5.7%**	
26	700	715-05048	pipe, type 4 circular 6 in	2,327.000	L.F.	2.50	5,817.50	0.00	10	3.42	7,958.34	
27	700	715-05053	pipe, underdrain, outlet 6 in	400.000	L.F.	12.25	4,900.00	0.00	6	14.18	5,672.00	
28	700	718-06528	outlet protector, 1	8.000	EACH	525.00	4,200.00	0.00	2	606.00	4,848.00	
29	700	718-52610	aggregate for underdrains	211.000	C.Y.	30.00	6,330.00	0.00	8	38.14	8,047.54	
		STRUCTURES SUBTOTALS					**21,247.50** **2.2%**				**26,525.88** **2.4%**	
30	800	808-10033	line, multi-component, solid, white, 4 in	2,327.000	L.F.	0.34	791.18	0.00	14	0.34	791.18	
31	800	808-10034	line, multi-component, solid, yellow, 4 in	2,327.000	L.F.	0.36	837.72	0.00	12	0.36	837.72	
32	800	808-75998	snowplowable raised pavement marker	22.000	EACH	16.68	366.96	0.00	22	16.68	366.96	
		TRAFFICE CONTROL DEVICES AND LIGHTING SUBTOTALS					**1,995.86** **0.2%**				**1,995.86** **0.2%**	

PRICING REPORT

Date: 06/10/2013
Time: 03:45:53

Project: ***SR 46 North Alt Temp***
Location:
County: ***CLAY***
District: ***Crawfordsville***

Project ID: ***0800910 OA N***
Bid Date: ***/ /*** State: ***IN***
Route:

SortCd	Sect	Pay Item	Description	Quantity	Unit	Bid Price	Extension	Std. Deviation	#	Comparison #1	Extension	Std. De
TOTALS							**958,923.16** **100.0%**				**1,087,298.57** **100.0%**	

LOADED PRICES

Alternate #1: Spec PayItem/All Contractors/Low 2 Prices/Last 12 Months

Alternate #2: User Entered Prices

Alternate #3: User Entered Prices

Alternative Analysis Estimate - 5C South

Road Construction Estimate	$1,861,329
New Bridge Construction Estimate	$2,643,281
Ped. Bridge Rehab Construction Estimate (Relocate)	$2,805,263
Contingency (25%)	$1,827,468
MOT	$182,747
Subtotal - Construction Costs	**$9,320,088**
ROW (13.9 Ac)	$139,000
ROW Engineering (7 parcels)	$105,000
Utility Relocation	$30,000
Subtotal - Project Costs	**$9,594,088**
User Costs	$81,081
Total Alternative Cost	**$9,675,169**

Assumptions

Pedestrian bridge rehab includes rehabilitation, relocation, and new substructure (no other trail work)
MOT = 2% of construction cost
Daily detour costs: Maintain two lanes = $297/day (see user cost calculations)
MOT duration: 273

PARSONS

Calculation Sheet

Made By TMB Date: 12/08/2011					Job No. ---
					Sheet No. L - 1
Rev	Input By	Date	Input Chk By	Date	Title: SR 46 over Eel River
-	MJK	6/11/2013	-	-	SUMMARY

Proposed Structure Number: **46-11-1316D**

Description: **SR 46** over **Eel River**

PRELIMINARY COST ESTIMATE - BULB T BEAM

Pay Item	Pay Item Description	Quantity	Unit	Unit Price	Extension
105-06845	CONSTRUCTION ENGINEERING	1	LS	2%	$ 45,668.81
110-01001	MOBILIZATION AND DEMOBILIZATION	1	LS	5%	$ 114,172.02
202-51330	PRESENT STRUCTURE, REMOVE	1	LS	$ 200,000.00	$ 200,000.00
206-51220	EXCAVATION, WET	803	CYS	$ 34.00	$ 27,290.67
206-51225	EXCAVATION, DRY	201	CYS	$ 30.00	$ 6,020.00
211-06467	AGGREGATE FOR END BENT BACKFILL	85	CYS	$ 60.00	$ 5,119.45
302-07455	DENSE GRADED SUBBASE	42	CYS	$ 90.00	$ 3,780.00
601-01522	GUARDRAIL TRANSITION TYPE TGB	4	EACH	$ 1,900.00	$ 7,600.00
602-06729	BARRIER DELINEATOR	24	EACH	$ 13.00	$ 312.00
609-06259	REINFORCED CONCRETE BRIDGE APPROACH, 12 IN.	250	SYS	$ 75.00	$ 18,750.00
616-02320	GEOTEXTILES	1,231	SYS	$ 3.00	$ 3,693.00
616-06405	RIPRAP, REVETMENT	681	TON	$ 25.00	$ 17,025.00
621-06574	SODDING	72	SYS	$ 19.00	$ 1,368.00
701-06011	DYNAMIC PILE LOAD TEST	4	EACH	$ 2,300.00	$ 9,200.00
701-08253	PILE SLEEVES	20	EACH	$ 605.00	$ 12,100.00
701-09557	TEST PILE, DYNAMIC, PRODUCTION	290	LFT	$ 60.00	$ 17,400.00
701-09559	TEST PILE, DYNAMIC, RESTRIKE	4	EACH	$ 1,900.00	$ 7,600.00
701-09683	PILE SHOE HP 12 X 74	92	EACH	$ 115.00	$ 10,580.00
701-95780	PILE, STEEL H, HP 12 IN X 74	4,850	LFT	$ 60.00	$ 291,000.00
702-51005	CONCRETE, A, SUBSTRUCTURE	329.8	CYS	$ 505.00	$ 166,537.78
702-51015	CONCRETE,B,FOOTINGS	266.7	CYS	$ 430.00	$ 114,666.67
703-06028	REINFORCING BARS	125,601	LBS	$ 0.90	$ 113,040.90
703-06029	REINFORCING BARS, EPOXY COATED	300,042	LBS	$ 0.95	$ 285,039.90
704-51002	CONCRETE, C, SUPERSTRUCTURE	679.6	CYS	$ 550.00	$ 373,780.00
706-05732	CONCRETE BRIDGE RAILING TRANSITION, TFC	4	CYS	$ 2,100.00	$ 8,400.00
706-09960	RAILING, CONCRETE, FC	877	LFT	$ 55.00	$ 48,235.00
707-10176	STRUCTURAL MEMBER, CONCRETE BULB-T BEAM, 72 IN X 49 IN	1742	LFT	$ 330.00	$ 574,860.00
709-51821	SURFACE SEAL	1	LS	$ 22,042	$ 22,042.00
714-05562	RETAINING WALL - TEMPORARY	4600	SFT	$ 30.00	$ 138,000.00
			SUBTOTAL		**$ 2,643,281**
			CONTINGENCY	**25%**	**$ 570,860**
			TOTAL		**$ 3,214,141**

Printed 2:56 PM 6/23/2015

SR46 over Eel River- Pedestrian Rehab Alternative (At New Location)

Item	Description	Quantity	Unit	Unit Price	Price
105-06845	CONSTRUCTION ENGINEERING	1	LS	$23,379.11	$23,379.11
110-01001	MOBILIZATION AND DEMOBILIZATION	1	LS	$58,447.77	$58,447.77
202-51328	PRESENT STRUCTURE, REMOVE PORTIONS	1	LS	$385,525.00	$385,525.00
619-51859	PAINT STEEL BRIDGE, TYPE 3	1	LS	$153,271.67	$153,271.67
619-11052	CLEAN STEEL BRIDGE, QP-2, TYPE 3	1	LS	$326,565.32	$326,565.32
712-11618	ENVIRONMENTAL CONTROL	1	LS	$75,255.01	$75,255.01
701-51195	PILE, STEEL H, HP 12 IN X 53	1400	LFT	$45.00	$63,000.00
702-51005	CONCRETE, A, SUBSTRUCTURE	53.3	CYS	$505.00	$26,895.93
704-51002	CONCRETE, C, SUPERSTRUCTURE	154.4	CYS	$550.00	$84,947.20
703-06028	REINFORCING BARS	13,315	LBS	$0.90	$11,983.33
703-06029	REINFORCING BARS, EPOXY COATED	38,612	LBS	$0.95	$36,681.75
709-51821	SURFACE SEAL	1	LS	$12,043.35	$12,043.35
724-51925	STRUCTURAL EXPANSION JOINT, SS	100.00	LFT	$145.00	$14,500.00
702-51110	GRATES, BASINS, AND FITTINGS, CAST IRON	1,536	LBS	$3.75	$5,760.00
711-51876	JACKING AND SUPPORTING TRUSS	1	LS	$750,000.00	$750,000.00
711-51035	STRUCTURAL STEEL	194,252	LBS	$4.00	$777,007.09

Total	$2,805,262.53
Contingency (25%)	$701,315.63
Rehab Total	$3,506,578.17

PRICING REPORT

Date: 06/10/2013
Time: 03:44:02

Project: ***SR 46 South Alt***
Location:
County: ***CLAY***
District: ***Crawfordsville***

Project ID: ***0800910 SOUTH***
Bid Date: ***/ /*** State: ***IN***
Route:

SortCd	Sect	Pay Item	Description	Quantity	Unit	Bid Price	Extension	Std. Deviation	#	Comparison #1	Extension	Std. De
1	100	105-06845	construction engineering	1.000	L.S.	20,000.00	20,000.00	0.00	34	20,063.62	20,063.62	
2	100	110-01001	mobilization and demobilization	1.000	L.S.	90,000.00	90,000.00	0.00	34	80,698.97	80,698.97	
		GENERAL PROVISIONS SUBTOTALS					**110,000.00**				**100,762.59**	
							5.9%				**5.0%**	
3	200	201-52370	clearing right of way	1.000	L.S.	30,000.00	30,000.00	0.00	22	32,153.20	32,153.20	
4	200	203-02000	excavation, common	22,778.000	C.Y.	8.00	182,224.00	0.00	22	10.87	247,596.86	
5	200	203-02070	borrow	39,110.000	C.Y.	7.50	293,325.00	0.00	12	7.23	282,765.30	
6	200	207-08263	subgrade treatment, type ia	19,240.000	S.Y.	4.75	91,390.00	0.00	10	5.41	104,088.40	
7	200	207-08267	subgrade treatment, type iiia	4,379.000	S.Y.	9.00	39,411.00	0.00	12	10.47	45,848.13	
		EARTHWORK SUBTOTALS					**636,350.00**				**712,451.89**	
							34.2%				**35.5%**	
8	300	301-07448	compacted aggregate, no. 53, base	1,912.000	TON	16.00	30,592.00	0.00	20	18.41	35,199.92	
9	300	303-01180	compacted aggregate, no. 53	2,998.000	TON	16.50	49,467.00	0.00	12	20.56	61,638.88	
		AGGREGATE PAVEMENT AND BASES SUBTOTALS					**80,059.00**				**96,838.80**	
							4.3%				**4.8%**	
10	400	401-06264	profilograph, hma	1.000	L.S.	3,000.00	3,000.00	0.00	2	2,289.51	2,289.51	
11	400	401-07320	qc/qa-hma, 1, 64, surface, 9.5 mm	438.000	TON	55.55	24,330.90	0.00	21	55.55	24,330.90	
12	400	401-07328	qc/qa-hma, 3, 70, surface, 9.5 mm	999.000	TON	74.65	74,575.35	0.00	4	74.65	74,575.35	
13	400	401-07398	qc/qa-hma, 3, 70, intermediate, 19.0 mm	1,670.000	TON	57.96	96,793.20	0.00	4	57.96	96,793.20	
14	400	401-07406	qc/qa-hma, 1, 64, base, 25.0 mm	1,312.000	TON	47.24	61,978.88	0.00	9	47.24	61,978.88	
15	400	401-07424	qc/qa-hma, 3, 64, base, 19.0 mm	4,009.000	TON	57.05	228,713.45	0.00	6	57.05	228,713.45	
16	400	401-07429	qc/qa-hma, 5, 76, intermediate, og, 19.0 mm	1,552.000	TON	58.93	91,459.36	0.00	6	58.93	91,459.36	

PRICING REPORT

Date: 06/10/2013
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Project: ***SR 46 South Alt***
Location:
County: ***CLAY***
District: ***Crawfordsville***

Project ID: ***0800910 SOUTH***
Bid Date: ***/ /*** State: ***IN***
Route:

SortCd	Sect	Pay Item	Description	Quantity	Unit	Bid Price	Extension	Std. Deviation	#	Comparison #1	Extension	Std. De
17	400	402-07432	hma surface, type a	283.000	TON	70.00	19,810.00	0.00	8	76.15	21,550.45	
18	400	402-07435	hma intermediate, type a	472.000	TON	60.00	28,320.00	0.00	10	63.67	30,052.24	
19	400	402-07440	hma base, type a	755.000	TON	50.00	37,750.00	0.00	6	69.61	52,555.55	
20	400	402-10087	hma for temporary pavement, d	4,517.000	TON	45.00	203,265.00	0.00	6	46.62	210,582.54	
		ASPHALT PAVEMENT SUBTOTALS					**869,996.14** **46.7%**				**894,881.43** **44.5%**	
21	600	601-01522	guardrail, transition type tgb	4.000	EACH	1,984.38	7,937.52	0.00	4	1,984.38	7,937.52	
22	600	601-94689	guardrail end treatment, os	4.000	EACH	2,683.63	10,734.52	0.00	10	2,683.63	10,734.52	
23	600	601-99105	guardrail, w-beam, 6 ft 3 in spacing	700.000	L.F.	18.25	12,775.00	0.00	10	18.25	12,775.00	
24	600	610-07486	hma for approaches, type a	697.000	TON	70.00	48,790.00	0.00	4	103.05	71,825.85	
25	600	616-06405	riprap, revetment	441.000	TON	29.05	12,811.05	0.00	12	29.05	12,811.05	
		INCIDENTAL CONSTRUCTION SUBTOTALS					**93,048.09** **5.0%**				**116,083.94** **5.8%**	
26	700	715-05048	pipe, type 4 circular 6 in	7,777.000	L.F.	2.50	19,442.50	0.00	10	3.42	26,597.34	
27	700	715-05053	pipe, underdrain, outlet 6 in	1,100.000	L.F.	12.25	13,475.00	0.00	6	14.18	15,598.00	
28	700	718-06528	outlet protector, 1	22.000	EACH	525.00	11,550.00	0.00	2	606.00	13,332.00	
29	700	718-52610	aggregate for underdrains	701.000	C.Y.	30.00	21,030.00	0.00	8	38.14	26,736.14	
		STRUCTURES SUBTOTALS					**65,497.50** **3.5%**				**82,263.48** **4.1%**	
30	800	808-10033	line, multi-component, solid, white, 4 in	7,777.000	L.F.	0.34	2,644.18	0.00	14	0.34	2,644.18	
31	800	808-10034	line, multi-component, solid, yellow, 4 in	7,777.000	L.F.	0.36	2,799.72	0.00	12	0.36	2,799.72	
32	800	808-75998	snowplowable raised pavement marker	56.000	EACH	16.68	934.08	0.00	22	16.68	934.08	
		TRAFFICE CONTROL DEVICES AND LIGHTING SUBTOTALS					**6,377.98** **0.3%**				**6,377.98** **0.3%**	

PRICING REPORT

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Project: ***SR 46 South Alt***
Location:
County: ***CLAY***
District: ***Crawfordsville***

Project ID: ***0800910 SOUTH***
Bid Date: ***/ /*** State: ***IN***
Route:

SortCd	Sect	Pay Item	Description	Quantity	Unit	Bid Price	Extension	Std. Deviation	#	Comparison #1	Extension	Std. De
TOTALS							**1,861,328.71**				**2,009,660.11**	
							100.0%				**100.0%**	

LOADED PRICES

Alternate #1: State Averages/Low 2 Prices/Last 6 Months

Alternate #2: Spec PayItem/All Contractors/Low 2 Prices/Last 6 Months

Alternate #3: DOT District 1/Low 2 Prices/Last 24 Months

Alternative Analysis Estimate - 5C North

Road Construction Estimate	$1,915,372
New Bridge Construction Estimate	$2,643,281
Ped. Bridge Rehab Construction Estimate (Relocate)	$2,805,263
Contingency (25%)	$1,840,979
MOT	$184,098
Subtotal - Construction Costs	**$9,388,993**
ROW (16.1 Ac)	$161,000
ROW Engineering (13 parcels)	$195,000
Utility Relocation	$15,000
Subtotal - Project Costs	**$9,759,993**
User Costs	$81,081
Total Alternative Cost	**$9,841,074**

Assumptions

Pedestrian bridge rehab includes rehabilitation, relocation, and new substructure (no other trail work)
MOT = 2% of construction cost
Daily detour costs: Maintain two lanes = $297/day (see user cost calculations)
MOT duration: 273

PARSONS

Calculation Sheet

Made By TMB Date: 12/08/2011					Job No. ---
					Sheet No. L - 1
Rev	Input By	Date	Input Chk By	Date	Title: SR 46 over Eel River
-	MJK	6/11/2013	-	-	SUMMARY

Proposed Structure Number: **46-11-1316D**

Description: **SR 46** over **Eel River**

PRELIMINARY COST ESTIMATE - BULB T BEAM

Pay Item	Pay Item Description	Quantity	Unit	Unit Price	Extension
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706-09960	RAILING, CONCRETE, FC	877	LFT	$ 55.00	$ 48,235.00
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709-51821	SURFACE SEAL	1	LS	$ 22,042	$ 22,042.00
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			SUBTOTAL		**$ 2,643,281**
			CONTINGENCY	**25%**	**$ 570,860**
			TOTAL		**$ 3,214,141**

Printed 2:56 PM 6/23/2015

SR46 over Eel River- Pedestrian Rehab Alternative (At New Location)

Item	Description	Quantity	Unit	Unit Price	Price
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202-51328	PRESENT STRUCTURE, REMOVE PORTIONS	1	LS	$385,525.00	$385,525.00
619-51859	PAINT STEEL BRIDGE, TYPE 3	1	LS	$153,271.67	$153,271.67
619-11052	CLEAN STEEL BRIDGE, QP-2, TYPE 3	1	LS	$326,565.32	$326,565.32
712-11618	ENVIRONMENTAL CONTROL	1	LS	$75,255.01	$75,255.01
701-51195	PILE, STEEL H, HP 12 IN X 53	1400	LFT	$45.00	$63,000.00
702-51005	CONCRETE, A, SUBSTRUCTURE	53.3	CYS	$505.00	$26,895.93
704-51002	CONCRETE, C, SUPERSTRUCTURE	154.4	CYS	$550.00	$84,947.20
703-06028	REINFORCING BARS	13,315	LBS	$0.90	$11,983.33
703-06029	REINFORCING BARS, EPOXY COATED	38,612	LBS	$0.95	$36,681.75
709-51821	SURFACE SEAL	1	LS	$12,043.35	$12,043.35
724-51925	STRUCTURAL EXPANSION JOINT, SS	100.00	LFT	$145.00	$14,500.00
702-51110	GRATES, BASINS, AND FITTINGS, CAST IRON	1,536	LBS	$3.75	$5,760.00
711-51876	JACKING AND SUPPORTING TRUSS	1	LS	$750,000.00	$750,000.00
711-51035	STRUCTURAL STEEL	194,252	LBS	$4.00	$777,007.09

Total	$2,805,262.53
Contingency (25%)	$701,315.63
Rehab Total	$3,506,578.17

PRICING REPORT

Date: 06/10/2013
Time: 03:44:42

Project: ***SR 46 North Alt***
Location:
County: ***CLAY***
District: ***Crawfordsville***

Project ID: ***0800910 NORTH***
Bid Date: ***/ /*** State: ***IN***
Route:

SortCd	Sect	Pay Item	Description	Quantity	Unit	Bid Price	Extension	Std. Deviation	#	Comparison #1	Extension	Std. De
1	100	105-06845	construction engineering	1.000	L.S.	20,000.00	20,000.00	0.00	34	20,063.62	20,063.62	
2	100	110-01001	mobilization and demobilization	1.000	L.S.	90,000.00	90,000.00	0.00	34	80,698.97	80,698.97	
		GENERAL PROVISIONS SUBTOTALS					**110,000.00** **5.7%**				**100,762.59** **5.6%**	
3	200	201-52370	clearing right of way	1.000	L.S.	30,000.00	30,000.00	0.00	22	32,153.20	32,153.20	
4	200	203-02000	excavation, common	51,550.000	C.Y.	8.00	412,400.00	0.00	22	10.87	560,348.50	
5	200	203-02070	borrow	9,373.000	C.Y.	7.50	70,297.50	0.00	12	7.23	67,766.79	
6	200	207-08263	subgrade treatment, type ia	20,258.000	S.Y.	4.75	96,225.50	0.00	10	5.41	109,595.78	
7	200	207-08267	subgrade treatment, type iiia	4,425.000	S.Y.	9.00	39,825.00	0.00	12	10.47	46,329.75	
		EARTHWORK SUBTOTALS					**648,748.00** **33.9%**				**816,194.02** **45.3%**	
8	300	301-07448	compacted aggregate, no. 53, base	1,979.000	TON	16.00	31,664.00	0.00	20	18.41	36,433.39	
9	300	303-01180	compacted aggregate, no. 53	3,298.000	TON	16.50	54,417.00	0.00	12	20.56	67,806.88	
		AGGREGATE PAVEMENT AND BASES SUBTOTALS					**86,081.00** **4.5%**				**104,240.27** **5.8%**	
10	400	401-06264	profilograph, hma	1.000	L.S.	3,000.00	3,000.00	0.00	2	2,289.51	2,289.51	
11	400	401-07320	qc/qa-hma, 1, 64, surface, 9.5 mm	453.000	TON	55.55	25,164.15	0.00	0	0.00	0.00	
12	400	401-07328	qc/qa-hma, 3, 70, surface, 9.5 mm	1,051.000	TON	74.65	78,457.15	0.00	4	74.65	78,457.15	
13	400	401-07398	qc/qa-hma, 3, 70, intermediate, 19.0 mm	1,756.000	TON	57.96	101,777.76	0.00	4	57.96	101,777.76	
14	400	401-07406	qc/qa-hma, 1, 64, base, 25.0 mm	1,357.000	TON	47.24	64,104.68	0.00	0	0.00	0.00	
15	400	401-07424	qc/qa-hma, 3, 64, base, 19.0 mm	4,218.000	TON	57.05	240,636.90	0.00	6	57.05	240,636.90	
16	400	401-07429	qc/qa-hma, 5, 76, intermediate, og, 19.0 mm	1,632.000	TON	58.93	96,173.76	0.00	6	58.93	96,173.76	

PRICING REPORT

Date: 06/10/2013
Time: 03:44:42

Project: ***SR 46 North Alt***
Location:
County: ***CLAY***
District: ***Crawfordsville***

Project ID: ***0800910 NORTH***
Bid Date: ***/ /*** State: ***IN***
Route:

SortCd	Sect	Pay Item	Description	Quantity	Unit	Bid Price	Extension	Std. Deviation	#	Comparison #1	Extension	Std. De
17	400	402-07432	hma surface, type a	309.000	TON	70.00	21,630.00	0.00	8	76.15	23,530.35	
18	400	402-07435	hma intermediate, type a	514.000	TON	60.00	30,840.00	0.00	10	63.67	32,726.38	
19	400	402-07440	hma base, type a	822.000	TON	50.00	41,100.00	0.00	0	0.00	0.00	
20	400	402-10087	hma for temporary pavement, d	4,517.000	TON	45.00	203,265.00	0.00	0	0.00	0.00	
		ASPHALT PAVEMENT SUBTOTALS					**906,149.40** **47.3%**				**575,591.81** **32.0%**	
21	600	601-01522	guardrail, transition type tgb	4.000	EACH	1,984.38	7,937.52	0.00	4	1,984.38	7,937.52	
22	600	601-94689	guardrail end treatment, os	4.000	EACH	2,683.63	10,734.52	0.00	10	2,683.63	10,734.52	
23	600	601-99105	guardrail, w-beam, 6 ft 3 in spacing	700.000	L.F.	18.25	12,775.00	0.00	10	18.25	12,775.00	
24	600	610-07486	hma for approaches, type a	655.000	TON	70.00	45,850.00	0.00	4	103.05	67,497.75	
25	600	616-06405	riprap, revetment	441.000	TON	29.05	12,811.05	0.00	12	29.05	12,811.05	
		INCIDENTAL CONSTRUCTION SUBTOTALS					**90,108.09** **4.7%**				**111,755.84** **6.2%**	
26	700	715-05048	pipe, type 4 circular 6 in	8,177.000	L.F.	2.50	20,442.50	0.00	10	3.42	27,965.34	
27	700	715-05053	pipe, underdrain, outlet 6 in	1,100.000	L.F.	12.25	13,475.00	0.00	6	14.18	15,598.00	
28	700	718-06528	outlet protector, 1	22.000	EACH	525.00	11,550.00	0.00	2	606.00	13,332.00	
29	700	718-52610	aggregate for underdrains	737.000	C.Y.	30.00	22,110.00	0.00	8	38.14	28,109.18	
		STRUCTURES SUBTOTALS					**67,577.50** **3.5%**				**85,004.52** **4.7%**	
30	800	808-10033	line, multi-component, solid, white, 4 in	8,177.000	L.F.	0.34	2,780.18	0.00	14	0.34	2,780.18	
31	800	808-10034	line, multi-component, solid, yellow, 4 in	8,177.000	L.F.	0.36	2,943.72	0.00	12	0.36	2,943.72	
32	800	808-75998	snowplowable raised pavement marker	59.000	EACH	16.68	984.12	0.00	22	16.68	984.12	
		TRAFFICE CONTROL DEVICES AND LIGHTING SUBTOTALS					**6,708.02** **0.4%**				**6,708.02** **0.4%**	

PRICING REPORT

Date: 06/10/2013
Time: 03:44:42

Project: ***SR 46 North Alt***
Location:
County: ***CLAY***
District: ***Crawfordsville***

Project ID: ***0800910 NORTH***
Bid Date: ***/ /*** State: ***IN***
Route:

SortCd	Sect	Pay Item	Description	Quantity	Unit	Bid Price	Extension	Std. Deviation	#	Comparison #1	Extension	Std. De
TOTALS							**1,915,372.01** **100.0%**				**1,800,257.07** **100.0%**	

LOADED PRICES

Alternate #1: DOT District 1/Low 2 Prices/Last 6 Months

Alternate #2: State Averages/Low 2 Prices/Last 6 Months

Alternate #3: Spec County:CLAY/Low 2 Prices/Last 12 Months

SR 46 OVER EEL RIVER - USER COSTS
Full Detour

Increase in travel time

length of detour	21.9	miles
average detour speed	40	mph
Travel time of detour	0.55	hours
length of current route	14.9	miles
average speed of current route	54.3	mph
Travel time of current route	0.27	hours
Increase in travel time for detour	**0.27**	**hours**

Cost of Lost time

ADT (vehicles detoured)	3350	vpd
Value of motorist's time	$13.00	/hour
Cost of Lost time	**$11,897.07**	**/day**

Cost in Extra Travel Distance

length of detour	21.9	miles
Length of current route	14.9	miles
Detour extra length	7.0	miles
Vehicle operating expense	$0.25	/mile
Cost in Extra Travel Distance	$1.75	/trip
ADT (vehicles detoured)	3350	vpd
Cost in Extra Travel	**$5,862.50**	**/day**

DETOUR USER COST

Travel Time	$11,897.07	/day
Operating Expense	$5,862.50	/day
TOTAL	**$17,759.57**	**/day**

SR 46 OVER EEL RIVER - USER COSTS
Full Detour

Average speed of current route

non-Bowling Green	14.4	miles	@	55	mph	=	0.26	hours
Bowling Green	0.5	miles	@	40	mph	=	0.01	hours

Total distance	14.9	miles		
travel time			0.27	hours
Average speed			54.3	mph

SR 46 OVER EEL RIVER - USER COSTS
One-Lane Temporary Bridge

Increase in travel time

length of construction zone	1	miles
Construction Zone speed	15	mph
Travel time of construction zone	0.07	hours
length of current route	1	miles
average speed of current route	55.0	mph
Travel time of current route	0.02	hours
Increase in travel time for detour	**0.05**	**hours**

Cost of Lost time

ADT (vehicles slowed)	3350	vpd
Value of motorist's time	$13.00	/hour
Cost of Lost time	**$2,111.52**	**/day**

Cost in Extra Travel Distance

length of construction zone	0	miles
Length of current route	0	miles
Detour extra length	0	miles
Vehicle operating expense	$0.25	/mile
Cost in Extra Travel Distance	$0.00	/trip
ADT (vehicles detoured)	3350	vpd
Cost in Extra Travel	**$0.00**	**/day**

DETOUR USER COST

Travel Time	$2,111.52	/day
Operating Expense	$0.00	/day
TOTAL	**$2,111.52**	**/day**

SR 46 OVER EEL RIVER - USER COSTS
Maintain Two Lanes Throughout Construction

Increase in travel time

length of construction zone	1	miles
Construction Zone speed	40	mph
Travel time of construction zone	0.03	hours
length of current route	1	miles
average speed of current route	55.0	mph
Travel time of current route	0.02	hours
Increase in travel time for detour	**0.01**	**hours**

Cost of Lost time

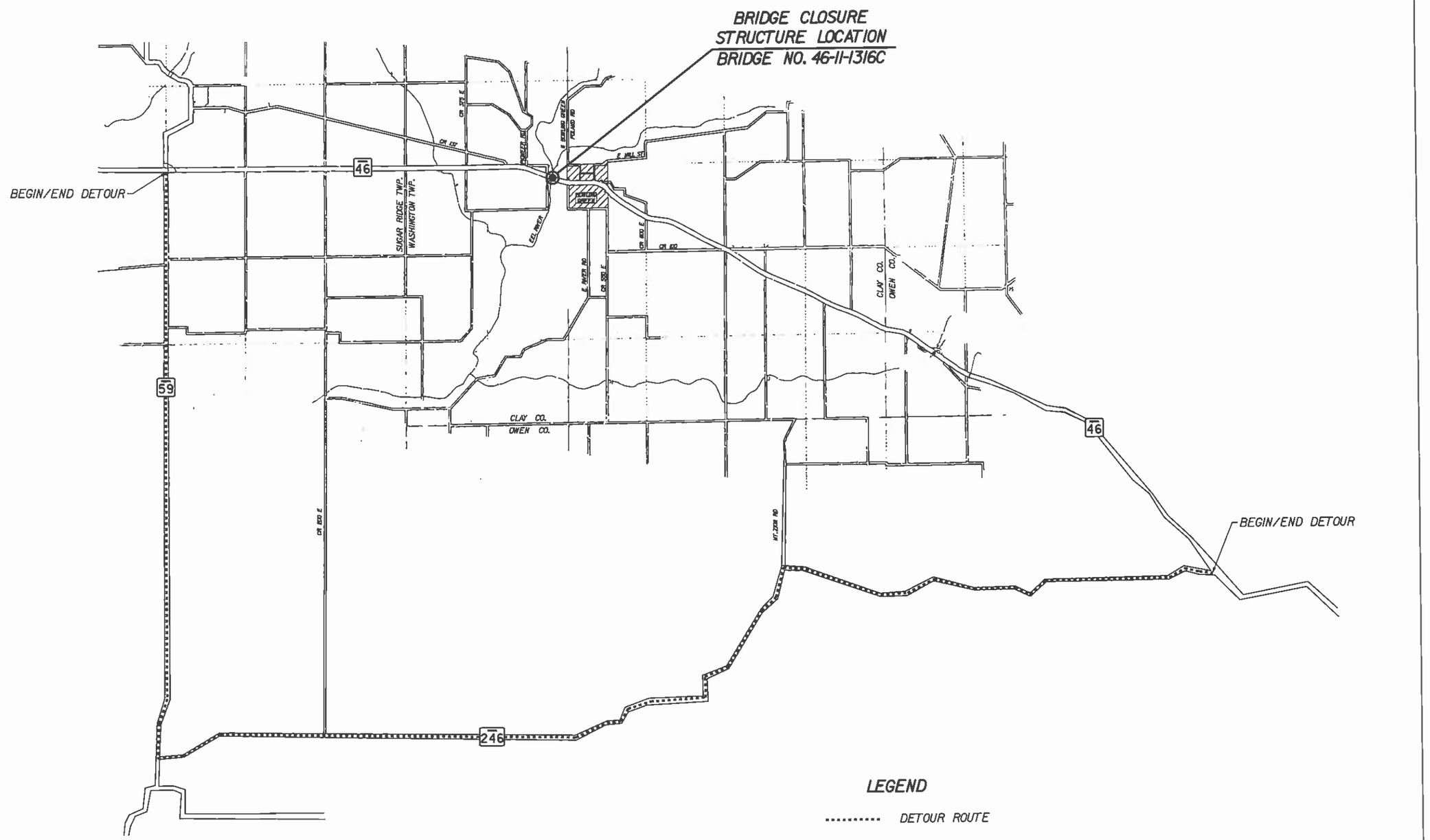
ADT (vehicles slowed)	3350	vpd
Value of motorist's time	$13.00	/hour
Cost of Lost time	**$296.93**	**/day**

Cost in Extra Travel Distance

length of construction zone	0	miles
Length of current route	0	miles
Detour extra length	0	miles
Vehicle operating expense	$0.25	/mile
Cost in Extra Travel Distance	$0.00	/trip
ADT (vehicles detoured)	3350	vpd
Cost in Extra Travel	**$0.00**	**/day**

DETOUR USER COST

Travel Time	$296.93	/day
Operating Expense	$0.00	/day
TOTAL	**$296.93**	**/day**



RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE 1" = 3000'	BRIDGE FILE 46-11-1316C
		VERTICAL SCALE 1" = 3000'	DESIGNATION 1297592
DESIGNED: MJK / DRAWN: ALF	OFFICIAL DETOUR ROUTE	SURVEY BOOK	SHEETS 1 of 1
CHECKED: MJK / CHECKED: MJK		CONTRACT B-15323	PROJECT 1297592

Appendix D

Inspection Reports

(included in electronic file only)

SR 46 over Eel River

PROJECT NUMBER: 0800910

BRIDGE FILE NUMBER: 046-11-01316 D

DESIGNATION NUMBER: 0800910

ROUTE IDENTIFICATION AND FEATURE CROSSED:

SR 46 over the Eel River

PROJECT LOCATION: 4.8 Mi. East of SR 59

REFERENCE POINT: 22+05

Clay County, Indiana

Bridge Inspection Report

November 2012

Prepared for:

Indiana Department of Transportation – Crawfordsville District

Prepared by:

PARSONS

101 West Ohio Street, Suite 2121

Indianapolis, IN 46204

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I. PURPOSE AND SCOPE

The purpose of this inspection of SR 46 over the Eel River was to evaluate and verify the observed defects detailed in the biennial bridge inspection and supplementary reports such that a preliminary bridge rehabilitation plan and cost estimate could be developed.

The scope included the visual inspection of the bridge in a manner such that a general sense of the bridge condition could be established and the previous inspection information could be verified. Specifically, the scope included a visual inspection of the superstructure by utilizing bridge rigging, physical climbing, and a bucket truck.

II. FIELD INSPECTION DATA

Date of Inspection: 07/31/2012 – 08/1/12

Attendance:

John Schmid, PE	Parsons	Inspection Team Leader
Matthew Kohut, PE Inspector No.: IN000130-2013	Parsons	Inspector
M. Sean Porter, PE	Parsons	Inspector
Katherine Coressel, EIT	Parsons	Inspector

III. EXISTING STRUCTURE DATA

A. IDENTIFICATION/HISTORY

Project No.: 0800910

Bridge File No.: 046-11-01316 D

Project Location: SR 46 over the Eel River, 4.8 Mi. East of SR 59

Reference Point: 22+05

Designation No.: 0800910

Year Built: 1933

Years Repaired: 2011, 2012

Years Reconstructed: 1977

B. STRUCTURE DIMENSIONS

Surface Type:	Concrete Cast-In-Place Deck	
Out to Out of Copings:	25’-0”	
Out to Out of Bridge Floor:	402’-4”	
Skew:	Square	
Type of Superstructure:	Span A:	Parker Steel Through Truss
	Spans B:	Parker Steel Through Truss
Spans:	Span A:	198’-0”
	Spans B:	198’-0”

Type of Substructure/Foundation:	Bent 1:	Reinforced Concrete (RC) Wall on Spread Footing
	Piers 2:	Solid RC Wall on Piles
	Bent 3:	RC Wall on Spread Footing

C. GEOMETRICS

The geometrics that apply to the bridge rehabilitation project are based on the following:

1. Rural location
2. Rural Minor Arterial
3. 3R (Rehabilitation and Replacement Project)

The existing geometrics determined from both inspection and existing plans do not meet the current geometric design criteria from Figures 55-3A (3R Project) of the Indiana Design Manual. Specifically, the existing clear roadway width of 24'-0" does not provide adequate shoulders to meet the 3R design criteria. This is truly a safety concern, as it was noted that the bridge railing has been hit numerous times. The pertinent information in these figures is highlighted in Appendix A. Appendix A also contains a generalized level one design criteria checklist for the 3R design criteria for both the rehabilitation and the replacement alternatives.

D. APPURTENANCES

Bridge Railing:	C6 X 8.2 steel channel handrail is mounted on steel posts connected to outside stringers and to truss vertical posts. The face of handrail is flush with curb. The face of the handrail posts have a 3½" offset from curb.
Curbs:	6" wide and 5" deep curb is present along both copings of the bridge. No curbs are present on the approaches.
Sidewalks:	No sidewalks are present on the bridge or approaches.
Utilities:	Visible overhead electric lines are present approximately 50' from the centerline to the south. The project limits may contain the following utility providers: • BBP Water Corporation, (812) 829-2283 • Clay County Rural Telephone Cooperative, Inc., (765) 795-4261 • Duke Energy, (812) 375-2071 • Utilities District of Western Indiana REMC, (812) 384-4446
Railroad:	No railroad will be affected during construction or maintenance of traffic.

E. APPROACHES

Roadway Width: Both the east and west approaches consist of an approach pavement width of 20'-0" that transitions into a 24'-0" bridge clear roadway width. The bridge approach slabs are 26'-4" in length. During the 1977 reconstruction, a 4'-0" portion of the approach slab was replaced along the bridge S-S joint. A 40'-0" bituminous wedge was constructed on top of the remaining concrete bridge approach. This scenario occurs on both the east and west approach.

Surface Type: The east and west approach slabs contain a 4'-0" portion of the reinforced concrete slab with a 40'-0" length of bituminous wedge over the remaining portion.

Guardrail: The west approach contains 60'-0" of class D-S guardrail that was shop curved with terminal ends on both the north and south corners. The east approach contains 265'-0" of class D-S guardrail with buried ends on both the north and south corners.

Guardrail Transition: Roadway guardrail is transitioned into the concrete bridge rail transition that sits on top of the concrete wing walls and is located at each corner of the bridge. The steel channel bridge rail terminates at the vertical face of the concrete bridge rail transition. The approach and departing guardrail is anchored to the vertical face of the bridge rail transition.

IV. ENVIRONMENTAL COMPLIANCE

The SR 46 bridge over the Eel River was listed on the Indiana Register of Historic Sites and Structures on March 1, 2000 and on the National Register of Historic Places (NRHP) on March 15, 2000. Based on its listing on the NRHP, it was identified as "Select" in INDOT's Historic Bridge Inventory, without a detailed evaluation. Because it is a truss bridge, it was considered potentially suitable for relocated for non-vehicular use.

Bridges included on the Select List are not eligible for replacement with Federal funds. INDOT is currently investigating the potential to remove the bridge from the Select List based on the condition of the structure and the likelihood of relocation. If that occurs, replacement without relocation of the bridge could be considered.

Section 4(f) of the U.S. Department of Transportation (DOT) Act of 1966 (49 USC 303) requires Departments of Transportation to avoid impacts to Section 4(f) properties unless there are no feasible and prudent alternatives for avoiding the use of the property. Properties that may be protected under Section 4(f) include but are not limited to parks, trails, recreation areas, wildlife and waterfowl refuges and historic sites. Resources, such as the SR 46 bridge, that are listed or eligible for listing on the NRHP are considered historic sites under Section 4(f). No other Section 4(f) resources were identified within a half mile of the project in the red flag investigation performed by American Structurepoint for the Engineers Assessment (*Final Engineering Assessment: SR 46 Bridge Rehabilitation Over Eel River*, January 2010).

Other environmental considerations include the Eel River and its associated wetlands. The Eel River runs north to south through the project area. Impacts to this resource will be minimized by constructing new piers outside of the river bed. Floodway impacts will be minimized by limiting the amount of fill placed below the floodway elevation.

If the rehabilitation option is selected, permits may be required depending on the extent of work and/or fill placed in the Eel River. If the replacement option is selected, the project will likely require Section 404, Section 401, and Construction in a Floodway permits.

V. EXISTING CONDITIONS

A. BRIDGE DECK

General Condition:

During the visual inspection, the bridge deck was visually observed to be in fair condition with numerous patches, spalls, and cracking exhibited in the concrete overlay. There are spalls in the concrete copings with exposed reinforcement. As a result of the spalls in the copings, storm water overflow from the bridge deck is corroding the superstructure members. If bridge rehabilitation is selected, three Level 1 Design Exceptions will be required. These include exceptions for the shoulder width, the bridge clear roadway width, and the lane width.

Overlay:

In 1977, a 1½" Modified Portland Cement Concrete overlay was placed on a new 6½" concrete deck under Contract B-10852. A visual observation of the concrete overlay classified it as being in fair condition. The overlay has numerous visible transverse and longitudinal cracks. Multiple deck patches are evident and spalling indicates a need for further patching. Deterioration of the original deck, corrosion of the deck reinforcement, and delamination of the overlay are anticipated to occur at the locations of the overlay cracks if left unmitigated.

Surface Condition:

The surface of the overlay is in fair condition. The bridge deck tinning in the wheel path has deteriorated to a smooth surface; subsequently the skid resistance compared to the original condition has been reduced considerably. The surface is delaminating in various locations across the length of the bridge.

Underside Condition:

The underside of the deck is generally in fair condition. Transverse cracks and leaching are apparent. There are also some spalls with exposed reinforcement.

Joints:

The joints on this structure are in overall fair condition. The type S-S expansion joints at both Bent 1 and Bent 3 were found to be in fair condition. The curb sections alongside these joints appear deteriorated and have allowed water to flow over the bridge deck as is evident by corroded stringer and floor beam flanges below. The S-S joint at Pier 2 has been patched over during a deck overlay.

Drainage:

The existing bridge drainage consist of 16 standard type SQ drains along the north and south coping in combination with drainage turnouts at the corners of the west approach. The turned up joint detail and curb section of the S-S joint along Pier 2 are absent on both the north and south coping. As a result, storm water that runs along the curb near the joints can freely drain over the edge of the deck. This condition has contributed to advanced corrosion and section loss of the gusset plates below. This has led to the closure of the bridge due to the advanced section loss of the gusset plates until a repair has been completed. The water flowing through this opening is also pooling on the lower stringers causing corrosion of these members. The south stringers are more heavily shaded, and as a result, show more advanced symptoms of corrosion

Bridge Railing:

C6 X 8.2 steel channel handrail is mounted on steel posts connected to outside stringers and to the truss vertical posts. The front face of the handrail channels is flush with the curb. The front face of the posts has a 3½" offset from curb. The existing railing is in fair condition.

Curbs:

The existing 5" curbs were observed to be in fair to poor condition. Numerous locations with cracking, concrete spalling, and exposed reinforcement were noted. The curb over Pier 2 is completely missing and has led to drainage and corrosion issues.

B. SUPERSTRUCTURE

General Condition:

The overall condition of the superstructure is poor; with indication that the structure deterioration has severely limited the structural integrity of this bridge. This inspection was performed by visual observation using a bridge rigging system and physical climbing to provide an arm's reach inspection of all lower truss members of the superstructure. Upper truss members were evaluated using a bucket truck for an arm's reach inspection. Hand brushes were used for debris removal to provide an accurate assessment of the condition of the members. During the inspection, extensive corrosion and complete section loss in the gusset plates at the abutments and pier warranted a bridge closure and an emergency fix to be completed. However, this fix only remedies the failed gusset plates and does not address the severe section loss in the lower chord members of the truss superstructure unit. In general, the lower chord members, lower cord splice plates, stringers, and cross bracing are showing signs of advanced deterioration. In combination with the temporary emergency repair of the gusset plates, the bridge superstructure is in poor condition.

Repair/Maintenance Work:

The following maintenance/repairs have been performed on the bridge superstructure.

Year	Contract No.	Repair	Description
1977	B-10852	1316A	Bridge floor slab replacement; removal and replacement of mudwalls; guardrail replacement
2011	B-34533	1316B	Retrofit repair of Pier 2 gusset plates
2012	B-35323	1316C	Emergency repair of Bent 1, Pier 2, Bent 3 gusset plates

Specific Deficiencies:

The majority of the truss deficiencies were observed on the lower chord members, lower chord member connections, exterior stringers, floor beams, and secondary members nearest the expansion joints at the end bents and the pier.

Fracture Critical Members:

The lower cord members are experiencing advanced deterioration at numerous splice plates, cover plates, and gusset plates. Pack rust has formed between the angles that make up the lower chord members, causing visible separation. All lower chord member splices display visible corrosion at the interface with the primary chord member. Pack rust has developed at these interfaces and results in prying action along the edges of the plates. In numerous locations, both the bottom and top splice plates have nearly 50% section loss along with 50% to 100% loss in the rivets. This corrosion compromises the carrying capacity of these splice connections. This deterioration is a result of debris and moisture collecting on the horizontal surfaces, which

creates a condition favorable for corrosion. Due to the sensitivity of these members to fatigue and their fracture critical nature, the members should be analyzed and retrofitted or replaced as appropriate to reduce the chance of failure.

Lower Exterior Stringers:

Considerable corrosion has occurred on the outside face and lower flange of the exterior line of stringers. This is the result of storm water drainage that has leaked through the spalls in the deck curb and had rolled around the coping onto the stringer faces. The stringers are also shaded, preventing timely drying of the moisture. Overall, these exterior stringers have up to 25% section loss and are in poor condition.

Lower Lateral Bracing:

The lower lateral bracing is in poor condition, with nearly 25% of the members containing complete section loss. Each bay contains two diagonal steel angle members that are attached to a connection plate at the floor beam and gusset plate intersection. These connection plates display 1/8” of section loss in all locations. The lateral bracing angles are oriented so that one is facing up and the other is facing down. In all bays, both laterals display significant corrosion with holes in the members. The lateral bracing that are oriented face up are in worse condition, with 75% of them displaying holes and heavy corrosion on the angle legs. In multiple locations, the angles have 100% section loss at the connection plate and are no longer connected to the lower chord and gusset plates.

Gusset Plates:

During the inspection, extensive corrosion and section loss of the gusset plates located at the abutments and pier was observed. The exterior gusset plate on the upstream side of the structure in Span 2 at L0 has 100% section loss. It is deteriorated to a point in which it can no longer safely carry the load from the bottom chord to the bearing pin and compression diagonal. The interior gusset plate has 50% section loss. Similar corrosion and section loss occurs in the upstream and downstream gusset plates at Bent 1 (L0), Pier 2 (L11), Pier 2 (L0) and Bent 3 (L11). These gusset plates are in critical condition. Due to the severity of this situation, the bridge was closed and an emergency fix was designed under contract B-35323. The temporary fix will use high strength rods to transfer the loads from the bottom chord to the bearing pin and will bypass the failed gusset plates. These gusset plates will need to be replaced and reconnected to the bottom chord before the temporary high strength rod system is removed.

Vertical Posts:

The vertical truss posts are in fair condition. Rust holes were observed in the main members and deterioration of lacing bars was observed. The vertical posts near the bearing at Pier 2 indicate out of plane movement, possibly as the result of the failed gusset plates below.

Diagonals:

The diagonals are in fair condition and only exhibit minor section loss. This section loss is primarily at the gusset plate connection to the lower chord.

Upper Truss:

The upper chord members are in fair condition. These members show little corrosive damage with minor rust scaling. A portion of the upper sway bracing was removed to provide adequate vertical clearance for traffic due to all the collision damage from the high percentage of trucks. The absence of these members has resulted in minor twisting to the upper laterals from inadequate sway resistance. The portal bracing is bent and fractured from vehicular collision.

Damage:

Collision damage by vehicles has occurred to the portal bracing of this structure. It is apparent that the sway bracing has been hit by traffic prior to a section being removed. Some of the vertical post members and bridge railing of the truss also have been damage due to numerous traffic collisions. There does not appear to be any drift collision damage the lower chord.

Bearings:

All bearings are functioning as intended and are in fair conditions. No bearings appear to be over-rotated or frozen. Several anchor bolts and the bearing pins are experiencing heavy corrosion and will require future repair.

Bent 1: Span A – Expansion

Pier 2: Span A – Fixed

Span B – Fixed

Bent 3: Span B – Expansion

C. SUBSTRUCTURES AND FOUNDATIONS

General Condition:

A visual inspection of the substructure units was performed as part of this inspection. The substructure units were inspected from both the ground and via rigging. At the time of inspection, Pier 2 was observed to be free of debris and appeared to be plumb and stable. The inspection indicates minor areas of cracking and spalling concrete in the back wall, breast wall, and bridge seats at Bents 1 and 3. The stem and bridge seat at Pier 2 have minor cracking and spalls present. The overall condition of the substructure is fair.

Repair/Maintenance:

The following maintenance/repairs have been performed on the bridge substructure.

Year	Contract No.	Repair	Description
1977	B-10852	1316A	Installation of new abutment and pier pedestals.

Specific Deficiencies:

Bent 1 – No major deficiencies noted. Minor cracks and spalls were observed.

Pier 2 – No major deficiencies noted. Minor cracks and spalls were observed.

Bent 3 – No major deficiencies noted. Minor cracks and spalls were observed.

Drainage:

The existing bridge was built in 1933 without any hydraulic design. The SR 46 Bridge over Eel River is hydraulically inadequate. It is undersized for the amount of flow carried and for the length of the west overbank flow. This results in high velocity through the bridge, especially the western span. Because of this high velocity, the river has changed course and flows through the west span instead of the east span as originally designed. The river used to flow through the bridge at a 30 degree skew to the east. Today the flow has no skew and is beginning to migrate to the west where the channel bank is severely unstable with large trees falling in the river. The river banks are heavily vegetated natural embankments. Significant erosion was noted on the west bank under the bridge. With only a 400’ opening, the structure causes approximately 2’ of backwater. Calculated scour depths exceed the pier footing depth. Since the pier footing is on piles, scour is not a problem for the pier.

Scour:

The crossing was built along a stretch of unstable river; aerial photos indicate past migration of the channel. The river at the bridge site has a 5000' right overbank that carries significant flow. Based on the migration of the river, it is likely that within 20 years the west abutment and approach embankment will become unstable due to the river migration and high velocity. Without proper bank protection, the river has the potential to wash out the west embankment. This could happen without warning if it were a storm of significant magnitude such as a Q50 or Q100 event. Statistically, this type of storm event occurs numerous times a year throughout the country.

D. APPROACHES

General:

The overall condition of the approaches is in fair condition.

Wedge:

The existing east and west approach wedges are 40' in length of bituminous material displaying normal wear and are in fair condition

Approach Pavement:

The asphalt pavement up to the concrete approach slabs is in satisfactory condition.

Guardrail:

The current end terminals on the east approach meet current safety standards. The guardrail transitions into the bridge rail transitions on top of the wings do not satisfy the current performance criteria for a 3R or 4R project.

Drive or Public Road:

CR 475 is located approximately 75 feet west of the bridge and does not have adequate sight distance. Private drives exist on the northwest and southeast corners of the bridge. There is a stop sign at the intersection of CR 475 and SR 46. Bridge end markers exist at each corner of the structure.

Traffic-Control Devices:

The existing pavement markings for lanes and shoulders are in fair condition. No traffic signals, raised markings or lighting exist in the proposed construction limits.

Roadway Drainage and Pipes:

SR 46 has side ditches at the base of the fill slopes on both the north and south sides of the road.

Miscellaneous:

The nearby CR 475 will require realignment to provide adequate sight distance. There have also been numerous truck collisions to the truss due to the heavy truck traffic that SR 46 carries. The sway bracing was partially removed due to the amount of trucks collisions to accommodate a larger vertical clearance.

Traffic Data:

SR 46

2011 AADT= 2,390 v.p.d.

2015 AADT= 2,585 v.p.d. (Construction Year)

2035 AADT= 3, 545 v.p.d. (Design Year)

Trucks = 13% AADT

E. SLOPEWALLS

No slope walls are present on either the east or west ends of the bridge

F. UTILITIES

No utilities are attached to this structure. Visible overhead electric lines are present approximately 50'-0" from the centerline to the south of the bridge. Bridge rehabilitation or replacement should not require the relocation of any utilities.

The project limits may require potential involvement with the following utility providers:

- BBP Water Corporation, (812) 829-2283
- Clay County Rural Telephone Cooperative, Inc., (765) 795-4261
- Duke Energy, (812) 375-2071
- Utilities District of Western Indiana REMC, (812) 384-4446

VI. RECOMMENDATIONS

A. ADDITIONAL CONDITION SURVEYS AND TESTS

INDOT is currently looking into removing this bridge from the historic "select" list. A replacement structure is strongly recommended.

B. BRIDGE RAILINGS AND TRANSITIONS

If the bridge is rehabilitated, the existing steel channel handrail mounted on steel posts connected to outside stringer will be replaced with 6" X 6" X 3/16" steel tube rails installed on posts directly connected to the outside stringers to provide adequate support and meet current standards. The w-beam guardrail transitions attached to the bridge rail transitions on top of the wings will also be replaced and will meet criteria for a 3R project. In addition, the current w-beam approach guardrail and end terminals will be replaced.

If the bridge is replaced, FC Railing will be used to meet current standards. All new approach guardrail, guardrail transitions, and bridge rail transitions will be installed.

C. BRIDGE DECK

The existing bridge deck geometrics are substandard by current design standards. The existing clear roadway width of 24'-0" does not meet the current 3R standard minimum clear roadway width, which is 26'-0". A Level 1 Design Exception will be necessary for the clear roadway width. The existing lane and shoulder widths are substandard and will also require a Level 1 Design Exception.

It is recommended the bridge deck be replaced to satisfy the current design standards of clear roadway width, lane width, and shoulder width, within the next five to ten years.

D. SUPERSTRUCTURE

The critical condition of the truss superstructure elements warrant replacement of all lateral bracing, splice plates, rivets, lower chord members and gusset plates. The superstructure will require significant element replacements and retrofits to the sway bracing and portal bracing will be required. Shear studs will be added to the stringers so they will interact compositely with the deck. Shoring of the structure will be necessary to disassemble, replace, repair, and clean the truss.

The current state of the truss is in poor condition and currently utilizes a temporary fix for the failed gusset plates at Pier 2. The temporary fix acts as a band aid until a permanent fix can be completed. Due to the magnitude of corrosive loss the structure possesses, it is recommended the superstructure members be rehabilitated within the next 5 years.

If the bridge is replaced, it is recommended that a 4-span, continuous, composite, prestressed Bulb-Tee beam bridge with a reinforced concrete deck be used. The spans of the new bridge would be approximately 115'-0", 130'-0", 130'-0", and 115'-0". The new bridge geometrics would meet all current design standards.

E. SUBSTRUCTURE AND FOUNDATION

The overall condition of the substructure does not warrant replacement of any substructure units. Each substructure unit has minor cracks and spalls that shall be repaired with concrete patching. Based on the scour analysis, Class 1 riprap will be required around Bent 1 and Pier 2 to prevent the washout of the west embankment and should be incorporated into the plans.

If the bridge is replaced, new end bents and piers will be constructed. Riprap spill slopes will be utilized at each end bent. The end bents and piers will more than likely be supported on piles; but spread footings will be evaluated.

F. APPROACHES

The reinforced-concrete bridge approaches will be reconstructed to meet the current design standards. If the bridge is replaced, the grade of the roadway will have to be raised due to the increase in structure depth. These costs have been included in the replacement alternative in the economical analysis section.

G. UTILITIES

A bridge rehabilitation or replacement should not require the relocation of any utilities.

H. MAINTENANCE OF TRAFFIC DURING CONSTRUCTION

During the rehabilitation or replacement of the bridge, a detour route will be required. The details of this route can be seen in Appendix B.

VII. PRELIMINARY COST ESTIMATE

A preliminary cost estimate based on the recommendations of this report was prepared utilizing INDOT's most current pay items and prices. The preliminary rehabilitation cost estimate includes proposed bridge repairs, roadway work, and maintenance of traffic. The preliminary cost estimate for the major bridge rehabilitation is provided in Appendix C and is estimated to be $4.82 Million. This major rehabilitation would extend the service life of the bridge by 25 years.

VIII. ECONOMIC COST COMPARISON

For comparison purposes, a preliminary estimate for a full replacement alternative was also prepared. The replacement alternative structure considered was a prestressed concrete Bulb-

Tee beam bridge. The replacement cost estimate is provided in Appendix C and is based on maintaining the existing alignment and assuming that the existing bridge would be taken off the historic "select" list so it can be removed. The concrete replacement structure is estimated to cost approximately $4.99 Million.

Life Cycle Costs were also analyzed for the rehabilitation and replacement alternatives. These costs are summarized in the matrix below. For comparison purposes, the life cycle costs were analyzed for a 75 year period. The costs are listed in 2012 dollars for comparison purposes only. The future costs will be higher due to inflation.

Item for Analysis	Frequency	Number of Cycles	Cost per Cycle	Rehabilitation Life Cycle Cost	Replacement Life Cycle Cost
Structural Steel Cleaning and Painting (Entire Structure)	25 years	3	$555,000	$ 1,665,000	N/A
Structural Steel Cleaning and Painting (Partial Structure)	5 years	12	$ 140,000	$ 1,680,000	N/A
Structural Steel Repairs	15 years	5	$ 100,000	$ 500,000	N/A
Fracture Critical Inspection	2 years	38	$ 9,000	$ 342,000	N/A
Routine Inspection	2 years	38	$ 200	N/A	$ 7,600
Climbing Inspection	5 years	15	$ 19,500	$ 292,500	N/A
Overlay of Bridge Deck	18 years	3	$ 50/SFT	$ 1,509,000	$ 1,509,000 •
Deck Replacement	54 years	1	$ 90/SFT	$ 905,300	$ 905,300 •
			Total Life Cycle Cost	**$ 6,893,800**	**$ 2,421,900**

- The replacement alternative will meet all current Level 1 design criteria. For comparison purposes, the same overlay and deck replacement costs were used for both the rehabilitation and the replacement alternatives. These costs were based on the smaller of the two deck areas.

The major bridge rehabilitation project, which extends the service life by 25 years, is 97% of the estimated concrete bridge replacement cost alternative. A cost comparison of rehabilitation versus replacement alternatives utilizing the graph shown in Figure 72-2C in the Indiana Design Manual indicates replacement is the most cost effective solution.

A. RECOMMENDATIONS

A replacement structure is strongly recommended based on the following factors.

1. The long term life cycle cost for the rehabilitation is much greater than the replacement cost.
2. The geometry of the existing bridge is substandard and rehabilitation would require three Level 1 Design Exceptions. A replacement structure would meet all Level 1 Design Criteria and no exceptions will be required.
3. It is not acceptable to apply for the Level 1 Design Exceptions due to the safety concerns the traveling public encounters as they cross the bridge as evident by numerous collision damage on the bridge.

4. The bridge is undersized hydraulically due to the visual scour problems that are present and the scour analysis that was completed. If the scour problems persist, the existing bridge could wash out and the spans would collapse.

Due to all of these factors, we recommend that the bridge be removed from the historic "select" list and that the replacement alternative be chosen. Based on the analysis and the on-going costs associated with the existing bridge, the only prudent choice is to move forward with a replacement option at this location.

IX. ESTIMATED REMAINING LIFE

The estimated remaining life of this structure without additional repairs is 5 years. After the recommended repairs are performed by rehabilitation, the remaining life will be 25 years. The design life for a new structure is approximately 75 years.

X. SCHEMATICS

Refer to Appendix D

XI. PHOTOGRAPHS

Refer to Appendix E

Prepared by:

Parsons Transportation Group

Katherine L. Coressel

Design Engineer

November 12, 2012

Reviewed by:

Parsons Transportation Group

Matthew J. Kohut, P.E.

Senior Engineer

November 12, 2012

APPENDIX A: Design Criteria

LEVEL ONE DESIGN CRITERIA CHECKLIST – English-Units Project

Route: SR 46 over Eel River (Replacement) Des. No. 0800910 Page 1 of 1

Project No:0800910 Bridge File: 46-11-1316D

Functional Classification: Minor Arterial Terrain: Level

Design Year: 2035 AADT: 3,545

Designer: KLC INDOT location or Consultant: Parsons Transportation Group

Submittal: Inspection Report Date: 9/28/12

Enter the value provided in appropriate column.

Design-Criteria Table 55-3A	Does the proposed design satisfy INDOT criteria?		
	Yes	No *	N/A
1. Design Speed, Mainline: Posted Speed Limit mph Ramps, mph	55 mph		
2. Lane Width, Mainline: 12 ft Ramps: ft Auxiliary Lanes: ft	12'-0"		
3a. Uncurbed Sections, Shoulder Width adjacent to: Mainline, 6 ft Ramps, ft Auxiliary Lanes, ft	7'-8"		
3b. Curbed Sections, Curb Offset:			X
4. Bridge Clear-Roadway Widths	39'-4"		
5. Structural Capacity	HL-93		
6. Horizontal Curvature, Minimum Radius = ft			X
7. Superelevation Transition Lengths **			X
8a. Stopping Sight Distances at Horizontal Curves **			X
8b. Stopping Sight Distances at Vertical Curves **			X
9. Maximum Grades	-2.12 %		
10. Through-Travel-Lane Cross Slope: 2 %	2 %		
11. Superelevation Rate **			X
12. Vertical Clearances			X
13. Accessibility Criteria for Physically-Challenged Individuals			X
14. Bridge-Railing Safety Performance Criteria, ** TL-2 v. TL-4 v. TL-5	TL-4		

** Justification for design exception or waiver must be prepared and approved. See* Indiana Design Manual *Section 40-8.0.*

*** Attach calculations.*

Note: Criteria 1, 2, 3, 6, and 10 apply throughout the project. The remaining criteria apply to specific sites within the project limits.

Submitted By KLC Date 9/28/12 Checked By MJK Date 9/28/12 INDOT reviewer Date

If there are no changes to the plans from the previous submittal that affect Level One, initial and date here.
(initials) Date

Design Element				Manual Section	2-Lane				Multi-Lane	
Design Controls	Design-Year AADT			40-2.01	< 400	400 ≤ AADT < 3000	3000 ≤ AADT < 5000	≥ 5000	Undivided	Divided
	Design Forecast Period			55-4.01	20 Years (1)				20 Years (1)	
	*Design Speed, mph (2)			55-4.01	Posted Speed Limit				Posted Speed Limit	
	Access Control			40-5.0	Partial Control / None				Partial Control / None	
	Level of Service			40-2.0	Desirable: B; Minimum: D				Desirable: B; Minimum: D	
Cross-Section Elements	Travel Lane	*Width		55-4.05	12 ft	12 ft	12 ft	12 ft	12 ft.	
		Typical Surface Type (3)		Ch. 52	Asphalt / Concrete				Asphalt / Concrete	
	Shoulder (4)	*Width Usable		55-4.05	D: 6 ft M: 2 ft	D: 8 ft M: 3 ft	D: 8 ft M: 6 ft	D: 11 ft M: 8 ft	Desirable: 11 ft Minimum: 8 ft	Rt: D: 11 ft; M: 9 ft Lt: D: 4 ft; M: 4 ft
		*Width Paved		55-4.05	D: 4 ft M: 0 ft	D: 6 ft M: 2 ft	D: 6 ft M: 2 ft	D: 10 ft M: 2 ft	Desirable: 10 ft Minimum: 8 ft	Rt: D: 10 ft; M: 8 ft Lt: D: 4 ft; M: 3 ft
		Typical Surface Type (3)		Ch. 52	Asphalt / Concrete / Sealed Aggregate				Asphalt / Concrete / Sealed Aggregate	
	Cross Slopes	*Travel Lane (5)		55-4.05	2%				2%	
		Shoulder (6)		55-4.05	Paved Width ≤ 4 ft 2%; Paved Width > 4 ft 4% Asphalt / Concrete; 6% Sealed Aggregate				Paved Width ≤ 4 ft 2%; Paved Width > 4 ft 4% Asphalt / Concrete; 6% Sealed Aggregate	
	Auxiliary Lane	Lane Width		55-4.05	Desirable: 12 ft; Minimum: 11 ft				Desirable: 12 ft; Minimum: 11 ft	
		Shoulder Width			Des: Same as Next to Travel Lane; Min: 2 ft				Des: Same as Next to Travel Lane; Min: 2 ft	
	Median Width			55-4.05	N/A				0.0 ft.	Existing
	Obstruction-Free-Zone Width			55-5.02	See Section 55-5.02				See Section 55-5.02	
	Side Slopes	Cut	Foreslope	55-4.05	2:1 or Flatter (7)				2:1 or Flatter (7)	
			Ditch Width		(7)				(7)	
			Backslope		2:1 or Flatter (7)				2:1 or Flatter (7)	
		Fill			2:1 or Flatter (7)				2:1 or Flatter (7)	
	Median Slopes			55-4.05	N/A				Desirable: 8:1; Maximum: 4:1	
Bridges**	New or Reconstructed Bridge	*Structural Capacity		Ch. 60	HL-93 (8)					
		*Clear-Roadway Width (9)		55-6.03	Full Paved Approach Width					
	Existing Bridge to Remain in Place	*Structural Capacity		Ch. 72	HS-20					
		*Clear-Roadway Width		55-6.02	Travelway Plus 2 ft on Each Side					
	*Vertical Clearance, Arterial Under (10)	New or Replaced Overpassing Bridge		55-6.0	16.5 ft					
		Existing Overpassing Bridge (11)			14.0 ft					
		Sign Truss / Pedestrian Bridges			New: 17.5 ft; Existing: 17.0 ft					
	Vertical Clearance, Arterial Over Railroad (12)			Ch. 69	23.0 ft					

D or Des: Desirable; M ot Min: Minimum. * Controlling design criterion. ** Selection of cross section and bridge elements is based on design-year traffic volume irrespective of design speed.

GEOMETRIC DESIGN CRITERIA FOR RURAL ARTERIAL, 3R PROJECT

Figure 55-3A

Design Element			Manual Section			
Alignment Elements	Design Speed		---	50 mph	55 mph	60 mph
	*Stopping Sight Distance, Desirable		55-4.02	425 ft	495 ft	570 ft
	Decision Sight Distance	Speed / Path / Direction Change	42-2.0	750 ft	865 ft	990 ft
		Stop Maneuver		465 ft	535 ft	610 ft
	Passing Sight Distance		42-3.0	Existing	Existing	Existing
	Intersection Sight Distance, -3% to +3% (14)		55-4.06	P: 630 ft; SUT: 780 ft	P: 730 ft; SUT: 890 ft	P: 840 ft; SU: 1020 ft
	*Minimum Radius		55-4.03	See Section 55-4.03		
	*Superelevation Rate		55-4.03	See Section 55-4.03		
	*Horizontal Sight Distance		55-4.03	See Section 55-4.03		
	*Vertical Curvature, K-value	Crest	55-4.04	See Section 55-4.04		
		Sag		See Section 55-4.04		
	*Maximum Grade (13)	Level	55-4.04	5%	4.5%	4%
		Rolling		6%	5.5%	5%
	Minimum Grade		44-1.03	Desirable: 0.5%; Minimum 0.0%		

* Controlling design criterion. A deviation from such is a design exception, and is subject to approval. See Section 40-8.0.

An operational or maintenance change, permanent or temporary, exclusive of work-zone traffic control, that in fact creates substandard conditions such as by re-striping to obtain added lane(s) by reducing existing land widths or shoulders, must be addressed in a design exception, whether or not actual construction or reconstruction is involved.

GEOMETRIC DESIGN CRITERIA FOR RURAL ARTERIAL, 3R PROJECT

Figure 55-3A (Continued)

GEOMETRIC DESIGN CRITERIA FOR RURAL ARTERIAL, 3R PROJECT

Footnotes to Figure 55-3A

(1) Design Forecast Period. For a partial 3R project, the pavement should be designed for at least a 10-year design life.

(2) Design Speed. The minimum design speed should equal the anticipated posted speed limit after construction or the legal speed limit, 60 mph, on a non-posted multilane divided highway, or 55mph on a non-posted two-lane highway.

(3) Surface Type. The pavement-type selection will be determined by the Office of Pavement Engineering or by the local jurisdiction.

(4) Shoulder. The following will apply:

a. On an INDOT facility, the shoulder should be paved to the front face of guardrail. The desirable guardrail offset is 2 ft from the effective usable-shoulder width. In a restrictive situation, the guardrail offset may be 1 ft from the effective usable-shoulder width. See Section 49-5.0 for more information.

b. If guardrail is present, the minimum offset from E.T.L. to the front face of guardrail should desirably be equal to the shy-line distance, but should not be less than 4 ft. See Section 49-5.0 for shy-line offsets.

c. Usable-shoulder width is defined as the distance from the edge of the travel lane to the shoulder break point.

(5) Cross Slope, Travel Lane. Cross slopes of 1.5% are acceptable on an existing bridge to remain in place.

(6) Cross Slope, Shoulder. Value is for a tangent section. See Figure 45-1A(1) or Figure 45-1A(2) for more-specific information. See Figure 43-3M or Figure 43-3N for shoulder cross slope on a horizontal curve.

(7) Side Slopes. Section 55-4.05 provides additional information for side-slope criteria.

(8) Structural Capacity, New or Reconstructed Bridge. The following will apply:

a. HL-93 loading should be applied.

b. Each State-highway bridge within 15 mi of a Toll-Road gate must be designed for Toll-Road loading.

c. Each bridge on an Extra-Heavy-Duty Highway must be designed for the Michigan Train truck loading configuration.

d. See Chapter Sixty for additional information on the loading configurations.

GEOMETRIC DESIGN CRITERIA FOR RURAL ARTERIAL, 3R PROJECT

Footnotes to Figure 55-3A (Continued)

(9) Width, New or Reconstructed Bridge. See Section 59-1.01(01) for more information. On a State highway, the minimum clear-roadway width should be 30 ft. Otherwise, the bridge clear-roadway width is the algebraic sum of the following:

a. the approach traveled-way width;
b. the approach effective usable-shoulder width without guardrail; and
c. a bridge-railing offset (see Figure 59-1G).

(10) Vertical Clearance, Arterial Under. Value includes an additional 6-in. allowance for a future pavement overlay. Vertical clearance applies from usable edge to usable edge of shoulders.

(11) Vertical Clearance, Existing Bridge. See Section 55-6.02 for additional information on minimum allowable vertical clearance.

(12) Vertical Clearance, Arterial Over Railroad. See Chapter Sixty-nine for additional information on railroad clearance under a highway.

(13) Maximum Grade. A grade that is 1% steeper may be used for a one-way downgrade.

(14) Intersection Sight Distance. For left turn onto a 2-lane road. P = Passenger car; SUT = single unit truck. See Figure 46-10G for value for a combination truck.

Parsons	SUBJECT:	SR 46 over Eel River				
	BY:	KLC	DATE:	9/25/2012	DES NO.	
	CHECK:	MJK	DATE:	9/26/2012	JOB NO.	

Bridge Rail Selection Calculations for Shoulder barrier

Reference: Section 49-9.0, Part V, INDOT Design Manual

Design Speed	=	60	mph				
Projected AADT, (Construction year, 2015)	=	2585	vpd				
Grade in Direction of Traffic	=	-2.12%		Kg	=	1.1	(Figure 49-6B)
Rate of Curvature	=	Tangent		Kc	=	1	(Figure 49-6B)
Land Use Occupancy Below Structure	=	Low					
Deck Height Above Surface	=	15	ft	Ks	=	0.70	(Figure 49-6C)

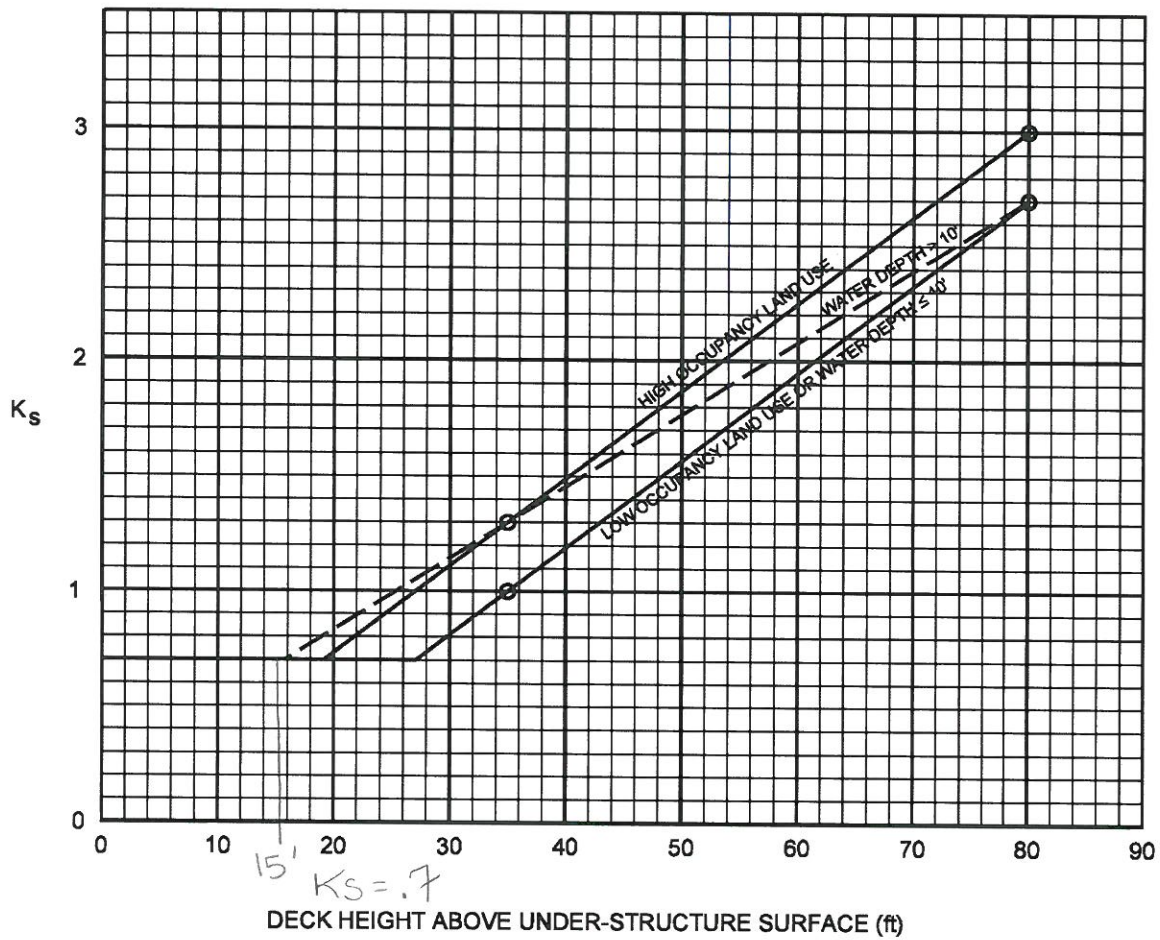
Adjusted AADT (T)	=	0.001	x	AADT	x	Kg	x	Kc	x	Ks			
T	=	0.001	x	2585	x	1.1	x	1	x	0.7	=	**1.99**	

Percent Trucks	=	13%		
Barrier Offset	=	7.67	ft	
Undivided	<	**2.4**		(Figure 49-6D (60))

Therefore TL-4 is required
TL-4 is provided

(Figure 49-6D (60))

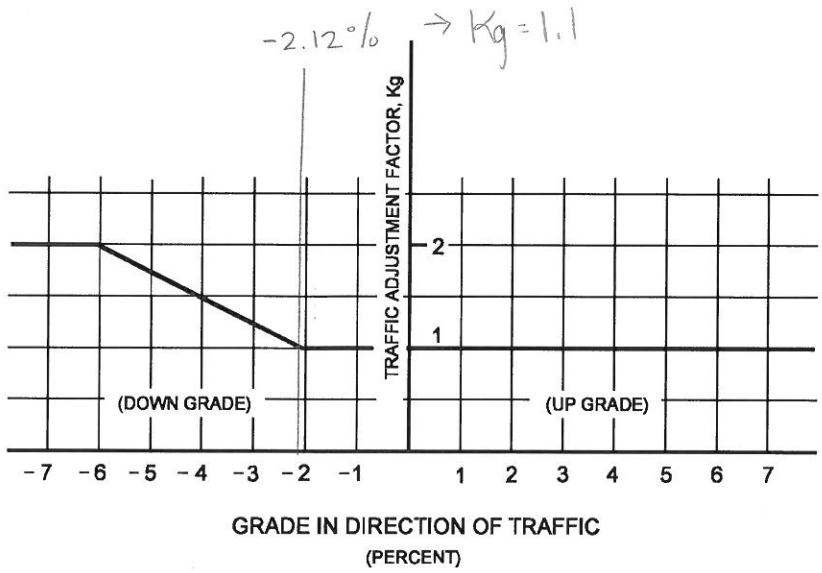
NOTE: Input data is denoted by shading. All other values are calculations performed by the spreadsheet.
REFERENCE: Indiana Design Manual, Section 49-9.0 and INDOT Design Memo 05-05.
NOTE: For further descriptions of TL-2, -4, & -5 railings, see Memo 05-05.
NOTE: TL-4 is the 33" Common Barrier, TL-5 is the 45" Truck Barrier

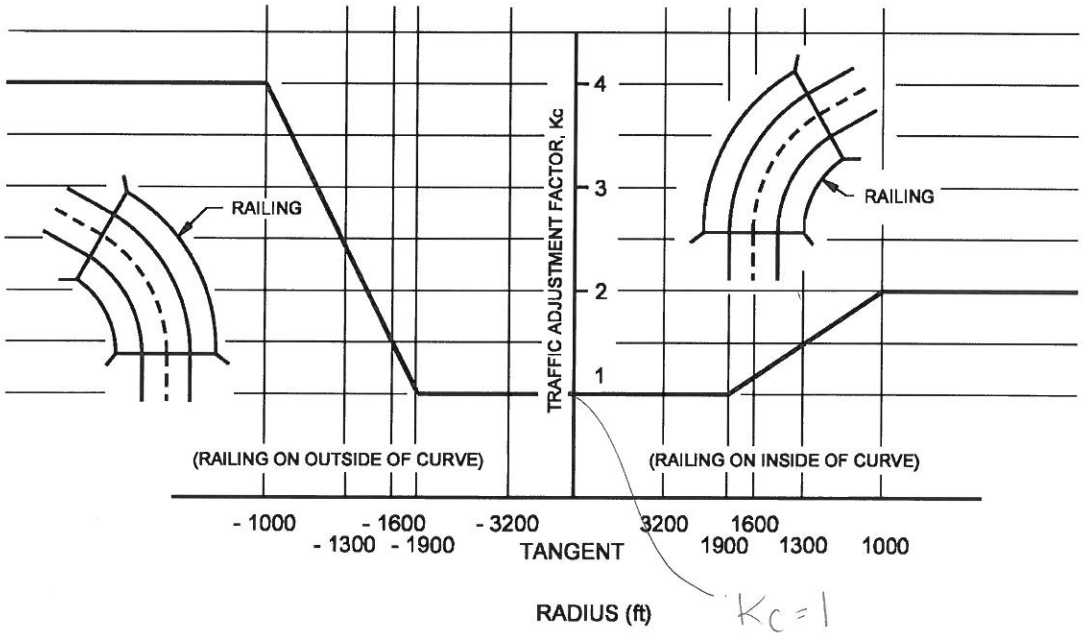


TRAFFIC-ADJUSTMENT FACTOR K_S,

Deck Height and Under-Structure Shoulder Height Conditions

Figure 49-6C





GRADE TRAFFIC-ADJUSTMENT FACTOR, K_g AND
CURVATURE TRAFFIC-ADJUSTMENT FACTOR, K_c

Figure 49-6B

T= 1,99

Site Characteristics		Adjusted Construction-Year Average Annual Daily Traffic, T, (1000s) for Traffic-Barrier Test Levels								
		Highway Type								
% Trk.	Edge of Travel Lane to Front Face Barrier, L_2 (ft)	Divided, or Undivided With 5 or More Lanes			Undivided With 4 Lanes or Fewer			One-Way		
		Test Level			Test Level			Test Level		
		TL-2	TL-4	TL-5	TL-2	TL-4	TL-5	TL-2	TL-4	TL-5
0≤ % <5	≤ 3	n/a	3.0 ≤ T < 107.3	≥ 107.3	n/a	1.9 ≤ T < 70.3	≥ 70.3	n/a	1.5 ≤ T < 53.7	≥ 53.7
	3 < L_2 ≤ 7	n/a	3.3 ≤ T < 126.3	≥ 126.3	n/a	2.1 ≤ T < 82.8	≥ 82.8	n/a	1.7 ≤ T < 63.2	≥ 63.2
	7 < L_2 ≤ 12	n/a	4.1 ≤ T < 158.4	≥ 158.4	n/a	2.7 ≤ T < 105.6	≥ 105.6	n/a	2.1 ≤ T < 79.2	≥ 79.2
	> 12	n/a	5.0 ≤ T < 203.8	≥ 203.8	n/a	3.3 ≤ T < 138.2	≥ 138.2	n/a	2.5 ≤ T < 101.9	≥ 101.9
5≤ % <10	≤ 3	n/a	2.8 ≤ T < 39.6	≥ 39.6	n/a	1.8 ≤ T < 25.0	≥ 25.0	n/a	1.4 ≤ T < 19.8	≥ 19.8
	3 < L_2 ≤ 7	n/a	3.1 ≤ T < 47.5	≥ 47.5	n/a	2.0 ≤ T < 29.3	≥ 29.3	n/a	1.6 ≤ T < 23.8	≥ 23.8
	7 < L_2 ≤ 12	n/a	3.9 ≤ T < 53.1	≥ 53.1	n/a	2.5 ≤ T < 33.7	≥ 33.7	n/a	2.0 ≤ T < 26.6	≥ 26.6
	> 12	n/a	4.7 ≤ T < 67.6	≥ 67.6	n/a	3.1 ≤ T < 44.1	≥ 44.1	n/a	2.4 ≤ T < 33.8	≥ 33.8
10≤ % <15	≤ 3	n/a	2.7 ≤ T < 24.3	≥ 24.3	n/a	1.7 ≤ T < 15.2	≥ 15.2	n/a	1.4 ≤ T < 12.2	≥ 12.2
	3 < L_2 ≤ 7	n/a	2.9 ≤ T < 29.3	≥ 29.3	n/a	1.9 ≤ T < 17.8	≥ 17.8	n/a	1.5 ≤ T < 14.7	≥ 14.7
	7 < L_2 ≤ 12	n/a	3.7 ≤ T < 31.9	≥ 31.9	n/a	2.4 ≤ T < 20.0	≥ 20.0	n/a	1.9 ≤ T < 16.0	≥ 16.0
	> 12	n/a	4.5 ≤ T < 40.5	≥ 40.5	n/a	2.9 ≤ T < 26.2	≥ 26.2	n/a	2.3 ≤ T < 20.3	≥ 20.3
15≤ % <20	≤ 3	n/a	2.5 ≤ T < 17.5	≥ 17.5	n/a	1.6 ≤ T < 10.9	≥ 10.9	n/a	1.3 ≤ T < 8.8	≥ 8.8
	3 < L_2 ≤ 7	n/a	2.8 ≤ T < 21.1	≥ 21.1	n/a	1.8 ≤ T < 12.8	≥ 12.8	n/a	1.4 ≤ T < 10.6	≥ 10.6
	7 < L_2 ≤ 12	n/a	3.5 ≤ T < 22.8	≥ 22.8	n/a	2.2 ≤ T < 14.3	≥ 14.3	n/a	1.8 ≤ T < 11.4	≥ 11.4
	> 12	n/a	4.2 ≤ T < 28.9	≥ 28.9	n/a	2.8 ≤ T < 18.7	≥ 18.7	n/a	2.1 ≤ T < 14.5	≥ 14.5
20≤ % <25	≤ 3	n/a	2.4 ≤ T < 13.7	≥ 13.7	n/a	1.5 ≤ T < 8.5	≥ 8.5	n/a	1.2 ≤ T < 6.9	≥ 6.9
	3 < L_2 ≤ 7	n/a	2.6 ≤ T < 16.5	≥ 16.5	n/a	1.7 ≤ T < 10.0	≥ 10.0	n/a	1.3 ≤ T < 8.3	≥ 8.3
	7 < L_2 ≤ 12	n/a	3.3 ≤ T < 17.7	≥ 17.7	n/a	2.1 ≤ T < 11.1	≥ 11.1	n/a	1.7 ≤ T < 8.9	≥ 8.9
	> 12	n/a	4.0 ≤ T < 22.5	≥ 22.5	n/a	2.6 ≤ T < 14.5	≥ 14.5	n/a	2.0 ≤ T < 11.3	≥ 11.3

MEDIAN-BARRIER OR BRIDGE-RAILING TEST-LEVEL SELECTION, DESIGN SPEED 60 mph

Figure 49-6D(60)

LEVEL ONE DESIGN CRITERIA CHECKLIST – English-Units Project

Route: SR 46 over Eel River (Rehabilitation) Des. No. 0800910 Page 1 of 1

Project No:0800910 Bridge File: 46-11-1316D

Functional Classification: Minor Arterial Terrain: Level

Design Year: 2035 AADT: 3,545

Designer: KLC INDOT location or Consultant: Parsons Transportation Group

Submittal: Inspection Report Date: 9/28/12

Enter the value provided in appropriate column.

Design-Criteria Table 55-3A	Does the proposed design satisfy INDOT criteria?		
	Yes	No *	N/A
1. Design Speed, Mainline: Posted Speed Limit mph Ramps, mph	55 mph		
2. Lane Width, Mainline: 12 ft Ramps: ft Auxiliary Lanes: ft		11'-0"	
3a. Uncurbed Sections, Shoulder Width adjacent to: Mainline, 2 ft Min. Ramps, ft Auxiliary Lanes, ft		1'-0"	
3b. Curbed Sections, Curb Offset:			X
4. Bridge Clear-Roadway Widths 26 ft		24'-0"	
5. Structural Capacity	HS-20		
6. Horizontal Curvature, Minimum Radius = ft			X
7. Superelevation Transition Lengths **			X
8a. Stopping Sight Distances at Horizontal Curves **			X
8b. Stopping Sight Distances at Vertical Curves **			X
9. Maximum Grades	0.585 %		
10. Through-Travel-Lane Cross Slope: 2 %	2 %		
11. Superelevation Rate **			X
12. Vertical Clearances			X
13. Accessibility Criteria for Physically-Challenged Individuals			X
14. Bridge-Railing Safety Performance Criteria, ** TL-2 v. TL-4 v. TL-5	TL-4		

** Justification for design exception or waiver must be prepared and approved. See* Indiana Design Manual *Section 40-8.0.*

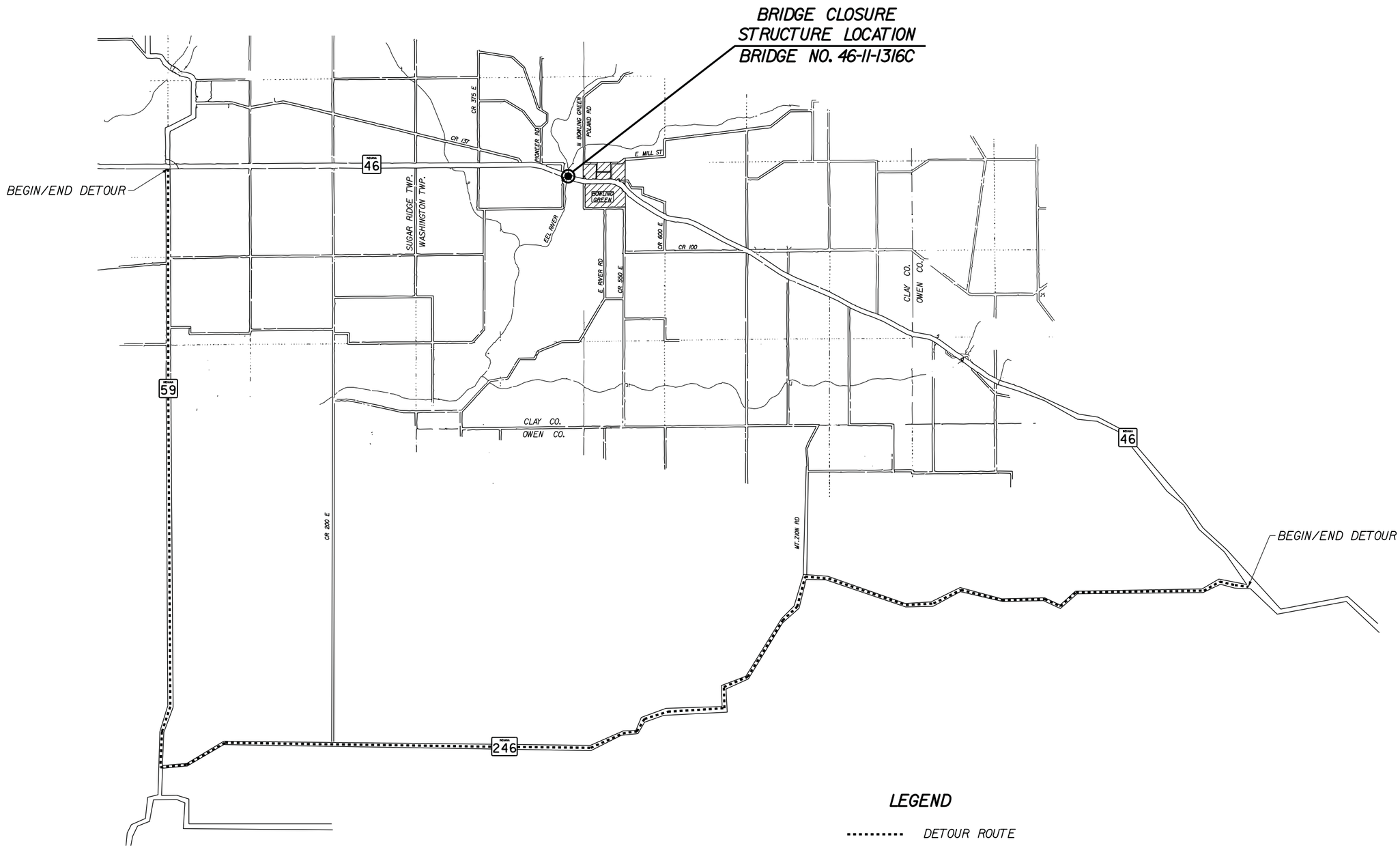
*** Attach calculations.*

Note: Criteria 1, 2, 3, 6, and 10 apply throughout the project. The remaining criteria apply to specific sites within the project limits.

Submitted By KLC Date 9/28/12 Checked By MJK Date 9/28/12 INDOT reviewer Date

If there are no changes to the plans from the previous submittal that affect Level One, initial and date here.
(initials) Date

APPENDIX B: Detour Route



RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE 1" = 3000'	BRIDGE FILE 46-11-1316C
		VERTICAL SCALE 1" = 3000'	DESIGNATION 1297592
DESIGNED: MJK / DRAWN: ALF	OFFICIAL DETOUR ROUTE	SURVEY BOOK	SHEETS ___ of ___
CHECKED: MJK / CHECKED: MJK		CONTRACT B-35323	PROJECT 1297592

p0006588
22-AUG-2012
IP_PWFadmo0325\DETOURPLAN.001.dgn
17:07

APPENDIX C: Cost Estimates

Des by	MJK
Chk by	MSP
Rev by	

Summary of Bridge Quantities **Structure Number** **46-11-1316D** **SR 46 over Eel River**

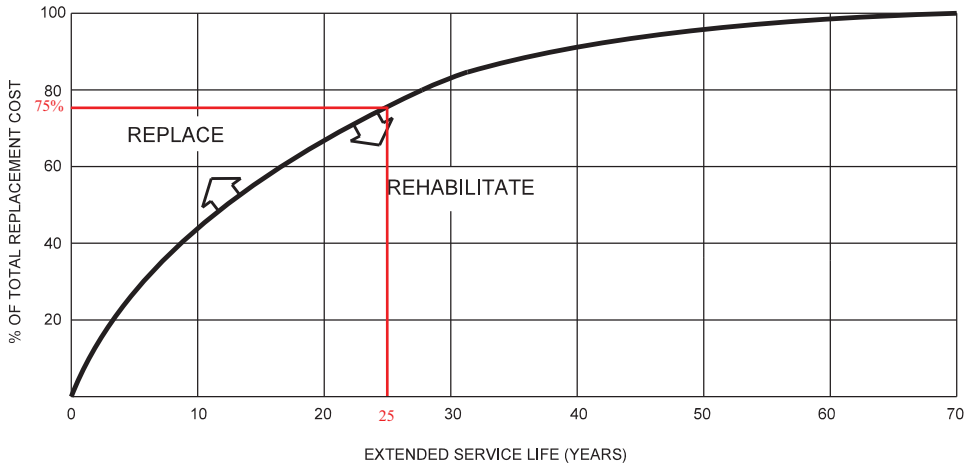
Pay Item	Item Description	unit	Quantity			
105-06845	CONSTRUCTION ENGINEERING	LS	2%			$51,171
110-01001	MOBILIZATION AND DEMOBILIZATION	LS	5%			$127,928
202-51030	PRESENT STRUCTURE, REMOVE	LS	1		$200,000	$200,000
206-51220	EXCAVATION, WET	CYS	780		$35	$27,300
206-51225	EXCAVATION, DRY	CYS	195		$15	$2,925
211-06467	AGGREGATE FOR END BENT BACKFILL	CYS	67		$60	$4,044
302-07455	DENSE GRADED SUBBASE	CYS	32		$60	$1,920
602-06729	BARRIER DELINEATOR	EACH	26		$13	$338
609-06259	REINFORCED CONCRETE BRIDGE APPROACH, 12 IN.	SYS	192		$75	$14,400
616-02320	GEOTEXTILES	SYS	1,030		$3	$2,575
616-06405	RIPRAP, REVETMENT	TON	858		$25	$21,450
621-06574	SODDING	SYS	100		$19	$1,892
701-06011	DYNAMIC PILE LOAD TEST	EACH	5		$2,300	$11,500
701-08253	PILE SLEEVES	EACH	20		$605	$12,100
701-09693	TEST PILE, DYNAMIC, HP 12 X 74, NON-PRODUCTION	LFT	350		$60	$21,000
701-09559	TEST PILE, DYNAMIC, RESTRIKE	EACH	5		$1,900	$9,500
701-09683	PILE SHOE, HP 12 X 74	EACH	128		$120	$15,360
701-95780	PILE, STEEL H, HP 12" X 74	LFT	6,600		$60	$396,000
702-51005	CONCRETE,A,SUBSTRUCTURE	CYS	348		$595	$207,060
702-51015	CONCRETE,B,FOOTINGS	CYS	163		$360	$58,680
702-51110	GRATES, BASINS, AND FITTINGS, CAST IRON	LBS	4,000		$3.75	$15,000
703-06028	REINFORCING BARS	LBS	120,700		$0.95	$114,665
703-06029	REINFORCING BARS, EPOXY COATED	LBS	226,075		$1.00	$226,075
704-51002	CONCRETE, C, SUPERSTRUCTURE	CYS	739		$550	$406,450
706-05732	CONCRETE BRIDGE RAILING TRANSITION, TBC	EACH	4		$1,650	$6,600
706-51020	CONCRETE, C, RAILING	CYS	93		$450	$41,850
707-11046	STRUCTURAL MEMBERS, CONCRETE BULB-T BEAM, 60 IN. X 49 IN.	LFT	2,450		$290	$710,500
709-51821	SURFACE SEAL	SFT	27,867	estimated	$1	$27,867
711-51070	ANCHOR PLATE, AP1	EACH	20		$75	$1,500
801-06775	MAINTAINING TRAFFIC	LS	2%			$51,171
					Road Total	$1,200,000
					Sub toal	$3,988,820
					Contigency 25%	$997,205
					Total	**$4,986,025**

Price assumes that the truss will be taken off the select list and the truss will be removed. There is no rehab cost associated with this replacement option.

SR46 over Eel River- Rehab Alternative

Item	Description	Quantity	Unit	Unit Price	Price
105-06845	CONSTRUCTION ENGINEERING	1	LS	$75,750.63	$75,750.63
110-01001	MOBILIZATION AND DEMOBILIZATION	1	LS	$189,376.58	$189,376.58
801-06775	MAINTAINING TRAFFIC	1	LS	$75,750.63	$75,750.63
202-51328	PRESENT STRUCTURE, REMOVE PORTIONS	1	LS	$85,524.63	$85,524.63
619-51859	PAINT STEEL BRIDGE, TYPE 3	1	LS	$153,271.67	$153,271.67
619-11052	CLEAN STEEL BRIDGE, QP-2, TYPE 3	1	LS	$326,565.32	$326,565.32
712-11618	ENVIRONMENTAL CONTROL	1	LS	$75,255.01	$75,255.01
704-51002	CONCRETE, C, SUPERSTRUCTURE	247.1	CYS	$595.00	$147,035.89
703-06028	REINFORCING BARS, EPOXY COATED	66,905	LBS	$1.05	$70,250.02
609-06259	REINFORCED CONCRETE BRIDGE APPROACH, 12 IN	114	SYS	$80.00	$9,111.11
302-07455	DENSE GRADED SUBBASE	19	CYS	$62.00	$1,176.85
709-51821	SURFACE SEAL	1	LS	$12,043.35	$12,043.35
711-51876	JACKING AND SUPPORTING TRUSS	1	LS	$750,000.00	$750,000.00
724-51925	STRUCTURAL EXPANSION JOINT, SS	74.50	LFT	$161.00	$11,994.50
711-96800	STUD SHEAR CONNECTORS	792	EACH	$3.00	$2,376.00
702-51110	GRATES, BASINS, AND FITTINGS, CAST IRON	3,072	LBS	$3.75	$11,520.00
710-09158	PATCHING CONCRETE STRUCTURES	500	SFT	$75.00	$37,500.00
711-51035	STRUCTURAL STEEL	380,710	LBS	$5.50	$2,093,907.16

Total	$4,128,409.35
Roadway Costs	$500,000.00
Contingency (15%)	$694,261.40
Rehab Total	$4,822,670.76



Example: A proposed bridge rehabilitation project will extend the service life of the bridge by an estimated 10 years. Based on the figure, the "threshold" value is 43%. If the bridge rehabilitation cost is less than 43% of the total bridge replacement cost, then bridge rehabilitation is the most cost-effective option. If the bridge rehabilitation cost is 43% or more of the total bridge replacement cost, then bridge replacement is the most cost-effective option.

Bridge Replacement Cost = $4,986,025

Bridge Rehab Cost = $4,822,671

$4,986,025 x 0.75 = $3,739,519

$4,822,671 > $ 3,739,519

Therefore, Replacement is the most cost-effective option.

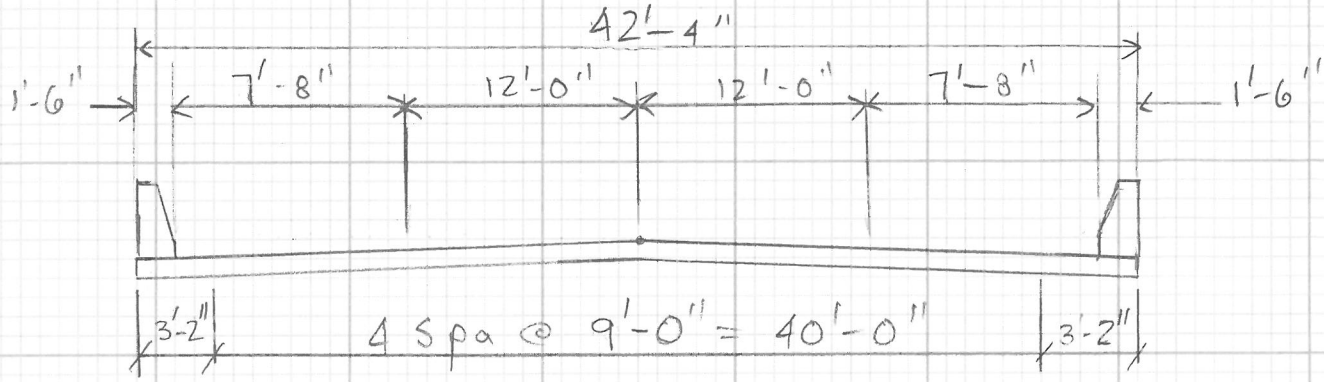
EVALUATING ALTERNATIVE IMPROVEMENT STRATEGIES (Based on a 6% Discount Rate)

Figure 72-2C

APPENDIX D: Schematics

* SR 46 is Minor Arterial
* Use Table 55-3A (Rural Arterial - 3R)

2011 AADT = 2,390 vpd
2015 AADT = 2,585 vpd
2035 AADT = 3,545 vpd



Structure Depth

Slab + Fillet = 8" + 3" = 11" = 0.917'
Beam Depth = 60" = 5.000'
Fall = (21.167' − 3.167') * 0.02 = 0.360'
6.277'

Max Overhang

0.45 (9') = 4.05'

or 5' max

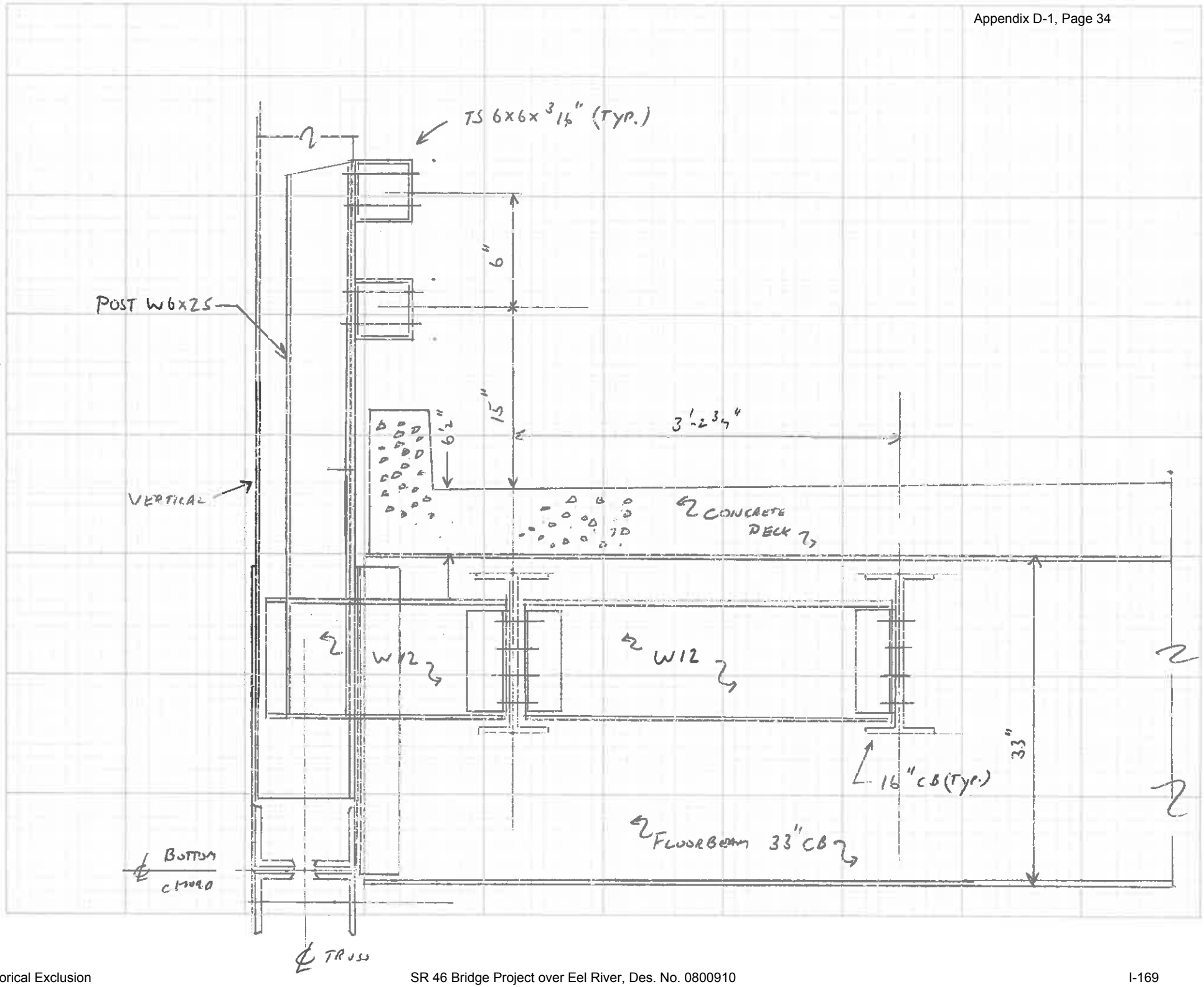
Min Overhang

$\frac{1}{2}(49/12) + \frac{9}{12} = 2.792'$

PARSONS

SUBJECT SR-46 JOB NO.

MADE BY JS DATE 9/11/12 CHECKED BY SHEET NO. OF DATE

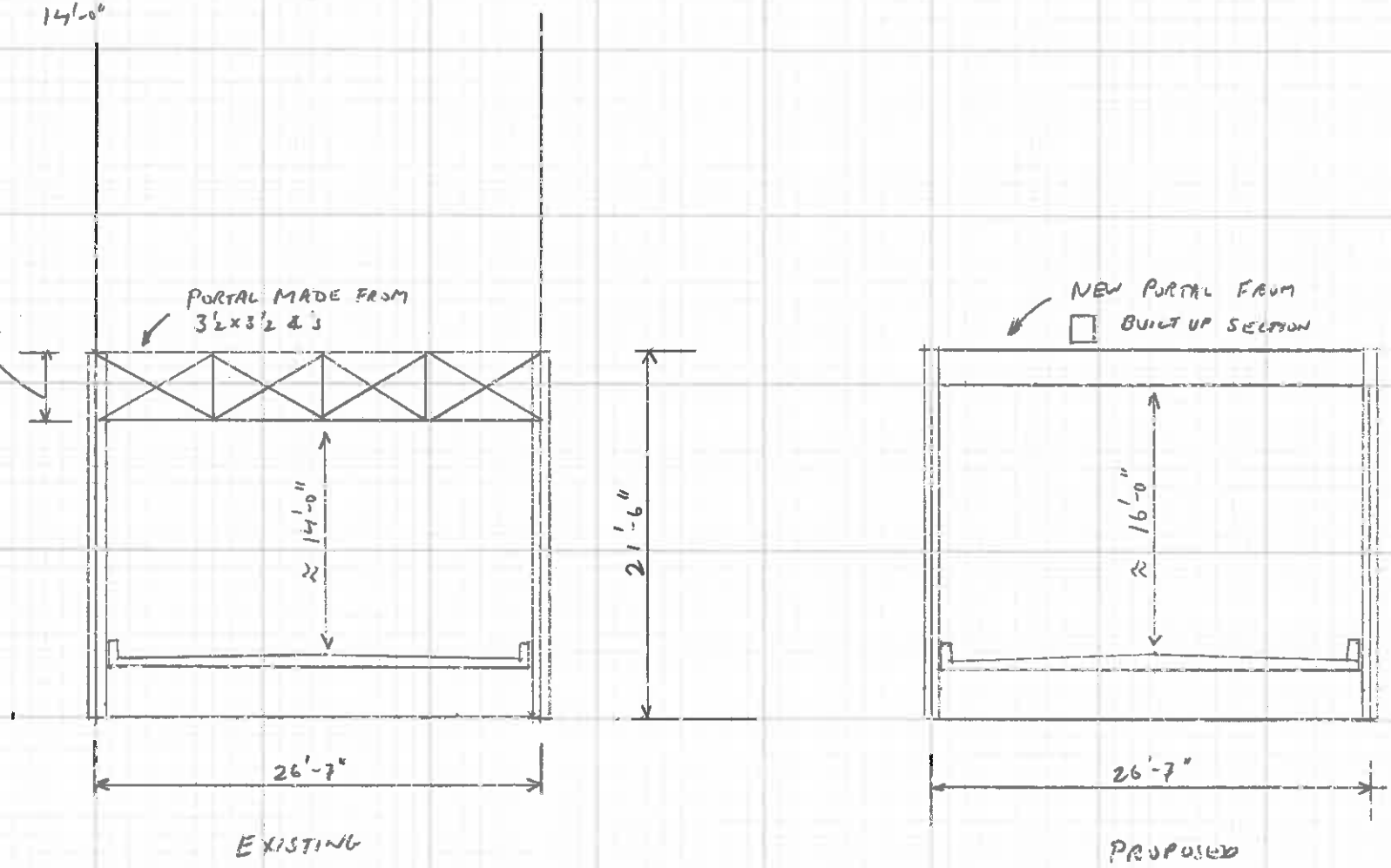


PARSONS

SUBJECT SR-46 JOB NO. ____ SHEET NO. ____ OF ____

MADE BY JS DATE 9/11/12 CHECKED BY ____ DATE ____

21'-6"
− 3'-9 1/2
18'-1 1/2
− 4'-1"
14'-0"



MODIFICATION OF
END PORTAL FRAME

APPENDIX E: Photographs

Photo 1: Span 1 Looking Upstream

Photo 2: Span 2 Looking Upstream

Photo 3: West Approach

Photo 4: East Approach

Span 1 (West Truss)
Lower Chord Members

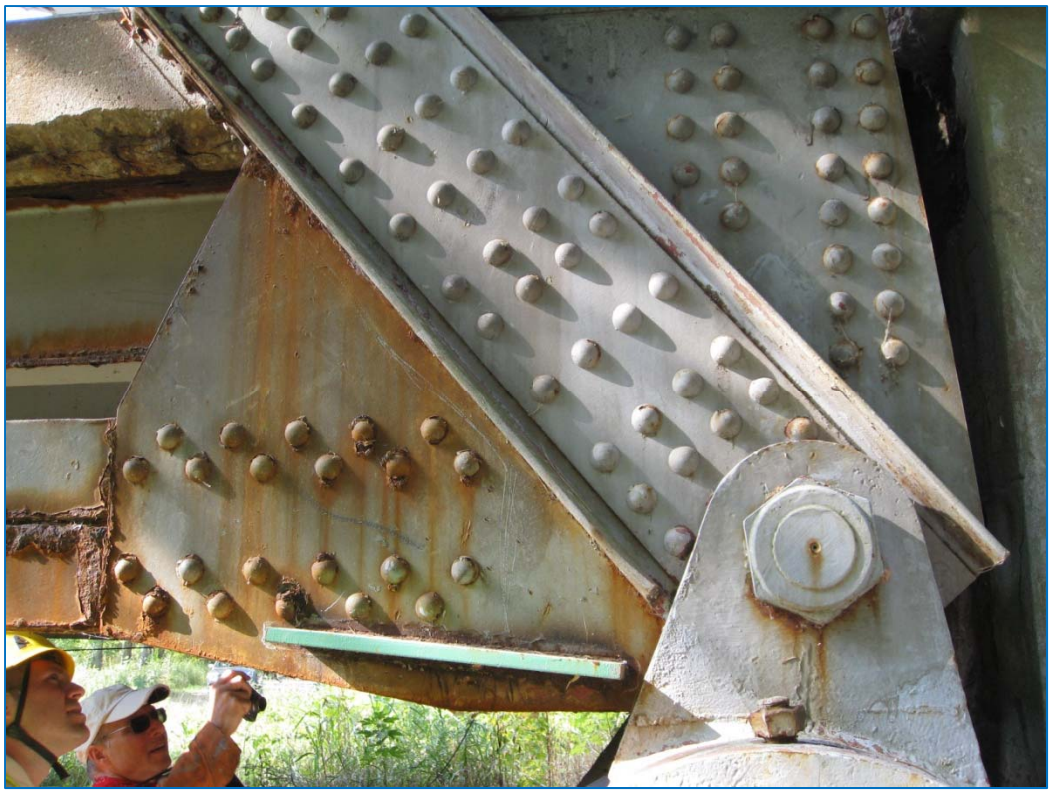


Photo 5: L0 Up Stream Bearing Outside Gusset Plate Looking South

Photo 6: L0 Up Stream Bearing Inside Gusset Plate Looking North

Photo 7: L0 Down Stream Bearing Outside Gusset Plate Looking North

Photo 8: L0 Down Stream Bearing Inside Gusset Plate Looking South

Photo 9: L1 Up Stream Connection Plate Looking West

Photo 10: L1 Down Stream Connection Plate Looking West

Photo 11: L2 Up Stream Connection Plate Looking East

Photo 12: L1 Down Stream Connection Plate Looking East

Photo 13: L3 Up Stream Connection Plate Looking West

Photo 14: L3 Down Stream Connection Plate Looking East

Photo 15: L4 Up Stream Connection Plate Looking East

Photo 16: L4 Down Stream Connection Plate Looking East

Photo 17: L5 Up Stream Connection Plate Looking West

Photo 18: L5 Down Stream Connection Plate Looking East

Photo 19: L6 Up Stream Connection Plate Looking East

Photo 20: L7 Up Stream Connection Plate Looking East

Photo 21: L7 Down Stream Connection Plate Looking West

Photo 22: L8 Up Stream Connection Plate Looking East

Photo 23: L8 Up Stream Connection Plate Looking West

Photo 24: L8 Down Stream Connection Plate Looking East

Photo 25: L8 Down Stream Connection Plate Looking West

Photo 26: L9 Up Stream Connection Plate Looking East

Photo 27: L9 Up Stream Connection Plate Looking West

Photo 28: L9 Down Stream Connection Plate Looking East

Photo 29: L9 Down Stream Connection Plate Looking West

Photo 30: L10 Up Stream Connection Plate Looking East

Photo 31: L10 Up Stream Connection Plate Looking West

Photo 32: L10 Up Stream Connection Plate Looking East

Photo 33: L10 Down Stream Connection Plate Looking West

Span 1 (West Truss)
Splice Connections

Photo 34: L2 Down Stream Splice Top

Photo 35: L3 Down Stream Splice Top

Photo 36: L3 Down Stream Splice Bottom

Photo 37: L5 Down Stream Splice Top

Photo 38: L5 Down Stream Splice Bottom

Photo 39: L6 Down Stream Splice Top

Photo 40: L8 Down Stream Splice Top

Photo 41: L9 Down Stream Splice Top

Photo 42: L2 Up Stream Splice Top

Photo 43: L3 Up Stream Splice Top

Photo 44: L5 Up Stream Splice Top

Photo 45: L3 Up Stream Splice Bottom

Photo 46: L6 Up Stream Splice Top

Photo 47: L8 Up Stream Splice Top

Photo 48: L9 Up Stream Splice Top

Span 1 (West Truss)
Upper Chord Members

Photo 49: U0 Looking West

Photo 50: U2 Up Stream Looking West

Photo 51: U2 Up Stream Looking West

Photo 52: U3 Down Stream Looking East

Photo 53: U3 Down Stream Looking West

Photo 54: U3 Up Stream Looking East

Photo 55: U3 Up Stream Looking West

Photo 56: U4 Down Stream Looking East

Photo 57: U4 Down Stream Looking West

Photo 58: U4 Up Stream Looking East

Photo 59: U4 Up Stream Looking West

Photo 60: U5 Down Stream Looking East

Photo 61: U5 Down Stream Looking West

Photo 62: U5 Up Stream Looking East

Photo 63: U5 Up Stream Looking West

Photo 64: U6 Down Stream Looking East

Photo 65: U5 Down Stream Looking West

Photo 66: U6 Up Stream Looking East

Photo 67: U6 Up Stream Looking West

Photo 68: U7 Down Stream Looking East

Photo 69: U7 Down Stream Looking West

Photo 70: U7 Up Stream Looking East

Photo 71: U7 Up Stream Looking West

Photo 72: U8 Down Stream Looking East

Photo 73: U8 Down Stream Looking West

Photo 74: U8 Up Stream Looking East

Photo 75: U8 Up Stream Looking West

Photo 76: U9 Down Stream Looking East

Photo 77: U9 Down Stream Looking West

Photo 78: U9 Up Stream Looking East

Photo 79: U10 Down Stream Looking South

Photo 80: U10 Up Stream Looking East

Photo 81: U9 Up Stream Looking West

Photo 82: U10 Down Stream Looking East

Photo 83: U10 Down Stream Looking South

Photo 84: U10 Up Stream Looking East

Photo 85: Damaged Sway Bracing at U1

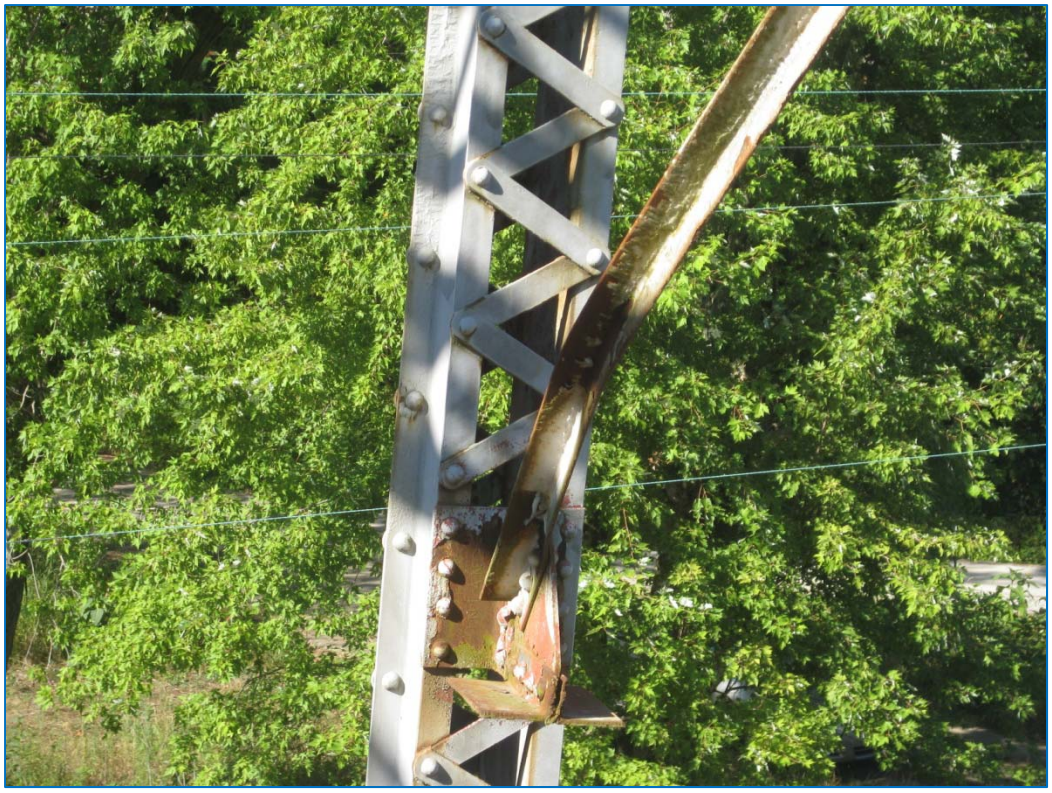


Photo 86: Damaged Sway Bracing at U2

Photo 87: Damaged Sway Bracing at U3

Photo 88: Damaged Sway Bracing at U4

Photo 89: Damaged Sway Bracing at U5

Photo 90: Damaged Sway Bracing at U6

Photo 91: Damaged Portal Bracing at U10

Photo 92: Damaged Portal Bracing at U10

Span 2 (East Truss)
Lower Chord Members

Photo 93: L0 Up Stream Interior Gusset Plate Looking South

Photo 94: L0 Up Stream Exterior Gusset Plate Looking South

Photo 95: L0 Up Stream Inside Gusset Plates Looking West

Photo 96: L0 Down Stream Inside Gusset Plates Looking West

Photo 97: L0 Down Stream Inside Gusset Plate Looking North

Photo 98: L0 Down Stream Exterior Gusset Plate Looking North

Photo 99: L1 Up Stream Connection Plate Looking East

Photo 100: L1 Up Stream Connection Plate Looking West

Photo 101: L1 Down Stream Connection Plate Looking East

Photo 102: L1 Down Stream Connection Plate looking West

Photo 103: L2 Up Stream Connection Plate Looking East

Photo 104: L3 Up Stream Connection Plate looking West

Photo 105: L2 Down Stream Connection Plate Looking East

Photo 106: L2 Down Stream Connection Plate looking West

Photo 107: L3 Up Stream Connection Plate Looking East

Photo 108: L2 Up Stream Connection Plate looking West

Photo 109: L3 Down Stream Connection Plate Looking East

Photo 110: L3 Down Stream Connection Plate looking West

Photo 111: L4 Up Stream Connection Plate Looking East

Photo 112: L4 Up Stream Connection Plate looking West

Photo 113: L4 Down Stream Connection Plate Looking East

Photo 114: L4 Down Stream Connection Plate looking West

Photo 115: L5 Up Stream Connection Plate Looking East

Photo 116: L5 Up Stream Connection Plate looking West

Photo 117: L5 Down Stream Connection Plate Looking East

Photo 118: L5 Down Stream Connection Plate looking West

Photo 119: L6 Up Stream Connection Plate Looking East

Photo 110: L6 Up Stream Connection Plate looking West

Photo 111: L6 Down Stream Connection Plate Looking East

Photo 112: L6 Down Stream Connection Plate looking West

Photo 113: L6 Down Stream Connection Plate Looking West

Photo 114: L6 Up Stream holes in vertical post

Photo 115: L7 Up Stream Connection Plate Looking East

Photo 116: L7 Up Stream Connection Plate Looking West

Photo 117: L7 Down Stream Connection Plate Looking East

Photo 118: L7 Down Stream Connection Plate Looking West

Photo 119: L8 Up Stream Connection Plate Looking East

Photo 120: L8 Up Stream Connection Plate Looking West

Photo 121: L8 Down Stream Connection Plate Looking East

Photo 122: L8 Down Stream Connection Plate Looking West

Photo 123: L8 Up Stream holes in vertical Post

Photo 124: L9 Up Stream Connection Plate Looking East

Photo 125: L9 Up Stream Connection Plate Looking West

Photo 126: L9 Down Stream Connection Plate Looking East

Photo 127: L9 Down Stream Connection Plate Looking West

Photo 128: L10 Up Stream Connection Plate Looking East

Photo 129: L10 Up Stream Connection Plate Looking West

Photo 130: L10 Down Stream Connection Plate Looking East

Photo 131: L10 Down Stream Connection Plate Looking West

Photo 132: L11 Down Stream Bearing Outside Gusset Plate Looking North

Photo 133: L11 Up Stream Bearing Outside Gusset Plate Looking South

Photo 134: L11 Up Stream Bearing Inside Gusset Plate Looking North

Photo 135: L11 Up Stream Bearing Outside Gusset Plate Looking South

Span 2 (East Truss)
Splice Connections

Photo 136: L2 Down Stream Splice Top

Photo 137: L3 Down Stream Splice Top

Photo 138: L5 Down Stream Splice Top

Photo 139: L5 Down Stream Splice Bottom

Photo 140: L6 Down Stream Splice Top

Photo 141: L6 Down Stream Splice Bottom

Photo 142: L8 Down Stream Splice Top

Photo 143: L9 Down Stream Splice Top

Photo 144: L2 Up Stream Splice Top

Photo 145: L3 Up Stream Splice Top

Photo 146: L5 Up Stream Splice Top

Photo 147: L6 Up Stream Splice Top

Photo 148: L8 Up Stream Splice Top

Photo 149: L9 Up Stream Splice Top

Span 2 (East Truss)
Upper Chord Members

Photo 150: U1 Down Stream Looking East

Photo 151: U1 Up Stream Looking West

Photo 152: U2 Down Stream Looking East

Photo 153: U2 Down Stream Looking West

Photo 154: U2 Up Stream Looking East

Photo 155: U2 Up Stream Looking West

Photo 156: U3 Down Stream Looking East

Photo 157: U3 Down Stream Looking West

Photo 158: U3 Up Stream Looking East

Photo 159: U3 Up Stream Looking West

Photo 160: U4 Down Stream Looking East

Photo 161: U4 Down Stream Looking West

Photo 162: U4 Up Stream Looking East

Photo 163: U4 Up Stream Looking West

Photo 164: U5 Down Stream Looking East

Photo 165: U5 Down Stream Looking West

Photo 166: U5 Up Stream Looking East

Photo 167: U5 Up Stream Looking West

Photo 168: U6 Down Stream Looking East

Photo 169: U6 Down Stream Looking West

Photo 170: U7 Down Stream Looking East

Photo 171: U7 Down Stream Looking West

Photo 172: U7 Up Stream Looking East

Photo 173: U7 Up Stream Looking West

Photo 174: U8 Down Stream Looking East

Photo 175: U8 Down Stream Looking West

Photo 176: U8 Up Stream Looking East

Photo 177: U8 Up Stream Looking West

Photo 178: U9 Down Stream Looking East

Photo 179: U9 Down Stream Looking West

Photo 180: U9 Up Stream Looking East

Photo 181: U9 Up Stream Looking West

Photo 182: U10 Down Stream Looking East

Photo 183: U10 Up Stream Looking East

Photo 184: Damage to U0 Portal Bracing

Photo 185: Damage to U1 Portal Bracing

Photo 186: Damage to U2 Sway Bracing

Photo 187: Damage to U3 Sway Bracing

Photo 188: Damage to U4 Sway Bracing

Photo 189: Damage to U5 Sway Bracing

Photo 190: Damage to U11 Portal Bracing

Photo 191: Damage to U11 Portal Bracing

Miscellaneous Conditions

Photo 192: Bent 1 Looking West

Photo 193: Bent 3 Looking East

Photo 194: Pier 2 Looking East

Photo 195: Rusting of Up Stream Chord at Pier 2

Photo 196: Exterior Chord pack Rust

Photo 197: Rusting in Exterior Stringer

Photo 198: Rust holes in Up Stream L1 Post

Photo 199: Rusting in L11 post on Down Stream Side

Photo 200: Hole in East Span Up Stream Interior Gusset Plate L0

Photo 201 : Hole in East Span Up Stream Exterior Gusset Plate L0

Photo 202: Hole in East Span Down Stream Interior Gusset Plate L0

Photo 203 : Hole in East Span Down Stream Exterior Gusset Plate L0

Photo 204: Hole in East Span Down Stream Interior Gusset Plate L11

Photo 205 : Hole in East Span Down Stream Interior Gusset Plate L11

Photo 206: Hole in West Span Up Stream Interior Gusset Plate L0

Photo 207 : Hole in West Span Down Stream Exterior Gusset Plate L0

BRIDGE INSPECTION REPORT

NBI Number: 017050
Bridge Number: 046-11-01316 C
Facility Carried: SR 46
Feature(s) Intersected: EEL RIVER
Location: 04.84 E SR 59
Logmile Over: 0011.750 Logmile Under:
Reference Post: 0022 Offset: 05

Inspection Date: 05/01/2014

Inspected By: (* is primary inspector)
Melvin Hughes*

Inspection Type:

- ☑ Routine
- ☐ Special
- ☐ Fracture Critical
- ☐ Underwater
- ☐ Scour
- ☐ Damage

Comments:

Other Info:

- ☐ Under Construction
- ☐ Initial Inspection
- ☐ Flag for Central Office Review

This inspection report is property of the Indiana Department of Transportation. Questions related to the content of this report should be directed to the INDOT district bridge engineer or the INDOT state central office.

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Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

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THINK SAFETY FIRST

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STRUCTURE INVENTORY AND APPRAISAL REPORT - 1

NBI Number: 017050 | Bridge Number: 046-11-01316 C
Facility Carried: SR 46 | Feature(s) Intersected: EEL RIVER

IDENTIFICATION

1. State: 185 (INDIANA)
8. NBI Number: 017050
8L. County Bridge Number:
8X. Structure Name:
5A. Inventory Route On: 131000460
5A. Inventory Route Under:
2. District: 01 (CRAWFORDSVILLE)
3. County: 011 (CLAY)
6. Feat Intersected: EEL RIVER
7. Facility Carried: SR 46
9A. Location: 04.84 E SR 59
11A. Mile Point (over): 0011.750
16. Latitude: 39° 23' 02.80"

8S. INDOT Bridge Number: 046-11-01316
8SD. INDOT Bridge Desig: C
8C. Old Bridge No:
8E. New Bridge No:
5B. Road Number On: 00046
5B. Road Number Under:
4. City/Town: 00000 (N/A)
98. Border Bridge:
99. Border Bridge Number:
9C. Map Location:
11B. Mile Point (under):
17. Longitude: 087° 01' 14.28"

STRUCTURE DATA

43A. Structure Type - Main Span: 310 B (STT - 310B)
43C. Main Span Widening Type: 000 - NONE
45. Number of Spans - Main: 002
107. Deck Structure Type: 1 (CONCRETE CAST-IN-PLACE)
108A. Wearing Surface: 3 (LATEX CONCRETE)
108C. Protection: 1 (EPOXY COATED REINFORCING)

44A. Structure Type - Approach: 000 (000 - NONE)
44C. Other Approach Types: N
46. Number of Spans - Approach: 0000
108B. Membrane: NONE
108D. Thickness of Asphalt: 01.50 Inches

AGE OF SERVICE

27A. Year Built: 1934
27B. Paint Date: 08/31/1994
59B. Paint Rating: 4
42A. Type of Service Over: 1 (HIGHWAY)
28A. Lanes on Structure: 02
29A. ADT - Over: 002390 VPD
29B. ADT - Under: VPD
114. Future ADT: 003310 VPD
109. Average Truck Traffic: 03 % Trucks

106A. Reconstructed: 1977
106B. Repaired: 2012
59C. Tons Steel: 000362
42B. Type of Service Under: 5 (WATERWAY)
28B. Lanes Under Structure: 00
30A. ADT Year Over: 2010
30B. ADT Year Under:
115. Future ADT Year: 2032
19. Bypass Detour Length: 008 mi.

GEOMETRIC DATA

48. Maximum Span Length: 0198.0 ft.
50A. Sidewalk/Curb Left: 00.5 ft.
51. Bridge Roadway Width: 023.9 ft.
32. Approach Roadway Width: 026.0 ft.
34. Skew: 00 Degree(s)
10A. Defense Vertical Clearance - Over: 14' 08"
47A. Total Horiz. Clearance Over East/North: 023.9 ft.
47C. Total Horiz. Clearance Over East/North (First UnderRec): ft.
53. Vertical Clearance/Deck: 14' 08"
55B. Lateral Right: 000.0 ft.
55A. Min Latr. Cl. Right - Code: N
56. Lateral Left: 000.0 ft.

49. Structure Length: 00402.3 ft.
50B. Sidewalk/Curb Right: 00.5 ft.
52. Deck Width (O-O): 025.0 ft.
33. Bridge Median: 0 (NO MEDIAN)
35. Structure Flared: 0 (NO FLARE)
10B. Defense Vertical Clearance - Under: 00' 00"
47B. Total Horiz. Clearance Over West/South: ft.
47D. Total Horiz. Clearance Over West/South (First UnderRec): ft.
54B. Underclearance: 00' 00"
54A. Min Vert Clear Code: N

THINK SAFETY FIRST

1

STRUCTURE INVENTORY AND APPRAISAL REPORT - 2

NBI Number: 017050 | Bridge Number: 046-11-01316 C
Facility Carried: SR 46 | Feature(s) Intersected: EEL RIVER

NAVIGATION

38. Navigational Control: 0
39. Navigation Vertical Clearance: 000.0 ft.
111. Pier/Abutment Protection:
40. Navigation Horizontal Clearance: 0000.0 ft.
116. Vertical Clearance - Lift Bridge:

CLASSIFICATION

112. NBIS Bridge Length: Y
104A. Highway System - Over: 0
26A. Func. Class - Over: 06
26B. Func. Class - Under:
100. Defense Highway Des: 0
102. Direction of Traffic: 2 (2-WAY TRAFFIC)
110. Des. Nat. Network: 1
21. Maint. Responsibility: 01 (STATE HIGHWAY AGENCY)
37. Historical Significance: 1 (ON NATIONAL REGISTER)
12. Base Highway Network: 0
104B. Highway System - Under:
13A. LRS Inventory Route:
13B. LRS Inventory Subroute:
101. Parallel Structure Des: N
103. Temporary Structure Des:
20. Toll: 3 (ON FREE ROAD)
22. Owner: 01 (STATE HIGHWAY AGENCY)

CONDITION

	CONDITION	MATERIAL	RATING
58.	Deck:		6
58.01	Wearing Surface:		5
59.	Superstructure:		3
60.	Substructure:		7
61.	Channel:		5
62.	Culv/Ret:		N
65.	Approach Roadway:		7

LOAD RATING AND POSTING

31. Design Load: 4 (H 20)
64. Operating Rating: 54
66. Inventory Rating: 32
66B. Gross Tons or H Rating: 19 Tons
70. Bridge Posting: 5 (EQUAL TO OR ABOVE LEGAL LOADS)
41. Open, Posted, or Closed: P (POSTED FOR LOAD)
66C. Tons Posted: 19
64B. Year of Rating: 2008
63. Oper Rating Method: 1 (LOAD FACTOR (LF))
65. Inv Rating Method: 1 (LOAD FACTOR (LF))
66D. Date Posted/Closed: 07/31/2012
Restriction Signage:

APPRAISAL

	COMMENTS	Unofficial	Official
67.	Structural:	3	4
68.	Geometry:	2	2
69.	Underclearance:	N	N

71. Waterway Adequacy: 6
72. Roadway Alignment: The alignments of the bridge and approaching roadway do not impede traffic flow 8
36A. Traffic Safety Features (Bridge Railings): 0 (DOES NOT MEET CURRENT SAFETY STANDARDS, OR IS NOT THERE AND IS NEEDED)
36B. Traffic Safety Features (Transitions): 0 (DOES NOT MEET CURRENT SAFETY STANDARDS, OR IS NOT THERE AND IS NEEDED)
36C. Traffic Safety Features (Approach Guardrail): 1 (MEETS CURRENT SAFETY STANDARDS)
36D. Traffic Safety Features (Approach Guardrail Ends): 1 (MEETS CURRENT SAFETY STANDARDS)
36X. Bridge Rail Type: H (MISC. STEEL RAILINGS)
113A. Scour Critical Bridge: 8 (STABLE)

THINK SAFETY FIRST

STRUCTURE INVENTORY AND APPRAISAL REPORT - 3

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

PROPOSED IMPROVEMENTS

73. Year Needed:..... 2012
75. Type of Work:..... 35 (REHABILITATION) 1 (CONTRACT)

Describe Item 75:

Bridge closed on 11/01/2011 for emergency repair to be completed and re-opened by 12/30/2011. Emergency Truss repair for Gusset Plate failure in lower chord in Span B at Pier 2. Contract cost estimated at $43,000.00.[Sherwood Lee Garrison, 11/11/2011]

Bridge rehabilitation or Bridge Replacement in 2015. Bridge is on the Historic Select list.

76. Improvement Length:..... 000434 ft.
94. Bridge Improvement Costs:..... $002404 x 1000
95. Roadway Improvement Costs:..... $000000 x 1000
96. Total Project Cost:..... $002404 x 1000
97. Year of Cost Estimate:..... 2013
114. Future ADT:..... 003310 VPD
115. Year of Future ADT:..... 2032

INDIANA AND LOCAL MAINTENANCE NEEDS

573. Year Needed:.....

Describe Item 575:

596. Total Project Cost:..... $ x 1000

INSPECTION DATA

90. Date:..... 05/01/2014
91. Des. Inspection Frequency:..... 12 Months
92. Critical Feature Inspection: A:..... Y 12 B:..... N C:..... Y 12
93. Date: A:..... 05/07/2013 B:..... C:..... 05/07/2013

REMAINING LIFE

63X. Estimated Remaining Life:

A:	Wearing Surface:.....	Years	
B:	Deck:.....	Years	
C:	Joints:.....	Years	
D:	Superstructure:.....	Years	
E:	Substructure:.....	Years	
F:	Approach:.....	Years	
G:	Channel:.....	Years	
H:	Culvert:.....	Years	

	Unofficial	Official
SUFFICIENCY RATING	28.8	07.0
Functionally Obsolete:	N	N
Structurally Deficient:	Y	Y

REMARKS

THINK SAFETY FIRST

3

STRUCTURE INVENTORY AND APPRAISAL SHORT FORM

NBI Number: 017050 | Bridge Number: 046-11-01316 C
Facility Carried: SR 46 | Feature(s) Intersected: EEL RIVER

IDENTIFICATION

State:..... 185 (INDIANA)
District:..... 01 (CRAWFORDSVILLE)
County:..... 011 (CLAY)
City/Town:..... 00000 (N/A)
Feature Intersected:..... EEL RIVER
Facility Carried:..... SR 46
Location:..... 04.84 E SR 59
Map:.....

STRUCTURE DATA

Str. Type - Main:..... 310 B(STT - 310B)
Str. Type - Appr:..... 000 (000 - NONE)
Deck Str. Type:..... 1 (CONCRETE CAST-IN-PLACE)
Wearing Surface:.. 3 (LATEX CONCRETE)
Protection:... 1 (EPOXY COATED REINFORCING)
No. of Spans - Main:..... 002
No. of Spans - Approach:..... 0000

AGE OF SERVICE

Year Built:..... 1934
Reconstructed:..... 1977
Repaired:..... 2012
Type of Service:..... 1 (HIGHWAY)
Lanes on Structure:..... 02
Lanes under Structure:..... 00
ADT - Over:..... 002390 VPD
ADT - Under:..... VPD
ADT Year Over:..... 2010
ADT Year Under:.....

GEOMETRIC DATA

Max. Span Length:..... 0198.0 Ft.
Sidewalk/Curb Lt:..... 00.5 Ft.
Sidewalk/Curb Rt:..... 00.5 Ft.
Br. Rdwy Width:..... 023.9 Ft.
Approach Roadway Width:..... 026.0 Ft.
Skew:..... 00 Degree(s)
Total Hor. Clearance - Over:..... 023.9 Ft.
Total Hor. Clearance - Under:..... Ft.
Vert Clear./Deck:..... 14' 08"
Structure Length:..... 00402.3 Ft.
Deck Width (O-O):..... 025.0 Ft.
Underclearance:..... 00' 00"

LOAD RATING AND POSTING

Design Load:..... 4
Operating Rating:..... 54
Inventory Rating:..... 32
Gross Tons or H Rating:..... 19 Tons
Posting:..... 5 (EQUAL TO OR ABOVE LEGAL LOADS)
Date Posted/Closed:..... 07/31/2012
Open, Posted, or Closed P (POSTED FOR LOAD)
Tons Posted:..... 19
Year of Rating:..... 2008

INSPECTIONS

Inspection Date:..... 05/01/2014
Des. Inspection Frequency:..... 12 Months
Critical Feature
A:..... Y 12 B:..... N C:..... Y 12
Critical Feature Inspection Date:
A:. 05/07/2013 B:..... C 05/07/2013

REMAINING LIFE

Estimated Remaining Life:
Wearing Surface:..... Years
Deck:..... Years
Joints:..... Years
Superstructure:..... Years
Substructure:..... Years
Approach:..... Years
Channel:..... Years
Culvert:..... Years

PROPOSED IMPROVEMENTS

Year Needed:..... 2012
Type Work:..... 35 1

Describe Work:

Bridge closed on 11/01/2011 for emergency repair to be completed and re-opened by 12/30/2011. Emergency Truss repair for Gusset Plate failure in lower chord in Span B at Pier 2. Contract cost estimated at $43,000.00.[Sherwood Lee Garrison, 11/11/2011]

Bridge rehabilitation or Bridge Replacement in 2015. Bridge is on the Historic Select list.

Due to the condition of the age and de... the narrowness of the bridge, the amount of traffic traveling across the bridge t... sway bracing and portal d... the vertical clearance height ... the current approach conditio... recommending a bridge r... [Sherwood Garrison, 04/29/2002]

Sufficiency Rating:..... 07.0
Improvement Length:..... 000434
Bridge Imp. Costs:..... 002404 x 1000
Roadway Imp. Costs:..... 000000 x 1000
Total Project Cost:..... 002404 tx 1000
Year of Cost Estimate:..... 2013

I am recommending this bridge for replacement based on the narrowness of the bridge and the damage to the superstructure.[Sherwood Garrison, 10/03/2000]

CONDITION

CONDITION	MATERIAL RATING
Deck:	6
Wearing Surface:	5
Superstr:	3
Substr:	7
Channel:	5
Culv/Ret:	N
Approach Roadway:	7

APPRAISAL

	RATING
Structural:	4
Geometry:	2
Underclearance:	N
Waterway Adequacy:	6
Roadway Alignment:..... The alignments of the bridge and approaching roadway do not impede traffic flow to any degree while travelling at the posted speed limit. 5/01/2014	8

REMARKS

STRUCTURE INVENTORY AND APPRAISAL SHORT FORM

NBI Number: 017050 Bridge Number: 046-11-01316 C

Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

GENERAL INVENTORY DATA

NBI Number: 017050 | Bridge Number: 046-11-01316 C
Facility Carried: SR 46 | Feature(s) Intersected: EEL RIVER

IDENTIFICATION

Contract Prefix: B
Contract Number: 34533

8A. NBI Number: 017050
8N. Bridge No: 046-11-01316
8C. Structure Designation:

6. Features Intersected: EEL RIVER
7. Facility Carried: SR 46

Road Number On: 0046
Road Number Under:
5. Inventory Route On: 131000460
5. Inventory Route Under:

(A.) Sort Number: 00017520

1. State: (INDIANA)
2. District: 01 (CRAWFORDSVILLE)
3. County: 011 (CLAY)
4. City/Town: 00000 (N/A)

9. Location: 04.84 E SR 59
16. Latitude: 39° 23' 02.80"
17. Longitude: 087° 01' 14.28"

11A. Logmile Over: 0011.750
11B. Logmile Under:

STRUCTURE DATA

43. Material/Design - Main Span: STT - 310B310 B
☐ Variable Dept ☐ Continuous ☐ Curved

43C. Main Span Widening Type: 000 - NONE
45. Number of Spans - Main: 002

44. Material/Design - Approach Spans: 000000 ()
☐ Variable Dept ☐ Continuous ☐ Curved

44C. Other Approach Codes: N
46. Number of Spans - Approach: 0000

GEOMETRIC DATA

28A. Lanes Over: 02 (02)
28B. Lanes Under: 00 (00)
33. Bridge Median: 0 (No Median)
34. Skew: 00 (s)

19B. Type Interchange: N
102. Traffic Direction: 2 (2-way traffic)
116. Minimum Nav Vert Clearance:
35. Structure Flared: 0 (No flare)

MEASUREMENT DATA

48. Maximum Span Length: 0198.0 Ft.
49. Structure Length: 00402.3 Ft.

47A. Total Horizontal Clearance - Over: 023.9 Ft.
47C. Total Horizontal Clearance - Under: Ft.

50A. Sidewalk Width Left: 00.5 Ft.
50B. Sidewalk Width Right: 00.5 Ft.

53. Minimum Verticle Over: 14' 08"
54A. Minimum Verticle Clearance Code: N

	Plan	Measured	Laser
Date Min Vert Over Governs	☐	☐	☐

Additional Span Lengths

0198.0 Ft.	0198.0 Ft.	Ft.
Ft.	Ft.	Ft.

47B. Total Horizontal Clearance - Over: Ft.
47D. Total Horizontal Clearance - Under: Ft.

51. Bridge Roadway Width: 023.9 Ft.
52. Deck Width: 025.0 Ft.
32. Approach Roadway Width: 026.0 Ft.

10A. Defense Vertical Clearance - Over: 14' 08"
10B. Defense Vertical Clearance - Under: 00' 00"

54B.1 Lateral Right: 000.0 Ft.
54B2 Lateral Left: 000.0 Ft.

TRAFFIC SAFETY FEATURES

36A. TSF Bridge Railing: 0 (DOES NOT MEET CURRENT SAFETY STANDARDS, OR IS NOT THERE AND IS NEEDED)
36B. TSF Transisitions: 0 (DOES NOT MEET CURRENT SAFETY STANDARDS, OR IS NOT THERE AND IS NEEDED)
36C. TSF App Guradrail: 1 (MEETS CURRENT SAFETY STANDARDS)

36D. TSF Terminal End: 1 (MEETS CURRENT SAFETY STANDARDS)
36X.1 Bridge Rail Type:
36X.2 Fencing On Bridge: 2

THINK SAFETY FIRST

GENERAL INVENTORY DATA

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

CONSTRUCTION HISTORY

27. Year Built:..... 1934
Contract Number:..... B-684

106A. Year Reconstructed:..... 1977
Contract Number:..... B-10852

106B. Year Widened:..... 0000
Contract Number:.....

106C.1Year Last Repaired:..... 2012
Contract Number:..... B-35323

DECK WEARING SURFACE

107. Deck Struct Type:..... 1 (CONCRETE CAST-IN-PLACE)
107B. Concrete Form:..... N
107C. Metal Form:..... N
107D. Deck Thickness:..... 06.50

108A. Wear Surface Type:..... 3 (LATEX CONCRETE)
108B. Membrane Type:..... 0 (NONE)
108C. Deck Prot:..... 1 (EPOXY COATED REINFORCING)
108D. Additional Overlay:..... 01.50

COMMENTS

The Lower Chords upstream and downstream at Pier #2 and at End Bents #1 and #3 of the Bridge were retrofitted again using two steel plate anchor blocks attached to the lower chord near each end pannel point and one steel plate anchor block attached on the other side of each bearing pin with four 1.25" diameter 150 KSI high strength rods threaded through holes drilled in the anchors then loaded evenly by turning nuts on the rods, essentially eliminating the gusset plate to lower chord connections at those locations. Rivets were removed from the Lower Chord Splice Plate at L6 of the upstream truss in Spam B and replaced with A325 high strength bolts as a splice plate retrofit. All was completed in 2012 under Contract B-35323 as the "C" repair rehab.

The Lower Chords and Gusset Plates were retrofitted at Pier #2 by installing a support assembly connecting L10-L11 of Span A with L0-L1 of Span B for both upstream and downstream trusses eliminating the gusset plate to lower chord connection problems. Anchor Bolts were added to the bearing plates at Pier #2. Retrofits were constructed at L0 of Span A and L11 of Span B for both upstream and downstream trusses, or to say at all four corners of the Bridge, by welding stiffeners to the gusset plates. Supported Floor Beam #12 at L11 in Span A at Pier #2. All was completed under Contract B-34533 in 2011 as the "B" repair rehab.

Deck Replacement: A new 6.5" thick Deck with Curb, a 1.5" thick modified portland cement concrete overlay, new end abutment Backwalls, new outside stringers, new transverse type SS Expansion Joints, new Deck Drains, and new Deck Drain Down Spouts were placed in 1977 under Contract B-10852 as the "A" rehab.

THINK SAFETY FIRST

APPROACH CONDITION (72X)

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Overall Rating (72X) 7 72X Rating Based Items 72X.05 Approach Pavement

72X. Overall Condition Comments

I saw no obvious problems with any of the Approach Items during the 2014 inspection.

72. Roadway Alignment 8 Note: 72 is Roadway Alignment and is an appraisal item:

ITEM	RATING	COMMENTS	GOVERNING
For Roadway Carried on Bridge			
72X.01 Alignment	8		☐
72X.02 Approach Slab	7	The approach slab is paved over and I am unable to see the actual slab.[Melvin Hughes,05.01.2014].	☐
72X.03 Relief Joints	N		☐
72X.04 Approach Guardrail	7	I saw no obvious problems with the approach guardrail during the 2014 inspection.some rusting at the northeast wingwall.	☐
72X.05 Approach Pavement	7	Pavement appeared to be in good condition during the 2014 inspection.	☑
72X.06 Approach Shoulders	7	Approach shoulders had no problems noted during the 2014 inspection.	☐
72X.07 Approach Median	N		☐
For Roadway Under the Bridge			
72X.08 Alignment	N		☐
72X.09 Guardrail	N		☐
72X.10 Impact Attenuators	N		☐
72X.11 Pavement	N		☐
SPEED REDUCTION FOR BRIDGE APPROACH			
72X.12 Roadway Over	3		☐
72X.13 Roadway Under	N		☐
72X.14 Posted speed limit Over	55		☐
72X.15 Posted speed limit Under	NA		☐
72X.16 Embankment	7		☐

THINK SAFETY FIRST

DECK CONDITION (58)

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Overall Rating (58) 6 58 Rating Based on: Item 058.02; Deck Underside

Overall 58. Deck Comments

ITEM	RATING	COMMENTS	GOVERNING
58.01 Wearing Surface	5	There are patches through out the wearing surface. I noted delamination through out both spans and transverse cracking. spalling is occurring around some of the patching. [Melvin Hughes05.01.2014].	☐
108A. Type of Wearing Surface	3		
108C. Deck Protection	1	☐ Cathodic Protection	
58.02 Deck Underside ☐ Post-Tensioned	6	The deck underside has transverse cracking with efflorescence. Span B has old false work left in place. [Melvin Hughes,05.01.2014].	☑
58.03 Curbs	6	Upstream curb over the intermediate pier is deteriored.other areas above the floor beams are cracked. [Melvin Hughes,05.01.2014].	☐
58.04 Copings	6	The copings have some cracking.	☐
58.05 Median	N		☐
58.06 Sidewalks	N		☐
58.07 Parapet	N		☐
58.08 Railing/Post	5	I found the bridge rail to be loose in all spans. Maintenance letter written in 2009. 05.01.2014	☐
58.09 Painted Lines	5	The lines are faded.	☐
58.10 Drains	7		☐
58.11 Down Spouts/Drain Pipes	4	I found some of the down spouts missing in both span. 05.01.2014 No change.5.11.2012.Some drain spouts have rusted off and need to be replaced.[Melvin Hughes,11.01.2011].	☐
58.12 Lights	N		☐
58.13 Signs	N		☐
58.14 Utilities What/Where	N		☐

THINK SAFETY FIRST

DECK CONDITION (58)

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

- ☐ Gas
- ☐ Electric
- ☐ Telephone
- ☐ Water
- ☐ Sanitary Sewer
- ☐ Storm Sewer
- ☐ T.V. Cable
- ☐ R.R. Communication
- ☐ Other

THINK SAFETY FIRST

DECK CONDITION (58)

NBI Number: 017050 | Bridge Number: 046-11-01316 C
Facility Carried: SR 46 | Feature(s) Intersected: EEL RIVER

	RATING	LENGTH	TYPE	LOCATION	COMMENT	GOVERNING
58.15 Longitudinal Joints	N		N			
58.16 Transverse Joints (Overall)	6		B		Both joints look to be sealing.	
58.16A South/West	6		B			☐
58.16B Interior	N		K			☐
58.16C North/East	6		B			☐

	(sqft)	Comment	
58.20A Wearing Surface Delamination	1778.3		☐
58.20B Wearing Surface Spalling	125.5		☐
58.20C Wearing Surface Patched	305.6		☐
58.20 Total Patch Required	2209.4		☐

Joint Opening Data

Approximate Air Temp = 65 Fahrenheit

Abutments	Width Right	Width left
South/West		
North/East		

Interior

(1)
(2)
(3)
(4)
(5)

Joint Comments

THINK SAFETY FIRST

SUPERSTRUCTURE (59A)

NBI Number: 017050 | Bridge Number: 046-11-01316 C
Facility Carried: SR 46 | Feature(s) Intersected: EEL RIVER

Overall Rating (59A) 3 59A Rating Based on: Items 59A.18 & 59A.31; Trusses and Gusset Plates

59A. Overall Comments

Parsons, the consultant contracted to design the rehabilitation to the Bridge has decided that the Bridge should be closed due to findings at the north Steel Truss Gusset Plates in Span B at L0. Both Gusset plates are basically failed. The outside plate is gone and the inside plate is at 50% as estimated by the consultant. I consider both of them completely gone for all practical purposes and since the retrofit was placed without taking up any dead load, the consultant believes the Bridge should be closed. Parsons, the consultant contracted to design the rehabilitation to the Bridge does not believe that the retrofits to the trusses at Pier #2 are adequate to handle all forces. INDOT has decided to place a 16 ton load limt on the Bridge
Floor Beam supported and Gusset Plates retrofitted in December 2011 under Contract B-34533. Only the corners of each truss had work done to them.

ITEM	RATING	COMMENTS	GOVERNING
59A.01 Bearings	5	Downstream side rocker bearing bolt rusted into located at L0 down stream span A.	☐

	Primary	Secondary	Angle/Dir. (If Rockers)	
59A.01A Bearing Types at Abutments	E			☐
59A.01B Bearing Types at Intermediate	X			☐
59A.01C Seismic Restraints				☐

Steel

59A.02 Steel: Girders	N		☐
59A.03 Beams	N		☐
59A.04 Diaphragms	6	These diaphrams are located at the bottom of each guard rail post and are connected to floor stringers 1&2 and 7&8 in both spans, some of the connection plates are rusty. No obvious changes were seen.05.01.2014	☐
59A.05 Cross Bracings	N		☐

Concrete

☐ Post-Tensioned

59A.06 Concrete: Girders	N		☐
59A.07 Beams	N		☐
☐ Cracks in Beams			
59A.08 Diaphrams	N		☐
59A.09 Concrete Slabs	N		☐
59A.10 Integral with pier cap:	☐ Yes		☐

THINK SAFETY FIRST

SUPERSTRUCTURE (59A)

NBI Number: 017050 | Bridge Number: 046-11-01316 C
Facility Carried: SR 46 | Feature(s) Intersected: EEL RIVER

Timber			
59A.11 Timber	N		☐
Arches			
59A.12 Arches	N		☐
59A.13 Arch Ring	N		☐
59A.14 Spandrel Walls	N		☐
Floor System			
59A.15 Stringers	5	Floor stringer deterioration whether it be from section loss, pack rust or scale is concentrated to the outside edges of the bridge. Minor section loss at the ends of some Superstructure Stringers where they connect to Floor Beams mostly the outside Stringer Runs and more the North side than the South side. Some of the Stringer attachment angles had rivets while others had bolts. 05/01/2014	☐
59A.16 Floor Beams	4	Span A down stream Floor beam condition: L1 has .25" section loss on the west side.~ Span A up stream floor beam condition :Floor beam L9 west side has some section loss at floor beam connection.L11 floor beam poor condition.~ Span B up stream:L5 floor beam has a rust hole;L6 floor beam has rust hole at end;L9 floor beam some section loss at stringer connection. The support is still in place at span A # 11 floor beam seen no futher problems. Span B downstream: L0 floor beam typical rust and scale. L1 floor beam typical rust and scale. L2 floor beam section loss near connection bracket(10%). L3 floor beam minor section loss near connection bracket. L4 floor beam lower flange has 50% section loss at lower cross brace connection plate. L5 floor beam has some minor section loss near connection bracket. L6 floor beam has section loss near connection bracket about 15%. L7 floor beam has some section loss in web near connection bracket. L8 floor beam typical rust and scale. L9 floor beam top of flange has about 15% and web at floor stringer has about 10% section loss. L10 floor beam typical rust and scale. L11 floor beam typical rust and scale. Span B upstream: L0 floor beam heavy scale with some typical section loss around connection bracket. L1 floor beam typical rust and scale. L2 floor beam typical rust and scale. L3 floor beam has section loss in web and around	☐

THINK SAFETY FIRST

SUPERSTRUCTURE (59A)

NBI Number: 017050 | Bridge Number: 046-11-01316 C
Facility Carried: SR 46 | Feature(s) Intersected: EEL RIVER

connection brackets. L4 floor beam has section loss around 15% and heavy scale. L5 floor beam has two rust holes in the web one is 3/4"x3/4" and the other is 1 1/2" x 1 1/2". L6 floor beam has some rust thru and scale. L7 floor beam typical rust and scale. L8 floor beam typical rust and scale. L9 floor beam has section loss around 10% near connection bracket. L10 floor beam has section loss near connection bracket about 10%. L11 floor beam typical rust and scale.

Span A downstream: L0 floor beam rusty along connection bracket. L1 floor beam has minor rusting. L2 floor beam has minor minor rusting. L3 floor beam web has spots of section loss along the connection bracket at L3 and the bottom flange has about 30% section loss at the connection plate. L4 minor rusting top flange near connecting bracket. L5 floor beam has section loss in web along connection bracket. L6 floor beam has section loss in web near connection bracket. L7 floor beam has section loss in web around the floor stringer bracket. L8 floor beam bottom flange has section loss at connection plate. L9 floor beam has section loss in web near connection bracket. L10 floor beam has section loss near connection bracket. L11 floor beam rusty with some scale at top flange and near connection bracket.

Span A upstream: L0 floor beam rusty and scaling and some pitting. L1 floor beam rusting around floor stringer bracket. L2 floor beam rusting around floor stringer bracket. L3 floor beam rusting around floor stringer bracket(minor). L4 floor beam rusting around floor stringer bracket with section loss at about 40%. L5 floor beam top and bottom flange rusty with with 50% section loss in places and some rusting around the floor beam connection bracket. L6 floor beam has around 15% section loss at connection bracket. L7 floor beam has some rusting around connection bracket. L8 floor beam some minor section loss around connection bracket. L9 floor beam has about 10% section loss near connection bracket. L10 floor beam has some section loss about 10% near connection bracket. L11 floor beam has a 1"x 12"vertical rusted out area that was a critical finding.05.01.2014

59A.17 Knee Braces	N		☐
Trusses			
59A.18 Trusses	4	Parsons, the consultant contracted to design the rehabilitation to the Bridge has decided that the Bridge should be closed due to findings at the north Steel Truss Gusset Plates in Span B at L0. Both Gusset plates are basically failed. The outside plate is gone and the inside plate is at 50% as estimated by the consultant. I consider both of them completely gone for all practical purposes and since the retrofit was placed without taking up any dead	☑

SUPERSTRUCTURE (59A)

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

		load, the consultant believes the Bridge should be closed. Gusset Plates retrofitted in December 2011 under Contract B-34533. Only the corners of each truss had work done to them. All retofit repairs look to be in good condition. 05.01.2014	
59A.19 Truss members eyebars	☐ Yes		☐
59A.20 Verticals	4	On the Up stream side of Span B at L1 I found 4 holes in the web of the vertical ~ 3" to 4" at the curb line. Also noted at the L6 area in the Vertical Web at the curb line is an ~ 1" hole. L8 at the Verical Web has ~ 1" hole about the curbline. Span A downstream: U9L9 vertical has some minor section loss at the top of the outer gusset connection plate. Span A upstream: U9L9 has a rust hole in the east c channel. Span B downstream: U8L8 has a 1" rust hole in the east c channel. Span B upstream: U1L1 has two rust holes 7" x 3" and 3" x 3". U6 L6 has a rust hole at L6. U8 L8 has two rust holes 1/2" x 2 1/2" and 1 1/2" x 1" . Damage to the North Verticals is present as per previous inspection observations. The lower portion of all sway bracing has been cut out leaving a structural triangle to provide sway support and maintain the length to width ratio of the verticals at an acceptable design level. However, many of the existing sway bracing members are still bent from vehicular damage and have never been straightened. The lateral resistance for the verticals is not as it should be and I do not know if the designer evaluating the truss members after the damage considered that situation. 05.01.2014	☐
59A.21 Diagonals	6	U3L4 span A downstream diagonal has minor section loss about 2%. INDOT 2010 inspection manual states that 2% or less is still a satisfactory condition. section loss is were the stay plate attaches at L4 gusset plate connection, this loss is in the diagonal along the top of the stay plate. 05.01.2014	☐
59A.22 Upper Chords	6	The upper chords looks to be in satisfactory condition during my routine inspection observation(not at arms length).05.01.2014	☐
59A.23 Lower Chords	4	I have made comments concerning rivet heads rusted away on the bottom chord splice plated areas. Span B Down Stream Bottom Chord at L2 I have 12 out of 16 rusted rivet heads. L3 I have 7 out of 14 rusted rivet heads along with 18 out of 18 in another area of the same splice	☐

THINK SAFETY FIRST

SUPERSTRUCTURE (59A)

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		plate. L5 I have 6 out of 14, 3 out of 16 & 19 out of 20 rusted rivet heads on the same splice plate. L6 I have 8 out of 10 & 6 out 14 rivet heads rusted. L8 I have 6 out of 14, 8 out of 16 & 3 out of 8 rivet heads rusted. L9 I have 2 out of 14 rivet heads rusted. On Span B Up Stream side of the Bottom Chord I have at L2 16 out of 16, 7 out of12 & 2 out of 19 rusted rivet heads. L3 has 11 out of 16 rivet heads rusted. L5 has 6 out of 14, 7 out of 17 & 19 out of 20 rivet heads rusted on the same splice plate. L8 has 5 out of 14, 15 out of 16 & 2 out of 14 rivet heads rusted on the same splice plate. L9 has 15 out of 16 rivet heads rusted. L10 has 6 out of 14 rivet heads rusted. 05.01.2014	
59A.24 Upper Bracings	6	The upper bracings look to be in satisfactory condition.05.01.2014	☐
59A.25 Portals	4	All four portals have had some type of damage from collision and remains a rating of 4.05.01.2014	☐
59A.26 Top Laterals	6	The top laterals looks to be in satisfactory condition during my routine inspection observation(not at arms length).05.01.2014	☐
59A.27 Lateral Strut	6	The Lateral struts looks to be in satisfactory condition during my routine inspection observation(not at arms length).05.01.2014	☐
59A.28 Sway Bracings	4	The bottom horizontal members of the horizontal sway bracing have been removed by INDOT forces. Design determined that those members of the sway bracing were not needed. Most had been damaged by a vehicle with equipment that was sticking up too high. Still, 14 sway bracing units are damaged and I have determined that the extent of the damage still warrants a condition rating of 4 for the Superstructure Sway Bracing. No changes have been made to the sway bracings from when INDOT cut out the bottom horizontal members.05.01.2014	☐
59A.29 Lower Bracings Laterals	3	Lower bracing laterals are primary members as per the manual. 50% or more section loss exists at L4L5 & L5L6 span A downstream and span B L5L7 downstream & L5L6 upstream. The bracing in span A at connection L11 Upstream and Downstream have been cut off and the same in span B at L0 Upstream and Downstream this was done so the retofits could be installed. All others are deteriorating, this is taking place at the connection plates were salt and debris collect.05.01.2014	☐
59A.T1	N		☐
59A.T2	N		☐

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SUPERSTRUCTURE (59A)

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Other

59A.30 Connection Plates	3	Upstream L0 span A connection plate is rusted thru and downstream L0 has 25% of through section loss. The most outer connection plates throughout the structure that are exposed to the elements have some degree of section loss, rusting, pack rust and scaling.05.01.2014	☐
59A.31 Gusset Plates	1	Span B showed a critical finding at L0 upstream the outer gusset plate had a 14 1/2" vertical crack and after chipping rust and scale on the inside gusset plate it also was a critical finding. ~ L11 also had a lot of heavy scale on the inside of each gusset plate and after chipping rust and scale the outside gusset plate had a vertical rust hole 7 1/2" x 1" at the end of the lower cord. The inside gusset plate also had a vertical rust hole 8 1/2" x 1 1/4" at the end of the lower cord. Up stream L11 had more of the same the inside gusset plate has a vertical rust hole 9 1/2" x 2" and the outer gusset plate had a vertical rust hole 7 1/2" x 1" both at the end of the lower cord. ~ L0 inside gusset plate has a 7" x 1" vertical rust hole at the end of the lower cord. Span A L0 upstream inside gusset plate has a 7 1/2" x 1 1/2" vertical rust hole at the end of the lower cord. ~ L11 inside gusset plate has a vertical rust hole 3" x 1" at the end of the lower cord. Downstream L0 inside gusset plate has a 1 1/2" x 1" rust hole at the end of the lower cord. The outside gusset plate has a 3" x 1" vertical rust hole at the end of the lower cord. ~ L11 inside gusset plate has a 4" x 2" vertical rust hole at the end of the lower cord. These areas of rust thru and section loss still exists, retofits have been installed to secure the structure.[Melvin Hughes,05.01.2014].	☑
59A.32 Stay/Batten Plates	4	The stay/batten plates have some rust thru and section loss typical in the lower area of the structure.05.01.2014	☐
59A.33 Lacings	4	Most of the lacing rust thru is in the truss end posts in the hand rail area.05.01.2014	☐
59A.34 Rivets	5	Most of the rivet deterioration is from the guard rail and below from salt and debris that accumulates in areas that don't dry out or get cleaned, Some of the splice plates on the bottom cord have rusted rivet heads with heavy section loss.05.01.2014	☐
59A.35 Bolts	5	Some bolts missing from the guard rail.05.01.2014	☐
59A.36 Splice Plates	5	Some of the splice plates have pack rust & section loss. Photos were taken & labeled of the worst ones. 5/07/2013	☐
59A.37 Brackets	6	Bracket rating still remains a satisfactory rating of 6. 05.01.2014	☐
59A.38 Tack Welds	N		☐
59A.39 Full Welds	N		☐

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SUPERSTRUCTURE (59A)

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59A.40 Others	N		☐
Pin Connections			
59A.41 Hangers	N		☐
59A.42 Total # of Hangar Bars	00		
59A.43 Hinges	N		☐
59A.44 Pins	5	Pins have some degree of rust and section loss that still look to be in fair condition during my routine inspection observation.05.01.2014	☐
59A.45 Total # of Pins	08		
59A.46 Nuts	6	The bearing pin nuts look to be in satisfactory condition during the routine inspection observation.05.01.2014	☐
59A.47 Hanger bars	N		☐
59A.48 Web plates	N		☐
59A.49 Mudwalls	N		☐
59A.50 Curtain walls	N		☐
59A.51 Collision Damage	5	I saw no new collision damge during the 2014 routine inspection. 05.01.2014 I talked to Jim Reilman who sent out the repair plans to the damaged truss. He left the portals alone because they were beefier members and he along with other INDOT personnel thought it best to leave them as is to maintain the integrity of the structure. The vertical member that is out of plumb is thought to be a tension member and it was decided between him and other designers that it could be left as is feeling that any forces would only tend to have a straightening effect on the member. The severed horizontal top member of the portal could be spliced with a like member for the length of the damaged quarter section by placing 16 bolts (4 in each side of the angle at each end) to splice the good member to the damaged one. [Sherwood Garrison, 11/06/2001] Dan Bewley, Steve Isenhower, and I reviewed the bridge. One vertical is about 3" out of plumb to the South. It is also out of plumb to the West. All of the bottom horizontal sway bars have been hit and damaged. Central Office is to have our District remove all bottom horizontal sway bracing in the top half of the truss except for the portals at each end of each span.[Sherwood Garrison, 11/05/2001] Collison damage is seen at the portals and sway bracing. All damage is minor.[Bruce Bowman, 10/13/1998]	☐

THINK SAFETY FIRST

SUPERSTRUCTURE (59A)

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Several overhead members are bent.[Doug Tucker, 10/18/1996]

(A copy of this report dated 11/15/89 is on file in the Crawfordsville District Office.) I checked the Sway Bracing collision damage in Span B as reported to the Central Office by Mr. Ken Micheal, the District Bridge Inspector on 11/13/89. When comparing the condition of the Sway Bracings and Portals with photos, it seems that the damage is about the same as what is shown in old photos from 1988, 1986, and perhaps even 1984. Therefore, I would say there is not any new collision damage. The following is a list of the damage. In SPAN A, the damage is: EAST AND WEST PORTALS: The lower angle of both of these members is very very slightly twisted or bent over the centerline area. There are no scrape marks present. SWAY BRACINGS: at U2 - The lower angle has some minor scrape marks and rust over the EBL area. At U3 - The lower angle has some minor scrapes and is bent up slightly over the centerline area. At U4 - The lower angle has some minor scrape marks and rust over the EBL area. At U5 - The lower angle has some minor scrape marks and rust, and is bent up slightly over the centerline area. U6 - OK. U7 - The lower angle has some minor scrapes and rust marks, and has several areas bent up and down slightly. There is also a slight twisting of this member and the whole member is bent slightly west. This is all generally over the centerline area. U8 - The lower angle has some minor scrapes and rust, and is just very slightly bent up a little over the centerline area. U9 - The lower angle has some minor scrapes and rust, and is bent up a little over the centerline area. SPAN B: WEST PORTAL - There is a very slight scrape and rust mark along the lower angle, which has a very slight bend, over the centerline area. EAST PORTAL - The lower angle over the WBL area is bent and twisted and has many scrapes and rust marks. The upper part of the portal over the WBL is also bent (West some) and has its top horizontal angle split in two. U2 - The lower angle has some minor scrapes and is bent up a little over the centerline area. U3 - The lower angle has some minor scrapes and rust marks over the centerline area. U4 - The lower angle is bent up and scraped and rusted over the centerline area, and is badly twisted downward and slightly bent over the WBL area. U5 - The lower angle is up and down, scraped, and is rusted over the centerline area, and is twisted up some over the WBL area. The angle is bent some to the West. U6 - The lower angle is scraped up and rusted over the centerline area. The lower angle is twisted downward and bent to the West over the WBL area. U7 - The lower angle is scraped and rusted and is bent up a little over the centerline area. U8 - The lower angle is scraped, rusted, and bent up a little over the centerline area. U9 - The lower angle is scraped and rusted over the centerline area. It is also badly twisted downward and bent West over the

SUPERSTRUCTURE (59A)

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		WBL area. GENERAL - There appeared to be at least two separate collisions to this bridge. The first and least damaging occurred right about over the centerline of the bridge and just caused scrapes and minor bending up of most sway bracings. The second collision is over the Westbound lane and primarily from the East Portal of Span B to the U4 Sway Bracing. The East Portal and the Sway Bracings at U4, U5, U6, and U9 were damaged the most. No cracks were noticed at the rivet connections at the verticals. Also, there was no bending or twisting in any of the verticals. At this time, I would not recommend any repairs to the damaged Sway Bracings. The vertical clearance should be checked at some of the damaged Sway Bracings to be sure that they do not stick down below the 14' 8" clearance that this bridge is suppose to have. The verticals will need to be continually checked to insure that cracks do not develop at the Sway Bracing connections and also at the top and bottom truss connections.[Bill Dittrich, 11/15/1989]	
59A.52 Alignment of Members	6	The alignment of members seem to be satisfactory, except for span B L5-U5 Upstream and Downstream verticals. The lower bracing was hit and pulled on the verticals, this was looked at during that time and documented.05.01.2014	☐
59A.53 Deflections	6		☐
59A.54 Vibrations	6		☐
59A.55 Impact	6		☐
59A.56 Noise	6		☐
Additional Items			
59A.O1	N		☐
59A.O2	N		☐

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PAINT CONDITION (59B)

NBI Number: 017050 | Bridge Number: 046-11-01316 C
Facility Carried: SR 46 | Feature(s) Intersected: EEL RIVER

Overall Rating (59B) 4 | 59B Rating Based on: Item 59B.01; Condition of Paint

59B. Overall Comments

Due to the amount of rusting and paint failure seen to the steel Truss Bridge members, I agree with the rating of a 4. 5.01.2014

ITEM	RATING	COMMENTS	GOVERNING
59B.01 Condition of Paint (amt of rust/corrosion)	4	There is paint faiure at some of the floor beam connections and gusset paltes. 5/07/2013	☑
59B.02 Type of Paint (Primer)	2	Sherwood Garrison met with Todd Tracy at the Materials and Test Division in Indianapolis and showed him the paint sample that I had taken off of the Bridge steel. After looking at the samples taken, he believes that the red coating seen is an epoxy coating. No lead based primer was evident from the sample taken. Therefore, I will continue to record the bridge paint material as zinc-based rather than lead-based until evidence determines otherwise.	
59B.03 Paint System	2 Coat System		☐
59B.04 Paint Color	Light Blue		
59B.05 Est Rem Life of Paint	06		☐
27B Paint Date - Year	1994	Painted in August of 1994	
59B.06 Paint Contract Number	M-21027		
59B.07 Weathering Steel	N		☐
59C Tons of Steel	000362		
	Type / Rate		
Other Coatings and Sealants	/ N		☐

THINK SAFETY FIRST

COLLISION DAMAGE INFORMATION - TO STRUCTURAL MEMBERS (505)

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

ITEM	RATING	COMMENTS
505.01 Is there any collision damage?	Y	
505.02 Number of members damages	30	
505.03 Severity of Damage	2	

60.29 Substructure Collision Damage(Comments)

59A.51 Superstructure Collision Damage (Comments)

I saw no new collision damge during the 2014 routine inspection. 05.01.2014

I talked to Jim Reilman who sent out the repair plans to the damaged truss. He left the portals alone because they were beefier members and he along with other INDOT personnel thought it best to leave them as is to maintain the integrity of the structure. The vertical member that is out of plumb is thought to be a tension member and it was decided between him and other designers that it could be left as is feeling that any forces would only tend to have a straightening effect on the member. The severed horizontal top member of the portal could be spliced with a like member for the length of the damaged quarter section by placing 16 bolts (4 in each side of the angle at each end) to splice the good member to the damaged one.[Sherwood Garrison, 11/06/2001]

Dan Bewley, Steve Isenhower, and I reviewed the bridge. One vertical is about 3" out of plumb to the South. It is also out of plumb to the West. All of the bottom horizontal sway bars have been hit and damaged. Central Office is to have our District remove all bottom horizontal sway bracing in the top half of the truss except for the portals at each end of each span.[Sherwood Garrison, 11/05/2001]

Collison damage is seen at the portals and sway bracing. All damage is minor.[Bruce Bowman, 10/13/1998]

Several overhead members are bent.[Doug Tucker, 10/18/1996]

(A copy of this report dated 11/15/89 is on file in the Crawfordsville District Office.) I checked the Sway Bracing collision damage in Span B as reported to the Central Office by Mr. Ken Micheal, the District Bridge Inspector on 11/13/89. When comparing the condition of the Sway Bracings and Portals with photos, it seems that the damage is about the same as what is shown in old photos from 1988, 1986, and perhaps even 1984. Therefore, I would say there is not any new collision damage. The following is a list of the damage. In SPAN A, the damage is: EAST AND WEST PORTALS: The lower angle of both of these members is very very slightly twisted or bent over the centerline area. There are no scrape marks present. SWAY BRACINGS: at U2 - The lower angle has some minor scrape marks and rust over the EBL area. At U3 - The lower angle has some minor scrapes and is bent up slightly over the centerline area. At U4 - The lower angle has some minor scrape marks and rust over the EBL area. At U5 - The lower angle has some minor scrape marks and rust, and is bent up slightly over the centerline area. U6 - OK. U7 - The lower angle has some minor scrapes and rust marks, and has several areas bent up and down slightly. There is also a slight twisting of this member and the whole member is bent slightly west. This is all generally over the centerline area. U8 - The lower angle has some minor scrapes and rust, and is just very slightly bent up a little over the centerline area. U9 - The lower angle has some minor scrapes and rust, and is bent up a little over the centerline area. SPAN B: WEST PORTAL - There is a very slight scrape and rust mark along the lower angle, which has a very slight bend, over the centerline area. EAST PORTAL - The lower angle over the WBL area is bent and twisted and has many scrapes and rust marks. The upper part of the portal over the WBL is also bent (West some) and has its top horizontal angle split in two. U2 - The lower angle has some minor scrapes and is bent up a little over the centerline area. U3 - The lower

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COLLISION DAMAGE INFORMATION - TO STRUCTURAL MEMBERS (505)

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angle has some minor scrapes and rust marks over the centerline area. U4 - The lower angle is bent up and scraped and rusted over the centerline area, and is badly twisted downward and slightly bent over the WBL area. U5 - The lower angle is up and down, scraped, and is rusted over the centerline area, and is twisted up some over the WBL area. The angle is bent some to the West. U6 - The lower angle is scraped up and rusted over the centerline area. The lower angle is twisted downward and bent to the West over the WBL area. U7 - The lower angle is scraped and rusted and is bent up a little over the centerline area. U8 - The lower angle is scraped, rusted, and bent up a little over the centerline area. U9 - The lower angle is scraped and rusted over the centerline area. It is also badly twisted downward and bent West over the WBL area. GENERAL - There appeared to be at least two separate collisions to this bridge. The first and least damaging occurred right about over the centerline of the bridge and just caused scrapes and minor bending up of most sway bracings. The second collision is over the Westbound lane and primarily from the East Portal of Span B to the U4 Sway Bracing. The East Portal and the Sway Bracings at U4, U5, U6, and U9 were damaged the most. No cracks were noticed at the rivet connections at the verticals. Also, there was no bending or twisting in any of the verticals. At this time, I would not recommend any repairs to the damaged Sway Bracings. The vertical clearance should be checked at some of the damaged Sway Bracings to be sure that they do not stick down below the 14' 8" clearance that this bridge is suppose to have. The verticals will need to be continually checked to insure that cracks do not develop at the Sway Bracing connections and also at the top and bottom truss connections. [Bill Dittrich, 11/15/1989]

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SUBSTRUCTURE (60)

NBI Number: 017050 | Bridge Number: 046-11-01316 C
Facility Carried: SR 46 | Feature(s) Intersected: EEL RIVER

Overall Rating (60) 7 60 Rating Based on: Items 60.02 & 60.13; Abutment Backwall and Pier Column Solid Stem

60. Overall Comments

113A. NBI Scour Eval Code	8	
113R. District Rec. Scr Rating		Scour piers #2 & #3. 3/31/1995 THE CHANNEL RUNS FROM THE NORTH TOWARD THE SOUTH & RUNS ALONG THE WEST FACE OF PIER 2. WATER WAS STANDING BELOW SPAN B & ALONG THE EAST ABUTMENT DURING THE 2008 INSPECTION. I SAW EVIDENCE OF HIGH WATER. WOODY GARRISON STATES IN HIS NOTES FROM PREVIOUS INSPECTIONS THE SCOURING EXISTS. I BELIEVE THIS TO BE TRUE. PICTURES OF THE STREAM ALIGNMENT WERE TAKEN. 3/24/08

ITEM	RATING	COMMENTS	GOVERNING
ABUTMENTS			
☐ Post-Tensioned			
60.01 Bridge Seat	7	The west seat has crack about mid-center.05.01.2014	☐
60.02 Backwall	7	West back wall cracked. 05.01.2014	☑
60.03 Breastwall	7	The west breastwall has a vertical crack. 05.01.2014	☐
60.04 Bent Cap	N		☐
60.05 Wing Walls	5	Wing walls are at a fair rating of 5 with spall. Rebar exposed at the southeast wing wall.[Melvin Hughes,05.01.2014].	☐
60.06 Footings	N		☐
60.07 Piles	N		☐
60.08 Scour/Undermining	7		☐
60.09 Erosion/Undermining	6	Bank erosion downstream west bank.	☐
60.10 Concrete Slope Walls	N		☐
60.11 Settlement	7		☐
INTERMEDIATE PIERS			
60.12 Pier Cap	7		☐
☐ Post-Tensioned			
60.13 Column (solid stem)	7	Some minor spall seen on the North nose of the	☑

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SUBSTRUCTURE (60)

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

		Substructure Concrete Column Solid Stem at Intermediate Pier #2. 05.01.2014	
60.14 Concrete Pillars	N		☐
60.15 Concrete Piles	N		☐
60.16 Timber Piles	N		☐
60.17 Steel Piles	N		☐
60.18 Footing	N		☐
60.19 Crash Walls	N		☐
60.20 Bracings	N		☐
60.21 Erosion/Undermining	7		☐
60.22 Scour/Undermining	7		☐
60.23 Settlement	7		☐
GENERAL DETERIORATION			
60.24 Concrete	6	General condition is satisfactory(in general)	☐
60.25 Steel	N		☐
60.26 Timber	N		☐
60.27 Epoxy Coatings	N		☐
60.28 Debris on Bridge Seats	7		☐
60.29 Collision Damage	N		☐
PLUMB			
60.30 Abutments Plumb	Y		☐
60.31 Piers Plumb	Y		☐

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CHANNEL & CHANNEL PROTECTION (61)

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Overall Rating (61) 5 61 Rating Based on: Items 61.08; Channel Protection

61. Overall Comments

I saw no obvious changes in the channel during the 2013 inspection. 5/7/2013

THE CHANNEL RUNS FROM THE NORTH TOWARD THE SOUTH & RUNS ALONG THE WEST FACE OF PIER 2. WATER WAS STANDING BELOW SPAN B & ALONG THE EAST ABUTMENT.

ITEM	RATING	COMMENTS	GOVERNING
61.01 Scour/Ersn. UpStream	7		☐
61.02 Scour/Ersn. DownStream	6	Down steam west bank has some erosion at structure. 5/01/2014	☐
61.03 Drift	7		☐
61.04 Vegetation	7		☐
61.05 Channel Change	7		☐
61.06 Adequacy of Opening	7		☐
61.07 Misc. Hydraulic Features	N		☐
61.08 Channel Protection	5	The west bank at the south side of the bridge is eroding. 5/01/2014	☑
61.09 Type	J		☐
71.1X Overtopping Possibilities	1		☐
71.2X Overtopping Traf Delays	1		☐
71. Waterway Adequacy	6		

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CULVERT AND UNDERFILL STRUCTURES (62)

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Overall Rating (62) N 62 Rating Based on:

62. Overall Comments

ITEM	RATING	COMMENTS	GOVERNING
62.01 Barrel	N		☐
62.02 Alignment	N		☐
62.03 Steel	N		☐
62.04 Bolts	N		☐
62.05 Concrete	N		☐
62.06 Stone	N		☐
62.07 Headwall	N		☐
62.08 Aprons	N		☐
62.09 Erosion/Scour/Undermining	N		☐
62.10 Construction Joints	N		☐
62.11 Wingwalls	N		☐
62.18 Embankment	N		☐
Subjective Appraisal Items			
59A.53 Deflections	6		☐
59A.54 Vibrations	6		☐
59A.55 Impact	6		☐
59A.56 Noise	6		☐
Inventory Data			
62.12 Description of Cells/Boxes/Pipes			
62.13 Fill Height			
62.14 Min Dstnce to hdwl/cpng			
62.15 Culvert Barrel Length			
62.16 Culvert Height			
62.17 Culvert Width			

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FOUNDATION DATA (113B)

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

ITEM	RATING	COMMENTS
113B.01 Total # of all Piers	03	
FOUNDATION AT ABUTMENTS		
113B.02 Abutment #1 type	A	
113B.03 Abutment #2 type	A	
FOUNDATION AT INTERMEDIATE PIERS		
113B.05 # of Int Piers	01	
113B.06A Types of Int Piers	A	
113B.06B Types of Int Piers		
113B.06C Types of Int Piers		
113B.06D Types of Int Piers		
113B.06E Types of Int Piers		
113B.06F Types of Int Piers		
113B.08 # of Piers in the Water	01	A pond Under Span B barely reaches East Abutment #3, which is not the norm. Intermediate Pier #2 is in the water which is the norm. I have changed the Number of Piers in the Water from a number of 3 to a number of 1.[Sherwood Garrison, 04/28/2004] The River water level is up due to rain for the previous two days. Currently, all piers (two abutments and one interior pier) are in the water.[Sherwood Garrison, 04/29/2002]
113B.09 # of Piers with any Scr	02	A very wide scour hole exists under Span B barely reaching East Abutment #3. Scour occurs about Intermediate Pier #2, which is always in the water.[Sherwood Garrison, 04/28/2004]

THINK SAFETY FIRST

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Photo 1

046-11-01316 C 05.01.2014 Road alignment looking east

Photo 2

046-11-01316 C 05.01.2014 Box mounted on railing post span A downstream

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

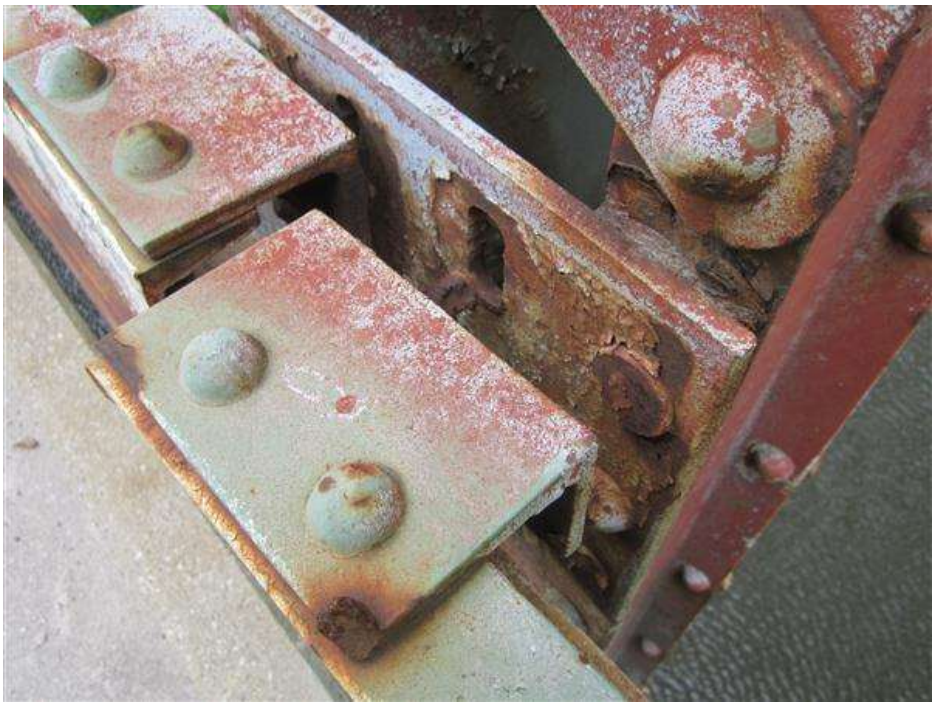

Photo 3

046-11-01316 C 05.01.2014 Bridge raill condition

Photo 4

046-11-01316 C 05.01.2014 Curb cracking

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Photo 5

046-11-01316 C 05.01.2014 Deck spall in span A

Photo 6

046-11-01316 C 05.01.2014 Down stream west bearing bolt missing

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Photo 7

046-11-01316 C 05.01.2014 Downstream reto fit at the interior pier

Photo 8

046-11-01316 C 05.01.2014 Downstream span A bottom end of device mounted on bridge

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Photo 9

046-11-01316 C 05.01.2014 Downstream span A device mounted on guard rail post

Photo 10

046-11-01316 C 05.01.2014 Downstream span A lower chord reto fit

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

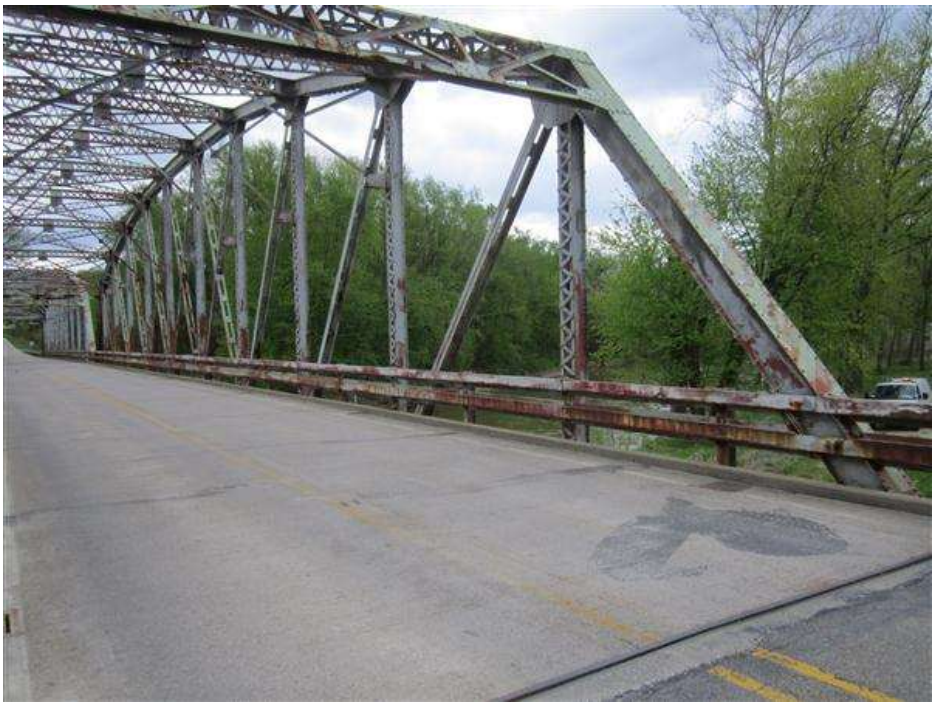

Photo 11

046-11-01316 C 05.01.2014 Downstream span A truss condition looking southeast

Photo 12

046-11-01316 C 05.01.2014 Downstream span B looking southeast

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Photo 13

046-11-01316 C 05.01.2014 East bent of span B

Photo 14

046-11-01316 C 05.01.2014 East breastwall looking east

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Photo 15

046-11-01316 C 05.01.2014 Full depth patch in span B

Photo 16

046-11-01316 C 05.01.2014 Interior pier looking southwest

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Photo 17

046-11-01316 C 05.01.2014 L1-U1 Up stream condition

Photo 18

046-11-01316 C 05.01.2014 Looking east through truss

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Photo 19

046-11-01316 C 05.01.2014 North profile looking southwest

Photo 20

046-11-01316 C 05.01.2014 Northeast rail rusting out

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Photo 21

046-11-01316 C 05.01.2014 Northwest joint area curb spalling and backwall

Photo 22

046-11-01316 C 05.01.2014 Old patch and spall in span B

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Photo 23

046-11-01316 C 05.01.2014 Something new on span A downstream

Photo 24

046-11-01316 C 05.01.2014 South profile looking northeast

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Photo 25

046-11-01316 C 05.01.2014 Southwest reto fit condition

Photo 26

046-11-01316 C 05.01.2014 Span A deck under looking east

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Photo 27

046-11-01316 C 05.01.2014 Span A southwest inside gusset plate condition

Photo 28

046-11-01316 C 05.01.2014 Span A southwest inside gusset plate has rust thru

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Photo 29

046-11-01316 C 05.01.2014 Span A upstream truss condition looking northeast

Photo 30

046-11-01316 C 05.01.2014 Span B deck underside looking east

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Photo 31

046-11-01316 C 05.01.2014 Transverse cracking in the deck wearing surface

Photo 32

046-11-01316 C 05.01.2014 Transverse cracking with fflorescence in the deck underside

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Photo 33

046-11-01316 C 05.01.2014 Tree needs cut span B upstream

Photo 34

046-11-01316 C 05.01.2014 Upstream span B condition looking northeast

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Photo 35

046-11-01316 C 05.01.2014 Upstream span B floor beam condition

Photo 36

046-11-01316 C 05.01.2014 Upstream span B lowerchord splice plate repair

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Photo 37

046-11-01316 C 05.01.2014 Wearing surface condition looking east

Photo 38

046-11-01316 C 05.01.2014 West abutment looking west

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Photo 39

046-11-01316 C 05.01.2014 West approach slab looking northwest

ESTIMATED REMAINING LIFE

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

ESTIMATED REMAINING LIFE (Assuming No Work Will Be Done) --- (In Years)

	YEARS	COMMENTS
1. Wearing Surface (63X.A)		
2. Deck (63X.B)		
3. Joints (63X.C)		
4. Superstructure (63X.D)		
5. Substructure (63X.E)		
6. Approach Features (63X.F)		
7. Channel Features (63X.G)		
8. Culvert or Underfill Features (63X.H)		

THINK SAFETY FIRST

APPRAISAL

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

	Unofficial	Official	Comments
67 Structure Condition	3	4	
68 Deck Geometry	2	2	
69 Under Clr Vert and Horz	N	N	

	Unofficial	Official	Comments
Sufficiency Rating	28.8	07.0	
Sufficiency Rating	05/09/2014	04/01/2013	
Functionally Obsolete	N	N	
Structurally Deficient	Y	Y	

	Code
(71) Water Adequacy	6

THINK SAFETY FIRST

OVERWEIGHT VEHICLE (501) and DISTRICT PRIORITY IN H.I.P. (502)

NBI Number: 017050 | Bridge Number: 046-11-01316 C
Facility Carried: SR 46 | Feature(s) Intersected: EEL RIVER

Overweight Vehicle (501)

501.01 Bridge on "MICHIGAN TRAIN TRUCK" Routes	N	
501.02 Bridge on "HEAVY DUTY TRUCK ROUTE"	N	
501.03 Field Observed Load Carrying Problems	5	
501.04 Overload Vehicle - Code	1	
501.05 Overload Vehicle - Restriction Codes	4	

Overweight Vehicle 501 Overall

Parsons, the consultant contracted to design the rehabilitation to the Bridge has decided that the Bridge should be closed due to findings at the Lo Span B Gusset Plate. Both Gusset plates are basically failed. The outside plate is gone and the inside plate is at 50% as estimated by the consultant. I consider both of them completely gone for all practical purposes and since the retrofit was placed without taking up any dead load, the consultant believes the Bridge should be closed.[Sherwood Lee Garrison, 08/01/2012]

Parsons, the consultant contracted to design the rehabilitation to the Bridge does not believe that the retrofits to the trusses at Pier #2 are adequate to handle all forces. INDOT has decided to place a 16 ton load limt on the Bridge.[Sherwood Lee Garrison, 07/25/2012]

DISTRICT PRIORITY IN H.I.P. (502)

Proposed Improvements

502.01 Priority Number		
502.02 Year of Priority #		
502.03 Year Originally Programmed into SPMS	2008	

Scheduled/Programmed Improvements

502.04 Date Listed as (READY FOR LETTING)	10/08/2014	
502.05 Type of Work to be Done to Bridge as listed in SPMS	2	Bridge Replacement in 2017.
502.06 Contract Awarded Date		
502.07 NEW Contract #	B-31565	
502.08 Est. Date of Completion	11/27/2015	
502.09 New Structure Type		

INSTIP

Congressional District	8	
M.P.O.	WCIEDD	

THINK SAFETY FIRST

STRUCTURE DETAIL DATA (503)

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

	NUMBER	DESCRIPTION
503.02 Intermediate diaphragms	N	
503.04 Diaphragms over bearings	N	
503.05 Jacking Frames	false	
503.07 Vertical web stiffeners	N	
503.09 Cross Bracing	N	
503.10 Transverse plate - lateral bracing - no cross bracing	# of	
503.11 Transverse plate - lateral bracing - with cross bracing	N # of	
503.12 Web welds	N	
503.13 Flange welds	N	
503.14 Flange cover plates	N	
503.15 Longitudinal web stiffners	N	
503.16 Plate welded on flanges of beams or girders	N	
503.17 Steel box girders	N	
503.18 Hanger connections	N	
503.19 Hinge (PIN) Connection	4	
503.20 Cantilevered bearings	N	
503.21 Steel box pier caps	N	
503.22 Concrete segmental	N	
503.23 Open spandrel arch columns	N	
503.24 Suspension cables (main or hangar)	N	
503.25 Suspension span tie chords	N	
503.26	N	
503.27 Structure Redundancy	2	
503.28 Number of lines of beams	00	

THINK SAFETY FIRST

STRUCTURE DETAIL DATA (503)

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

503.29 Number of lines of girders	00	
503.30 Number of lines of stringers	08	
503.31 Number of lines of floorbeams	24	
503.32 Number of Gusset Plates	176	176 gusset plates = 22 gusset plates per one side of one truss X 2 sides per truss X 2 trusses per span X 2 Spans.

THINK SAFETY FIRST

IN-DEPTH BRIDGE INSPECTION NEEDS (504)

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

TYPE OF EQUIPMENT	COULD USE	DID USE	COMMENTS
UNDERBRIDGE INSP EQUIP	504.01 ☑	504.02 ☐	
UB-60	504.01A ☐	504.02A ☐	
UB-40	504.01B ☑	504.02B ☑	
CRANE AND BASKET	504.03 ☐	504.04 ☐	
BUCKET TRUCK	504.05 ☑	504.06 ☑	
LIFT TRUCK	504.07 ☑	504.08 ☐	
LADDER	504.09 ☑	504.10 ☑	
SCAFFOLDING	504.11 ☐	504.12 ☐	
BOAT	504.15 ☐	504.16 ☐	
OTHER Reach-all/Waders/Traffic Control	504.13 ☑	504.14 ☐	

THINK SAFETY FIRST

ACTIONS TAKEN (506)

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

	Yes	Plan of Action Items
506.01	☑	Wrote normal inspection report, or supplemental report of some type
506.02	☑	Took Photos
506.03	☑	Notified Maintenance about Have maintenance fasten the bridge rail in both spans where the bolts have worked out. [Melvin Hughes,05.01.2014].
506.04	☐	Notified Design about
506.05	☐	Notified Central Office Inspection about
506.06	☐	Notified District about
506.07	☐	Other about
506.08	☐	Put on CRITICAL DEFICIENCIES LIST, until
506.09	☑	Will, or already has been put on H.I.P. Priority List to
506.10		Are there features which may need to be Y
506.11		Frequenc 12 months Item(s) Lower Chord, Gusset plates to Lower Chord and Floor Beams

THINK SAFETY FIRST

Subjective Bridge Appraisal Factors Related to Functionality

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

	General Appraisal Factors Related to Functionality			
	Road On		Road Under	
BRIDGE RELATED FACTORS	Item #	Code	Item #	Code
Relative roadway width	507.01	2	507.02	6
Shoulder width	507.03	4	507.04	6
Shoulder width reduction	507.05	3	507.06	6
Vertical clearance	507.07	3	507.08	6
Approach and bridge guardrail	507.09	2	507.10	6
APPROACH ROADWAY FACTORS				
Approach sight Distance	507.11	2	507.12	6
Approach roadway curvature	507.13	2	507.14	6
Approach gradient	507.15	1	507.16	6
ENVIRONMENTAL FACTORS				
Volume/capacity ratio	507.17	1	507.18	6
Percentage of trucks	507.19	2	507.20	6
Lighting, signing, delineation	507.21	5	507.22	6
Presence of ramps, merges, or intersections	507.23	5	507.24	6
Presence pavement transitions	507.25	3	507.26	6

THINK SAFETY FIRST

SAFETY IMPROVEMENT

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

NAME	NEEDED	IN-PLACE	REMOVE
One Lane	☐	☐	☐
Narrow Bridge	☐	☐	☐
Guard Rail	☐	☑	☐
Approach Rail	☐	☑	☐
Bridge End Markers	☐	☑	☐
Speed Limit	☐	☐	☐
Curve Signs	☐	☐	☐
Advance Warning	☐	☐	☐
No Trucks	☐	☐	☐
Load Posting	☐	☑	☐
Underclearance Signs	☐	☐	☐
Other	☐	☐	☐

Comments

THINK SAFETY FIRST

ROADWAY MANAGEMENT DATA

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

601.01 WMS Route ID

602.1 Approximate Length of Improvement - Feet (Bridge)

602.1 Approximate Length of Improvement - Feet (Approach)

604.1 Largest Vertical Distance for Pier Cost 24.4

THINK SAFETY FIRST

CONTRACTS REPORT

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

No Contracts Found

THINK SAFETY FIRST

UNDERRECS REPORT

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

No Underrecs Found

THINK SAFETY FIRST

INDOT FRACTURE CRITICAL EVALUATION

NBI Number: 017050 | Bridge Number: 046-11-01316 C
Facility Carried: SR 46 | Feature(s) Intersected: EEL RIVER

	Official	Proposed		
92A.01 Requires F. C. Inspection?	Y		93A Date of F.C. Inspection	05/07/2013
92A.02 Inspection Frequency (Months)	12		93C Date of Special Insp.	05/07/2013
92C.01 Requires Special Inspection?	Y			
92A.02 Inspection Frequency (Months)	12	12		

Notes and Comments: Use UB-40 or if needed, a Ladder.

503.27 Redundant Code: N

Reason for Fracture Critical Rating

- Bridge is a Truss ☑
- 2 Girder Structure ☐
- Welded Plate Girders ☐
- Riveted Girders ☐
- Bolted Girders ☐
- Widened with Additional Line(s) of Girders ☐

Notes and Comments:

Inspection Requirements

Requires Arms Length	☑	
Requires Access Equipment	☑	Use UB-40, Bucket Truck and if needed, a ladder.
Requires Special Equipment	☐	
Requires Traffic Control	☑	
Est Time for Full Insp (hrs):	42	42 man-hours
Est Time for Partial Insp		

Current Inspection Data

Date of Inspection: 11/01/2011

Number of Hours for Inspection: 88

Full Inspection ☑ Partial Inspection ☐

Inspected By: District ☑

Consultant (name):

Proposed Reinspection Frequency (mm): 12

Reason for Above: Once every 12 months due to the condition of the Lower Chord, Lower Chord Gusset Plates, and the Floor Beams

Reinspect By: 11/01/2012

Inspection Type: Full

To view a copy of current and past special inspection reports, go to:

THINK SAFETY FIRST

INDOT FRACTURE CRITICAL EVALUATION

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Master List Items

92A.1000 Members to Inspect

1. Upper Chords, L0-U1, U1-->U10, U10-L11 ~~ 2. Lower Chords, LO-L2, L2-->L9, L9-L11 ~~ 3. Diagonals, 12 different ones ~~ 4. Verticals, 10 different ones ~~ 5. Floor Beams, FB-0 -->FB-11 ~~ 6. Stringers, S-1, S-2, S-3, S-4, S-5, S-6, S-7, S-8 ~~ 7. Upper lateral & sway bracings ~~ 8. All Gusset Plates

92A.2000 Inspection Procedures

Clean, scrape, hit, measure, NDT, etc. use access equipment

92A.3000 Inspection and Access Equipment Needed

Probes, wire brush, hammer, magnifying glass, light, etc.

92A.4000 Major Inspection Findings

1. OK ~~ 2. Some section loss at middle of lower chords ~~ 3. OK ~~ 4. Verticals - collision damage; some out of plumb 4 to 5 damaged on north truss and 7 to 8 damaged on south truss ~~ 5. Rust Through at L11 Span A Upstream Truss floor beam end, a Critical find and close to failure, supported by Contract B-34533 in December 2011 ~~ 6. section loss at outside stringers #1 and #8 ~~ 7. Collision damage ~~ 8. Gusset plates failed at L0 Span B Upstream Truss, a Critical find. Close to failure at L0 Span B Downstream Truss. Gusset Plates retrofitted by Contract B-34533 in December of 2011.

92A.5000 Inspectors Recommended Actions

1. OK ~~ 2. Monitor ~~ 3. OK ~~ 4. Monitor ~~ 5. Monitor ~~ 6. Replace by Contract when Deck is replaced during next major rehab. ~~ 7. Repair by Contract during next major rehab.(Recommended altering sway bracing in 2001 to improve vertical clearance to reduced the chance of collision damage. ~~ 8. Monitor

Actions Taken and Dates

1. None ~~ 2. Monitor ~~ 3. None ~~ 4. Monitor ~~ 5. Supported under Contract B-34533 by 12/20/2011 ~~ 6. Monitor ~~ 7. Monitor - In April of 2002, lower member and members connecting to it of all sway bracing cut out to diagonal member and removed as per Central Office design dated 06-27-2001. ~~ 8. Retrofitted by 12/20/2011 under Contract B-34533.

Programmed Contract Work

Contract B-31565, Bridge rehabilitation or Bridge Replacement in 2015.

☐ Items/Issues to Check on Biennial Inspections

Do any items require a deficiency report? No

THINK SAFETY FIRST

INDOT UNDERWATER EVALUATION

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

NBI Underwater Data

113A NBI Scour Evaluation Code 8

	Official	Proposed
92B.01 Requires Underwater Inspection?	N	
92B.02 Inspection Frequency (Months)		

93B Underwater Insp Date:

Notes and Comments:

Current Underwater Inspection Data

Date of Inspection

Inspected By: District

Consultant (name)

Proposed Inspection Frequency (mm)

Reason for Above:

Number Piers/Abuts in Water 01 ☐ Leave on NBI Underwater Inspection List

Number Piers/Abuts with Scour 02 ☐ Add to 5 Year Inspection List

Water Velocity (ft./sec.) 0 Reinspection Date

Time to Inspect (hours) 0

Reason for Underwater Inspection (Deepest Water Depth and Location):

Additional Inspection Data:

Method of Inspection Waded: ☐ Dove: ☐ Used Boat: ☐

Cross Sections Sounding Pole ☐ Fathometer ☐

Water Quality OK ☐ Poor ☐

Do any items require a deficiency report?

THINK SAFETY FIRST

INDOT UNDERWATER EVALUATION

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Master List Items

92B.1000 Members to Inspect

92B.2000 Inspection Procedures

92B.3000 Inspection / Access Equipment Needed

93A. 4000 Major Inspection Findings

Drift/derls, Miscellaneous Findings

Consultant's Recommendations

92A.5000 INDOT Action Taken/Dates

Programmed Contract Work

Biennial Inspection Item

Items Requiring Inspection? ☐

Comments

THINK SAFETY FIRST

INDOT SPECIAL INSPECTION

NBI Number: 017050 | Bridge Number: 046-11-01316 C
Facility Carried: SR 46 | Feature(s) Intersected: EEL RIVER

	Official	Proposed		
92C.01 Requires Special Inspection?	Y		93C Date of Special Inspection	05/07/2013
92A.02 Inspection Frequency (Months)	12	12		

93C.X Special Detail Code 2 Notes Pins at Bearings

92A.01 Requires F. C. Inspection?	Y		93A Date of F. C. Inspection	05/07/2013
92A.02 Inspection Frequency (Months)	12			

Comments Use UB-40. Also, Walk, Climb, and/or use Ladder.

Inspection Requirements

Requires Arms Length Inspection ☑

Requires Access Equipment ☑ Use UB-40. Can also Climb or use ladder with proper equipment

Requires Special Equipment ☐

Requires Traffic Control ☑

Est Time for Full Insp (hrs): 02 2 man-hours

Est Time for Partial Insp (hrs): 0

Current Inspection Data

Date of Inspection 11/01/2011

Proposed Reinspection Frequency (mm) 12

Number of Hours for Inspection 16

Reason for Above:

Full Inspection ☑ Partial Inspection ☐

Once every 12 months due to Gusset Plate and Lower Chord conditions.

Inspected By: District ☑

Consultant (name)

Reinspect By 10/20/2012

Inspection Type Full

To view a copy of current and past special inspection reports, go to:

THINK SAFETY FIRST

SPECIAL INSPECTION MASTER LIST

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Master List Items

92C.1000 Items to Inspect

Pins at Bearings

92C.2000 Inspection

Use rags and a wire brush to clean area. Tap on the pin with a hammer and listen for any odd sounds. Use a Permanent Marker and mark the position of the Pin relative to the Bearing. Look for a change in position from the mark on the pin relative to the mark placed on the bearing to determine if the pin is siezed up or free to rotate.

92C.3000 Special Equipment Required

Fall Protection equipment and proper climbing gear, wire brush, hammer, magnifying glass, light, etc.

92C.4000 Inspection Findings

None to date

92C.5000 Followup Action

None needed at this time

Actions Taken and Dates

None to date

Programmed Contract Work

Contract B-31565, Bridge rehabilitation or Bridge Replacement in 2015.

☐ Items/Issues to Check on Biennial Inspections

Do any items require a deficiency No

THINK SAFETY FIRST

ROUTINE PLAN OF ACTION REPORT

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

No Routine P.O.A. Found

THINK SAFETY FIRST

SPECIAL IDENTIFICATION ITEMS

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Special Bridge Identification Items

Complex ☐

Major ☐

Hoan ☐

Curved ☐

Endangered Species

Where/Description

☐ Bats

☐ Cliff Swallows

☐ Barn Swallows

☐ Other Name:

THINK SAFETY FIRST

92A. FRACTURE CRITICAL PLAN OF ACTION REPORT

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

No Fracture Critical P.O.A. Found

THINK SAFETY FIRST

92B. UNDERWATER PLAN OF ACTION REPORT

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

No Underwater P.O.A. Found

92C. SPECIAL PLAN OF ACTION REPORT

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

No Special P.O.A. Found

SCOUR PLAN OF ACTION REPORT

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

No Scour P.O.A. Found

THINK SAFETY FIRST

INDOT SCOUR AND FOUNDATION EVALUATION FORM

NBI Number: 017050 | Bridge Number: 046-11-01316 C
Facility Carried: SR 46 | Feature(s) Intersected: EEL RIVER

Central Office Screening

Date of Last Review or Update: 11/16/1998

Scour Risk: MODERATE

(113A) NBI Scour Evaluation: 8

Notes and Data:

Spread footings, No piles, scour piers #2 & #3, on rock

☐ Scour Committee Review

District Office Screening

Date of Last Data Update: 03/24/2008

(113R) District Scour Evaluation:

Field Observed Scour Problems:

Scour piers #2 & #3. 3/31/1995
THE CHANNEL RUNS FROM THE NORTH TOWARD THE SOUTH & RUNS ALONG THE WEST FACE OF PIER 2. WATER WAS STANDING BELOW SPAN B & ALONG THE EAST ABUTMENT DURING THE 2008 INSPECTION. I SAW EVIDENCE OF HIGH WATER. WOODY GARRISON STATES IN HIS NOTES FROM PREVIOUS INSPECTIONS THE SCOURING EXISTS. I BELIEVE THIS TO BE TRUE. PICTURES OF THE STREAM ALIGNMENT WERE TAKEN. 3/24/08

Past Scour Problems:

Foundation Data	Code	Comments
113B.01 Total # of all Piers	03	
113B.08 # of Piers in the Water	01	A pond Under Span B barely reaches East Abutment #3, which is not the norm. Intermediate Pier #2 is in the water which is the norm. I have changed the Number of Piers in the Water from a number of 3 to a number of 1.[Sherwood Garrison, 04/28/2004] The River water level is up due to rain for the previous two days. Currently, all piers (two abutments and one interior pier) are in the water.[Sherwood Garrison, 04/29/2002]
113B.09 # of Piers with any Scr	02	A very wide scour hole exists under Span B barely reaching East Abutment #3. Scour occurs about Intermediate Pier #2, which is always in the water.[Sherwood Garrison, 04/28/2004]
FOUNDATION AT ABUTMENTS		
113B.02 Abutment #1 (W/S)	A	
113B.03 Abutment #2 type	A	
FOUNDATION AT INTERMEDIATE		
113B.05 # of Int Piers	01	
113B.06A Types of Int Piers	A	
113B.06B Types of Int Piers		
113B.06C Types of Int Piers		
113B.06D Types of Int Piers		
113B.06E Types of Int Piers		

THINK SAFETY FIRST

INDOT SCOUR AND FOUNDATION EVALUATION FORM

NBI Number: 017050 | Bridge Number: 046-11-01316 C
Facility Carried: SR 46 | Feature(s) Intersected: EEL RIVER

113B.06F Types of Int Piers		
113B.08 # of Piers in the Water	01	A pond Under Span B barely reaches East Abutment #3, which is not the norm. Intermediate Pier #2 is in the water which is the norm. I have changed the Number of Piers in the Water from a number of 3 to a number of 1.[Sherwood Garrison, 04/28/2004] The River water level is up due to rain for the previous two days. Currently, all piers (two abutments and one interior pier) are in the water.[Sherwood Garrison, 04/29/2002]
113B.09 # of Piers with any Scr	02	A very wide scour hole exists under Span B barely reaching East Abutment #3. Scour occurs about Intermediate Pier #2, which is always in the water.[Sherwood Garrison, 04/28/2004]

Foundation Numbering: Foundations 1 thru 3 numbered from west to east.

Design Plans: See “As Builts/Plans” in the Pictures subtab under the Rpt. Info tab section.

As-built Plans: Looked at "As Built" plans.

Soils Information: Rock supports all three foundations.

Original Flow Line: 548.7 | Original Flow Line: 1934

Bottom of Footing: Bott. Bent #1 footer at Elev. 536.50', Bott. Pier #2 footer at Elev. 542.50' or Elev. 542.75, and
Bott. Bent #3 footer at Elev. 547.00'.

End Abutment foundations #1 and #3 and Pier #2 foundation are each embeded into Rock.

Information from "As Built" plans.

Minimum Pile Tip Elevation

Notes and Comments:

All Information below taken from "As Built" plans.

Bott. Bent #1 footer at Elev. 536.50',
Bott. Pier #2 footer at Elev. 542.50' or Elev. 542.75', and
Bott. Bent #3 footer at Elev. 547.00'.

End Abutment foundations #1 and #3 and Pier #2 foundation
are each embeded into Rock.

THINK SAFETY FIRST

INDOT SCOUR AND FOUNDATION EVALUATION FORM

NBI Number: 017050 | Bridge Number: 046-11-01316 C
Facility Carried: SR 46 | Feature(s) Intersected: EEL RIVER

Scour Calculation

Scour Calcs. Letter: Date

Q100 Water Surface Elevation

Q100 Scour Depth Elevation

Q100 Flow Velocity 0

Q500 Water Surface Elevation 0

Q500 Scour Depth Elevation

Current Flow Line Elevation Used for Calculations 0

Recommendations:

Purpose of Scour Calcs:

- ☐ New Bridge
  - New #:
- ☐ Rehab
- ☐ Scour Problems
- ☐ Other

Scour Monitoring Data

Is Bridge on a District Monitoring Program? No

Reason for Monitoring

Who Monitors the Bridge?

Is Bridge on a District Monitoring Program?

Long Term Scour Solution

008 Bridge Number		008A NBI Number	017050
006A Features Intersected	EEL RIVER	Update Date	

1. What to Monitor: List substructure units to monitor

2. What to Look for: List specific signs indicating a

3. When to Monitor: List what initiates monitoring

4. Who Monitors: Unit and bridge inspectors; others

5. Describe Monitoring Preparations: Q100 flowline marked on piers, etc.

6. Describe Channel Probing/Depth Reading Procedures:

THINK SAFETY FIRST

INDOT SCOUR AND FOUNDATION EVALUATION FORM

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

7. Closing procedures:

8. Historic Monitoring

Montoring Date	Water Level	Cause of Highwater	Comments

9. Miscellaneous:

10. Have Drawings Available: General Plan; Layout; Pier/Abutment

Maintenance Notes

Is this a major drift collecting bridge?	No	Angle:
Is there an angle of ATTACK for normal flow?	No	
Is there an angle of ATTACK for highwater flow?	No	

Programmed Contract Work

Seismic Items

1. On Primary Evacuation	No	
2. Seismic Countermeasures:	N	
3. Seismic Design:	N	
4. Items to review after event	Look for vertical and horizontal misalignment along the top of each Bridge Curb line. Look for bending of various Truss members. Look for dislodged steel bearings at the top of the pier cap and abutment seats. Look for signs of pier or abutment rotation. Look for roadway settlement. Look for large cracks and anything out of the ordinary	

Seismic Notes

THINK SAFETY FIRST

INDOT SCOUR COMMITTEE REVIEW

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Scour Data

As Built Flow Line Elevation 548.7

Q100 Water Surface Elevation

Q100 Scour Depth Elevation

Q100 Flow Velocity 0

Q500 Water Surface Elevation 0

Q500 Scour Depth Elevation

Q500 Flow Velocity

Consultant Report 0

Consultant Calcs. Date

☐ Design Plans Checked

☐ As-Built Plans Checked

Comments

Central Office Screening

Date of Last Review or Update

Scour Risk

(113A) NBI Scour Evaluation 8

Committee Notes

Hydraulic Section Notes:

Central Office Bridge Inspection Notes:

Geotechnical Section Notes:

Date of Scour Review Meeting

Recommended Action:

Scour Committee Comments

☐ Schedule for Rehab (Scour Countermeasures)?

Recommended Work for

THINK SAFETY FIRST

INDOT LOAD RATING

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

NBI-NUMBER..... 017050
BRIDGE-NUMBER.....
DISTRICT-CODE..... 01
COUNTY CODE..... 011
NUMBER-MAIN-SPANS..... 002
STR-TYPE-MAIN-ENGL..... STT - 310B
MAIN-WIDE-TYPE-ENGL..... 000 - NONE
LENGTH-MAX-SPAN..... 0198.0
STRUCTURE-LENGTH..... 00402.3
SKEW..... 00
LANES-OVER..... 02
BRIDGE-ROADWAY-WIDTH..... 023.9
DECK-WIDTH..... 025.0
NUMBER-BEAMS..... 00
NUMBER-GIRDERS..... 00
NUMBER-STRINGERS..... 08
NUMBER-FLOOR-BEAMS..... 24
DECK-STR-TYPE..... 1
DECK-THICKNESS..... 06.50
REDUNDANT-CODE..... N
OVERLOAD-PROBLEM..... 5
OVERLOAD-DATA..... 1
COND-OF-SPSTR..... 3
COND-OF-SBSTR..... 7
COND-CULVERT-RET-WALL..... N
GROSS TONS..... 19
NBI Item #65-Inv Rating Method..... 1
INV-CODE..... 2
INV-TONS..... 32

ROAD-NUM-OVER..... 0046
ROAD-NUM-UNDER.....
FACILITY-CARRIED..... SR 46
FEATURES-INTERSECTED..... EEL RIVER
NUMBER-APPRO-SPANS..... 0000
STR-APPRO-PRIM-ENGL..... 000 - NONE
OTHER-APPRO-CODES..... N
YEAR-BUILT..... 1934
YR-RECONSTRUCTED..... 1977
WIDENED-DATE.....
LAST-REPAIR-DATE..... 2012
CONTRACT-NO..... 34533
OWNER-CODE..... 01
HEAVY-TRUCK-RTE..... N
MICHIGAN-TRUCK-RTE..... N
BRIDGE-POSTING..... 5
DESIGN-LOADING..... 4
TYPE-WEAR-SURFACE..... 3
ASPHALT-THICKNESS..... 01.50
BRIDGE-RAIL-TYPE..... H
METAL-FORM..... N
CONCRETE-FORM..... N
LOAD-RESTRICTION..... 4
RATING-CHECK-DIGIT..... 2
NUM-TONS-POSTED..... 19
POSTED-DATE..... 07/31/2012
OPC-CODE..... P
Temporary Structure Designation.....
NBI Item #63-Oper Rating Method..... 1
OP-CODE..... 2
OP-TONS..... 54

THINK SAFETY FIRST

INDOT LOAD RATING

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

INVENTORY-RATING..... 232 OPERATING-RATING..... 254

Location of H20 Inventory Low Rating..... 13.29 ft. Floor Beam #2
Location of HS20 Inventory Low Rating..... 13.29 ft. Floor Beam #2
Location of HS20 Operating Low Rating..... 13.29 ft. Floor Beam #2
Underfill/Arch Form Date..... Underfill/Arch Fill Height.....
Underfill/Arch Road-to-Coping Distance.....
Date of Proposed Overlay.....
Proposed Overlay (By Whom)..... Status of Proposed Overlay.....
Amount of Proposed Overlay..... Date Overlay Put Down.....
Rating Program..... VIRTIS Rater-Name..... Jeremy Hunter
Rating Method..... LFD Rater-Company..... RQAW
Rating Units..... US Customary Cost of Rating.....
Rating Date..... 09/19/2008 Year of Cost.....
Date Rating Reviewed/Changed..... Main Span Type Rated.....
Plans Used for Rating..... Approach Span Type Rated.....
Live Load Distr Factor..... 0.614 Stringer #3 Other span Type(s) Rated.....
Concrete Strength Used-Deck.....
Concrete Strength Used-Superstructure.....
Steel Strength Used-Rebars.....
Steel Strength Used-Superstructure #1.....
Steel Strength Used-Superstructure #2 Hybrid.....
Rating Factor Mich Train Truck #5 Oper..... 1.29999995231628
Location of Mich Trk #5 Low Rating..... L4U3 Truss
Rating Factor Mich Train Truck #8 Oper..... 1.27100002765656
Location of Mich Trk #8 Low Rating..... 13.29 ft. Floor Beam #2
Rating Factor Military Loading Oper..... 1.42400002479553
Location of Military Trk Low Rating..... 13.29 ft. Floor Beam #2
Rating Factor Toll Road 89-4 Oper..... 1.5809999704361
Location of Toll Road 89-4 Low Rating..... 13.29 ft. Floor Beam #2
Rating Factor Toll Road 90 Oper..... 1.26699995994568
Location of Toll Road 90 Low Rating..... 13.29 ft. Floor Beam #2
Rating Factor Toll Road 126 Oper..... 1.471
Location of Toll Road 126 Low Rating..... L4U3 Truss
Rating Factor 13 axle 267kips Oper..... 0.944999992847443

THINK SAFETY FIRST

INDOT LOAD RATING

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Location of 13 axle 267kip Low Rating..... L4U3 Truss

Rating Factor 14 axle 350kips Oper..... 0.723999977111816

Location of 14 axle 350kip Low Rating..... L4U3 Truss

Rating Factor 19 axle 305kips Oper..... 0.894999980926514

Location of 19 axle 305kip Low Rating..... U8U9 Truss

Rating Factor 19 axle 480kips Oper..... 0.665000021457672

Location of 19 axle 480kip Low Rating..... U8U9 Truss

Rating Factor - Fatigue Truck - Oper.....

Rating Factor - Fatigue Truck Low Rating.....

Rating Factor - HL-93 - Oper.....

Location of HL-93 Low Rating.....

Rating Factor - HS-25 - Oper.....

Location of HS-25 Low Rating.....

Additional Rating Truck(1) - Oper.....

Location of Additional Rating Truck(1) Low Rating.....

Additional Rating Truck(2) - Oper.....

Location of Additional Rating Truck(2) Low Rating.....

Notes and Comments for Load Rating:

THINK SAFETY FIRST

DEFICIENCY REPORT

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

SR 46 0011.750
EEL RIVER
04.84 E SR 59 0022 05

Reported By:

No Deficiencies Found

THINK SAFETY FIRST

BRIDGE SUFFICIENCY RATING

NBI Number: 017050 | Bridge Number: 046-11-01316 C
Facility Carried: SR 46 | Feature(s) Intersected: EEL RIVER

1) STRUCTURAL ADEQUACY AND SAFETY (MAX = 55%)

STRUCTURAL RATING REDUCTION	C=	40.00
ADJUSTED INVENTORY TONNAGE (AIT)	AIT=	
I =	I=	2.04
	S1=	12.96

2) SERVICEABILITY AND FUNCTIONAL OBSOLESCENCE (MAX=30%)

SERVICEABILITY RATING REDUCTION (MAX = 13%)

ITEM NO. 58 DECK CONDITION	A=	0.00
ITEM NO. 67 STRUCTURAL EVALUATION	B=	2.00
ITEM NO. 68 DECK GEOMETRY	C=	4.00
ITEM NO. 69 UNDERCLEARANCES	D=	0.00
ITEM NO. 71 WATERWAY ADEQUACY	E=	0.00
ITEM NO. 72 APPROACH ROAD ALIGNMENT	F=	0.00
J = (A+B+C+D+E+F)	J=	6.00

VERT., CLEARANCE RATING REDUCTIONS (MAX 2%)

	I=	0.00
	S2=	9.00

ROADWAY WIDTH RATING REDUCTIONS (MAX=15%)

X= 1,195.00 Y= 3.70

1) APPLY TO ALL BRIDGES EXCEPT CULVERTS

IF (No. 51 + 2ft.) < No. 32 THEN, G=5%	G=	0.00

2) APPLY TO ONE LANE BRIDGES ONLY

	H2=	15.00

3 & 4) APPLY TO BRIDGES WITH 2 OR MORE LANES

	H3=	15.00
	H4=	15.00

3) ESSENTIALITY FOR PUBLIC USE (MAX 15%)

K = (S1 + S2)/85	K=	0.26
A = (ADT x Detour Length x 15) / (200,000 x K)	A=	5.64
B = 2% if No. 100 > 0, else 0% if No.100 = 0	B=	0.00
S3 = 15 - (A + B)	S3=	9.36

4) SPECIAL REDUCTIONS (USED ONLY WHEN S1 + S2 + S3 >= 50) (MAX 13%)

A = (No. 19)^4 x (5.205 x 10^-8)	A=	0.00
B = 0% to 5%	B=	5.00
NO. 36 SUM OF TRAFFIC SAFETY FEATURES =		2.00
C =	C =	1.00
	S4=	6.00

UNOFFICIAL SUFFICIENCY RATING = (S1 + S2 + S3 - S4) = 31.30

UNOFFICIAL STRUCT. & FUNC. CLASS. = STRUCTURALLY DEFICIENT

		Official Date
LAST OFFICIAL SUFFICIENCY RATING =	7.00	04/01/2013
LAST OFFICIAL STRUCT. DEFICIENT =	Y	
LAST OFFICIAL FUNCT. OBSOLETE =	N	

THINK SAFETY FIRST

NOTES REPORT

NBI Number: 017050 Bridge Number: 046-11-01316 C
Facility Carried: SR 46 Feature(s) Intersected: EEL RIVER

Date: 07/25/2012 Item: 66C By: Sherwood Lee Garrison

Comment:

BRIDGE IS POSTED for 16 tons as of 07/25/2012:
Parsons, the consultant contracted to design the rehabilitation to the Bridge does not believe that the retrofits to the trusses at Pier #2 are adequate to handle all forces. INDOT has decided to place a 16 ton load limt on the Bridge.

Date: 08/01/2012 Item: 59A By: Sherwood Lee Garrison

Comment:

BRIDGE IS CLOSED as of 07/31/2012:
Parsons, the consultant contracted to design the rehabilitation to the Bridge has decided that the Bridge should be closed due to findings at the north Steel Truss Gusset Plates in Span B at L0. Both Gusset plates are basically failed. The outside plate is gone and the inside plate is at 50% as estimated by the consultant. I consider both of them completely gone for all practical purposes and since the retrofit was placed without taking up any dead load, the consultant believes the Bridge should be closed. I have reduced the Trusses condition from a poor rating of 4 to an Immenent Failure Rating of 1.[Sherwood Lee Garrison, 08/01/2012]

Parsons, the consultant contracted to design the rehabilitation to the Bridge does not believe that the retrofits to the trusses at Pier #2 are adequate to handle all forces. INDOT has decided to place a 16 ton load limt on the Bridge. [Sherwood Lee Garrison, 07/25/2012]

Date: 5/07/2013 Item: 66C By: Dan Bewley

Comment:

Bridge was posted for 19 tons at the time of the May 2013 inspection. I inspected Span A down stream & Span B up & down stream. Matt Ference & Randy Strain inspected Span A up stream. All of the floor beams I inspected at a minimum, had section loss. I had placed concern during my 2013 inpsection in the L5 & L6 connection point areas in Span B up stream side. The L5 floor beam has two 3/4" holes in the web of the floor beam along with large areas of section loss. Also noted is a large amount of section loss on the inside gusset plates connecting the vertical & diagonal supports. I also found along the bottom cord at L5 in one area of the splice plate 19 of the 20 rivet heads had rusted away. At the L6 connection in Span B up stream side I found an approximate 1" hole in the web of the floor beam along with a large amount of section loss. On Span B down stream side at L5 at the bottom cord splice plate I found 19 out of 20, 3 out of 16, & 6 out of 14 rivet heads rusted away. At the L6 on the bottom cord I found 6 out of 14 rivet heads rusted away. E-mail will be sent to George Snyder Rehab Group asking for a load rating to be done.

THINK SAFETY FIRST

Appendix E

Historic Bridge Documentation

FINAL

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in How to Complete the National Register of Historic Places Registration Form (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name Indiana State Highway Bridge 46-11-1316

other names/site number Bowling Bridge 021-105-30027

2. Location

street & number State Road 46 over Eel River N/A ☐ not for publication

city or town Bowling Green ☒ vicinity

state Indiana code IN county Clay code 021 zip code 47833

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this ☒ nomination ☐ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36CFR Part 60. In my opinion, the property ☒ meets ☐ does not meet the National Register criteria. I recommend that this property be considered significant ☐ nationally ☐ statewide ☒ locally. (☐ See continuation sheet for additional comments.)

1/25/00

Signature of certifying official/Title Date

State or Federal agency and bureau

In my opinion, the property ☐ meets ☐ does not meet the National Register criteria. (☐ See continuation sheet for additional comments.)

Signature of certifying official/Title Date

State or Federal agency and bureau

4. National Park Service Certification

I hereby certify that the property is:

Signature of the Keeper Date of Action

- ☐ entered in the National Register.
  - ☐ See continuation sheet.
- ☐ determined eligible for the National Register
  - ☐ See continuation sheet.
- ☐ determined not eligible for the National Register
- ☐ removed from the National Register
- ☐ other, (explain:)

5. Classification

Ownership of Property
(Check as many boxes as apply)

- ☐ private
- ☐ public-local
- ☒ public-State
- ☐ public-Federal

Category of Property
(Check only one box)

- ☐ building
- ☐ district
- ☐ site
- ☒ structure
- ☐ object

Number of Resources within Property
(Do not include previously listed resources in the count

Contributing	Noncontributing	
0	0	buildings
0	0	sites
1	0	structures
0	0	objects
1	0	Total

Name of related multiple property listing
(Enter "N/A" if property is not part of a multiple property listing.)

N/A

Number of contributing resources previously listed in the National Register

0

6. Function or Use

Historic Functions
(Enter categories from instructions)

TRANSPORTATION: Road-Related (vehicular)

Current Functions
(Enter categories from instructions)

TRANSPORTATION: Road-Related (vehicular)

7. Description

Architectural Classification
(Enter categories from instructions)

OTHER: Parker through truss

Materials
(Enter categories from instructions)

foundation
walls
roof
other METAL
CONCRETE

Narrative Description
(Describe the historic and current condition of the property on one or more continuation sheets.)

8. Statement of Significance

Applicable National Register Criteria
(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- ☒ A Property is associated with events that have made a significant contriibution to the broad patterns of our history.
- ☐ B Property is associated with the lives of persons significant in our past.
- ☐ C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- ☐ D Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations
(Mark "x" in all the boxes that apply.)

Property is:

- ☐ A owned by a religious institution or used for religious purposes.
- ☐ B removed from its original location.
- ☐ C a birthplace or grave.
- ☐ D a cemetery.
- ☐ E a reconstructed building, object, or structure.
- ☐ F a commemorative property.
- ☐ G less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance
(Enter categories from instructions)

TRANSPORTATION

Period of Significance

1935-1949

Significant Dates

1939

Significant Person
(Complete if Criterion B is marked above)

N/A

Cultural Affiliation

Architect/Builder

Vincennes Bridge Company

Narrative Statement of Significance
(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographic References

Bibliography
(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS):

- ☐ preliminary determination of individual listing (36 CFR 67) has been requested
- ☐ previously listed in the National Register
- ☐ previously determined eligible by the National Register
- ☐ designated a National Historic Landmark
- ☐ recorded by Historic American Buildings Survey # _____
- ☐ recorded by Historic American Engineering Record # _____

Primary location of additional data:

- ☒ State Historic Preservation Office
- ☐ Other State agency
- ☐ Federal agency
- ☒ Local government
- ☐ University
- ☐ Other

Name of repository:

10. Geographical Data

Acreage of Property Less than 1 acre

UTM References
(Place additional UTM references on a continuation sheet.)

	Zone	Easting	Northing
1	16	498240	4359210
2			
3			
4			

☐ See continuation sheet

Verbal Boundary Description
(Describe the boundaries of the property on a continuation sheet.)

Boundary Justification
(Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared By

name/title John Warner

organization _____ date 6-1-99

street & number 5018 Broadway Street telephone (317) 283-5450

city or town Indianapolis state IN zip code 46205

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

A **USGS map** (7.5 or 15 minute series) indicating the property's location.

A **Sketch map** for historic districts and properties having large acreage or numerous resources.

Photographs

Representative **black and white** photographs of the property.

Additional items
(Check with the SHPO or FPO for any additional items)

Property Owner

(Complete this item at the request of SHPO or FPO.)

name State of Indiana Dept. of Transportation- Operations Division #W478

street & number 402 W. Washington St. telephone 317-232-3150

city or town Indianapolis state IN zip code 46204

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 *et seq.*).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Projects (1024-0018), Washington, DC 20503.

NPS Form 10-900a
(8-86)
OMB Approval No. 1024-0018
United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet – State Bridge # 46-11-1316

Section 7 Description

State bridge 46-11-1316 is oriented generally east to west and carries State Road 46 over the Eel River at Bowling Green, Indiana. Positioned on standard concrete abutments and a concrete pier, the two 198' spans are riveted, Parker through trusses with a 24' roadway. The vertical curve of 398' is atypical for the standard plan. Each truss has 11- 18' panels bounded by verticals fabricated from a pair of laced 10" channels, except for the second from the end. The upper chord is fabricated from a pair of 15" channels and each member of the chord, except for the central panel's, is differently sloped (not parallel) from the horizontal plane of the lower chord (photo 1). Between the trusses at the upper chord location, substantial latticed strut bracing provides protection against stress induced by sway from either high winds or vehicle passage. Diagonal sets are composed of two pairs of 4"X3.5" angles (L-shaped steel members) reinforced and fastened together with battens in the outermost panels; in the second and third, a pair of 7" X 4" angles; and in the fourth a pair of 3.5" X 3" angles. A pair of 4.5" X 3" angles forms the counter sets in the three most central panels (photos 1 and 2).

The 33" floor I-beams are riveted to the verticals above a lower chord fabricated from two pair of 6"X 4" angles joined by riveted battens and reinforced along the sides with riveted plates (photo2). Heavy I-stringers, eight in all, combined with the floor beams carry the concrete deck. Crossed angles provide lower sway bracing members (photo 2).

Each span of the bridge has a fixed and expansion end; the fixed ends for both spans are anchored on the central pier. The expansion ends rest on the bridge seats on elliptical bearing points attached to the endpost with pins (photo 3). The approaches to the both ends of the bridge have concrete foundations and flared, paneled, and coped concrete rails (photo 4).

Section 8 Significance

State bridge 46-11-1316 is significant under Criterion A for its association with events in the settlement and economic development of Clay County, Indiana. The bridge is an example of an important, revised, third-generation, Indiana State Highway Commission bridge that replaced many of the late 19th century wooden structures inherited from county commissioners in the late 1910s. The bridge retains significant integrity and is structurally noteworthy for the vertical curve of the trusses; the handrails have been replaced. In addition, the bridge, erected on the site of the first major bridge to span the Eel River, is the work of a major Indiana bridge-building firm, the Vincennes Bridge Company. The positioning of the bridge, 500' upstream from the historic crossing site to Bowling Green, reminds us of the importance to commerce of all-weather roads and bridges in the development of the county.

NPS Form 10-900a
(8-86)
OMB Approval No. 1024-0018
United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet – State Bridge # 46-11-1316

Clay County, Indiana, named for the noted statesman Henry Clay, was originally a part of a land cession from the Delaware, Potawatomie, and Miami Indians in 1809. This elevated portion of the Wabash Valley was heavily forested with burr oak, ash, beech, elm, black walnut, and gum trees when the General William H. Harrison marched through the area in 1812 on his way to Fort Harrison on the Wabash from Vincennes, Indiana, on the lower Wabash River. With Harrison's command was a private soldier by the name of Samuel Rizley, who liked the land around Bowling Green so much he later returned to become one of the county's earliest white settlers.

The topography of the Eel River Basin proved to be one major factor in developing the transportation and industrial history of the county. At the time of settlement, the county contained as many as thirty streams, large and small, and the Eel River that traverses the county from Cass Township in the northeast, meanders through Washington, Sugar Ridge, Harrison, Perry, and Lewis Townships and exits the county in the southeast corner. With a very small change of elevation throughout its length, the river tended to flood at regular intervals and created an obstacle to travel even at its lowest depth in the dry months of the year. The Eel River, along with its major tributary, Birch Creek that drains much of the center of the county, often confounded personal travel and transportation of goods by early settlers. Birch Creek gained early historic significance in the county as a feeder stream to the Wabash and Erie Canal. On a positive note, streams like Jordan Creek, situated in some places in rugged terrain, provided enough fall to power mills, both saw and flouring. Another topographical factor in county development was the presence of a number of sloughs and marshy areas that once drained and controlled made accessible fertile land suitable for farming.

After 1816 and Indiana's statehood was a fact, the General Assembly and other private citizens sought ways to make Indiana a place attractive to settlers and entrepreneurs searching for opportunities. Indiana, like the other states carved from the Northwest Territory, lacked even a rudimentary infrastructure that would spur the influx of settlement. More importantly, an infrastructure to serve as the means to import goods these new citizens would need to live and export excess production that would result from the burgeoning economy. Debate on a solution continued until in 1827, the US Congress offered Indiana a substantial land grant to build a canal, the Wabash and Erie Canal, that when completed would connect Lake Erie with the Ohio River via the Wabash River. The canal would impact the history of Indiana and Clay County.

In 1832, construction on the canal began at Fort Wayne, Indiana, and progressed fitfully through the next two decades and reached Evansville, Indiana, in the early 1850s. Part of the canal system was the Cross-cut Canal that was to connect the Wabash and Erie with the never-constructed Central Canal in the vicinity of Worthington in Greene County. The Cross-cut Canal traversed the south west quadrant of Clay County and accounts for the names of well-known county historic assets/ events such as Feeder Dam Bridge, Aqueduct or Towpath Bridge, Towpath Road, and the Reservoir War of 1855. The Wabash and Erie Canal only operated over its full length of 459 miles for approximately a decade, but its short existence belies its importance in the growth of the Wabash River Valley and the State of Indiana.

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(8-86)
OMB Approval No. 1024-0018
United States Department of the Interior
National Park Service

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Water transportation was not the only element of infrastructure developing in the county in the 1850s. The first railroad survey for the Terre Haute & Richmond Railroad was made in 1849. In 1850, construction of the rails began with work commencing from both ends of the line – Indianapolis and Terre Haute – simultaneously. By 1852, daily freight and passenger trains were crossing the county. By 1872, railroad tracks from the Terre Haute & Cincinnati Railroad and the Brazil branch of the Evansville & Indianapolis Railroad also crisscrossed the county.

Starting with privately-financed/built turnpikes and continuing through the latter decades of the 19th century, Clay County made steady progress in improving its ground system of transportation. Private individuals like David Thomas, who started and operated a ferry across the Eel River west of Bowling Green for almost 50 years, provided a service to the casual traveler, the farmer going to market, and the wagons carrying coal from the small mines in the county.

The 1870s and 1880s in Clay County witnessed many changes. The extensive coal reserves in the county were identified early in the development of the county. From initial estimates, the coal area was found to encompass roughly 300 square miles in the south half of the county. Its positive economic potential for the county was obvious to many but one source defined a problem that could thwart progress because, "for want of suitable transportation ... only a small portion of it [coal reserves] ... can be made available for mining purposes." While railroads would eventually haul the majority of the coal mined in the county, mines not near a railhead or those earliest mines were dependent on wagon transportation to get their coal to the consumers. For example, the pig iron furnaces around Brazil would have ceased to function without adequate supplies of coal.

The need to transport agricultural products to market also spurred development of a more all-weather infrastructure. Clay County's farmers were hard at work to raise more corn and wheat to move to market as grain or as flour processed in some of the local flouring mills. The 790,000 bushels of corn produced in the county in the 1880s nearly doubled to 1,346,160 bushels in the 1890s; a significant achievement but without purpose unless the grain reached market. Wheat, another county-grown grain, increased from 165, 600 bushels in the 1880s to 267, 590 bushels in the 1890s; another admirable achievement. County officials harkened to the needs of the taxable public and moved forward to resolve transportation issues.

As population grew and production of agricultural items and coal increased in the post Civil War decades, county officials and citizens realized that without good roads and all-weather stream crossings real limits to economic success existed in the region. Around 1868, the county commissioners took a major step in resolving some stream crossing problems when they directed construction of a covered wooden bridge over the Eel River west of Bowling Green. Built by the firm of Rarick & Black the bridge cost $12,000 to complete. The two-span Burr arch bridge was bypassed in 1934/35 by the new bridge #46-11-1316A. The old wooden bridge was later demolished in the early 1950s. Next, around 1871, the commissioners engaged contractors Ernst Muehler and David Notter, a firm that operated in Clay County during the 1870s and 1880s, to build a

bridge across Jordan Creek north of Bowling Green. The firm built many of the stonework abutments on Clay County bridges of that era. It might be worthy to note that Bowling Green was the county seat until 1877, when the seat of government was moved to the city of Brazil.

Once committed to furnishing permanent all-weather stream crossings, the county commissioners moved rapidly to contract with Muehler & McNamar for the Poland covered wooden bridge over Eel River for $7,200 (1872), and with William Graber and Levi Fair for the Hooker's Point bridge for $6,300 (1876). Later destroyed in 1883 by an act of nature, this bridge was replaced by an iron bridge from the Canton Iron Bridge Company, Canton, Ohio, at a cost of $5,120. Muehler & Notter furnished the stone abutments for $600.00. Muehler & Notter also built the first Feeder Dam Bridge over the Eel River, a wooden structure (1878) at a cost of $8,700. The first iron bridges built over Birch Creek were built by Muehler & Notter on the Bowling Green & Brazil Road (1878), the Birch Creek Reservoir bridge near Saline City (1880), and the abutments for the aqueduct bridge (1880).

In the late 1910s, the Indiana State Highway Commission (ISHC) began to assume responsibility for the construction and maintenance of certain roads and bridges previously administered by county governments. One major program was the replacement of the timber truss bridges for which the state assumed responsibility vice the counties. The state survey of the Bowling Green bridge site was conducted in the spring of 1931. In field notes drafted by the survey chief-of-party, local residents provided historical accounts of past high water levels and other pertinent flood plain information. Local resident Charles Woods remarked that " the present bridge was built in the 1871 and the west abutment was placed on a mat of logs." Another longtime resident, Hayes Miles, commented that high water in 1875, "reached up to the hub board on the Jordan Creek Bridge," which was about one-half mile upstream. These comments were collected to assist in determining average high water levels, approximately 571.1' at the bridge site, and the new bridge deck elevation (elevation 573.08'). Also identified during these testimonies were any special engineering considerations needed to mitigate the effect of flood conditions.

In 1934, the Vincennes Bridge Company of Vincennes, Indiana won the contract to build this two span structure for the sum of $63,058.13, which was about $7,000 below the state engineer's estimate. The new bridge was completed in the spring of 1935.

Still active, the bridge and its site are symbols of a number of significant events in the history of Clay County. First, the building of the covered bridge acknowledged the need for overcoming natural barriers to settlement, agricultural growth, and economic development and the role of county commissioners (local authority) in accomplishing this action. Secondly, the present bridge symbolizes its importance in the establishment of all-weather infrastructure and the evolution of the bridge builder's technology. Thirdly, it remains as an example of the ever-decreasing number of steel truss bridges that once dotted the landscape and if not protected in the future, will disappear as have many of the 19th century truss bridges.

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(8-86)
OMB Approval No. 1024-0018
United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet – State Bridge # 46-11-1316

Section 9 Bibliography

Blanchard, Charles, ed. *Counties of Clay and Owen, Indiana, Historical and Biographical Atlas.* (Chicago, Ill.: F. A. Battey & Company, 1884).

Edwards, Llewellyn N. *A Record of the History and Evolution of Early American Bridges.* (Orono, Me.: University Press, 1959.

Hool, George A. and W. S. Kinne, eds. *Steel and Timber Structures.* (New York: McGraw-Hill Book Company, 1942).

Indiana Department of Transportation. *Field Survey Notebooks.* Bridge 42-11-3101, Contract # 1586 -A-B and Bridge 46-11-1316, Contract #684.

Travis, William. *History of Clay County, Indiana. Vols. 1&2.* (Chicago, Ill.: Lewis Publishing Company, 1909).

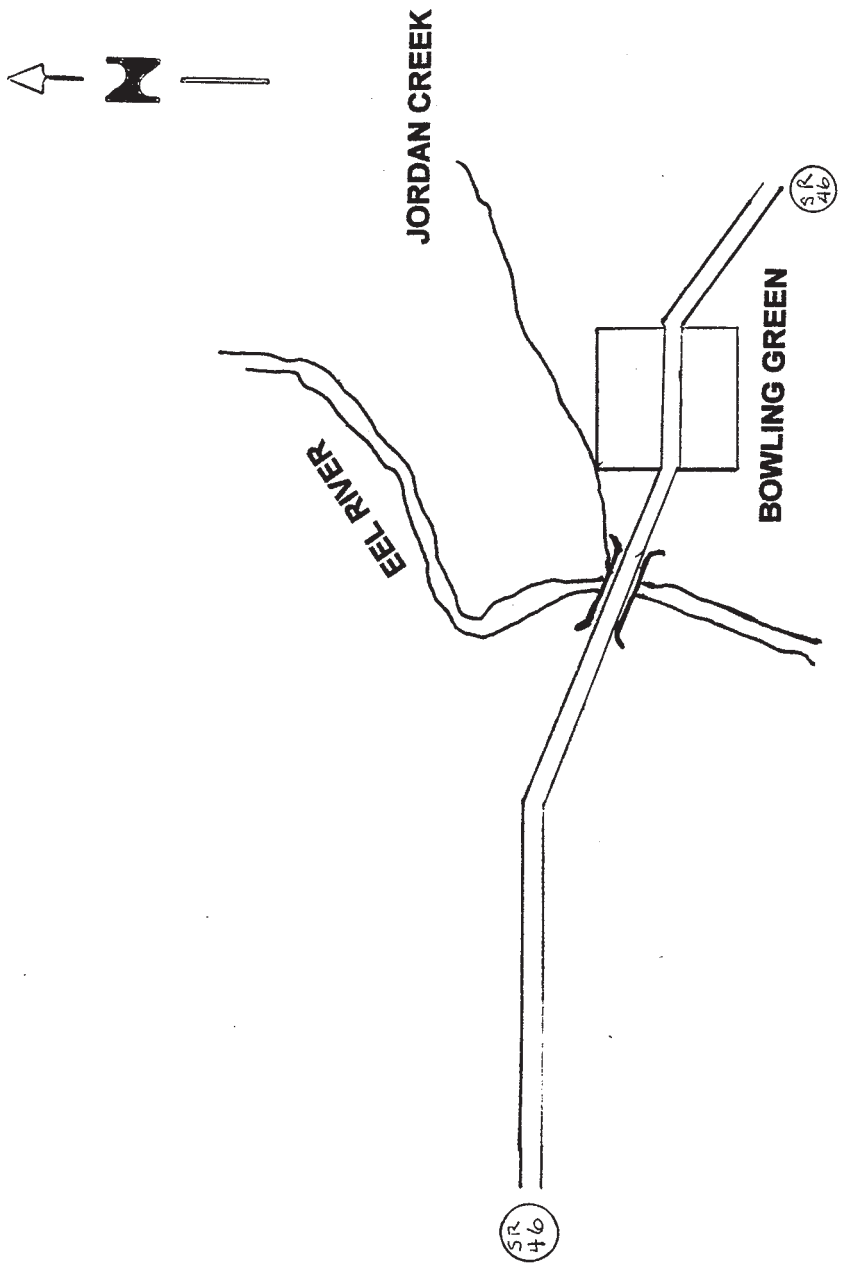
Section 10 Geographical Data

Verbal Boundary Description

From a point 60 feet east and 15 feet north of the northeast endpost of the bridge; proceed south across SR 46 to a point 60 feet east and 15 feet south of the southeast endpost of the bridge; turn west and proceed across the river to a point 105 feet west and 15 feet south of the southwest endpost of the bridge; turn north and proceed across SR 46 to a point 105 feet west and 15 feet north of the northwest endpost of the bridge; turn east and proceed across the river to close on the start point.

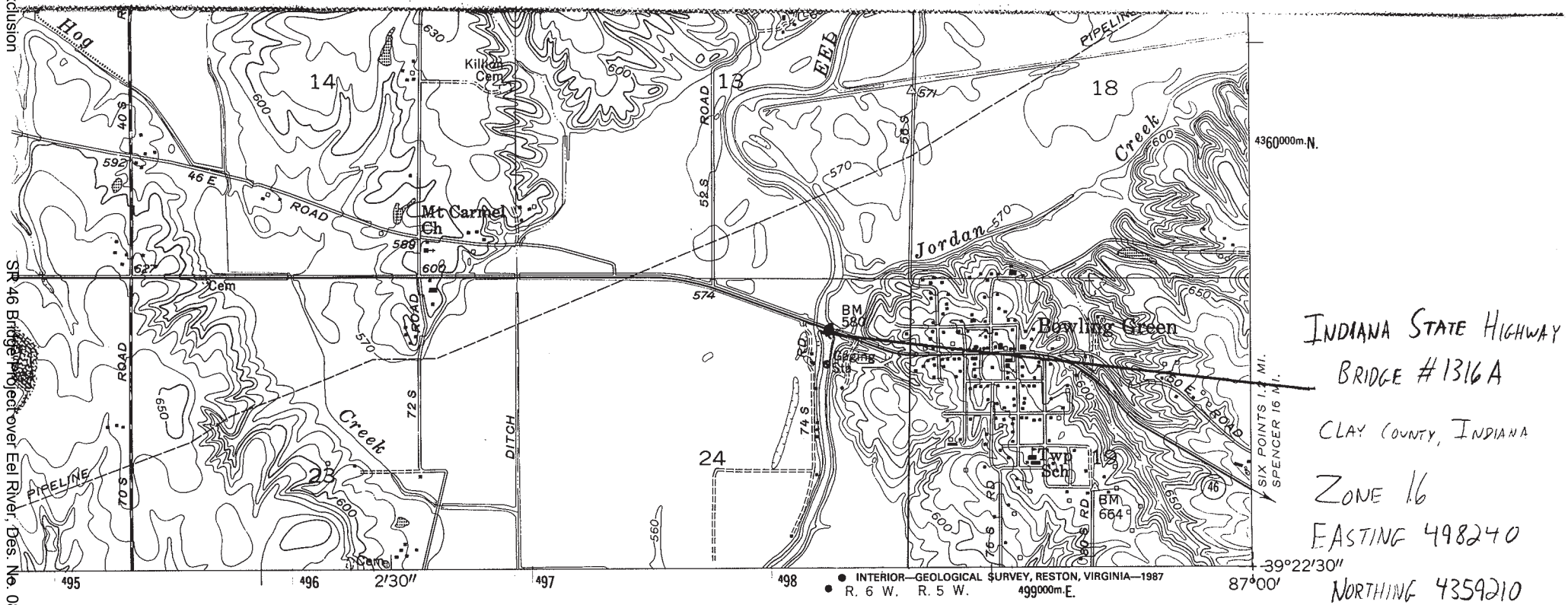
Boundary Justification

The boundary as described includes the approaches, wingwalls, abutments, piers, and spans of the bridge and its immediate environs.



BRIDGE 46-11-1316
CLAY COUNTY, INDIANA
NE ¼, NE ¼, S 24, T 11N, R 5W

Not to Scale



INDIANA STATE HIGHWAY
BRIDGE #1316A
CLAY COUNTY, INDIANA
ZONE 16
EASTING 498240
NORTHING 4359210

(PATRICKSBURG)
3662 IV SW

INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1987

1 MILE
4000 5000 6000 7000 FEET
1 KILOMETER

. 10 FEET
DATUM OF 1929

ROAD CLASSIFICATION

Heavy-duty
Medium-duty
Light-duty
Unimproved dirt

State Route
Interstate Route

INDIANA

QUADRANGLE LOCATION

MAP ACCURACY STANDARDS
OGICAL SURVEY
ESTON, VIRGINIA 22092
OURCES, INDIANAPOLIS, INDIANA 46204
SYMBOLS IS AVAILABLE ON REQUEST

Revisions shown in purple and woodland compiled in cooperation with State of Indiana agencies from aerial photographs taken 1983 and other sources. This information not field checked
Map edited 1986

CENTER POINT, IND.
39087-D1-TF-024

1957
PHOTOREVISED 1986
DMA 3562 I NE-SERIES V851

IN.gov SHAARD

Historic Bridge

Historic Name: Indiana State Highway Bridge #46-11-1316A
IHSSI Number: -
Rating: Contributing
Year Dataset Compiled: 1989

Survey County

County	Legal Township(s)	Quad Name(s)
Clay	Washington	Center Point

Carries: SR 46
Crosses: Eel River
Location: -

Terrestrial Coordinates (in decimal degrees)

Latitude: -
Longitude: -

Coordinates

Easting	Northing
498240	4359419

Year Built: 1935
Condition: Good

Year Demolished: -

Integrity: Slightly Altered

Date Moved: -

Alterations: See below

Architect/Builder	Architectural Firm	Affiliation
Vincennes Bridge Company	-	Fabricator
Indiana State Highway Commission	-	Designer

Bridge Specifics

Truss or Arch Type	Connection Type	Number of Panels	Number of Spans	Span Length
Parker through truss	Riveted	11 ea.	2	198'

Total Number of Spans: 2

Structure Length (in feet): 396'

Vertical Clearance (in feet): 14'8"

Road Width (in feet): 24'

Skew Angle: -

Structure Material: METAL

Abutments & Wingwalls: CONCRETE

Deck Material: CONCRETE

Rail Type: -

Sidewalk & Parapet: -

Stone Type: -

Statement of Significance: This bridge is an early and long extant example of the IDH's adjusted standard plan for 198' Parkers. Aside from contemporary guardrails, the structure retains its original members.

Architectural Description: The Indiana Department of Highways selected a modified version of its longest standard Parker through-truss design, as well as its traditional concrete substructure and coped and paneled approach rails, for this setting. The IDH stiffened the outer diagonals and the lower chord to accommodate a wider deck.

The 198' riveted superstructures of both spans are divided into eleven panels, each with a differently-sloped top-chord segment. The verticals consist of laced channels. Two pairs of angles and battens make up the outer diagonal. A pair of angles and battens, lighter toward midspan, provide the other diagonals as well as the counters (used only in the three central panels). The lower chord is fabricated from two pairs of heavy angles riveted together with battens and (except in the two outer panels) a stiffening plate. Substantial portals and cross-frames brace the trusses. The heavy I floor beams are riveted to the verticals at and above the lower chord and carry a 24' concrete roadway.

ALTERATIONS: The structure has contemporary guardrails.1976: Guard Rails Replaced, Deck Overlay

Bridge Number: 46-11-1316A

NBI Number: 17050

IHBC Rating: -

HABS/HAER Inventory Rating: 3

Historic District Name:	-
Access:	Yes, unlimited
Ownership:	-
Endangered:	No
Threat:	-
Areas of Significance:	-

Function

Historic:	Highway Bridge
Current:	Highway Bridge

Status	Status date
Listed in Both Nat. Reg. and St. Reg.	2000

Memorandum of Agreement:	☐
National Register Listing Date:	03/15/2000
NPS File Number:	00000211
National Register File Number:	NR-1516
State Register Listing Date:	01/19/2000
Bibliography:	Inventory of Bridges on State Highway System of Indiana (Indianapolis, 1989).
	ISHC Structure # 46-11-1316

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Excerpt from *Indiana Historic Bridge Inventory, Volume 2: Listing of Historic and Non-Historic Bridges*, August 2009

Section 1. Listing of Historic Bridges

Clay **Bridge No. 046-11-01313A** **NBI No. 17020** **Eligible**

Feature Carried: SR 46 *Feature Crossed:* BIRCH CREEK 310A Steel pony truss
Latitude (degrees/minutes) *39 / 233* *Longitude (degrees/minutes)* *87 / 77*

This bridge does not appear to possess significance under the National Register evaluation system for Criterion A. No evidence was found during data collection activities to indicate that this bridge possesses a significant association with important historical events or trends. As such, it is recommended not eligible under Criterion A.

This bridge is eligible under Criterion C because it represents a variation, evolution, or transition that is conveyed through important features or innovations related to bridge construction, design, or engineering, and it retains historic integrity necessary to convey its engineering significance.

Rationale: This bridge displays exceptional overall or main span length for its type representing an innovative design and/or construction method.

Clay **Bridge No. 046-11-01316A** **NBI No. 17050** **Listed in the National Register**

Feature Carried: SR 46 *Feature Crossed:* EEL RIVER 310B Steel thru truss
Latitude (degrees/minutes) *39 / 231* *Longitude (degrees/minutes)* *87 / 13*

This bridge has been previously listed or determined eligible for listing in the National Register or is a contributing resource within a historic district listed in the National Register. Therefore, this bridge was not reevaluated as part of this inventory project.

Clay **Bridge No. 00096** **NBI No. 1100083** **Previously determined eligible**

Feature Carried: CR 500 NORTH *Feature Crossed:* ILLINOIS CREEK 102A Reinforced concrete girder
Latitude (degrees/minutes) *39 / 27.3* *Longitude (degrees/minutes)* *087 / 00.7*

This bridge has been previously listed or determined eligible for listing in the National Register or is a contributing resource within a historic district listed in the National Register. Therefore, this bridge was not reevaluated as part of this inventory project.

Clay **Bridge No. 00122** **NBI No. 1100100** **Previously determined eligible**

Feature Carried: CR 650 WEST *Feature Crossed:* BIG SLOUGH CREEK 202A Continuous reinforced concrete girder
Latitude (degrees/minutes) *39 / 23.5* *Longitude (degrees/minutes)* *087 / 13.9*

This bridge has been previously listed or determined eligible for listing in the National Register or is a contributing resource within a historic district listed in the National Register. Therefore, this bridge was not reevaluated as part of this inventory project.

INDOT - Indiana Historic Bridge Inventory Condition Score Calculation

	Structure Number 17050		
	StructureType 310B STEEL THRU TRUSS		
	Location Clay County		
NBI Field Number	**Criteria**	**NBI Value**	**Assessment Calculations**
64A	Structural Capacity (Tons)	56	5
67	NBI Structural Evaluation	5	5
59	NBI Superstructure Rating	4	4
60	NBI Substructure Rating	5	5
51/29	Roadway Width Compared to ADT (NBI Factor H)	15	0
51/32	Approach Width Compared to Bridge Roadway Width		0
68	NBI Deck Geometry Evaluation	0	0
71	Waterway Adequacy	5	5
72	NBI Approach Roadway Alignment Evaluation	8	5

Total Condition Score	29
Sufficiency Rating	43.4
Eligibility Score	99

DATA INPUT FROM NBI RECORDS

28	Number of Lanes	2
29	ADT (Average Daily Traffic)	3512
30	ADT Year	2004
32	Approach Width	26
51	Roadway Width	23.9
59	NBI Superstructure Rating:	4
60	NBI Substructure Rating:	5
64A	Structural Capacity (Tons)	56
67	NBI Structural Evaluation	5
68	NBI Deck Geometry Evaluation	0
71	Waterway Adequacy	5
72	Approach Alignment Evaluatio	8
114	Future ADT	4864
115	Future ADT Year	2026

SR Factor H 15

(X) ADT/Lane = 1756

(Y) Width/Lane = 11.95

Assessment Legend

Indicates User Input Required or Values Read from NBI

Indicates assigned values corresponding to the NBI rating with a maximum value of 5 to a lower value of 0

If Future ADT is less than 400, also complete *Low Volume Road Intial Screening* matrix

Indiana Historic Bridge Inventory

State Bridge Number: 046-11-01316A **County:** Clay

County Bridge Number:

Individual Review Process (if applicable)

Individual Review Form

NBI Number: 17050
County/State Bridge No: 046-11-01316A
County: Clay
Selection Matrix Box: 3 Metal Thru Truss

Low Volume Test
Refer to if applicable

Passes? N/A
Exception to LVS Applies? _____
Structural: no
Functional: no (2 lanes) no (1 lane)
Roadway Width: 23.9
Future ADT: 4864

Candidate Bridge

Points Assigned

Points Assigned		Condition Score				
7.2		29	Identify bridge deficiencies leading to low condition score (points = 0.25 x CS, max. 10 points)			
10		99	Review eligibility scoring (points = 0.5 x ES, max. 10 points), Identify character-defining features			
25	Better candidate for long-term preservation (25 points)	yes	Check 1: Can the existing superstructure and substructure be restored to an NBI condition 5? Superstructure Rating: 4 Substructure Rating: 5 — Yes	no	Less desirable candidate for long-term preservation (0 points)*	
20	Better candidate to carry vehicles (20 points)	yes	Check 2: Does the bridge meet minimum load capacity standards for the functional class of the roadway? Structural Capacity (Tons): 56 Functional Class: 6 Structural Evaluation: 5 — Yes	no	Less desirable candidate to carry vehicles (0 points)*	
0	Better candidate to carry vehicles (15 points)	no	Check 3: Is the bridge functionally obsolete? Yes — 67 5 68 0 69 N 71 5 72 8	yes	Less desirable candidate to carry vehicles (0 points)*	

15 — Rehabilitation less likely to compromise historic integrity (15 points)

3 — 1 point for each factor answered no (Maximum 5 points)

80.2 **Total Points**

(Maximum individual review score is 100 points.)

Check 4: Are major deficiencies tied to character-defining features? No

no → Check 5: Additional factors:

		Points:
Yes	Salted Roadway?	0
No	Sag Vertical Curve?	1
No	Open Deck Joints?	1
No	High Accident Rate?	1
Yes	Long Detour? 011	0

yes → Rehabilitation more difficult to execute to retain historic integrity (0 points)

yes → 0 points

Select / non-select status: Select

Non-vehicular use analyzed

Individual Review-Non-Vehicular Use for Inventory Review:

NBI Number (#8): 17050

County: Clay

Selection Matrix Box: 3

Non-Vehicular Use Individual Review Form

Candidate Bridge

Individual Bridge Review Score = 80.2

Individual Bridge Review Score qualifies it for consideration for non-vehicular use.

Check 1A: Can the existing superstructure and substructure be restored to an NBI condition 5?

Superstructure Rating: 4

Substructure Rating: 5

Yes

no → Non-Select

yes →

Check 2A: Does the bridge offer sufficient capacity for pedestrian use at a minimum 8 foot width?

Permitted width based on Inventory Rating: 10.41

Permitted width based on Operating Rating: 16.1933

Yes

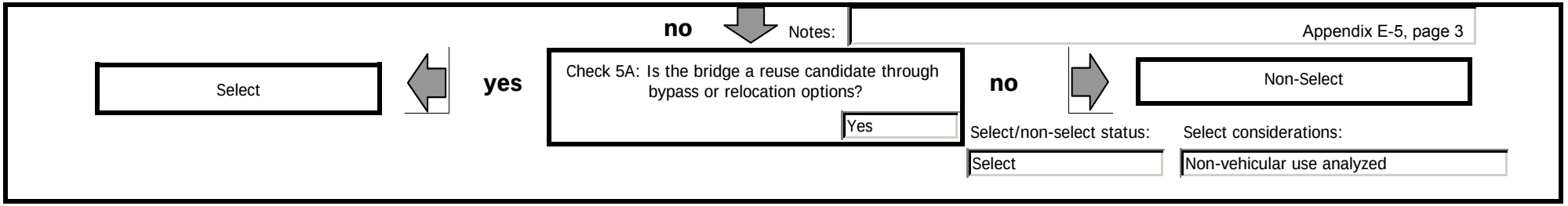
no → Non-Select

yes →

Check 4A: Are major deficiencies tied to character-defining features? If so, provide description to left.

No

yes → Non-Select


no
Notes:
Appendix E-5, page 3
Select
yes
Check 5A: Is the bridge a reuse candidate through bypass or relocation options?
Yes
no
Non-Select
Select/non-select status:
Select
Select considerations:
Non-vehicular use analyzed

Section 3: List of Select and Non-Select Bridges by County

County	State or County Bridge Number	NBI Number	Bridge Type	Preservation Commitment Exists	Status and Select Considerations
Cass	017-09-04177A *Feature Carried:* SR 17 *Latitude* N 40°454'	4410	Concrete Arch *Feature Crossed* EEL RIVER *Longitude:* W 86°221'	No	Non-Select Individual review criteria not met
Cass	025-09-03841 *Feature Carried:* SR 25 *Latitude* N 40°461'	6490	Concrete Arch *Feature Crossed* HARVEY CREEK *Longitude:* W 86°215'	No	Select Programmatically determined
Clark	00063 *Feature Carried:* ELROD ROAD *Latitude* N 38°30.4'	1000053	Metal Pony Truss *Feature Crossed* SILVER CREEK *Longitude:* W 085°45.5'	No	Select Exception to Low Volume Standard recommended
Clark	403-10-01941A *Feature Carried:* SR 403 *Latitude* N 38°249'	32000	Metal Thru Truss *Feature Crossed* SILVER CREEK *Longitude:* W 85°444'	No	Non-Select Programmatically determined
Clay	00096 *Feature Carried:* CR 500 NORTH *Latitude* N 39°27.3'	1100083	Reinforced Concrete Girder and Beam *Feature Crossed* ILLINOIS CREEK *Longitude:* W 087°00.7'	No	Select Programmatically determined
Clay	00122 *Feature Carried:* CR 650 WEST *Latitude* N 39°23.5'	1100100	Reinforced Concrete Girder and Beam *Feature Crossed* BIG SLOUGH CREEK *Longitude:* W 087°13.9'	No	Non-Select Individual review criteria not met
Clay	00123 *Feature Carried:* CR 250 WEST *Latitude* N 39°21.2'	1100101	Reinforced Concrete Girder and Beam *Feature Crossed* BRANCH OF BIRCH CREEK *Longitude:* W 087°09.5'	No	Non-Select Programmatically determined
Clay	00127 *Feature Carried:* CR 200 SOUTH *Latitude* N 39°21.6'	1100105	Metal Thru Truss *Feature Crossed* BIRCH CREEK *Longitude:* W 087°08.8'	No	Select Individual review criteria met
Clay	00145 *Feature Carried:* CR 200 NORTH *Latitude* N 39°25.0'	1100122	Reinforced Concrete Slab *Feature Crossed* BRANCH OF BIRCH CREEK *Longitude:* W 087°06.6'	No	Select Exception to Low Volume Standard recommended
Clay	00211 *Feature Carried:* FIRST STREET *Latitude* N 39°17.1'	1100176	Reinforced Concrete Girder and Beam *Feature Crossed* BRANCH OF CONNELEY DITCH *Longitude:* W 087°07.0'	No	Non-Select Individual review criteria not met
Clay	00301 *Feature Carried:* CR 200 WEST *Latitude* N 39°35.7'	1100237	Reinforced Concrete Girder and Beam *Feature Crossed* CONRAIL RAILROAD *Longitude:* W 087°09.1'	No	Non-Select Programmatically determined
Clay	00333 *Feature Carried:* LANKFORD STREET *Latitude* N 39°17.0'	1100242	Reinforced Concrete Girder and Beam *Feature Crossed* BRANCH OF CONNELEY DITCH *Longitude:* W 087°06.8'	No	Non-Select Individual review criteria not met
Clay	042-11-03101A *Feature Carried:* SR 42 *Latitude* N 39°267'	15790	Metal Thru Truss *Feature Crossed* EEL RIVER *Longitude:* W 86°597'	No	Select Programmatically determined
Clay	046-11-01313A *Feature Carried:* SR 46 *Latitude* N 39°233'	17020	Metal Pony Truss *Feature Crossed* BIRCH CREEK *Longitude:* W 87°77'	No	Non-Select Programmatically determined
Clay	046-11-01316A *Feature Carried:* SR 46 *Latitude* N 39°231'	17050	Metal Thru Truss *Feature Crossed* EEL RIVER *Longitude:* W 87°13'	No	Select Non-vehicular use
Clinton	00036 *Feature Carried:* 950 W *Latitude* N 40°19.6'	1200042	Concrete Arch *Feature Crossed* SOUTH FORK WILDCAT CREEK *Longitude:* W 086°41.1'	No	Non-Select Individual review criteria not met

Appendix F

Bridge Marketing Documentation

Prevost, Daniel

From: Brier, Dale [dbrier@dnr.IN.gov]
Sent: Thursday, March 07, 2013 10:36 AM
To: bob@summitcitybikes.com; mccain@carlnet.org; al.moll@cityoffortwayne.org; ligparks@ligtel.com; Amy Shetler; Angie Pool; anita@cityofdelphi.org; Anita Knowles; April Williams; Arthur Gale; russellb@fishers.in.us; Barry Yeakle; Belinda Hussong; bwagner@columbus.in.gov; Beverly Alexander; skyking24@hotmail.com; bcallahan@pdswireless.com; Brian Kaluzny, Clarksville; Brittnie Whitaker; bfingerhut@embarqmail.com; cajones@ci.gary.in.us; cjonsson@syracusein.org; ciceroparks@comcast.net; corner@franklin-in.gov; Chris.Johnson@portage-in.com; cjohnston@jcpark.org; Chris Owens; cstephenson@co.monroe.in.us; Cindy Murray; Clay Chafin; Allebach, Craig; rwalter@angolain.org; Daniel Dolezal; danteter@gmail.com; Fox, Dave; Dave Williams, Bloomington; David Stucker; dawn.ritchie@ci.ft-wayne.in.us; deanheise@comcast.net; denise.bard@huntington.in.us; Diana Virgil; dcolvin@indygov.org; Don Seal, Noblesville; Donald Sporleder; pierced@mchsi.com; Ed Allen; parks@terrehaute.in.gov; Eric Ellsperman; emartin@cityoflawrence.org; Evie Kirkwood; Fred Hoffman; Glenn Boberg, Evansville; Gloria Salavarria; greg@indianatrails.org; admin@loganparks.comcastbiz.net; jeffret@indy.rr.com; Jeff Ray; Jennifer Hotchkiss (Business Fax); Jim Rueger; jpayne@westlafayette.in.gov; Joe Tutterow; Joe Tutterrow; John and Lissa Milligan; John Bawcum; jmartino@cityofkokomo.org; John Messenger; John Novacich; John Seibert; Jon Garber; Joy Marley; Karen Martin; karin.frey@coei.org; keith.ruble@vigocounty.in.gov; kbuck@ci.jasper.in.us; Kevin Patmore; Laurence Brown; lneff@elkhartcounty.com; Lori Keys; mgreen@columbiacity.net; mheintz@townofdyer.com; Mark Salee; Mark Shields; Mark Westermeier; mjakubowski@whitingindiana.com; Martin,Pat; Matt Bailey; mdickey@zionsville-in.gov; Matt Sandy; Melody Jones; mikebottomley@comcast.net; Michael Hite; Michael Thurman; mick@sur-seal.com; Mike Clendenen; Mike Kuepper; Miriam and Steve Blane; mbarloga@nirpc.org; Mitch Billue; mmetz@lagrangecounty.org; Nancy Tibbett ; Nathan Messer; Pam Vanderkolk; parkone@kuntrynet.com; Phil Tevis, Cardinal Greenways, Inc.; pparnin@brownsburgparks.com; Phillip St. Clair ; Richard Stroup; itf@indianatrails.com; Rick Wagner; rcleveland@blackfordcoedc.org; Robert Barker; emailbobgreene@gmail.com; Robert Nickovich ; Roger Jeffers; rbanks@indygov.org; Ron Barnhart; Rory_Robinson@nps.gov; Rusty Conner; rweinschenk@cityofgreencastle.com; Sandy Heckard ; Scott Miller MD; Scott Zimmerman; info@ohiorivergreenway.org; Sheri Howland; springee@greenwood.in.gov; Stephen Krull; Ostby, Susan D.; Tamera Doty-Davis; tcparks@tippecanoe.in.gov; Ted Bumbleburg; Teresa Inman; tlee@fultondevelopment.org; Tim Morgan; Tim Peterson, ITF; Tom Tuley, Friends of Salt Creek; Tracy Doyle, Greenfield; Walter Lenckos; Walter Lenkos; Arin Shaver; Bill Knowles; Brier, Dale; Dave Hacker; George Mears; Jim Andrew; John J. Gettinger; Kara Kish; Ken Einselen; Kopp, Leah J; Larry J. Southard; Michael Beauchamp; Penny Cox; Ralph Weinzapfel; Rama Sobhani; Robert G. Shepherd; Ron Zartman; Ryan Noblitt; Scott Elzey; Steve Eberly; Faron Parr; Gerald Bledsoe; Josh Francis; Keith Fleckenstein; Keith Poole; Phil Cox; Rae Schnapp; Richard Beamer; Tom VanSickle
Cc: #DNR Properties; #DNR Outdoor
Subject: Spring Trail news
Attachments: Easy Guide.pdf; NTD General Fact Sheet.pdf

Greetings Trail people,

The last of the winter snow is melting and Spring is right around the corner.

I want remind everyone that National Trails Day is not as far away as it may seem, June 1 will be here before you know it and now is the time to start planning your events. Here is the official website for planning and registering your events. http://www.americanhiking.org/national-trails-day/ Remember, getting the word out helps bring in people. I've attached a couple of great documents to get you started. If you have any questions or would like more information, please feel free to contact

me at jmichels@americanhiking.org or by phone at 301-565-6704 x208. Thank you very much! I look forward to working with you to get more Americans outdoors!

The 2013 Purdue Road School was a success this year. For the first time ever, Trails and Greenways has a 5 session track on Wednesday and I'm happy to report that every session was full. It's great to see the transportation world taking an increased interest in trails and greenways.

The Indiana Bike summit is next week, it is not too late to register for it, March 11 is the deadline. http://bicycleindiana.org/summit.php

If you want to attend the premier trails even, the International Trails Symposium will be in Arizona this year. The 21st Symposium is April 14-17, 2013. http://www.americantrails.org/2013/index.html

For those looking for trail funding, the Recreational Trails Program (RTP) grant deadline is coming up May 1, 2013. If you have a project you would like to fund, contact Bob Bronson bbronson@dnr.IN.gov for more details.

The Mid America Trails and Greenways Conference will be in Chicago this year, not too far for most Hoosier to attend this great Conference. Save Oct 27 through Oct 30 on your calendars and look for registration to open up this summer.

I'd also like to help spread the word about a bridge opportunity for those who need one. Indiana has had many successes in relocating historic road bridges for use as trail bridges. These bridges can really bring a unique aspect to a greenway trail and are often cheaper than building a new bridge. For more information, contact Daniel Prevost at Daniel.Prevost@parsons.com

Location: The bridge currently carries SR 46 over the Eel River about 0.25 mile west of Bowling Green. Google Map

Bridge:

- Structure # 46-11-1316D
- 400 foot long Parker Truss (through truss) comprised of two 200 foot spans that could be used independently
- constructed in 1933
- 24 foot wide roadway, no existing sidewalk
- In 2000, the bridge was listed on the National Register of Historic Places

Condition: The bridge is currently in overall poor condition. Twice in the last two years, the bridge has been closed in order to make emergency repairs. The bridge has developed advanced deterioration, section loss and fatigue affecting critical load-bearing components.

Rehabilitation Requirements: The bridge is listed on the "Select List" of INDOT's Historic Bridge Inventory. This means that based on its historic quality and potential to be reused for non-vehicular traffic (bikes and pedestrians), that INDOT is obligated to keep the bridge in use in some manner. This obligation includes the requirement to pay for the rehabilitation (replacement of members, painting, etc.) of the bridge as well as any relocation costs. Any adopting entity would receive a bridge that has been rehabilitated to meet its intended use.

Please feel free to pass this email on to anyone who might be interested.

Dale Brier
Streams and Trails Section Chief
Division of Outdoor Recreation
Department of Natural Resources
402 W. Washington St. W271
Indianapolis IN, 46204
317-232-4072
www.IN.gov/dnr/outdoor

Indiana Department of Natural Resources

DIVISION OF OUTDOOR RECREATION

Prevost, Daniel

From: John Bawcum [jbawcum@live.com]
Sent: Friday, March 08, 2013 10:33 PM
To: Prevost, Daniel
Subject: Bridge
Attachments: 14-Bridge 3-23-11.jpg

Dan,
I read in an e-mail from Dale at DNR about a possible old bridge available for relocation for trail purposes. We might be interested in something like this. We have been exploring the possibility of errecting a bridge over State Road 14 in Winamac, Indiana inorder to carry our trail north and out of town to the Tippecanoe River State Park. This is the site of an old railroad overpast (underpass) that was taken out years ago. Keep in mind, we are just in the talk stages at this point. Attached is an artistic mock up of what we had in mind. To build something like this would cost $350,000 to $750,000. We don't have it. Do you have a ball park figure on what moving something like this old bridge would cost? Is there a rough cost per mile that we could reference?

Thank you for your time.

John Bawcum
President,
Friends of the Panhandle Pathway, Inc.

574-595-0819

www.panhandlepathway.org

W I N A M A C

Prevost, Daniel

From: John Bawcum [jbawcum@live.com]
Sent: Sunday, March 17, 2013 4:46 PM
To: Prevost, Daniel
Subject: RE: Bridge

Thank you.

From: Daniel.Prevost@parsons.com
To: jbawcum@live.com
Subject: RE: Bridge
Date: Sun, 17 Mar 2013 17:00:09 +0000

John –

I haven't forgotten about you. We received a couple inquiries in response to Dale's email. Both I and the INDOT project manager were out of town for a few days and we're still trying to sort out a few bigger project issues. So we haven't had a chance to reach out to those that inquired and certainly haven't made any decisions.

A couple items I'll toss out to keep in mind: It's likely that the bridge won't be available until 2016. As of now, we intend to leave it in place until the new one is in service. Also, keep in mind, each of the two segments is 200 feet long. It looked like your rendering had something like a 50-foot clear span. This would be a lot longer than that so you would need to consider the footprint and how to get ramps down to ground level. Also note that it has an approximately 24-foot clear width on the bridge and the truss is approximately 20 feet tall top-to-bottom. So it's noticeably more massive than what you've shown in the rendering. I'm not familiar with your site, so this may not be an issue, but I wanted to make sure you understood the size of this bridge.

Once the team gets together to discuss the issues further, I'll update you. If you don't hear anything in a couple weeks, by all means, please feel free to follow-up with me.

Thanks.

- Dan

Dan Prevost, AICP CTP
Principal Planner/Project Manager
PARSONS
Office – 317.616.1017 Mobile – 513.368.0514
daniel.prevost@parsons.com www.parsons.com

Sustainability is a Parsons Core Value.
Please consider the environment before printing this email.

From: John Bawcum [mailto:jbawcum@live.com]
Sent: Saturday, March 16, 2013 9:55 PM
To: Prevost, Daniel
Subject: Bridge

Dan,
I understand through Dale at DNR that there is a bridge available for trail use and you are the one to contact for more information. We have a state highway to carry our trail over. This might be our answer. Is it still available or did someone load it up in the bed of their truck and carry it away?

Kidding aside, I would like to discuss this.

Thank you,

John Bawcum
President,
Friends of the Panhandle Pathway, Inc.

www.panhandlepathway.org

Prevost, Daniel

From: cliff kunze [cliffkunze@hotmail.com]
Sent: Wednesday, March 20, 2013 4:20 PM
To: Prevost, Daniel
Subject: RE: Structure #46-11-1316D

Like "Manna from Heaven" your time frame sounds just like you scheduled it just for CBGTA. As I stated earlier, we plan to get our first mile completed in 2013. 2 miles down the railroad right-of-way we have Big Raccoon Creek, then in 2 more miles we have Little Raccoon Creek. This bridge would be quite a boost for the people of Parke County. If there is a anything we need to do in order to obtain this bridge, please let me know.

Thanks
Cliff Kunze

"Building a trail, one mile at a time."

From: Daniel.Prevost@parsons.com
To: cliffkunze@hotmail.com
Subject: Re: Structure #46-11-1316D
Date: Wed, 20 Mar 2013 19:07:45 +0000

Cliff -

Sorry about not responding more quickly. Don't worry - we haven't forgotten about you. I was on vacation and then ao was the INDOT project manager. We're still discussing the timing and approach for the project. I would expect that i would have some more info in a week or two.

One thing to keep in mind - we will be keeping the existing bridge in place until construction of the new bridge is complete. That means it would likely be mid 2016 before the bridge could be in place a its new location. You didn't mention your timeframe so I wanted to make sure you understood our schedule.

If you don't hear anything from me within two weeks or so, feel free to drop me a line to check in.

- Dan

Dan Prevost, AICP CTP
PARSONS
(513) 552-7013

On Mar 20, 2013, at 2:28 PM, "cliff kunze" <cliffkunze@hotmail.com> wrote:

> Dear Mr. Prevost,
>
> When I originally sent this letter, I received the your out-of-office response. I worry that these emails sometimes get lost in cyber space! I would appreciate it if you would let me know that you received this.
>
> Thanks
> Cliff Kunze
>
> *"Building a trail, one mile at a time."*

From: cliffkunze@hotmail.com
To: daniel.prevost@parsons.com
CC: dbrier@dnr.in.gov; cbgta2009@gmail.com
Subject: Structure #46-11-1316D
Date: Fri, 8 Mar 2013 16:51:08 -0500

Dear Mr. Prevost,

I have just received information from Dale Brier, the Streams and Trails Section Chief of the Division of Outdoor Recreation, about the possibility of obtaining a historic bridge located in Clay County. This opportunity might be a blessing for our young organization.

I should introduce myself. My name is Cliff Kunze. I serve on the Board of the Covered Bridge Gateway Trails Association and am also chairman of the Trail Development committee for CBGTA.

CBGTA has only been in existence since 2009. Recently, we received land through the rails to trails program. We are currently waiting for the Categorical Exclusion (CE) work to be completed for the Recreational Trails Program grant for which we have been approved. We are hoping to start this summer on the first mile of our portion of the longest loop trail in the United States. The first mile will be in the southern part of the county between Rosedale and the Parke/Vigo County line. Eventually, the Covered Bridge Gateway Trail will connect the National Road Heritage Trail and the B & O Trail thus looping Indianapolis, Terre Haute and Parke County. For additional information, go to our website at bikethebridges.org.

Our organization would be ecstatic to be able to acquire the bridge! Taking a quick look at the map, you will note that we will need to cross both Little Raccoon and Big Raccoon Creeks in order to continue north through Parke County.

I have no idea of how I should proceed. Please advise. I can also be reached at 765-498-1776.

Thank-you.

Best regards,
Cliff Kunze

" Building a trail, one mile at a time."

Prevost, Daniel

From: List, Mike [MList@dnr.IN.gov]
Sent: Friday, March 08, 2013 9:09 AM
To: Prevost, Daniel
Subject: State Rd. 46 Bridge over Eel River

Hi Daniel,
Indiana State Parks may a use for all or half of this bridge. Can you provide more details on the funding aspects of moving the bridge? Am I correct in thinking that INDOT will foot the cost to repair the bridge and the cost to move it to another site?
Thanks
Mike List
Indiana State Parks & Reservoirs
232-3348

PARSONS

INDIANA 46

Subject: SR 46 over Eel River, Clay County

Date/Time: April 10, 2013, 2:30 PM

Location: INDOT Central Office, Room N642

Attendees:

Ellie Dieckmeyer	INDOT-Crawfordsville District Project Manager
Shakeel Baig	INDOT-Director of Production
Anne Rearick	INDOT-Bridge Design, Inspection, Hydraulics Director
Louis Feagans	INDOT-Project Management Manger
Abigail Weingardt	INDOT-State and Federal Legislative Director
Patrick Carpenter	INDOT-Sec 106 Specialist
Susan Branigin	INDOT-Historian
Sean Porter	Parsons-Project Manager
Dave Ayala	Parsons-Road Lead
Dan Prevost	Parsons-Environmental Lead

Overview

This meeting was held to discuss the current direction for the SR 46 over Eel River Bridge.

Ellie handed an agenda with the following design alternatives identified:

1) Keep current alignment, move truss, use temporary run-around
2) New bridge on the current alignment using accelerated bridge construction.
   This alternative would only have a 30-45 day closure and make use of A+B construction to accelerate the construction
3) New alignment to south and move truss
4) New alignment to south and keep truss as pedestrian (i.e. sidewalk)
   It was discussed that the new alignment to south could have wetland impacts that will have cost and time effects. This potential wetland needs to be identified in the field ASAP.

ACTION ITEM: Parsons will schedule a field visit of the area.

The following two alternatives were added at the meeting:

5) New alignment to north and move truss
6) New alignment to north and keep truss as pedestrian (i.e. sidewalk)

Analysis of each alternative should consider:

- Cost including life cycle / user cost
- Time required building new bridge
- Time required moving old bridge

- Minimization of any closure periods
- Maintenance of Traffic Cost and sequence

Because the project involves a historic bridge, a Section 4(f) alternatives analysis and a public hearing will be required. The alternatives identified above will be considered along with those required by the INDOT *Historic Bridge Alternatives Analysis Layout*. Parsons will compile a complete list of alternatives to be evaluated for concurrence by INDOT. INDOT understands the bridge will be either bypass or be relocated, but the 4(f) alternative analysis will need to support whatever decision is made. The Section 4(f) alternatives analysis document will also serve as the project scoping alternative analysis.

It was discussed that DNR will split the trusses and this might be considered an adverse effect but other interested parties will most likely split them apart also. The conclusion was that DNR will most likely be given the truss bridge as it's another state agency and INDOT may use other state DNR funds to help move and rehab the bridges.

Patrick had mentioned that INDOT and DNR will need to execute an agreement for the maintenance of the bridges to be transferred. INDOT will be required to design and construct the new foundations and reassemble the bridges. DNR has already identified two locations, on the same recreational trail, where the trusses could be relocated.

The NEPA document for construction of the new bridge over the Eel River will need to incorporate all impacts associated with relocation of the bridge, including construction of foundations, etc.

The repairs will last until at least 2018 or beyond per Parsons. So the new bridge can be on a letting at the end of the year in 2015 or early 2016 with construction in calendar year 2016 & 2017.

Patrick had mentioned we will NOT have to post announcement signs on site as we do for other historic bridges since a new owner has already been identified. We will, however, be required to have a hearing.

Louis indicated that, under MAP 21, INDOT can use federal funds for ROW acquisition prior to completion of NEPA.

Abby will contact DNR to ensure we have management approval. (John Davis, DNR) She had also mentioned that there might be a news release about the project with general information.

Anne stated that we should assume the project will be required to meet 4R standards.

INDOT stated that central office will be doing the survey.

ACTION ITEM: Parsons will provide Ellie with the survey limits ASAP to get this started.

Without additional survey, Parsons wouldn't be able to get a profile, construction limits, earthwork, and get an accurate cost. This might delay the alternatives analysis document depending on how fast we receive this information. Assuming Parsons receives this survey by the first week of May the report will be completed by end of June 2013. Required coordination with DNR and the availability of information on the new pedestrian trail could also impact completion of the alternatives analysis document.

These meeting minutes were taken by Sean Porter. Please contact Sean at 317-616-1001 or sean.porter@parsons.com if you have any questions or corrections.

Meeting Concludes at 3:30 pm.

4-10-13

Name	Contact	
Ellie Dieckmeyer	765. 361.5258	INDOT
Patrick Carpenter	317 233-2061	INDOT
ANNE REARICK	317 232-5221	INDOT
SHAKEEL BALY	765-361-5241	INDOT
Susan Branigin	317-234-0142	INDOT
SEAN PORTER	317-616-1001	PARSONS
Dan Prevost	317-616-1017	Parsons
Dave Ayala	317 616 1006	Parsons
Abby Weingardt	317 234 8231	INDOT
Louis Feagans	317-232-5332	INDOT

INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N642
Indianapolis, Indiana 46204

PHONE: (317) 232-6601
E-mail: rclark@indot.in.gov

Michael R. Pence, Governor
Karl B. Browning, Commissioner

SR 46 BRIDGE OVER THE EEL RIVER
PUBLIC MEETING
January 29, 2015

Welcome!

Thank you for attending the public meeting this evening. We hope that you find it informative and that you use it as an opportunity to share your opinions regarding the project.

The bridge carrying SR 46 over the Eel River is severely deteriorated and must be improved. Twice in the last four years it has required temporary closure so that repairs could be made. INDOT regularly inspects the bridge and it is safe to use, but a more permanent solution is needed soon.

INDOT, the Federal Highway Administration (FHWA), and the consultant team have evaluated a wide range of options ranging from rehabilitation to replacement. Due to the design of the bridge, it would be cost-prohibitive to rehabilitate the bridge to carry the size and weight of trucks that need to use SR 46. As a result, INDOT and FHWA have determined that a new bridge is needed.

Because the bridge is listed on the National Register of Historic Places and was identified as a "Select" bridge in the Indiana Historic Bridge Inventory completed in 2009, INDOT is obligated to find a new use for the existing bridge. Two appropriate options remain:

- Rehabilitate the existing bridge at its existing location for use as a park, trail, or other public use (Alternative 4)
- Rehabilitate the bridge and relocate it to another location in the State for a similar use (Alternative 5)

Both of these alternatives would provide a new bridge to safely carry SR 46 over the Eel River for several generations and minimize impacts during construction.

The purpose of tonight's meeting is to provide the community with an overview of the project and to gather input regarding the most appropriate re-use for the existing bridge once a new bridge is built to carry traffic on SR 46. INDOT and FHWA are seeking an organization (public or private) that will put the bridge to public use and take responsibility for its upkeep. Specifically, the following is required:

1. The bridge must be put to a public use (park, pier, trail, etc.);
2. The organization must be willing to sign an agreement to take responsibility for the bridge for a minimum of 25 years, with the expectation that it would be maintained beyond that; and
3. The organization must make a firm commitment to sign that agreement within 60 days so that the project can move forward promptly.

There are several ways you can provide comments:

1. Participate during the public comment session following the presentation.
2. Complete one of the comment forms (available at the sign-in table) and return it to any of the INDOT representatives attending the public meeting.

INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N642
Indianapolis, Indiana 46204

PHONE: (317) 232-6601
E-mail: rclark@indot.in.gov

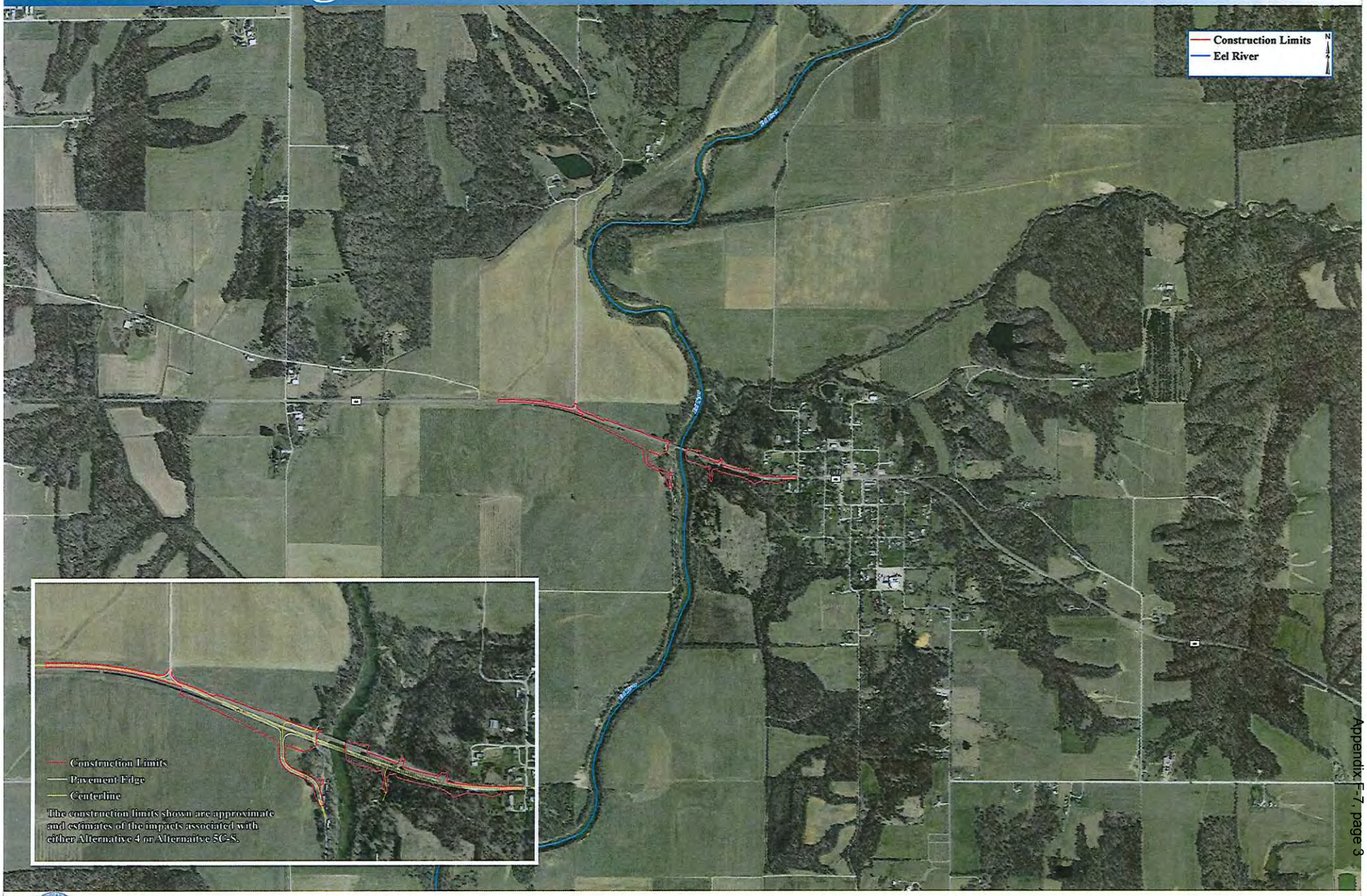
Michael R. Pence, Governor
Karl B. Browning, Commissioner

3. Mail your comments to: S.R. 46-Eel River Project, c/o Parsons, 101 West Ohio Street, Suite 2121, Indianapolis, Indiana 46204; FAX (317) 616-1033. **INDOT respectfully requests comments be submitted by Friday, March 6, 2015.**
4. Comments may be e-mailed to Parsons (INDOT's consultant) at: daniel.prevost@parsons.com.

All public comments submitted during the comment session or during the public comment period will be given full consideration by the INDOT project team as part of the decision making process.

Rickie Clark, INDOT Office of Public Involvement
rclark@indot.in.gov (317) 232-6601

SR 46 Bridge Over the Eel River



Indiana Department of Transportation

PARSONS

1/29/2015

State Road 46 Bridge over the Eel River

Bowling Green Community Building

Thursday, January 29, 2015

Welcome

- **Meeting Purpose**
  - Overview of project and alternatives
  - Gather public input
- **Project Team**
  - FHWA
  - INDOT
  - Consultant Team

Presentation Outline

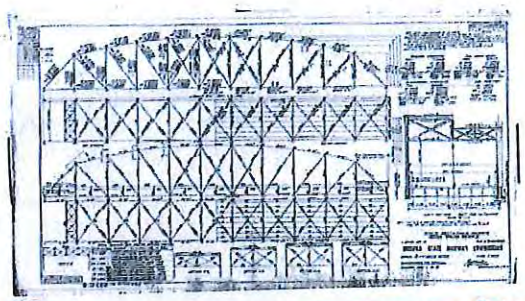
- **Project Overview and History**
- **Section 106 and Historic Bridge Process**
- **Project Alternatives**
- **Schedule**

Project Overview and History

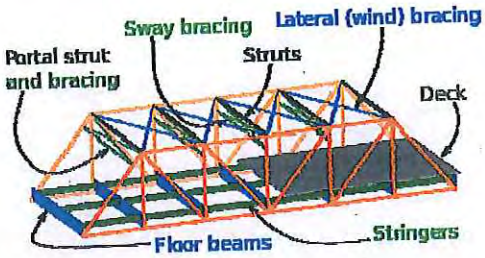
Project Overview and History

Project Overview and History

Original Design



Truss Bridge Terminology

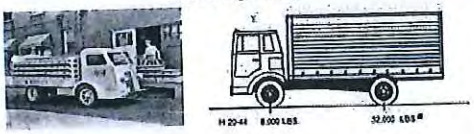


Truss Bridge Terminology

Gusset Plate

Design Loads

1934 Design Truck



2015 Design Truck

Bridge Inspection

- **Inspection Frequency (minimum)**
  - All bridges – every 2 years (FHWA requirement)
  - Fracture Critical Bridges – every year (INDOT requirement)
- **Fracture-Critical**
  - A bridge that has non-redundant features
  - If those key supports fail, the bridge would be in danger of collapse.
  - This does not mean the bridge in inherently unsafe, only that there is a lack of redundancy in its design.

Recent Inspection History

- **2011 Closure, Detour and Repair**
  - Failed gusset plates
  - Closed for 1 month for repair
- **2012 Closure, Detour and Repair**
  - Superstructure at risk
  - Closed for 3 months for repair
  - Repair Service Life: minimum 5 years

Current Condition

Damaged Sway Bracing

Current Condition

Connection Plate

Current Condition

Interior Gusset Plate

Current Condition

Interior Gusset Plate

Current Condition

Lateral Bracing

Current Condition

Truss Vertical

Current Condition

Rusting on Chord

Current Condition

West span of bridge, looking north

Current Condition

SR 46 bridge during 4/19/2013 flood event, looking northeast

Purpose and Need

- **Need for the Project:** Advanced deterioration, section loss, and fatigue affecting critical load-bearing components of this fracture critical bridge
- **Project Purpose:** To provide a safe and structurally sufficient bridge

Purpose and Need

- **Other desired outcomes:**
  - Hydraulic improvements/scour countermeasures
  - Standard lane widths/shoulders
  - Improved intersection at CR 475 East
  - Standard guardrail
  - Minimization of closures for construction, inspection, or repair

SR 46 Bridge is Historic

- **Listed in the National Register of Historic Places**
- **Significant under Criterion A "for its association with events in the settlement and economic development of Clay County, Indiana"**

Section 106 Process

- **National Historic Preservation Act (1966)**
  - Section 106: Federal agency must take into account the effects of the undertaking on historic properties (National Register of Historic Places eligible or listed)
  - Provide Advisory Council on Historic Preservation the opportunity to consult

Historic Bridges in Indiana

- **Modified Section 106 consultation process**
- **All historic bridges in Indiana categorized as Select or Non-Select**
- **Select Bridges: "most suitable for preservation and are excellent examples of a given type of historic bridge"**
- **FHWA will not participate in the demolition of a Select Bridge**
- **Follow procedures for each type outlined in the Programmatic Agreement**

SR 46 Bridge is "Select"

- **Historic Bridge Inventory lists the bridge as "Select" and appropriate for "Non-Vehicular Use"**

Alternatives Analysis

1. **No Build**
2. **Rehab for continued vehicular use**
3. **Rehab for continued vehicular use/one-way pair**
4. **Bypass/non-vehicular use**
5. **Bridge Replacement/Relocation of Historic Bridge**
   - 5A – Replacement on existing alignment, full detour
   - 5B-N – Replacement on existing alignment, temp bridge to the North
   - 5B-S – Replacement on existing alignment, temp bridge to the South
   - 5C-N – Replacement on new alignment to the North
   - 5C-S – Replacement on new alignment to the South

Alternative 1

- **Alternative 1 – No Build**
  - Would make no improvements
  - 2012 repair expected to last 5+ years (INDOT monitoring)
  - Likely closed in 2017 or later
- **INDOT and FHWA have determined that these alternatives would not meet the project's purpose and need**

Alternatives 2 and 3

Alternative 2 – Rehab for continued vehicular use

Alternative 3 – Rehab for continued vehicular use/one-way pair

- **Both would continue vehicular use**
  - *Possible* to rehabilitate the bridge
  - *Cost-prohibitive* to rehabilitate the bridge to carry current standard loads
- **INDOT and FHWA have determined that these alternatives would not meet the project's purpose and need**

Alternative 4

Alternative 4 – Bypass / Non-Vehicular Use

Alternative 4

Alternative 4

Alternative 4

- **New Bridge**
  - Immediately south of existing bridge
- **Two lanes of traffic maintained during construction**
- **Existing Bridge**
  - Rehabilitation for pedestrian use
  - Less intensive repairs than rehab for vehicle use
  - Rehabilitation effective for 25+ years
- **Total Cost: $10,342,000**

Alternative 4

- **Purpose and Need**
  - ✓Structural capacity
- **Other Desired Outcomes**
  - ✗ Hydraulic improvements
  - ✓Standard lane widths/shoulders
  - ✓Improved intersection at CR 475 East
  - ✓Standard guardrail
  - ✓Minimization of closures for construction, inspection, or repair

Alternative 4

- **Hydraulic Issues**
  - West Abutment Location
    - New bridge abutment ideally moved further west
    - If existing bridge remains, the new abutment would be required to be parallel to the existing one
    - Subject to future scour issues requiring maintenance
  - Not practical to address freeboard deficiency
- **Issues are not insurmountable, but would increase future maintenance requirements**

Alternative 5C-S

Alternative 5C-S – Bridge Replacement on New Alignment to the South

Alternative 5C-S

- **New Bridge**
  - Immediately south of existing bridge
  - Properly aligned with and sized for the channel
- **Two lanes of traffic maintained during construction**
- **Existing Bridge Relocated**
- **Cost: $9,745,000**

Alternative 5C-S

- **Purpose and Need**
  - ✓Structural capacity
- **Other Desired Outcomes**
  - ✓Hydraulic improvements
  - ✓Standard lane widths/shoulders
  - ✓Improved intersection at CR 475 East
  - ✓Standard guardrail
  - ✓Minimization of closures for construction, inspection, or repair

Alternatives Summary

	Alternative 4	Alternative 5C-S
Meets Purpose and Need	Yes	Yes
Other Desired Outcomes	Yes, except hydraulics	Yes
Cost	$10,342,000	$9,745,000
Existing Bridge	Pedestrian Use – Existing Location	Pedestrian Use – Alternate Location

Pedestrian Bridge Consultation

- **INDOT Project Manager contacted Clay County in 2010**
- **Clay County was not interested in keeping the bridge or moving it to a park or trail**
- **INDOT contacted IDNR Recreational Trails Program to identify alternate location**
- **Three organizations expressed interest**
- **Salt Creek Trail (Brown County) determined best option**

Salt Creek Trail

1/29/2015

Consulting Parties

- **December 2014 Consulting Party Meeting**
- **Interest in keeping bridge in existing location or elsewhere in Clay County**
- **Previous coordination with Clay County was more than 4 years ago**
- **Additional outreach appropriate**

INDOT-FHWA Goals

- **Agree with preference for location in Clay County (existing or other)**
- **Bridge must be put to public use (park, trail, etc.)**
- **Project must move forward promptly**

Requirements

- **In order for Alternative 4 or 5C-S to be considered prudent, FHWA has determined the following requirements must be met:**
  1. Public use of bridge
  2. Public or Private Organization willing to take responsibility of the bridge for a minimum of 25 years, with expectation of longer-term commitment
  3. Firm commitment within 60 days of intent to sign an agreement and demonstrate financial capacity

Financial Requirements

- **INDOT will rehabilitate the Existing Bridge to pedestrian standards**
  - Replacement of deficient members
  - New deck
  - New paint
  - Anticipated life: 25+ years
- **Requirements**
  - Minimal repairs may be required
  - Routine inspections

Schedule

March 30, 2015	Deadline for commitment to take ownership
Spring/Summer 2015	Preliminary engineering/environmental review
Summer 2015	Public Hearing
Fall 2015-Summer 2016	Land acquisition/final design
October 2016	Construction letting
December 2017	New bridge open to traffic
July 2018	Existing bridge rehabilitated (and relocated, if relevant)

Thank You

- **Ways to contact the project team**
  - **Comment forms**
  - **Email/Phone**
- **Thank you for attending**

Dan Prevost
Public Outreach Lead
Parsons
317-616-1017
daniel.prevost@parsons.com

8

INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N642
Indianapolis, Indiana 46204

PHONE: (317) 232-6601
E-mail: rclark@indot.in.gov

Michael R. Pence, Governor
Karl B. Browning, Commissioner

Please submit written comments by using the comment form provided. **INDOT respectfully requests comments be submitted by Friday, March 6, 2015.** Thank you for your attendance this evening.

PROJECT: S.R. 46-Eel River Project

MEETING DATE: Thursday, January 29, 2015

NAME: _____

COMMENT: _____

SIGNATURE: _____

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2	& TOM PRIONAS PETER & KIKI PRIONAS	7075 W. JACKSON ST INDIANAPOLIS IN 46241	TPRIONAS@AOL.COM 317-847-8349 } TOM 317-241-7386 - P&K
3	Vickie Mace	234 E Material Brazil IN 47834	VMACE72@gmail.com
4	P.J. Nicoson	241 E Co Rd 1005 Center Point	pjnicoson@aol
5	J. Pell	11814 N CR 200 E Brazil, IN 47834	
6	Nias & Bridgett Alltop	471 N County Rd 775 E Bowling Green, In 47833	alltopn@yahoo.com
7	Paul & Lara Horn	2915 Mitten RD Bowling Green In	
8	Madonna Campbell	1636 W County Rd 450 N Brazil Ind 47834	
9	Charles Schroer	1380 Smithville Rd Bowling Green Ind	
10	Bryan Allen	2225 W. Co. 550 N BRAZIL, IN. 47834	

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	NAME	ADDRESS	E-MAIL
1	Janine Mullinix	510 W. Fairway Dr. Brazil IN 47834	jlmullinix@msn.com
2	Greg Mullinix	" "	gregmullinix@msn.com
3	Robert L. Shelton	311 E 7 St. Clay City 47841	
4	Regina R. Roper	325 E Co. RD. 175 S Centre Point 47840	
5	Bill Cardwell	325 E CO RD 175 S Centre Point, In 47840	
6	Joseph Durga	5337 E. Washington St. Bowling Green In	
7	Jim Wilkinson	5141 E ST RD 46 Bowling Green, IN 47833	
8	Robert Gill	375 S. CLAY ST Bowling GREEN, IN. 47833	
9	Robert Lamb	348 Monroe Bowling Green, IN 47833	rlamb@CCRCT.com CCRT.com
10	Kelcy Cook	786 S. CR. 550 E. Bowling Green IN 47833	

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1	Jeanne Navel Troy BARRIX	5453 E. Co. Rd 150S Bowling GREEN, IN 47833	JEANNENAVEL@YAHOO.COM
2	Katie Barnard	5967 W. St. Rd. 340 Brazil, IN 47834	Krebman1126@yahoo.com
3	W.R MAINES	1843 N. Bowling Green Poland Rd Bowling GREEN, IN 47833	
4	Jeff Koehler	2544 N Co Rd 200E Center Point, IN 47840	
5	Donna Hostetler	6555 N. State Rd 59 Brazil, In. 47834	
6	OWEN D. CHAMBERS	5987 E. MILL ST. BOWLING GREEN IN 47833	
7	Vernon Sauder	2601 MT Zion Rd Bowling Green, IN 47833	VJ Sauder@yahoo.com
8	Mike & Pat Wilkerson	3477 E. Co Rd 200 N; Center Point, IN	
9	James & Amber Schoppmeyer	175 S Jefferson St BG, IN 47833	
10	Rose Warrell	PO Box 7 Center Point, IN 47840	

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2	[illegible] Johnson	3051 Mt Zion Rd Bowling Green In	
3	Tony Feingold	7336 W ST RD. 59 BRAZIL	
4	Harvey Roscoe	8267 N. ST Andrews Dr BRAZIL	herv615@aol.com
5	Donna Roscoe	8267 N. St Andrews Dr Brazil IN 47834	djr714@yahoo.com
6	James B Union	T. H.	X
7	[illegible]	Bowling Green	
8	Christie J. Coopridr	5458 E. CR 25 So. B. Green In 47833	N/A
9	James A Anderson	7553 So-CR 900 W Reelsville, IN 46171	NONE
10	Joe A. Hoffman	1471 S. Co. Rd. 375E. Center Point, In. 47840	

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	NAME	ADDRESS	E-MAIL
1	Roberta Buell	8100 E St. Rd. 46	
2	Paul Sinders	776 E CR 900 S Clay City 47841	PSinders@gmail.com
3	Ruth Fischer	3153 E Co Rd 100S Centerpoint In.	
4	Erin Pugh	901 Wabash Ave Suite 140 Terre Haute, IN 47807	Erin.Pugh@mail.house.gov
5	John O MARTIN	4301 Anderson Rd Bowling Green IN 47833	
6	Yates Clark	3733 N PR 450E Centerpoint IN 47840	yclark@bemis.com
7	Polly Spiegel	4410 North Pennsylvania St Indianapolis, IN 46205	ppspiegel@gmail.com
8	Ken Killion	0215 County Rd 375E Center Point 47840	sumhillkk@Gmail.com
9	Richard Dierdorf	2599 W Co Rd 300 N Brazil 47834	REDierdorf@joink.com
10			

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	NAME	ADDRESS	E-MAIL
1	Mindy & Doug Huffman	2121 E County Rd 300 N Center Point, IN 47840	
2	Gretchen Stevens	5640 E River Rd B.G. 47833	
3	Paul Miller	276 S Montgomery St BG 47833	
4	Deacha Rector Kenny Rector	786 S Co Rd 375 E Center Point 47840	
5	Robert Hostetler	2454 N Sonnefield Rd CP. IN 47840	
6	Debbie Hostetler	2454 N. Sonnefield Rd. Centerpoint 47840	
7	Josh & Clayton Rector	1078 S. County Rd. 375 E Centerpoint, IN 47840	
8	Elnora & STEVE CARLIN	7241 W. ST. Rd. 46 Bowling Green, IN 47833	
9	Kim Smith	~~2800 Ruth~~ 449 Ohio Terre Haute IN 47807 (Indiana Landmarks)	
10	Wilmadean Schepper	112. Park PL Drive Brazil, IN	

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	NAME	ADDRESS	E-MAIL
1	Karen E. Stearley	PO BOX 422 Center Point IN 47840	
2	D.J. Smith Jr.	5842 E. C.R. 100 S. Bowling Green, In 47833	djsmithjr@IEndeavor.com
3	Greg Jordan	8386 E. CR. 100 S. Bowling Green, In. 47833	gjordan@ceresllp.com
4	WILLIAM CARLIN	7400 W. ST. RD. 46 BOWLING GREEN, IN. 47833	
5	Steven Carlin	7241 W SR 46 Bowling Green In	
6	Tommy Kleckner - Indiana Landmarks	669 Ohio St. Terre Haute IN. 47807	
7	Wayne Jones	2317 S. Co. Rd 750E Bowling Green, In 47833	
8	Trenity + Megan Shaw	2065 N. B.G. Poland Rd Bowling Green In 47833	
9	Walter Graham	Bowling Green In 47833	—
10	Jennifer Lee	Bowling Green	

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	NAME	ADDRESS	E-MAIL
1	Jackie Woolf	516 S Co 550 E Bowling Green IN	Jackiesuewoolf a Gmail.com
2	Billy Woolf	5295 mulberry Dr Bowling Green	
3	Bert Geswein	11050 N Merom Rd Brazil	bertgeswein@yahoo.com
4	Kim M Erwin	5900 E CR 25 S. Bowling Green	BKERWIN@CCRTC.COM
5	Robert Erwin	5900 E CR 25 S Bowling Green	
6	Jason Kinney	509 N. Washington St. Spencer, IN 47460	jakinney@umail.iu.edu
7	Sue Lightfoot	5748 E CR 100S Bowling Green IN 47833	lightfoot@indeavor.com
8	Nancy Lankford	6275 E Co Rd 100S Bowling Green IN 47833	lankford@ccrtc.com
9	Shondra Barrett	535 E National Ave Brazil, IN 47834	info@claycountychamber.org
10	Susan Barrett	4303 W Co Rd 300S Cory, IN 47846	

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	NAME	ADDRESS	E-MAIL
1	Ross Nelson	9376 Castlegate Dr Indianapolis IN 46256	rnelson@ascgroup.net
2	Dave Stearley	3370 N CR.300 E Center Point IN 47840	David Stearley@hotmail.com
3	Marlin Schopper	6007E Co. Rd. 100S. Bowling Green. IN 47833	
4	Donald & Elaine Brown	1492 N Co Rd 200E Center Point, IN 47840	
5	Edward & Donna Burt	1011 N. Central Ave Brazil IN 47834	EABURT48@GMAIL.com
6	D. Frisz	695 N. Pioneer Rd Center Point IN 47840	friszdjds@iendeavor.com
7	Kristin Scott Michael Scott	457 S CR 800 E Bowling Green IN 47833	Ksunshine17@aol.com
8	Joe Edwards	1592 E. Co. Rd. 400 S. Clay City, IN. 47841	
9	Tiffany & Brent Wheeler	11050 Graham Rd. Bowling Green, In 47833	TWheeler-12@aol.com
10	James + Bethann Price	1402 S. 700 E. Bowling Green, In 47833	jbprice@ccrtc.com

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	NAME	ADDRESS	E-MAIL
1	GARY JENKINS	13759 VAN BUREN PL FISHERS	GARYKJENKINS@GMAIL.COM
2			
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7			
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	NAME	ADDRESS	E-MAIL
1	Jessica Miller INDOT	185 Agrico Lane Seymour IN 47274	Jesmiller@indot.in.gov
2			
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7			
8			
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10			

INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N642
Indianapolis, Indiana 46204

PHONE: (317) 232-6601
E-mail: rclark@indot.in.gov

Michael R. Pence, Governor
Karl B. Browning, Commissioner

NOTICE OF PUBLIC MEETING

The Indiana Department of Transportation (INDOT) will hold a public meeting on Thursday, January 29, 2015, at 6:00 pm at the Bowling Green Community Building, 5230 East Washington Street, Bowling Green, Indiana 47833.

The purpose of the public meeting is to offer all interested persons an opportunity to comment on alternatives under consideration for the SR 46 Bridge over the Eel River, 2.8 miles east of SR 59, located in Clay County. Improvements to the bridge are required to address the advanced deterioration affecting critical load-bearing components of the bridge. Bridge No. 046-11-01316C, a steel Parker through truss bridge with concrete abutments, a steel superstructure, and a concrete deck, is listed in the National Register of Historic Places (National Register) under Criterion A for its role in the development of Clay County. As part of the Indiana Historic Bridge Inventory project, the bridge was determined to be Select for Non-Vehicular Use. Select bridges are those that are most suitable for preservation and are excellent examples of a given type of historic bridge. The designation as Select for Non-Vehicular Use indicates that the Historic Bridge Inventory recognized that the load capacity and roadway width of this bridge does not make this bridge suitable for continued use.

INDOT has evaluated a range of alternatives for this bridge including: (1) a do-nothing or 'No Build' alternatives, (2) rehabilitation for continued vehicular use, (3) rehabilitating the bridge for use a part of a one-way pair of bridges, (4) bypassing the existing bridge with a new, adjacent bridge, retaining the existing one for non-vehicular use, or (5) constructing a new bridge and relocating the existing bridge to an alternate location for non-vehicular use. INDOT has determined that alternatives 1, 2, and 3 are not prudent, due to the load capacity of the existing bridge. Alternative 4 may be prudent depending on local support for maintaining the bridge and identifying a public use. Alternative 5 is a prudent alternative and could involve relocating the bridge to another location in Clay County or elsewhere in the state. **The goal of this meeting is to determine the public's interest in retaining the bridge in its existing location (Alternative 4) or relocating it to another location (Alternative 5).**

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This meeting is not the last opportunity for agencies or the public to comment on the project. INDOT is in the process of developing conceptual plans and the required environmental documentation under the National Environmental Policy Act and Section 106 of the National Historic Preservation Act. When that documentation is complete, a formal public hearing will be held to provide an opportunity to comment on the preferred

INDIANA DEPARTMENT OF TRANSPORTATION

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alternative and anticipated impacts prior to INDOT and the Federal Highway Administration making a final decision.

WINTER WEATHER NOTE:

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In accordance with the "Americans with Disabilities Act", if you have a disability for which the Indiana Department of Transportation would need to provide accommodation for, in terms attendance and participation during the meeting, please contact the Office of Public Involvement by Thursday, January 22, 2015.

INDOT looks forward to meeting with the community on Thursday, January 29, 2015 at 6:00 p.m.

Rickie Clark, Indiana Department of Transportation, Office of Public Involvement / Central Office Communications Division, 100 North Senate Avenue, Room N642, Indianapolis, Indiana 46204
Phone: (317) 232-6601 **Email:** rclark@indot.in.gov

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January 14th
January 21st

Additionally, our newspaper has a website and this public notice was posted on the same day(s) as it was published in the newspaper.

Edie Burgess

Date: January 21st, 2015

Title: PUBLISHERS REPRESENTATIVE

Wright, Mary

From: State of Indiana [indiana@subscriptions.in.gov]
Sent: Friday, January 09, 2015 3:13 PM
To: Wright, Mary
Subject: Public Meeting regarding the S.R. 46 Bridge over the Eel River, 2.8 miles east of S.R. 59 in Clay County

The Indiana Department of Transportation (INDOT) will hold a public meeting on Thursday, January 29, 2015, at 6:00 pm at the Bowling Green Community Building, 5230 East Washington Street, Bowling Green, Indiana 47833.

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INDOT looks forward to meeting with the community on Thursday, January 29, 2015 at 6:00 p.m.

Rickie Clark, Indiana Department of Transportation, Office of Public Involvement / Central Office Communications Division, 100 North Senate Avenue, Room N642, Indianapolis, Indiana 46204; **Phone:** (317) 232-6601 **Email:** rclark@indot.in.gov

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Clark, Rickie

From: State of Indiana [indiana@subscriptions.in.gov]
Sent: Friday, January 09, 2015 3:12 PM
To: Hoff, Andrew; mbuchanan@www.in.gov; Gearlds, Nicole; Clark, Rickie; Daniels, Kathryn; cvia@egov.com; Lubsen, Graig; Akers, Zachary; Watts, Nira; Duncan, Emily (LG)
Subject: Courtesy Copy: Public Meeting regarding the S.R. 46 Bridge over the Eel River, 2.8 miles east of S.R. 59 in Clay County

This is a courtesy copy of an email bulletin sent by Rickie Clark.

This bulletin was sent to the following groups of people:

Subscribers of Transportation - Meetings & Hearings (777 recipients)

The Indiana Department of Transportation (INDOT) will hold a public meeting on Thursday, January 29, 2015, at 6:00 pm at the Bowling Green Community Building, 5230 East Washington Street, Bowling Green, Indiana 47833.

The purpose of the public meeting is to offer all interested persons an opportunity to comment on alternatives under consideration for the SR 46 Bridge over the Eel River, 2.8 miles east of SR 59, located in Clay County. Improvements to the bridge are required to address the advanced deterioration affecting critical load-bearing components of the bridge. Bridge No. 046-11-01316C, a steel Parker through truss bridge with concrete abutments, a steel superstructure, and a concrete deck, is listed in the National Register of Historic Places (National Register) under Criterion A for its role in the development of Clay County. As part of the Indiana Historic Bridge Inventory project, the bridge was determined to be Select for Non-Vehicular Use. Select bridges are those that are most suitable for preservation and are excellent examples of a given type of historic bridge. The designation as Select for Non-Vehicular Use indicates that the Historic Bridge Inventory recognized that the load capacity and roadway width of this bridge does not make this bridge suitable for continued use.

INDOT has evaluated a range of alternatives for this bridge including: (1) a do-nothing or 'No Build' alternatives, (2) rehabilitation for continued vehicular use, (3) rehabilitating the bridge for use a part of a one-way pair of bridges, (4) bypassing the existing bridge with a new, adjacent bridge, retaining the existing one for non-vehicular use, or (5) constructing a new bridge and relocating the existing bridge to an alternate location for non-vehicular use. INDOT has determined that alternatives 1, 2, and 3 are not prudent, due to the load capacity of the existing bridge. Alternative 4 may be prudent depending on local support for maintaining the bridge and identifying a public use. Alternative 5 is a prudent alternative and could involve relocating the bridge to another location in Clay County or elsewhere in the state. **The goal of this meeting is to determine the public's interest in retaining the bridge in its existing location (Alternative 4) or relocating it to another location (Alternative 5).**

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WINTER WEATHER NOTE: In the event of hazardous winter weather causing hazardous driving conditions, this meeting would be rescheduled (if necessary) on Saturday, January 31, 2015 at the same location as listed above , but with a starting time of 1:00 p.m. In the event of inclement weather, please call the INDOT Office of Public Involvement at (317) 232-6601 to find out if the meeting will be held or rescheduled.

In accordance with the "Americans with Disabilities Act", if you have a disability for which the Indiana Department of Transportation would need to provide accommodation for, in terms attendance and participation during the meeting, please contact the Office of Public Involvement by Thursday, January 22, 2015.

INDOT looks forward to meeting with the community on Thursday, January 29, 2015 at 6:00 p.m.

Rickie Clark, Indiana Department of Transportation, Office of Public Involvement / Central Office Communications Division, 100 North Senate Avenue, Room N642, Indianapolis, Indiana 46204; **Phone:** (317) 232-6601 **Email:** rclark@indot.in.gov

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Clark, Rickie

From: Clark, Rickie
Sent: Friday, January 16, 2015 3:59 PM
To: 'bryan.allender@frontier.com'; 'psinders@gmail.com'; 'fenwickt@claycountyin.com'; 'stultzb@claycountyin.gov'; 'maryjo@claycountyin.gov'
Cc: Barbknecht, Nick; Calder, Debbie
Subject: Public Meeting regarding the S.R. 46 Bridge over the Eel River, 2.8 miles east of S.R. 59 in Clay County

INDIANA DEPARTMENT OF TRANSPORTATION

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Rickie Clark, Indiana Department of Transportation
Office of Public Involvement / Central Office Communications Division
100 North Senate Avenue, Room N642
Indianapolis, Indiana 46204
Phone: (317) 232-6601
Email: rclark@indot.in.gov

Clark, Rickie

From: Clark, Rickie
Sent: Friday, January 16, 2015 3:54 PM
To: House District 44; House District 46; House District 43; Senate District 38; Senate District 39
Cc: Alderman, Robert; Barbknecht, Nick; Calder, Debbie
Subject: Public Meeting regarding the S.R. 46 Bridge over the Eel River, 2.8 miles east of S.R. 59 in Clay County

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[INDOT] Public Meeting regarding the SR 46 Bridge over the Eel River, 2.8 miles east of SR 59 in Clay County

Start Date: 1/29/2015 **Start Time:** 6:00 PM
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Entry Description

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concrete deck, is listed in the National Register of Historic Places (National Register) under Criterion A for its role in the development of Clay County. As part of the Indiana Historic Bridge Inventory project, the bridge was determined to be Select for Non-Vehicular Use. Select bridges are those that are most suitable for preservation and are excellent examples of a given type of historic bridge. The designation as Select for Non-Vehicular Use indicates that the Historic Bridge Inventory recognized that the load capacity and roadway width of this bridge does not make this bridge suitable for continued use.

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SAVE OUR BOWLING GREEN BRIDGE (/)

THE FUTURE.

With a little vision, this grand monument can be a great source of community pride. Located on the Eel River, many possibilities exist for creating a recreational attraction. To accomplish this goal, all we need is to visualize a dream. Here is the beginning of this dream:

Sporting

-Fish from the bridge or your boat.
-Grab a canoe, kayak, or tube to float down the river.

Special Occasions

-Gather for weddings, reunions, and other occasions.
-Capture the historic setting as a perfect backdrop for pictures.

Nature Park

-Picnic with friends or family.
-Hike through the bridge and enjoy the scenic view of the river.

Nearby Attractions

-Explore historic Bowling Green.
-Combine a bridge visit with other nearby locations (McCormick's Creek State Park, Wineries, Historic Tivoli Theater, Owen-Putnam State Forest, and others).

The possibilities are endless... Help make this dream come true!

Categorical Exclusion
SR 46 Bridge Project over Eel River, Des. No. 0800910
I-451

Future - Save Our Bowling Green Bridge

CREATE A FREE WEBSITE (HTTP://WWW.WEEBLY.COM/?UTM_SOURCE=INTERNAL&UTM_MEDIUM=FOOTER&UTM_CAMPAIGN=3)

Troubled bridge is subject of INDOT meeting

Thursday, January 29, 2015
By Frank Phillips, Times Reporter

BOWLING GREEN -- An information meeting was conducted Thursday night about a troubled bridge on S.R. 46 over the Eel River.

The Indiana Department of Transportation (INDOT) conducted the meeting about the structure destined to be replaced or reduced to carrying half the traffic that travels over it now. Or, some hope, it could be used as the centerpiece of a recreational area at the town that served for years as Clay County's seat.

One thing is sure, it will not continue to be the sole means for cars and trucks crossing the Eel River at Bowling Green.

An estimated 140 people crowded into the Bowling Green Community Center by 6 p.m. for the meeting

Rickie Clark, director of public involvement for INDOT, conducted the meeting. A public hearing will be called this summer when a definite plan of attack for the bridge project is presented.

The meeting was separated into two parts: a slide presentation and a time for public comment.

The slide presentation was available in printed form, and, on Thursday, it was posted on the INDOT website, Clark said. The presentation revealed that the existing bridge will continue to be used until a new bridge, likely built of concrete, is constructed.

Because the bridge is listed on the National Register of Historic Places and was identified as a 'Select' bridge in the Indiana Historic Bridge Inventory completed in 2009, INDOT is obligated to find a new use for the existing bridge," stated a handout. "Two appropriate options remain:

"* Rehabilitate the existing bridge at its existing location for use as a park, trail, or other public use.

"* Rehabilitate the bridge and relocate it to another location in the State for a similar use."

The only way the bridge will remain in place for pedestrian traffic is for a public or private group to commit to maintaining it for at least 25 years, according to INDOT.

INDOT projected the cost to a group to keep the bridge in place to be $100,000 in 10 years for periodic repair to the steel structure and $500,000 in 25 years for cleaning and painting the bridge, stated Dan Provost of Parsons Corp., a company that works with INDOT on bridges in this area of Indiana.

Slides were shown depicting damages to the bridge that can only be seen from beneath it.

Five possible outcomes for the bridge were discussed:

* Nothing is done. In that case, the bridge will likely be closed to all traffic in 2017.

* Rehab the bridge for vehicular use. However, INDOT and the Federal Highway Administration have determined it will be "cost-prohibitive" to do so.

* Build a second bridge next to the current bridge that would carry traffic in one direction and the current bridge would carry traffic in the other direction. Again, that alternative was determined to be cost-prohibitive.

* Bypass the current bridge and build a new bridge near the old bridge. The old bridge would be kept for "non-vehicular traffic, including pedestrians, bicycles, etc.

* Build a new bridge and dismantle the old bridge, rehabilitate it and use it for non-vehicular traffic at a new location in Clay County or possibly on the new Salt Creek Trail being built in Brown County to connect the city of Nashville and Brown County State Park.

The new bridge is expected to cost state taxpayers $10.3 million.

Next came the public input portion of the meeting, where many spoke in favor of putting the old bridge out of commission.

"A lot of us around here farm and have big equipment and cross that bridge every day," said Kent Jillian. "Very dangerous, even with safety lights, escorts and whatever. It's a miracle that over the years there hasn't been more accidents and lives lost. What is a life worth?"

Jillian received applause when he said he didn't want his tax dollars to pay for maintaining the old bridge.

Richard Dierdorf likened the bridge to the covered bridges of Parke County. He also asked about the status of a bridge on S.R. 42 at Poland.

That bridge is closed for rehabilitation, an INDOT spokesperson said.

Josh Rector suggested the new bridge be built to the north instead of the south, so it will trap debris in the Eel River. He said the area to the south of the old bridge would "be a great parking lot area" if the old bridge is used for a recreation area.

"We feel the bridge needs to be shut down to heavy trucks immediately," Beth Price said. "I didn't have to see those pictures to know that it's not safe."

That drew agreement from two other people in the meeting.

"I agree with Mrs. Price," said Robert Irwin. "After seeing those pictures, I think every time I go across that bridge, I will be thinking about those pictures and I wonder if there is some way of keeping the semis from going over that until a new bridge is made. I was also wondering if they do keep the old bridge here, if it will become a playground the for kids in the area and that means climbing on it and that means possibly an accident. So I would be in favor of seeing it go."

"As a member of the law enforcement community, we get calls for big trucks coming from the west," said Kim Irwin added. "When they get to the bridge, they stop. They're afraid to go any farther. So, we have to send law enforcement officers down, from doing other duties to block traffic, to back those trucks up down the road. There's no place to turn around. So, I wholeheartedly agree with Mrs. Price."

Tommy Kleckner, director of the Western Regional office of Indiana Landmarks, said it was important to have the meeting in Clay County.

"It was by formal request that Indiana Landmarks wished to have a formal meeting held," Kleckner said. "Up until the Dec. 4 consulting parties meeting, there really had been no input opportunity from Clay County. There was no opportunity for the public to hear about the proposed project or plans for the project and the opportunity Clay County has to possibly keep the historic bridge in place with the new bridge built adjacent to it."

INDOT has set a March 30 deadline for a public or a private organization to commit to maintain the bridge for at least 25 years.

Kleckner called that "unacceptable" and said Historic Landmarks would prefer six months.

"I know that there's concern about taxpayers having to pay to rehabilitate and maintain," Kleckner also said. "Taxpayer money will be going to rehabilitate this bridge if it goes to Brown County."

County Commissioner Bryan Allender said after the meeting he had attended to listen.

County Commissioner Paul Sinders was also reticent to express an opinion.

"I came here for the purpose being informed because I know in the county there are many people who are in favor of this," Sinders said. "I know there are many people very much opposed to this in the county and probably the majority are somewhere in the middle. One of the major factors everybody talks to me about is, 'How much is this going to cost the county?' I think all of us have to look at this very carefully as to what the projected cost to the county is going to be. Where are we going to get the money?"

INDOT projects the new bridge will be open in December 2017, and the old bridge will be rehabilitated and possibly relocated in July 2018.

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Residents Hope to Save an Historic Bridge

Lindsey Harrison ()

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01/21/2015 06:23 PM 01/21/2015 06:27 PM

Some folks are trying to raise public support to keep an historic bridge in Clay County. The bridge is over Eel River, on State Road 46 near Bowling Green.

There are big plans for this bridge if the group is successful in saving it. But right now, the state is planning to move it out of Clay County. something these preservists do not want to happen.

The Bowling Green bridge has spanned the Eel River since 1933. It's an iron bridge that has a spot on the National Register of Historic Places.

"It's our bridge, you know. It was right here in this county. I know it's been here my whole life, it was built the year my dad was born... An architecturally significant bridge. An iron bridge! " said Clay County Historian Jeff Koehler.

A few years ago, the state decided to build a new bridge over Eel River and relocate the old one to another county for walking trails. They said Clay County commissioners had no interest in keeping the bridge when the decision was made.

Tommy Kleckner from Indiana Landmarks said, "Following the 2012 decision, consulting parties, Indiana Landmarks, other interested parties... they were unaware of this change in scope."

When local historians found out a few months ago, they began a push to keep the bridge in Clay County.

"We were just wanting to see if there was any support in our county to maybe keep it here and develop a park," said Koehler.

Kleckner added, "Our efforts right now are to make sure Clay County has a say in what happens to this historic bridge."

If the bridge stays in Clay County, this group of residents has big plans for it. Ideally they, would like to see it turned into a recreational park.

Koehler explained, "I'd see maybe a river access point, where we could put canoes on the river and the sportsmen could put their boats on and fish. Or you could fish off the bridge for that matter. Maybe a little place we could park off one side or the other and you could enjoy a picnic lunch."

They believe it can only have a positive effect on the area.

"Right here we have all this history...I don't see how it could have anything but a positive reaction on the community," he said.

Koehler said that he's been talking to residents all over Clay County, and according to him, the reception to this idea has been mostly positive.

INDOT is holding an informational meeting next Thursday, January 29, to hear public opinion about the bridge.

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Group wants support to save Bowling Green bridge

Tuesday, January 13, 2015
By FRANK PHILLIPS, Times Reporter

BOWLING GREEN -- A group of Washington Township residents and their friends are hoping to create a recreational area at the bridge that crosses the Eel River on S.R. 46.

Frank Phillips photos
The Bowling Bridge on S.R. 46 stands over Eel Creek.
[Click to enlarge]
[Order this photo]

They hope to express that vision with the Indiana Department of Transportation during an informational meeting at 6 p.m. Jan. 29 in the Bowling Green Community Building on East Washington Street in Bowling Green.

The group has formed a committee and created a website -- www.saveourbowlinggreenbridge.com -- for the purpose of rallying support for their cause.

A local group hopes to keep in place the Bowling Bridge over S.R. 46 and stop the possible move of the bridge to Brown County.
[Click to enlarge]
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"In the next two years (2016-17), the Indiana Department of Transportation plans to replace our Bowling Green Bridge over the Eel River," states the group's website. "The new bridge will be built south of the existing bridge. Once the new bridge is constructed, the State has plans to dismantle and relocate the existing bridge to a trail in Brown County (near Nashville, Indiana). Currently, our Bowling Green Bridge is on the National Register of Historic Places. This list includes landmarks that are worthy of preservation. The plans for relocating the bridge to Brown County are not finalized, and we believe there is value in keeping the bridge here in Clay County."

Jeffrey Koehler, county historian, is one of the organizers of the effort to keep the current bridge in Clay County.

"We would like to have a big crowd to show support for the value of keeping the bridge located where it is," Koehler stated in an e-mail to The Brazil Times.

"Ultimately, we have to convince our county officials that we need to keep the bridge in Clay County as a historic landmark and that it will be an asset to all of us. We have to instill in everyone the vision of what a great landmark would have on our county. It would be like no other park that we have, a place for recreation, relaxation and history preservation. Then maybe an even larger theme could develop from this. It may even spark some business to grow in Bowling Green, which we all know was our first county seat. The Bridge will be rehabilitated and made into a pedestrian bridge."

Fishing, canoeing, a location for weddings and reunions, a nature park and a water trail are possible uses of the area, the group envisions.

Along with its placement on the National Register of Historic Places, Historic Landmarks, Indianapolis, has shown an interest in the project to keep the bridge in Clay County.

The waters were troubled about the bridge in 2009 when the structure was found to be stressed and potentially dangerous for daily traffic.

In 2009, INDOT's Crawfordsville District office sent a letter to the Clay County Commissioners to determine if there was any interest in the bridge as a historical structure, said Debbie Calder, communications director for that district.

"There wasn't any interest," she said.

Tommy Kleckner, Historic Landmarks western regional office director, said INDOT determined to rehabilitate the bridge for traffic about 2008 or 2009.

"We didn't hear much, no correspondence after 2010," Kleckner said.

Then, in 2012, the bridge was closed for emergency repairs and traffic on S.R. 46 was detoured around the bridge.

"Unbeknownst to Indiana Landmarks and some of the locals, INDOT made the decision in 2012 to change the scope from rehabilitation for continued use to replacement," Kleckner said.

When the decision was made to replace the bridge, INDOT contacted the Indiana Department of Natural Resources to see if there were any trail projects that could benefit from the two-span bridge over the Eel River, Kleckner said.

It was determined there was a spot on a Brown County trail for the Bowling Bridge, as it is also known.

"State agencies began having these conversations without making it known that they had changed the scope from rehab to replacement," Kleckner said.

In November, notification was sent out of a "meeting of consulting parties," Calder said.

At that meeting, Kleckner and Koehler expressed interest in having a meeting in Clay County so local residents could make their views known, which is the session planned for Jan. 29.

"We feel it was handled poorly," Kleckner said. "We have been pushing for this to remain in Clay County. Moving a bridge and reuse should be considered the last preservation option."

If the bridge will remain in place over Eel River, someone in the county will have to sign an agreement "that they will take over the bridge" once INDOT finishes rehabilitating it, Calder said.

Kleckner said that would be up to the county commissioners. Calder said any group would be considered.

Clay County resident Vickie Mace is also involved in the effort.

"We don't have much time, but we can make this work," she stated. "It's so important that we get people to this meeting!"

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Clark, Rickie

From: Kennedy, Mary
Sent: Friday, January 30, 2015 10:45 AM
To: Carpenter, Patrick A; Branigin, Susan; Clark, Rickie; Wright, Mary
Subject: FW: Links to the news coverage last night.

http://www.mywabashvalley.com/story/d/story/bowling-green-residents-speak-on-sr46-bridge/27281/Mz63JCsq-kS6oKxaWYhN2g

http://wthitv.com/2015/01/29/clay-county-to-decide-historic-bridges-fate/

Clark, Rickie

From: Kennedy, Mary
Sent: Thursday, February 05, 2015 10:47 AM
To: Calder, Debbie; Clark, Rickie
Subject: FW: Public Meeting regarding the S.R. 46 Bridge over the Eel River, 2.8 miles east of S.R. 59 in Clay County

FYI

Mary E. Kennedy
Architectural Historian/History Team Lead
Cultural Resources Office
Environmental Services
100 N. Senate Ave., Room N642
Indianapolis, IN 46201
Office: (317) 232-5215
Email: mkennedy@indot.in.gov

From: Kennedy, Mary
Sent: Thursday, February 05, 2015 10:46 AM
To: Bronson, Bob; Zoll, Mitchell K; Carr, John; 'mdollase@indianalandmarks.org'; 'tkleckner@indianalandmarks.org'; 'rregan@indianalandmarks.org'; 'koehlerjm@frontier.com'; 'Vmace72@gmail.com'; 'Indianabridges@sbcglobal.net'; 'jlcooper@ccrtc.com'; 'psinders@gmail.com'; 'bryan.allender@frontier.com'; 'fenwick56@frontier.com'; 'Bob.kirlin@sbcglobal.net'; 'thompsonme@browncounty-in.us'; 'dlynbid@gmail.com'; 'julia@browncountyhistorycenter.org'; 'thompsonme@browncounty-in.us'
Cc: Jones, Tony W; Branigin, Susan; Carpenter, Patrick A; Ervin, Brock; Heil, Larry; 'Porter, Sean'; 'Matt.kohut@parsons.com'; 'Muellner, Kyle'; 'Ball, Alan'; 'rnelson@ascgroup.net'; 'dterpstra@ascgroup.net'; 'Prevost, Daniel'
Subject: RE: Public Meeting regarding the S.R. 46 Bridge over the Eel River, 2.8 miles east of S.R. 59 in Clay County

All,

There are a couple of items for which the project team wanted to provide an update. First, we would like to thank any consulting parties who attended the public meeting last week. We were pleased with the turnout and we appreciate the feedback received. For any who were not able to attend the meeting, you can find the meeting presentation and hand-out on the INDOT website. Below are links to the Crawfordsville District's page where they are located and also the direct links to the documents.
http://www.in.gov/indot/2701.htm
http://www.in.gov/indot/files/Eel_River_Public_Meeting_Handout_Package.pdf
http://www.in.gov/indot/files/SR_46_Eel_River_Public_Meeting_01_29_15_v2.2_web_posting.pdf

Additionally, here are two links to news coverage of the public meeting:
http://wthitv.com/2015/01/29/clay-county-to-decide-historic-bridges-fate/
http://www.mywabashvalley.com/story/d/story/bowling-green-residents-speak-on-sr46-bridge/27281/Mz63JCsq-kS6oKxaWYhN2g

Please note that INDOT respectfully requests comments on the public meeting be submitted by Friday, March 6, 2015. You can submit them to Parsons: Attn: S.R. 46-Eel River Project, 101 West Ohio Street, Suite 2121, Indianapolis, Indiana 46204; FAX: (317) 616-1033; or email: Daniel.Prevost@parsons.com.

A summary of the public meeting and comments received through the comment period will be distributed at a later date.

Secondly, based on concerns raised through recent outreach efforts, INDOT has revised its timeline for organizations considering taking ownership of the SR 46-Eel River Bridge. INDOT anticipates holding the public hearing for the project approximately the first week of August. The final decision regarding the preferred alternative and/or the future location of the existing bridge will not be made before that time. This provides organizations at least six months from the time of the January 29, 2015 public meeting to formalize their interest. A six-month period is consistent with marketing requirements outlined in the Historic Bridges Programmatic Agreement.

Please note, however, that, due to the urgent need for a permanent solution for this location, **any organization intending to take ownership of this bridge must be prepared to sign a legally binding agreement within a few weeks following the public hearing**. INDOT understands that organizations have numerous factors to consider (re-use plan, inspection and maintenance needs, liability issues, etc.) prior to making a commitment. As a result, INDOT **strongly encourages** organizations considering stepping forward to do so as soon as possible to allow sufficient time to work through these matters. INDOT can provide to any interested organization executed agreements from other bridge projects to help serve as an example for this project. INDOT welcomes interest from any type of organization that has the ability to make a firm commitment for the bridge and will be happy to work one-on-one with organizations to develop a plan that ensures the long-term preservation and public use of the structure.

Thank you for your continued participation in the consultation process for this bridge.

Mary E. Kennedy
Architectural Historian/History Team Lead
Cultural Resources Office
Environmental Services
100 N. Senate Ave., Room N642
Indianapolis, IN 46201
Office: (317) 232-5215
Email: mkennedy@indot.in.gov

From: Kennedy, Mary
Sent: Friday, January 16, 2015 1:33 PM
To: 'Prevost, Daniel'; Bronson, Bob; Zoll, Mitchell K; Carr, John; mdollase@indianalandmarks.org; tkleckner@indianalandmarks.org; rregan@indianalandmarks.org; koehlerjm@frontier.com; Vmace72@gmail.com; Indianabridges@sbcglobal.net; jlcooper@ccrtc.com; psinders@gmail.com; bryan.allender@frontier.com; fenwick56@frontier.com; Bob.kirlin@sbcglobal.net; thompsonme@browncounty-in.us; dlynbid@gmail.com; julia@browncountyhistorycenter.org; thompsonme@browncounty-in.us
Cc: Jones, Tony W; Branigin, Susan; Carpenter, Patrick A; Ervin, Brock; Heil, Larry; Porter, Sean; Matt.kohut@parsons.com; Muellner, Kyle; Ball, Alan; rnelson@ascgroup.net; dterpstra@ascgroup.net; 'Janice.Osadczuk@dot.gov'
Subject: RE: Public Meeting regarding the S.R. 46 Bridge over the Eel River, 2.8 miles east of S.R. 59 in Clay County

All –

There are several items we wanted to update you on as a follow-up to our December 4th Consulting Party meeting and leading up to the January 29th public meeting.

Alternatives Analysis
Since the December 4th Consulting Party meeting, INDOT and FHWA have been discussing both their goals for the SR 46 Eel River Bridge project as well as the process to be applied. The Historic Bridge Programmatic Agreement (PA) provides the framework for that process and the PA Project Development Process provides some additional guidance. It is INDOT and FHWA's joint goal to develop the project in a manner that meets the transportation needs of the corridor as well as

the spirit and intent of the PA, while ensuring long-term use of the historic bridge and that the investment in the bridge provides value to the State of Indiana.

Consideration of the Rehabilitation (Alt 2) and One-Way Pair (Alt 3) Options

As discussed at the December 4th meeting, each of these alternatives would require a Level 1 design exception for structural capacity. Based on further discussions between the consultant team and INDOT and FHWA, both confirmed that a design exception is not appropriate for this structure. This bridge's location on a National Truck Route and the number of heavy trucks known to use the bridge necessitates that the bridge be capable of carrying modern highway loads. Therefore, these alternatives have been determined to not meet the project's purpose and need, and are not feasible alternatives.

Prudence of the Bypass Alternative (Alt 4)

As described in the Alternatives Analysis document, this alternative is feasible – it is possible to construct a new bridge adjacent to the existing one that would safely carry traffic and to rehabilitate the existing bridge in place for non-vehicular use. The appropriateness (or 'prudence' under Section 4(f)) of this alternative, however, has yet to be determined and is dependent on the upcoming community outreach.

INDOT and FHWA have been reevaluating what criteria would make the Bypass Alternative a prudent alternative. As Larry Heil (FHWA) indicated at the December 4th meeting, FHWA wants to ensure that its investment in this bridge provides value to the State of Indiana and ensures the long-term use of the rehabilitated bridge. As noted in the December 4th Meeting Summary, INDOT coordinated with Clay County officials several years ago regarding re-use of the bridge and, at the time, the County was not interested in keeping the bridge at this location or any other location in the County. The offer from IDNR and Brown County to take ownership and responsibility for the bridge as part of the Salt Creek Trail provided INDOT and FHWA with what they felt was an appropriate use of the bridge and a sound investment. The Salt Creek Trail is expected to attract more than 10,000 users per year. That is expected to continue into the indefinite future, and both organizations have the capacity to maintain the bridge for the long term. Part of the sound investment was the willingness of IDNR and Brown County to sign an agreement between INDOT to take ownership of the bridge.

However, given the time that has passed since INDOT reached out to Clay County and the desire to prioritize options that keep the bridge either in its existing location or somewhere else within Clay County, INDOT agreed with comments at the December 4th meeting that additional outreach was appropriate to determine the community's interest in retaining the bridge. This is the purpose of the January 29th public meeting.

To make the determination that the Bypass Alternative or Relocation within Clay County is prudent, FHWA has established a few parameters:

1. There must be an expectation that the bridge will be put to a public use. That use may be in the form of a park, a fishing pier, a trail, or any number of other uses.
2. There must be an organization – public or private – that is willing to sign an agreement to take responsibility for the bridge. INDOT (and FHWA) will make a sizable investment to ensure that the bridge is rehabilitated to non-vehicular standards prior to the transfer of responsibility. The term of the agreement would be for a minimum of 25 years, but there should be an expectation that the bridge would be maintained beyond that 25 year term.
3. We must move forward promptly and prudently in the development of this project in respect of the safety of the public. However, it is recognized that such an agreement will take some time to review and execute by all parties. Therefore, within 60 days, the organization(s) who would take ownership of the bridge must make a firm commitment of their intent to sign the agreement and show that they have the financial capacity to take it on. For a governmental organization, such a commitment might come in the form of passing a resolution (county commission). For a local non-profit or private group, it might come in the form of a vote of their governing board. A signed agreement is ultimately required for a selected alternative to be prudent, and to complete the environmental (NEPA) document.

These parameters will be discussed in the presentation at the public meeting, but INDOT and FHWA felt it was appropriate to share them with this group in advance of the meeting. Following the public meeting and comment period, INDOT will update the Alternatives Analysis document to reflect the input received.

Availability of 2010 Historic Property Report

In their December 9, 2014 letter to INDOT, IDNR-DHPA recommended that INDOT make available the original historic properties report (Branigan 2010) prepared for the project. That document is now available for download from INDOT's INSCOPE website at:

http://netservices.indot.in.gov/Section106Documents/Default.aspx

The easiest way to search for the document (as well as other Section 106 documents related to the project) is by Des. No. (0800910). Please let me know if you have any difficulties accessing the document.

Thank you,

Mary E. Kennedy
Architectural Historian/History Team Lead
Cultural Resources Office
Environmental Services
100 N. Senate Ave., Room N642
Indianapolis, IN 46201
Office: (317) 232-5215
Email: mkennedy@indot.in.gov

From: Prevost, Daniel [mailto:Daniel.Prevost@parsons.com]
Sent: Friday, January 09, 2015 4:49 PM
To: Bronson, Bob; Zoll, Mitchell K; Carr, John; mdollase@indianalandmarks.org; tkleckner@indianalandmarks.org; rregan@indianalandmarks.org; koehlerjm@frontier.com; Vmace72@gmail.com; Indianabridges@sbcglobal.net; jlcooper@ccrtc.com; psinders@gmail.com; bryan.allender@frontier.com; fenwick56@frontier.com; Bob.kirlin@sbcglobal.net; thompsonme@browncounty-in.us; dlynbid@gmail.com; julia@browncountyhistorycenter.org; thompsonme@browncounty-in.us
Cc: Jones, Tony W; Kennedy, Mary; Branigin, Susan; Carpenter, Patrick A; Ervin, Brock; Heil, Larry; Porter, Sean; Matt.kohut@parsons.com; Muellner, Kyle; Prevost, Daniel; Ball, Alan; rnelson@ascgroup.net; dterpstra@ascgroup.net
Subject: FW: Public Meeting regarding the S.R. 46 Bridge over the Eel River, 2.8 miles east of S.R. 59 in Clay County

All –

Based on the discussion at our December 4th Consulting Party meeting and subsequent discussions with Clay County, INDOT will be hosting a public meeting to gather input regarding the alternatives under consideration, including the final location of the rehabilitated structure. Details are below.

- Dan

From: State of Indiana [mailto:indiana@subscriptions.in.gov]
Sent: Friday, January 09, 2015 3:13 PM
To: Prevost, Daniel
Subject: Public Meeting regarding the S.R. 46 Bridge over the Eel River, 2.8 miles east of S.R. 59 in Clay County

The Indiana Department of Transportation (INDOT) will hold a public meeting on Thursday, January 29, 2015, at 6:00 pm at the Bowling Green Community Building, 5230 East Washington Street, Bowling Green, Indiana 47833.

The purpose of the public meeting is to offer all interested persons an opportunity to comment on alternatives under consideration for the SR 46 Bridge over the Eel River, 2.8 miles east of SR 59, located in Clay County. Improvements to the bridge are required to address the advanced deterioration affecting critical load-bearing components of the bridge. Bridge No. 046-11-01316C, a steel Parker through truss bridge with concrete abutments, a steel superstructure, and a concrete deck, is listed in the National Register of Historic Places

(National Register) under Criterion A for its role in the development of Clay County. As part of the Indiana Historic Bridge Inventory project, the bridge was determined to be Select for Non-Vehicular Use. Select bridges are those that are most suitable for preservation and are excellent examples of a given type of historic bridge. The designation as Select for Non-Vehicular Use indicates that the Historic Bridge Inventory recognized that the load capacity and roadway width of this bridge does not make this bridge suitable for continued use.

INDOT has evaluated a range of alternatives for this bridge including: (1) a do-nothing or 'No Build' alternative, (2) rehabilitation for continued vehicular use, (3) rehabilitating the bridge for use a part of a one-way pair of bridges, (4) bypassing the existing bridge with a new, adjacent bridge, retaining the existing one for non-vehicular use, or (5) constructing a new bridge and relocating the existing bridge to an alternate location for non-vehicular use. INDOT has determined that alternatives 1, 2, and 3 are not prudent, due to the load capacity of the existing bridge. Alternative 4 may be prudent depending on local support for maintaining the bridge and identifying a public use. Alternative 5 is a prudent alternative and could involve relocating the bridge to another location in Clay County or elsewhere in the state. **The goal of this meeting is to determine the public's interest in retaining the bridge in its existing location (Alternative 4) or relocating it to another location (Alternative 5).**

The presentation will begin at 6:00 pm, followed by a public comment session. The presentation and comment session will extend until 7:30 p.m. During the public comment session, interested persons will be afforded an opportunity to express comments, concerns and provide input regarding the project. Following the presentation and comment session, INDOT representatives will be available to address questions and concerns. Comments may also be submitted to: SR 46-Eel River Project, c/o Parsons, 101 West Ohio Street, Suite 2121, Indianapolis, Indiana 46204. You may also elect to fax comments to (fax) 317-616-1033. Comments may be e-mailed to daniel.prevost@parsons.com.

This meeting is not the last opportunity for agencies or the public to comment on the project. INDOT is in the process of developing conceptual plans and the required environmental documentation under the National Environmental Policy Act and Section 106 of the National Historic Preservation Act. When that documentation is complete, a formal public hearing will be held to provide an opportunity to comment on the preferred alternative and anticipated impacts prior to INDOT and the Federal Highway Administration making a final decision.

WINTER WEATHER NOTE: In the event of hazardous winter weather causing hazardous driving conditions, this meeting would be rescheduled (if necessary) on Saturday, January 31, 2015 at the same location as listed above , but with a starting time of 1:00 p.m. In the event of inclement weather, please call the INDOT Office of Public Involvement at (317) 232-6601 to find out if the meeting will be held or rescheduled.

In accordance with the "Americans with Disabilities Act", if you have a disability for which the Indiana Department of Transportation would need to provide accommodation for, in terms attendance and participation during the meeting, please contact the Office of Public Involvement by Thursday, January 22, 2015.

INDOT looks forward to meeting with the community on Thursday, January 29, 2015 at 6:00 p.m.

Rickie Clark, Indiana Department of Transportation, Office of Public Involvement / Central Office Communications Division, 100 North Senate Avenue, Room N642, Indianapolis, Indiana 46204; **Phone:** (317) 232-6601 **Email:** rclark@indot.in.gov

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This email was sent to daniel.prevost@parsons.com using GovDelivery, on behalf of: State of Indiana · 402 Washington Street · Indianapolis, IN ·46204 · 800.457.8283

6

Thursday, January 29, 2015

To the residents of Clay County:

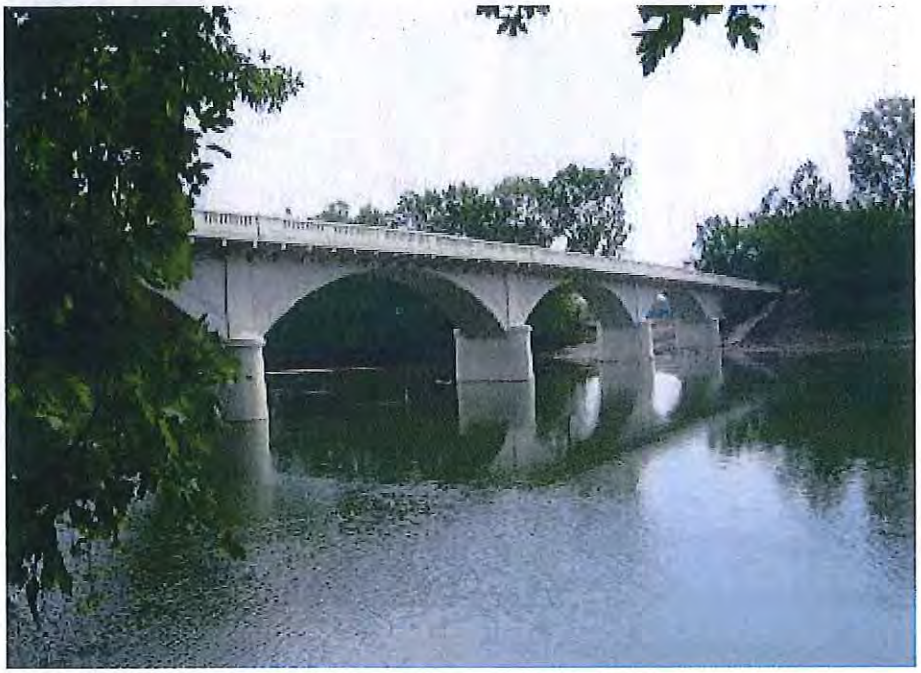
As an outsider from 85 miles away I would like to add some thoughts to your meeting tonight. We in Carroll County in northwestern Indiana have been through similar circumstances with our historic bridges and support a process that involves community participation. Two of our County's bridges in the past decade had been slated for replacement without adequate consideration for public involvement, preservation considerations or possible rehabilitation.

First the iron bridge known locally as Wilson Bridge lays in a quaint area populated by small farms and some horse and buggy German Baptist and the suggestion that a major new "million dollar bridge" be brought to this community was met with local resistance. Even abutting some farmers objected to its replacement. Originally slated for demolition by the Commissioners because of their feeling that it was "old" and therefore couldn't be of any future use. The local residents began a "save Wilsons Bridge" effort and organized numerous events that were held on the banks of Deer Creek to draw attention to the bridge's attributes. They pictured what replacement would mean to the valley. This also brought attention to the rural community with its historic barns and farmsteads which ultimately netted a National Register Rural Historic District to commemorate the historic background of this rural area.

Wilson Bridge was ultimately saved and restored for use by the County Highway and supports bus and local traffic

Second was a concrete bridge built in the 1920s that spanned the Wabash River at a place where the Wabash & Erie Canal Boats once crossed the river on its way from Logansport to Delphi. Again the officials feared the stability and worthiness of the old concrete and were reluctant to restore and re-deck this span. In place would have been a much longer angled bridge that would impact the integrity of historic sites of the canal era AND the cost would be more than three times the cost of rehabilitating and decking this major span.

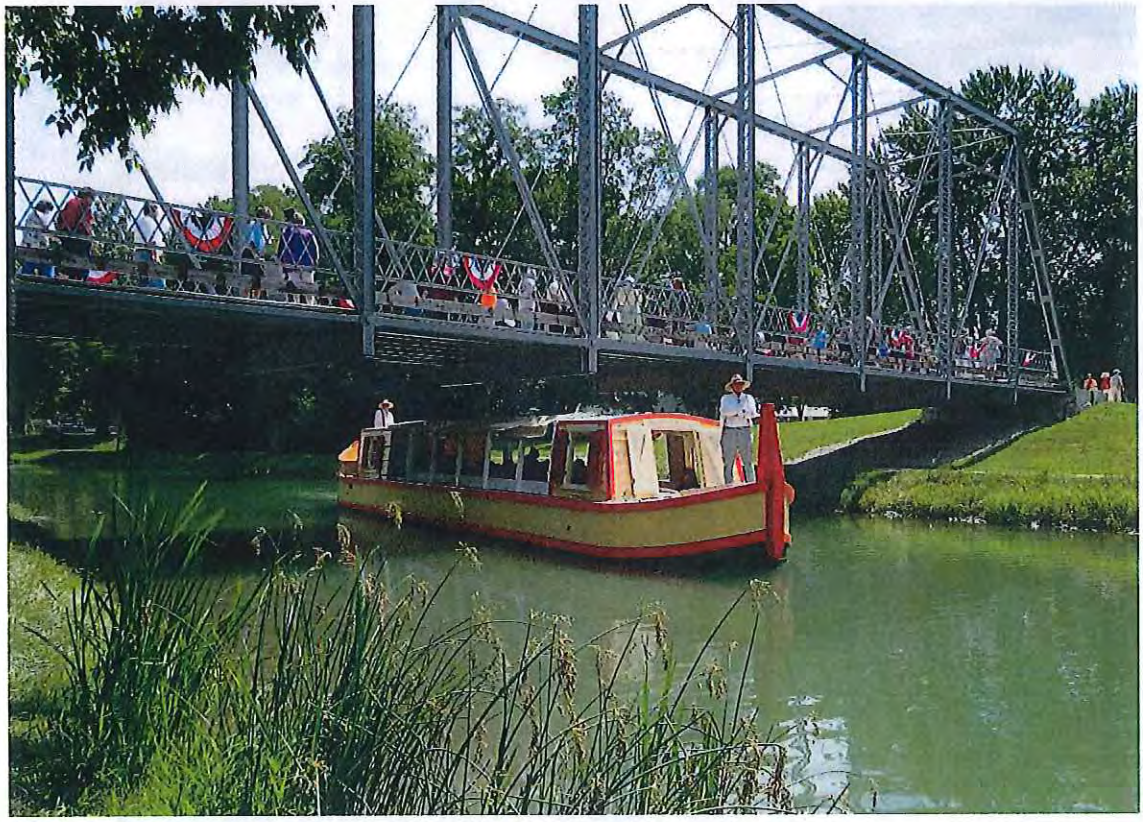
The impetus of saving Carrollton Bridge brought about an awareness for the history of the site. This very spot was the crossing for the Wabash & Erie Canal and held lots of connections to this mode of early travel. As a result two farmers donated land to make an interpretive park on either side of the north end of the bridge. This became a popular spot to recall history and for fishing to access the river.



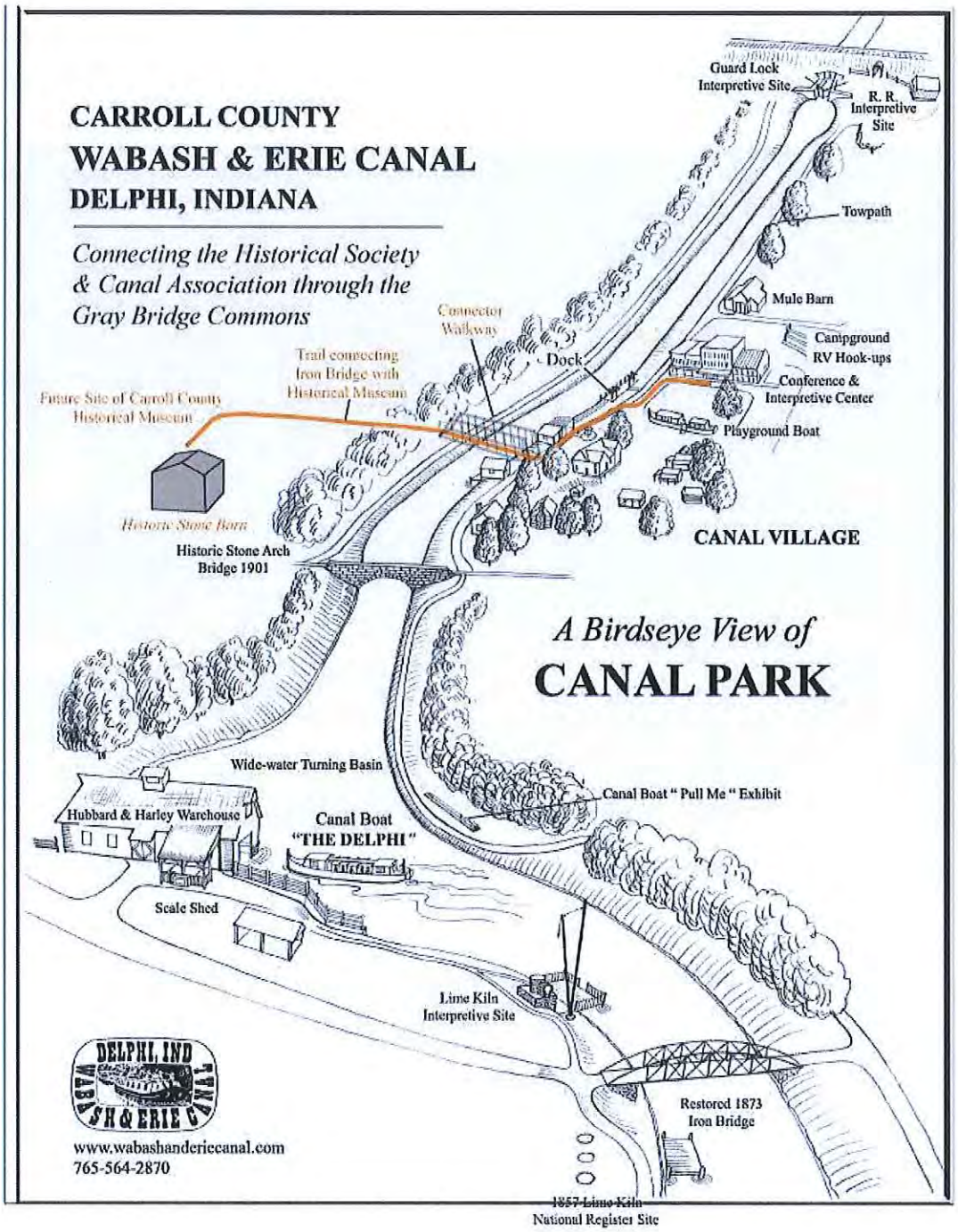
Once completed this span retains its original design and graces the Wabash River just north of Delphi

In addition the Carroll County organization known as the Wabash & Erie Canal Association has led a preservation cavalcade of efforts to preserve additional iron bridges that have been restored by our volunteer crew and placed over the re-watered section of the W&E Canal. They serve as Towpath Trail connectors. This preservation effort has evolved over the last 15 years and now includes these spans:

Our Stone Arch Bridge was saved because of efforts by the County Highway Director to find a mason to stabilize the cut stones



This restored bridge is in Delphi's Canal Park and serves as a trail between downtown and our Park



Canal Park is highlighted with three historic bridges. The 1874 iron bridge in the lower right, the Stone Arch in the middle that also serves as a city street, and the newest restored iron span in the upper section that connects Canal Park with the County Historical Society's potential (new) Museum site.

You are invited to come to Delphi and enjoy the bridges. Good luck with your efforts to make a pedestrian bridge and associated recreational uses in Bowling Green. Never give up hope !!

Lastly our working relationship with INDOT in the planning and construction of the new four lane Hoosier Heartland Highway that borders Delphi gave us reason to find support for maintaining the continuity of our Monon Trail. It involved working diligently with the planners and engineers to secure a very special 300 foot long iron single span bridge that came from Freedom, Indiana. This relic is now finished and open for just another special place for visitors to come and hike our trails.

Freedom Bridge was placed over the new four lane highway last September by INDOT

Dan McCain, President of the Wabash & Erie Canal Association

3198 North 700 West

Delphi, IN 46923

INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N642
Indianapolis, Indiana 46204

PHONE: (317) 232-6601
E-mail: rclark@indot.in.gov

Michael R. Pence, Governor
Karl B. Browning, Commissioner

Please submit written comments by using the comment form provided. **INDOT respectfully requests comments be submitted by Friday, March 6, 2015.** Thank you for your attendance this evening.

PROJECT: S.R. 46-Eel River Project

MEETING DATE: Thursday, January 29, 2015

NAME: Robert Hostetler

COMMENT: See Attched

SIGNATURE:

Reference the Clay County Bridge

We are hoping to preserve the S.R. 46 bridge, as this bridge would be a great addition to Indiana and Clay County Canal history. The area could also serve as a public recreational area with access to the Eel River. It would be a state-wide advantage with both the Boy Scout and Girl Scout camps drawing in campers within a 150 mile area.

The Boy Scout Camp, Camp Krietenstein (Opened on 1922), is a beautiful 224 acre camp located near Poland, Indiana (up river approximately 2 miles from S.R. 42.) They have an over one million dollar facility that resides near the river. They can put in canoes at their camp but must make arrangements to take out canoes on private property. See facebook https://www.facebook.com/CampK1922

The Girl Scout Camp, Camp Na Wa Kwa, offers 259 acres of large open areas and woods in Clay County near Poland, IN which could also resides near the river. See website http://www.girlscoutsindiana.org/council-properties/camp-na-wa-kwa

The history of the bridge reaches nearby to Knox County with the VINCENNES BRIDGE COMPANY, VINCENNES, INDIANA: Frank L. Oliphant, John P. Oliphant, and Jacob L. Riddle incorporated the Vincennes Bridge Company in Indiana in 1898 for the purpose of fabricating structural steel for bridges. Until the 1920s, the firm's work consisted primarily of small I-beam spans and pony truss bridges. Although the firm undertook jobs in twenty-seven states, it primarily practiced in Illinois and Indiana. The firm changed its name in 1932 to the Vincennes Steel Corporation (Cooper 1981;Vincennes Library).

I'm still trying to research how many of the Vincennes Bridges still exist in Indiana.

Also, see attached history from Iron Monuments to Distant Posterity: Indiana's Metal Bridges, 1870-1930 by James L. Cooper

The Eel River Historical bridge access point would serve the state of Indiana and neighboring counties with the 52.8-mile-long waterway which would bring public enjoyment and offer tourism and economic dollars to Indiana and the Clay County area.

Bridges played an important, if decreasing, role in the Rochester company's last decade. The firm bid successfully for a number of the metal structures which northern Indiana counties built in the 1920s, and it built a number of structures for the State Highway Commission. But the company did not survive more than the earliest ravages of the Great Depression of the 1930s.

The Vincennes Bridge Company

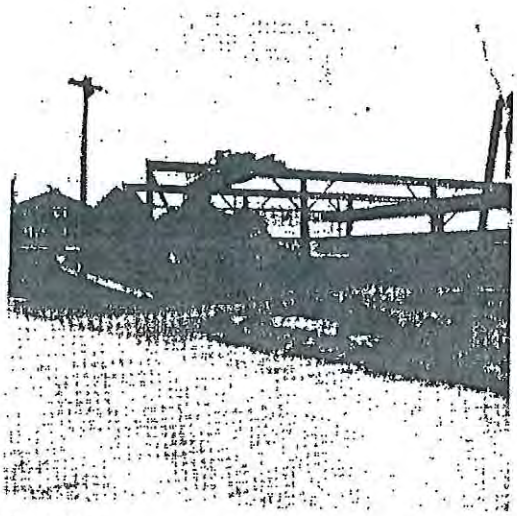
Not easy to contain, the Oliphant brothers from Buena Vista in Monroe County ultimately founded one of Indiana's most successful bridge-building firms. John tried hardware and then real estate before focusing on the bridge business. He bought into the New Castle Steel Sewer Pipe Company in 1896, became its Vice President and Secretary, participated in its name change to the New Castle Bridge Company, and sold his interest in the venture in June 1898. John had not lost interest in bridge building during those heady days in New Castle. Instead, he dreamed of running his own company and so he traveled to prospective sites in a dozen states looking for the best deal he could strike. In the end, he returned to southwestern Indiana and settled in Vincennes.[26]

Brother Frank Oliphant prepared for the life of a school teacher. He graduated from the Central Normal College at Danville in 1893 and headed west to Nebraska and Colorado where he quickly became a school principal. John called his brother back home to Indiana in 1899 so they might join forces with Jacob L. Riddle, a merchant neighbor from Cincinnati in Greene County, to operate the Vincennes Bridge Company (VBCo). When the company was dissolved in 1951, the Oliphant family still owned it.[27]

Demand pushed the small initial capital stock of $20,000 to $50,000 in 1902. Capital and profit underwrote a four-fold expansion of the plant. By 1911, the work force's weekly payroll had mounted into the thousands of dollars, and the firm had manufactured more than two thousand miles of spans. Annual production soon reached 1,200 spans with annual sales around $1,000,000. Not surprisingly, VBCo's spans could be found in more than fourteen southern Hoosier counties and in at least eight southern and western states before 1920.[28]

Without training or long experience i
hired the professional expertise they
served as their first Chief Engineer. F
Purdue graduates: Benjamin B. John
Free, and A. W. Day. They designed r
rated standard trusses in a variety of
again, they emphasized function and e
and novelty.

Unlike other metal fabricators in Ind
Company continued to focus on full-s
after the First World War. While the c
for structural work, it sought bridge w
in an enlarged role for contractors in
came a subcontractor, VBCo continued
tractors where circumstances allowed. T
pared to build concrete substructures a
It aggressively pursued the many co
Highway Commission and other st
offered in the 1920s, and it won a si
bridge market.



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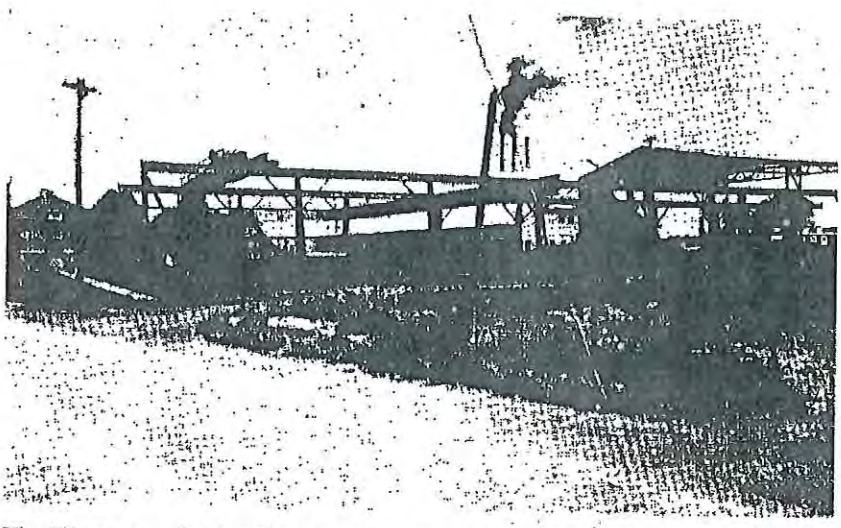
Without training or long experience in engineering, the Oliphants hired the professional expertise they needed. Benjamin F. Nesbit served as their first Chief Engineer. He was succeeded by mostly Purdue graduates: Benjamin B. Johnston, F. R. Sargent, Omer Free, and A. W. Day. They designed many simplified and undecorated standard trusses in a variety of long and short forms. Once again, they emphasized function and economy more than elegance and novelty.

Unlike other metal fabricators in Indiana, the Vincennes Bridge Company continued to focus on full-service bridge-building even after the First World War. While the company welcomed contracts for structural work, it sought bridge work. Instead of acquiescing in an enlarged role for contractors in which the manufacturer became a subcontractor, VBCo continued to bid directly against contractors where circumstances allowed. The firm retained crews prepared to build concrete substructures and it erected its own spans. It aggressively pursued the many contracts which the Indiana Highway Commission and other state highway departments offered in the 1920s, and it won a significant share of the new bridge market.



The Vincennes Bridge Company's plant was located, fittingly, on Oliphant Drive. (Vincennes Steel Corporation)

Bridge Builders

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Poising themselves for a great leap forward in early 1927, the Oliphants voted to increase their company's capital stock from $50,000 to $750,000, making VBCo the second largest metal fabricator in the state. The view from Buena Vista today would hardly suggest the vision that the Oliphant brothers nourished when, as entrepreneurial visionaries, they roared out of that quiet crossroads community before the turn of the century.

The Elkhart Bridge and Iron Company

Charles Fieldhouse of Elkhart tells a story about a chance meeting of his brother, John, with Frank Brumbaugh, an Elkhart resident and agent for Ohio's Bellefontaine Bridge Company, in an interurban car headed to South Bend:

> John said to Frank: "Why don't you build your bridges in Elkhart?" Frank said: "I would if I had $15,000.00" John said: "Would that be all it would take? One bridge might cost $15,000.00." Frank said: "It might, but the steel could be bought on credit and paid for after the bridge was finished." John said: "Be at my office, Frank, at 4 o'clock this afternoon."
>
> When John got back he phoned everyone he could think of, and at 4 p.m. when Frank walked in the back room of John's office, there were sixteen men to meet him. John told them the story of what was said on the interurban and also stated: "Let us build a bridge plant in Elkhart. H. E. Bucklen will donate five acres of ground for such a factory and Bucklen will also take some stock." William Pratt said: "I will take $1,000.00 worth of stock." Each man in the room agreed to take the same amount, and the Elkhart Bridge Company was started.[29]

Five local men, including Brumbaugh and Bucklen, incorporated the Elkhart Bridge Company with a capital stock of $25,000 in November 1901.[30] Prosperity eluded the fledgling company, and the "total amount of common stock was lost in business transactions the first two years." In June 1902, the stockholders voted an issue of $20,000 of preferred stock, but still the company did not prosper. In May 1904, Brumbaugh and a group of new local investors reorganized the corporate effort as the Elkhart Bridge and Iron Company (EB&ICo) with the modest capital stock of $10,000. The

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INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N642
Indianapolis, Indiana 46204

PHONE: (317) 232-6601
E-mail: rclark@indot.in.gov

Michael R. Pence, Governor
Karl B. Browning, Commissioner

NOTICE OF PUBLIC MEETING

-from Joyce R. Pipes
4819 Garrard Chapel Rd -
Bowling Green, IN 47833

The Indiana Department of Transportation (INDOT) will hold a public meeting on Thursday, January 29, 2015, at 6:00 pm at the Bowling Green Community Building, 5230 East Washington Street, Bowling Green, Indiana 47833.

The purpose of the public meeting is to offer all interested persons an opportunity to comment on alternatives under consideration for the SR 46 Bridge over the Eel River, 2.8 miles east of SR 59, located in Clay County. Improvements to the bridge are required to address the advanced deterioration affecting critical load-bearing components of the bridge. Bridge No. 046-11-01316C, a steel Parker through truss bridge with concrete abutments, a steel superstructure, and a concrete deck, is listed in the National Register of Historic Places (National Register) under Criterion A for its role in the development of Clay County. As part of the Indiana Historic Bridge Inventory project, the bridge was determined to be Select for Non-Vehicular Use. Select bridges are those that are most suitable for preservation and are excellent examples of a given type of historic bridge. The designation as Select for Non-Vehicular Use indicates that the Historic Bridge Inventory recognized that the load capacity and roadway width of this bridge does not make this bridge suitable for continued use.

INDOT has evaluated a range of alternatives for this bridge including: (1) a do-nothing or 'No Build' alternatives, (2) rehabilitation for continued vehicular use, (3) rehabilitating the bridge for use a part of a one-way pair of bridges, (4) bypassing the existing bridge with a new, adjacent bridge, retaining the existing one for non-vehicular use, or (5) constructing a new bridge and relocating the existing bridge to an alternate location for non-vehicular use. INDOT has determined that alternatives 1, 2, and 3 are not prudent, due to the load capacity of the existing bridge. Alternative 4 may be prudent depending on local support for maintaining the bridge and identifying a public use. Alternative 5 is a prudent alternative and could involve relocating the bridge to another location in Clay County or elsewhere in the state. **The goal of this meeting is to determine the public's interest in retaining the bridge in its existing location (Alternative 4) or relocating it to another location (Alternative 5).** alternative 4 - is my selection

At this public meeting, a presentation will begin at 6:00 p.m. followed by a public comment session. The presentation and comment session will extend until 7:30 p.m. During the public comment session, interested persons will be afforded an opportunity to express comments, concerns and input regarding the project. Comments may also be submitted to: SR 46-Eel River Project, c/o Parsons, 101 West Ohio Street, Suite 2121, Indianapolis, Indiana 46204. You may also elect to fax comments to (fax) 317-616-1033. Comments may be e-mailed to daniel.prevost@parsons.com. or

This meeting is not the last opportunity for agencies or the public to comment on the project. INDOT is in the process of developing conceptual plans and the required environmental documentation under the National Environmental Policy Act and Section 106 of the National Historic Preservation Act. When that documentation is complete, a formal public hearing will be held to provide an opportunity to comment on the preferred

Michael Kellum

From: "Michael Kellum" <mcdkellum@ccrtc.com>
To: <daniel.prevost@parson.com>
Sent: Monday, January 26, 2015 10:04 AM
Subject: EEL RIVER BRIDGE

Dear Sir,

We believe it would be in the best interest of the community to relocate the bridge. Bowling Green barely has enough support to keep the Church and Fire Dept active. We have been 3yrs trying to raise enough money to build a new Masonic Lodge that fell in disrepair and have only raised half the money so far. The bridge if left standing would fall into further disrepair because there is no local industry to help with the cost of maintaining the structure. Bowling Green already has a picnic area that is close to the playground and baseball diamond. We would like to see a new bridge built in it's place so there would not be another bend in the roadway. We would like to see a one lane bridge with a stop light south of the existing bridge built until the new bridge is complete to keep the road open.

Thank You,

Michael & Cheri Kellum
8475 east state road 46
Bowling Green, Indiana 47833

1/26/2015

Jan 24, 2015

Jan 29 Thurs
(Unable to attend)

To whom this Concerns.

I am a resident of Bowling Green Washington Twp.

I have not talked to anyone here who is concerned with keeping the bridge over eel river. We are a poor Twp ship and have very few able body people to be able to keep up the maintence on the bridge, Mostly elderly + to young to care. I've lived here 75 years and there is always a problem with flooding There is no way you can put a park at the river. We have no land to put one. There is no money to repair and paint a bridge. If it were a wooden bridge I could see maybe keeping it here, but not an iron one.

You have some people pushing this that does not live here.

There is no way I would vote to let us have it. Thats just a problem for the younger generation to care for.

We have trouble enough to get help to put on the annual picnic. We can do great things but I can't see this.

So I'm saying No to keeping the bridge here at Bowling Green.

Just build use a new one and put the guard rails back up along it like they were or put cable up. This is what I care about mostly.

Serving Others

Linda Schile 359 S. Clay St
Bowling Green In 47833

From: Donna Roscoe
To: Prevost, Daniel
Subject: Bowling Green bridge meeting
Date: Sunday, February 01, 2015 2:57:25 PM

Hello. I attended the meeting and have a few comments. I hope you don't mind.

First, I thought it was organized and respectful. However, there was a bit much of "telling us what we are going to do in the meeting" instead of just doing it. Just a comment, sorry.

Second, four of us that attended together are from Brazil. We were asked to attend by someone very involved in the Clay County Historical Society. We went assuming that the residents would be up in arms NOT to lose their bridge. We thought they would dramatically object to giving it to some other community. We were wrong and VERY VERY surprised at some of the comments.

While those living around the Bowling Green community are most familiar with the bridge, the flooding, the inconvenience when it is closed, it is in Clay County and you would think saving it would be a concern of the whole county. We did not see that. We were quite disappointed. Having said that, as natives of Vigo County, having only lived here less than 10 yrs, I can say that Clay County has always been regarded as non-progressive - it literally took them years - as in 20 plus years - to finally vote for a new high school even though the old one was crumbling around them. Most residents are so conservative and it is all about the money to them.

I've heard the Commissioners are meeting Monday 2/2 at 9:00am to vote on this. Mark my word, they will not vote to support taking on this issue. One commissioner wanted nothing of the meeting (he never gets close to any controversy, so he never even attended) and the other two won't spend the money.

Ok, having said that, I have to say I am disappointed in your handling of this project. If the residents and Commissioners vote this down, that's one thing, and at least they had their say. However, I think the IDOT set things up so that would happen. Here's why:

-I totally agree with the man from the Indiana Landmarks - 60 days is totally ridiculous for any county to find an organization - be it private or the county - do the proper research, budget for the future, vote on the issue, etc. 60 days guaranteed no action. What if the crowd HAD demanded to keep their bridge? How in the world would things have moved that fast? Since you contacted Clay County Commissioners (a difference bunch of officials, granted) 4 yrs ago, it would have almost been better NOT to grant this meeting, than grant it with so little chance for any action. It is clear that IDOT didn't want that to happen.

-The costs involved were of course advertised loud and clear to scare everybody off. I was quite surprised as I'm sure everyone was. Any plan to pay for this cannot be organized by anyone, county or otherwise, in 60 days.

In short, IDOT organized the presentation to scare off the conservative residents of Clay County and it worked. Others of us who value history and would like to see a few things happen in Clay County are again disappointed.

I do have a question. I am not clear on the proposed location of the two bridges in Brown Co. Were they both in the state park or not? If not, has proper research been done insuring that this Bike trail group CAN pay $100,000 in 8-10 yrs (as your group told Clay County) and another $500,000 in 25 yrs? (That's what was said out loud at our meeting.) How can you be sure they are able to do that? If the bridges are in the state park, aren't you dumping that costs on taxpayers all over the state who are unaware?

Thanks for listening.

From: Sherry Deckard
To: Prevost, Daniel
Subject: BRIDGE IN CLAY COUNTY - BRAZIL IN
Date: Thursday, January 29, 2015 4:12:42 PM

I may not be at the meeting, so I'd like to give my suggestion to you now.
I think it'd be great if the road could be straightened out coming out of Bowling Green - from where it starts to curve just past the house on the hill.
You could then see the bridge from Bowling Green & build the new bridge on the NORTH side of the bridge that exist now - so that the memorial picture and writing
would be on the SAME side of the road. We could still use the bridge as is now until the new road and bridge were completed.
Why take it down and put it in BROWN COUNTY?? Keep it here for this county where it belongs with the memorial!!
With a suggestion like mine, the old bridge stays, could be utilized while building the other, plus it would STAY with the memorial picture.
Straightening the road and putting the bridge on the NORTH side of the existing one would make a better "fit" for the whole situation.

Thank you for considering this!!

Sherry Deckard
2780 S. Co. Rd 700E
Bowling Green, IN. 47833
812-986-2272

From: Andy Rebman
To: Prevost, Daniel
Subject: Comments regarding the Bowling Green Iron Bridge project.
Date: Tuesday, February 03, 2015 3:10:43 PM

Good afternoon Mr. Prevost
First, I wanted to take a moment and say thank you for your time last Thursday at Bowling Green. The meeting was excellent and the information shared was good. I also wanted to send you my comments regarding the replacement project. I am president of the Indiana Covered Bridge Society and while this is not a covered bridge obviously, we as a society still have an interest in keeping all historic properties in their original rightful places. We feel strongly that all historic bridges regardless of building material should stay where they were built originally. I feel that every effort should be made to leave and rehabilitate the bridge in its original location. I personally like the idea of making this bridge a park and allowing it to be used for public gatherings. I have scheduled many trips for the Society and we look for places just like this to host our dinners in the evening. What a wonderful setting this would serve for this purpose. Also with access to the Eel River, it would allow fishing access as well.

With that said, I understand the concern from the community about the cost of maintaining the bridge for just pedestrian use. I am well aware of the costs involved in rehabbing these old bridges rather the material is wood or iron. Therefore I would ask that the state please ensure that this bridge survives one way or the other. If it cannot sadly be maintained at Bowling Green, then we would like to see it moved to Brown County and used on the Salt Creek Trail. It is an important bridge in the history of Indiana and above all we would like it to be preserved.

Thank you for your time.
Regards
Andy Rebman
President, Indiana Covered Bridge Society

From: Prevost, Daniel
To: Ball, Alan
Subject: FW: B.G. Bridge
Date: Tuesday, February 10, 2015 11:24:21 AM

-----Original Message-----
From: GREG JORDAN [mailto:gjordan@ceresllp.com]
Sent: Tuesday, February 10, 2015 11:21 AM
To: Prevost, Daniel
Subject: RE: B.G. Bridge

Dan,
Thank you for clearing things up for me.
Greg Jordan
Greg Jordan

"Prevost, Daniel" <Daniel.Prevost@parsons.com> wrote:

>Mr. Jordan -
>
>Under the Historic Bridge Programmatic Agreement (attached), as you stated, the Federal Highway Administration (FHWA) "will not participate [i.e., provide funding] in a project that would result in the demolition of a Select Bridge" (page 1, last "Whereas" statement). (Note: the Bowling Green bridge is "Select".) However, in Stipulation IV.G (page 10), the Programmatic Agreement states that:
>
>"G. Anticipatory Demolition – If FHWA or Indiana SHPO determine a bridge owner intentionally demolishes or otherwise diminishes the historic integrity of a Select Bridge under the bridge owner's jurisdiction with non-Federal-aid funds, then FHWA will comply with 36 CFR Part 800 for any future federal-aid bridge project proposed by that bridge owner. After the next Bridge Survey update is completed in accordance with Stipulation II.C.2, FHWA may process federal-aid projects in accordance with this Agreement for that bridge owner."
>
>In other words, if INDOT chose to use State-only (non-Federal) funds, INDOT would be prohibited (until the next bridge survey update) from using the Historic Bridge Programmatic Agreement for any future projects involving historic bridges (Select or Non-Select). The cost (in both time and money) of that would far outweigh the benefits of avoiding the Programmatic Agreement requirements for this single bridge project.
>
>If you have any additional questions or comments regarding the project, please let me know.
>
>- Dan
>
>
>Dan Prevost, AICP CTP, ENV-SP
>PARSONS
>Office – 317.616.1017 ♦ Mobile – 513.368.0514
>daniel.prevost@parsons.com ♦ www.parsons.com
>
>
>
>-----Original Message-----
>From: GREG JORDAN [mailto:gjordan@ceresllp.com]
>Sent: Thursday, February 05, 2015 6:18 PM
>To: Prevost, Daniel
>Subject: B.G. Bridge

>
>Dan,
> After speaking to a bordering county historian, he explained that as long as no federal grant money has been spent on a historical item, this item can be disposed of. This is what needs to happen in this case. Use the monies generated from the scrapping, to help replace the existing bridge. Use existing roadbed , with the exception of raising it 6 to 8 ft. Thus, saving tens of thousands of dollars. Make any sense? Response requested.
>
>Thank you,
>Greg Jordan, 812-249-9203

To whom it may concern.
I Carrie Garland would like for you to save the bridge and build an adjacent bridge beside it. It is our historical bridge and needs to be saved and not moved.
Thank you.
Carrie Garland

P.S.
#4 Build Adjacent bridge

Garland
Ms. Carrie ~~Thomas~~
9230 W. State Road 46
Bowling Green, IN 47833

INDIANAPOLIS IN 460
02 FEB 2015 PM 1 L

SR46 - Eel River Project
c/o Parsons, 101 West Ohio St.
Suite 2121
Indianapolis, IN 46204

Feb 21, 2015

To Whom it may concern:

I attended the public meeting held in Bowling Green concerning the fate of the Eel River Bridge.

I was quite pleased with the turnout. I understand some of views expressed against retaining the bridge. I was one of several people attending who want to keep the bridge, if at all possible, but did not speak.

I had forgotten my pen, so I had no means of jotting down questions during the presentation.

During the presentation, you showed "current condition" of the bridge. Agreed, they were truly horrific. This begs the questions:

1) If it's in this bad shape, why will you keep it open for 3 more years?

2) Why was the bridge allowed to get into such a condition?

3) Under "Recent Inspection History", it seems problems were evident in 2011 (or earlier). It seems, to me, that the new bridge could have already been built by now.

4) As I understand it, whether the bridge stays or goes, rehabilitation will take place. When will this take place? It looks like it should be as soon as possible.

"SR 46 Bridge is Historic for its association with events in the settlement and economic development of Clay County, Indiana." That's CLAY County, not Brown County — absolutely every effort to keep it in Clay County should be made!

"Alternatives 4 + 5"

With the exception of the "Hydraulic Issue" and costs, there is very little difference. "Issues are not insurmountable" — I would think that your engineers could figure out how to put the new bridge abutment where you prefer it to be (further west) by figuring a way to solve or minimize the "scour issue." I'd like to see them rise to the occasion and solve the problem!

"Total costs." There is absolutely

no way you can convince me that building the new bridge, rehabilitating and moving the old bridge costs LESS than leaving it where it is! No Way!

"INDOT-FHWA Goals" "Project must move forward promptly" — really? Since when? As far as I'm concerned, the new bridge construction is a separate issue. I can't believe construction won't start for more than year from now!

"Requirements" — You only wanted to allow 60 days for an organization to come forward to take over the bridge (I understand we now have 6 months). This would be a huge commitment - it needed more time to be properly considered.

It wasn't in the handout, but I recall some estimates for costs of inspections and painting of the bridge. Excuse me, but I thought they were inflated — I think it was a scare tactic.

Seriously, as much as I believe in vision for the bridge expressed

on the 'Save Our Bowling Green Bridge' website, I do not trust INDOT to spend our money wisely (I can think of 3 projects that didn't need to be done – that money could have been used elsewhere). I hope I am wrong, but I believe someone in INDOT has already been paid off to send our bridge to Brown County. I will do whatever I can to keep our bridge and make the dream a reality.

As far as the new bridge project, why does it need to be so much higher? It is my understanding that SR 46 will be lowered approaching the bridge. Excuse me, but that area floods out into the fields and the height of that road keeps it open! Lower it and we'll have problems! I suggest you get your "fill dirt" elsewhere.

I understand using the south side for the new bridge (path of least resistance). What I don't

understand is why the Bowling Green sign would be impacted. I looked the area over as I went to the meeting and there is ample room for the "new SR 46" to join the existing road before you get to the sign.

In closing, whatever the fate of the Bowling Green Bridge, everyone agrees a new bridge is needed. (Personally, I don't believe the new bridge will last as long as the old one has) I urge INDOT to get on with it!! Three years to completion is unacceptable of the old bridge is actually this bad. If trucks go over the bridge that are over the limit (and you know some will) and a collapse happens — it's on you're head!!

Sincerely,
Karen E Stearley
PO BOX 422
Center Point IN 47840

KAREN E. STEARLEY
P.O. BOX 422
CENTERPOINT, IN 47840-0422

INDIANAPOLIS IN 460
21 FEB 2015 PM 5 L

HENCEFORWARD SHALL BE FREE
EMANCIPATION PROCLAMATION
ABRAHAM LINCOLN
1863
FOREVER USA

SR46-Eel River Project
% Parsons
101 West Ohio St Suite 2121
Indianapolis In 46204

46204420346

Sorry this is a copy but I didn't know there were 2 places to send to. Michele Sent 2/11/15 to

INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N642
Indianapolis, Indiana 46204

PHONE: (317) 232-6601
E-mail: rclark@indot.in.gov

Michael R. Pence, Governor
Karl B. Browning, Commissioner

Please submit written comments by using the comment form provided. INDOT respectfully requests comments be submitted by Friday, March 6, 2015. Thank you for your attendance this evening.

PROJECT: S.R. 46-Eel River Project

MEETING DATE: Thursday, January 29, 2015

NAME: Michele D. Neese

COMMENT: My concern is with many things...

1) Our county was not informed, from the beginning, that there were talks, behind the scenes, about removing our historic bridge to another location. It is a part of our history so I feel we should have been asked before any other options were explored.

2) There seems to be no discussion between the people working on the St. Rd. 46 and St. Rd. 42 bridges. We farm almost 2000 acres in the area and desperately need to be able to use these bridges during the times of Sept. to Dec. for harvest and from Jan to May for hauling grain to market. We were w/o use of the 2 bridges at crucial times in 2010 & 2011 and it put a stranglehold on us... adding 20 miles to each trip... there & back

** Please coordinate the 2 projects ** and don't take any more time

3) We have people asking to get access to the river for recreation, all the time. If there is a way to do it, w/a public access site, that would be a

SIGNATURE: Michele D. Neese

www.in.gov/dot
An Equal Opportunity Employer

great thing for people in this area. We farm all along the river (by the St. Rd. 42 bridge) so we know how wonderful it is.. and believe families greatly benefit from usage of the river for canoeing, fishing, etc. but most have no access to it.

March 5, 2015

Dear Sir - Enclosed is a letter I wrote that put into 3 newspapers. These newspapers were in the communites in the Area of the Bowling queen bridge or Highway # 46.

At the meeting of January 29, 2014 only statements could be ask or comented on.

No Questions were to be asked.

1) will the roadway (Highway 46) east of the bridge be lowered?

2) where are you (State DOT) going to get road material to raise road?

3) Will more flood water be released than before?

4) Durning a flood event will flood cover State Road 46 east of bridge?

Best wishes

P.J. Nicoson

P.J. Nicoson
241 E Co Rd 100 South
Center Point, IN.
47840

Papers in
Clay City News
Brazil Times
Spencer

norts in New York .

Letters To The Editor

State Road 46 Bridge Should Be Saved

Dear Editor:

On January 29, 2015 I attended the meeting concerning the State Road 46 bridge over Eel River at Bowling Green. This was at the community building.

Personally I think the bridge should be saved and maintained as a small roadside park.

The bridge should be preserved not just for history but for the protection of the highly productive bottom farm land.

The new bridge will be nine feet higher and longer than the old bridge.

The old bridge puts a damper on how much flood water can be released from the Cagles Mill Dam.

The present bridge is listed in National Register of Historic Places.

Also as Criterion A for its Association with events in the settlement and economic development of Clay County.

Bowling Green will be celebrating it's 200 year anniversary soon; as not only a small community but also Clay County's first county seat of government.

The Cagles Mill Dam was first built to protect the farm land and homes in the bottoms by flood control. These lands are all connected to the Eel River basin.

As for upkeep we have inmates from the county jail who would volunteer to maintain the old bridge and the park.

Let's keep history and protect the farm ground. Keep the old bridge.

P.J. Nicoson
Center Point

Michael R. Pence, Governor
Cameron F. Clark, Director

DNR Indiana Department of Natural Resources

Division of Historic Preservation & Archaeology • 402 W. Washington Street, W274 · Indianapolis, IN 46204-2739
Phone 317-232-1646 • Fax 317-232-0693 · dhpa@dnr.IN.gov

March 5, 2015

SR 46-Eel River Project
c/o Parsons Transportation Group
101 West Ohio Street, Suite 2121
Indianapolis, Indiana 46204

Federal Agency: Federal Highway Administration ("FHWA")

State Agency: Indiana Department of Transportation ("INDOT")

Re: DUAL REVIEW: January 29, 2015, public meeting about the SR 46 bridge over the Eel River (INDOT Bridge No. 046-11-01316C/NBI No. 17050) near the community of Bowling Green, in Washington Township, Clay County, Indiana (Des. No. 0800910; DHPA No. 10596)

Dear Sir or Madam:

The Indiana Department of Natural Resources, Division of Historic Preservation and Archaeology ("DHPA"), which also serves as the staff of the Indiana State Historic Preservation Officer ("Indiana SHPO"), wishes to comment on the January 29 public meeting in Bowling Green, pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended (recently recodified at 54 U.S.C. § 306108), implementing regulations at 36 C.F.R. Part 800, and pertinent Section 106 programmatic agreements, as well as under Indiana Code 14-21-1-18 and 312 Indiana Administrative Code 20-4.

We thank FHWA, INDOT, and Parsons Transportation Group for having held the January 29 public meeting. Giving the residents of Clay County and others from that part of the state an opportunity to learn about and to comment on the project and how it might affect this Select Bridge is important.

Similarly, we welcome INDOT's extension of the timeframe in which another party could propose taking ownership of the SR 46 bridge over the Eel River from only 60 days after the January 29 meeting until approximately the first week of August 2015, when the public hearing on the project is anticipated to be held.

While accurately depicting the condition of some of the rusted connections and braces on the current bridge, the slides used in the presentation on January 29 might have given some in the audience the impression that such deterioration is not just widespread but typical of the connection plates, interior gusset plates, lateral bracing, truss vertical members, and chords. Some commented that all trucks (not just those over 14 tons, as the posted signs indicate) should be prohibited from using that crossing until the replacement bridge is open to traffic, and some in the audience expressed the opinion that the bridge should be closed to all traffic. A misimpression about the bridge's condition could cause the public to believe that the bridge would be unsafe for all uses, even pedestrian. Our understanding is that, while the condition of the bridge is poor, it is not yet such a safety risk that it would need to be closed until at least 2017. However, if the condition deteriorates more rapidly than expected, we would ask that all Section 106 consulting parties be notified of that discovery immediately.

During the explanation on January 29 of how the bridge could be moved, it was stated that the two trusses act independently and can be used separately. That is true from a purely engineering perspective, but it overlooks the reality that the bridge is listed in the National Register of Historic Places as a two-span structure. Emphasizing that the trusses can be used separately could cause the public to infer that using the trusses in two different locations also would result in

two historic bridges being saved. That seems unlikely. In our experience, two halves of a National Register-eligible and -listed structure do not equate to either one listed or eligible structure or two listed or eligible structures.

Furthermore, as the U.S. Department of the Interior has written:

> Properties listed in the National Register should be moved only when there is no feasible alternative for preservation. When a property is moved, every effort should be made to reestablish its historic orientation, immediate setting, and general environment. [36 C.F.R. § 60.14(b)(1)]

The National Register nomination, which refers to the bridge as Indiana State Highway Bridge 46-11-1316 or the Bowling Bridge, indicates that the bridge is listed under Criterion A for its transportation significance in the settlement and development of Clay County. If the bridge must be moved, then we would want it to remain listed during and after the move if at all possible (see 36 C.F.R. § 60.14[b][2]). If the bridge were to be moved before that procedure involving the Keeper of the Register is completed, it automatically would be deleted from the National Register (36 C.F.R. § 60.14[b][4]).

We think it is possible that the bridge, as it exists currently, also might be eligible under Criterion C for engineering significance, and we think it would be essential for INDOT to make a case for Criterion C significance when it submits to the Indiana SHPO the information necessary to attempt to keep the bridge listed in the National Register, if relocation is proven to be the only feasible alternative. Recent experience with moved properties has informed us that the U.S. Department of the Interior, National Park Service, considers them eligible under Criterion C, only, if at all. Although integrity of location and setting are not irrelevant to a property's being eligible under Criterion C, those kinds of integrity might not be as important as they would be to a property that is eligible only under Criterion A. Even though many Parker through trusses once stood on state and Federal highways in Indiana, they are becoming increasingly rare, as INDOT has been actively replacing them in recent years. The historical value of a once-plentiful type of bridge rises as the numbers of examples of that type decrease. Thus, the reference during the presentation to this bridge's having been built from a standard design may understate its current engineering significance.

The various requirements for keeping a property that will be moved listed in the National Register are spelled out in 36 C.F.R. § 60.14(b), and we will not discuss them all in this letter. We would look to INDOT to provide the necessary documentation in support of the move and of retention on the National Register. However, we should mention that since the SR 46 bridge was nominated to the National Register as a State nomination (i.e., the nomination originated in Indiana, rather than in the Federal government), the Indiana Historic Preservation Review Board, in addition to the Indiana SHPO, also would need to review the proposed move. Then the Indiana SHPO would submit the documentation to the Keeper of the National Register in the National Park Service, and await the Keeper's response. If that response is favorable, then documentation of the bridge after the move also would need to be prepared by INDOT and submitted to the Keeper by the Indiana SHPO. Given the short timeframe that INDOT has laid out for constructing a new bridge at this crossing of the Eel River, we would encourage INDOT not to wait until time to move the bridge has almost expired before beginning this National Register retention approval process, as it could take several months.

My staff recalls hearing during the January 29 presentation that 25 years after the bridge spans are moved, the two spans would need about $500,000 worth of cleaning and painting, although we are unable to find that in the slides of the presentation. We assume that figure takes into account anticipated inflation of the dollar over 25 years, or, in other words, that the present value of that cost figure would be considerably less. In any event, it is not a figure that we recall having heard or read before. We wonder whether that figure also includes desirable, but not necessarily essential, maintenance measures that even a vehicular bridge would be unlikely to receive just 25 years after a thorough rehabilitation. Are INDOT's metal truss bridges typically cleaned and painted every 25 years? Our concern is that if the $500,000 figure is what the cleaning and painting would cost in 2040 or includes work that might not be essential, then stating that in another 25 years $500,000 would have to be spent could present such a bleak picture of what it would take to preserve the bridge for the long term that it would diminish the chances that anyone would want to take responsibility for this bridge—or any other metal truss bridge that is, or will become, available for new ownership or relocation.

It is apparent that INDOT does not want to retain ownership of this Select bridge after it is bypassed to the south by the new bridge, but we ask that FHWA and INDOT give that option serious consideration. That option would be a second variation on a combination of Alternative 4 (leaving the current bridge in place and restricting it to non-vehicular use) and

Alternative 5C-S (bypassing the current bridge's location to the south with a new vehicular bridge—the preliminary preferred alternative). The first variation, which was discussed on January 29, was for another entity, such as Clay County, to take responsibility for the current bridge. Under the second variation, INDOT could maintain the current bridge as a roadside park. We sense that INDOT is reluctant to do so. However, if a bridge owner wants to replace a Select bridge that it owns using FHWA funds, it appears to us that, according to the 2006 Indiana Historic Bridges Programmatic Agreement, the bridge owner must preserve that bridge if no outside party comes forward to take ownership of and responsibility for the bridge. If moving pieces of a National Register-listed Select bridge to different locations would destroy the bridge's listing and eligibility for listing (for probably 50 years), is that a prudent alternative as long as the bridge owner's preserving the bridge in place as a unit is feasible and prudent?

A member of the audience commented that if the SR 46 bridge were left in place after being bypassed, children could play on it and possibly get hurt. We acknowledge that possibility. It would be true for a bridge on a trail, as well. Injury of that kind is usually a possibility to some degree, even on bridges that are still in vehicular use. We think that the possibility here might be somewhat less than usual, given that the new bypass bridge would be immediately adjacent to the current bridge, rather than in a remote location that, for the most part, is out of the public view.

The January 29 presentation also brought up hydraulics issues that leaving the current SR 46 bridge in place while bypassing it with a new bridge are thought by the engineers to create. One of those was the anticipated need to align the new bridge's west abutment so as to be parallel with the west abutment of the current bridge. As a result, scouring of the new abutment is anticipated, which would require placement of rip-rap for protection. In our experience, rip-rap placement, for either new or rehabilitated bridges, is not unusual. Furthermore, the historic bridge alternatives analysis (Prevost, 11/17/2014) acknowledged that a detailed hydraulic analysis had not been done at that time. The January 29 presenters seemed to be more certain of the need to properly align the two bridges' west abutments than did the November alternatives analysis. Has that detailed hydraulic analysis been completed since November?

We would like to be informed of any formal decision that the Board of Commissioners of Clay County might have made or yet make and reported to you regarding the possibility of the County's taking ownership of the SR 46 bridge. Similarly, if any other party has requested to take ownership and responsibility for the bridge (in addition to Salt Creek Trail/Board of Commissioners of Brown County and Brown County State Park), we would appreciate being advised of that request.

If you have any questions regarding our Dual Review of the SR 46-Eel River Project near the community of Bowling Green in Washington Township, Clay County, please contact DHPA. Questions about historic buildings or structures pertaining to this review should be directed to John Carr at (317) 233-1949 or jcarr@dnr.IN.gov. Questions about archaeological issues should be directed to Mitch Zoll at (317) 232-3492 or mzoll@dnr.IN.gov.

In all future correspondence regarding this SR 46-Eel River Project (Des. No. 0800910), please refer to DHPA No. 10596.

Very truly yours,

Mitchell K. Zoll
Deputy State Historic Preservation Officer
Director, Division of Historic Preservation & Archaeology

MKZ:JLC:PCD:jlc

cc: Preservation Association of Clay County

emc: Daniel Prevost, Parsons Transportation Group
Allan Ball, Parsons Transportation Group
Sean Porter, Parsons Transportation Group
Andrew Campbell, ASC Group, Inc.
Ross Nelson, ASC Group, Inc.
Kevin Schwarz, Ph.D., RPA, ASC Group, Inc.

Lawrence Heil, P.E., Federal Highway Administration, Indiana Division
Rickie Clark, Indiana Department of Transportation
Tony Jones, Indiana Department of Transportation
Jessica Miller, Indiana Department of Transportation
Brock Ervin, Indiana Department of Transportation
Patrick Carpenter, Indiana Department of Transportation
Shaun Miller, Indiana Department of Transportation
Mary Kennedy, Indiana Department of Transportation
Susan Branigin, Indiana Department of Transportation
David Moffatt, Indiana Department of Transportation
Shirley Clark, Indiana Department of Transportation
Bryan Allender, Clay County Commissioner
Tony Fenwick, Clay County Commissioner
Paul Sinders, Clay County Commissioner
Board of Commissioners of Clay County, c/o Mary Jo Alumbaugh, County Recorder
Jeffrey Koehler, Clay County Historian
Vickie Mace, Clay County Historical Society
Bob Kirlin, Salt Creek Trail
Board of Commissioners of Brown County, c/o Dr. Michael Thompson, Administrator
Town Council, Town of Nashville, c/o Brenda Young, Clerk-Treasurer
Brown County Schools
Julia Pearson, Brown County Historical Society
Bob Bronson, Indiana Department of Natural Resources, Division of Outdoor Recreation
Dan Bortner, Indiana Department of Natural Resources, Division of State Parks & Reservoirs
Benjamin Clark, Indiana Department of Natural Resources, Division of State Parks & Reservoirs
Mark Dollase, Indiana Landmarks, Central Regional Office
Tommy Kleckner, Indiana Landmarks, Western Regional Office
Paul Brandenburg, Indiana Historic Spans Task Force
Dr. James L. Cooper, Professor Emeritus of History, DePauw University
Joshua Palmer, Indiana Historic Preservation Review Board
Daniel Kloc, Indiana Historic Preservation Review Board
Jim Corridan, Indiana Historic Preservation Review Board
Richard Butler, Indiana Historic Preservation Review Board
Kevin Orme, Indiana Historic Preservation Review Board
Beth McCord, Indiana Historic Preservation Review Board
Cameron Clark, Director, Indiana Department of Natural Resources and Indiana State Historic Preservation Officer
Christopher Smith, Deputy Director, Indiana Department of Natural Resources
Mitchell Zoll, Indiana Department of Natural Resources, Division of Historic Preservation & Archaeology
Chad Slider, Indiana Department of Natural Resources, Division of Historic Preservation & Archaeology
Paul Diehold, Indiana Department of Natural Resources, Division of Historic Preservation & Archaeology
John Carr, Indiana Department of Natural Resources, Division of Historic Preservation & Archaeology

Brown County Board of Commissioners
P.O. Box 37
Nashville, Indiana 47448

RE: SR 46 Bridge over Eel River (Clay County)

February 18, 2015

LETTER OF INTENT

To Whom It May Concern:

The purpose of this letter is to communicate our interest in the relocation of the EEL RIVER BRIDGE to Brown County, for use in our SALT CREEK TRAIL PROJECT. Phase I of this project is complete, and we are proceeding with the design and engineering of the next two phases.

The EEL RIVER BRIDGE would be used to cross Salt Creek in two separate locations within this project. One Section will be located in the Brown County State Park area, and it is my understanding you should be receiving a separate commitment from DNR for this section.

This letter serves as our commitment (for the second section of the EEL RIVER Bridge) on behalf of the Brown County Commissioners to "take responsibility for the bridge for a minimum of 25 years, with the expectation that it will be maintained beyond that period".

The Brown County Commissioners have been working closely with the Salt Creek Trail Committee, Friends of the Salt Creek Trail, as well as the Brown County Community Foundation, to see this project completed. The EEL RIVER Bridge and its designation as listed in the National Register of Historic Places, are welcome additions to the project.

Brown County takes great pride in our local historic heritage, and as such will make a concerted effort to prominently display information about the origin of the EEL RIVER Bridge and its history.

Kindest Regards,

Dave Anderson, President
Brown County Board of Commissioners

Dennis J. Wray, Commissioner

Diana Biddle, Commissioner

DNR Indiana Department of Natural Resources

Michael R. Pence, Governor
Cameron F. Clark, Director
Executive Office
402 W. Washington Street, W256
Indianapolis, Indiana 46204
Phone: 317-232-4020

February 24, 2015

via e-mail

Mary E. Kennedy
Architectural Historian/History Team Lead
Cultural Resources Office
Indiana Department of Transportation
100 N. Senate Avenue, Room N642
Indianapolis, Indiana 46201

Re: Letter of Intent-Indiana Department of Natural Resources
Bridge Number 046-11-01316C

Dear Ms. Kennedy:

It is my understanding that the historic bridge referred to as Bridge Number 046-11-01316C, which carries traffic on SR 46 over the Eel River in Clay County, Indiana, is scheduled to be replaced by INDOT under INDOT Project Des. No.0800910. The Department of Natural Resources' ("DNR") and the Board of Commissioners of Brown County ("Commissioners"), collectively "the Parties", have a keen interest and desire to utilize this two-span, historic bridge as part of the Salt Creek Trail Project ("Project").

Specifically, the Commissioners received a trail grant for the Project from the DNR's Division of Outdoor Recreation in accordance with the *Hoosiers on the Move: Indiana State Trails, Greenways, and Bikeways Plan*. Further, the DNR's Division of State Parks is working with the Commissioners and a non-profit, Brown County, trail group to develop the Project. The trail will be 0.65 miles in length from Nashville, Indiana to Brown County State Park ("Park") with approximately 0.25 miles on Park property. There are two points where the trail will cross Salt Creek. It is the goal of the Parties to place one bridge span across the creek on Park property ("Bridge Span A") and the other bridge span across the creek on County property ("Bridge Span B"). Both spans will be utilized as pedestrian bridges and open to the public, which complies with the requirements of INDOT and the Federal Highway Administration ("FHWA"). Also like INDOT and FHWA, one of the obligations under the grant is that the trail be retained and utilized for a minimum of twenty-five (25) years. This letter confirms the DNR's interest in taking ownership of Bridge Span A as part of the Project and the DNR's

pledge to maintain Bridge Span A for a minimum of twenty-five (25) years, subject to appropriated funding.

If the Parties' requests are approved, we understand that INDOT will relocate and rehabilitate the spans to make them operational. DNR also understands that it will be necessary to enter into an agreement with INDOT outlining the specific details of use, including but not limited to adherence to all applicable requirements of the *Programmatic Agreement Among the Federal Highway Administration, the Indiana Department of Transportation, the Indiana State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding Management and Preservation of Indiana's Historic Bridges.* Please know that DNR is more than willing to enter into such an agreement.

It is the DNR's understanding that the Commissioners have sent a similar letter of commitment to INDOT. The DNR hopes that the Parties' requests will be evaluated favorably so that Bridge Number 046-11-01316C can become part of the Project and, therefore, be retained and maintained for public use for many years to come.

Very truly yours,

John M. Davis, Deputy Director
Bureau of Lands and Cultural Resources
Indiana Department of Natural Resources

e-copy: Dan Bortner, Terry Coleman, Ginger Murphy, Mike List, Bob Bronson, Ben Clark

APPENDIX J – ADDITIONAL INFORMATION

- Letter of Intent from Brown County
- Letter of Intent from Indiana DNR
- U.S. Census Data for Environmental Justice Calculations

Brown County Board of Commissioners
P.O. Box 37
Nashville, Indiana 47448

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Re: Letter of Intent-Indiana Department of Natural Resources
Bridge Number 046-11-01316C

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It is my understanding that the historic bridge referred to as Bridge Number 046-11-01316C, which carries traffic on SR 46 over the Eel River in Clay County, Indiana, is scheduled to be replaced by INDOT under INDOT Project Des. No.0800910. The Department of Natural Resources' ("DNR") and the Board of Commissioners of Brown County ("Commissioners"), collectively "the Parties", have a keen interest and desire to utilize this two-span, historic bridge as part of the Salt Creek Trail Project ("Project").

Specifically, the Commissioners received a trail grant for the Project from the DNR's Division of Outdoor Recreation in accordance with the *Hoosiers on the Move: Indiana State Trails, Greenways, and Bikeways Plan*. Further, the DNR's Division of State Parks is working with the Commissioners and a non-profit, Brown County, trail group to develop the Project. The trail will be 0.65 miles in length from Nashville, Indiana to Brown County State Park ("Park") with approximately 0.25 miles on Park property. There are two points where the trail will cross Salt Creek. It is the goal of the Parties to place one bridge span across the creek on Park property ("Bridge Span A") and the other bridge span across the creek on County property ("Bridge Span B"). Both spans will be utilized as pedestrian bridges and open to the public, which complies with the requirements of INDOT and the Federal Highway Administration ("FHWA"). Also like INDOT and FHWA, one of the obligations under the grant is that the trail be retained and utilized for a minimum of twenty-five (25) years. This letter confirms the DNR's interest in taking ownership of Bridge Span A as part of the Project and the DNR's

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Very truly yours,

John M. Davis, Deputy Director
Bureau of Lands and Cultural Resources
Indiana Department of Natural Resources

e-copy: Dan Bortner, Terry Coleman, Ginger Murphy, Mike List, Bob Bronson, Ben Clark

Table B03002 - Hispanic or Latino Origin by Race

Location	Total Population	Minority Population	Minority Population Percentage	125% COC Threshold	
Community of Comparison (COC)					
Clay County, Indiana	26,983	729	2.70%	3.38%	
Affected Community (AC)					**EJ Population**
Census Tract 405	3,672	98	2.67%	-	No

Source: U.S. Census Bureau, 2006-2010 American Community Survey

Table B17001 - Poverty Status in the Past 12 Months by Sex and Age

Location	Total Population	Population Below Poverty Level	Percentage of Total Population Below Poverty Level	125% COC Threshold	
Community of Comparison (COC)					
Clay County, Indiana	26,472	3,307	12.49%	15.62%	
Affected Community (AC)					**EJ Population**
Census Tract 405	3,513	492	14.01%	-	No

Source: U.S. Census Bureau, 2006-2010 American Community Survey

Legend:

Boundaries

State

'13 County

Features

Major Road

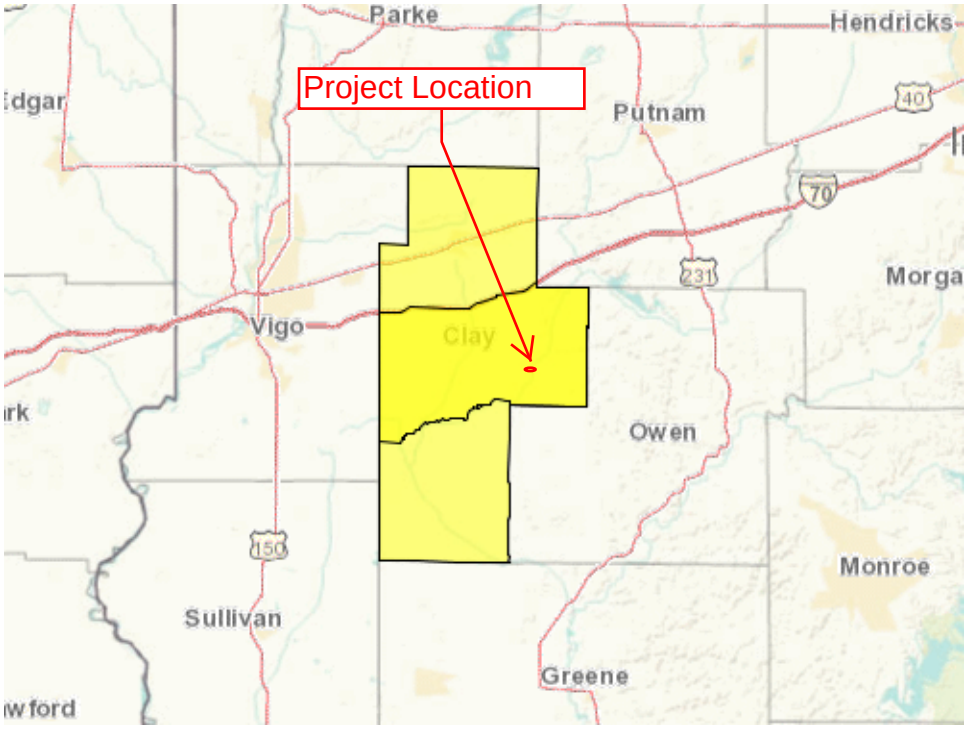
Street

Stream/Waterbody

Your Selections

Census tract 405

Items in grey text are not visible at this zoom level



B03002

HISPANIC OR LATINO ORIGIN BY RACE

Universe: Total population
2006-2010 American Community Survey 5-Year Estimates

Note: This is a modified view of the original table.

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Data and Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, for 2010, the 2010 Census provides the official counts of the population and housing units for the nation, states, counties, cities and towns. For 2006 to 2009, the Population Estimates Program provides intercensal estimates of the population for the nation, states, and counties.

	Clay County, Indiana	Census Tract 405, Clay County, Indiana
	Estimate	Estimate
Total:	26,983	3,672
Not Hispanic or Latino:	26,702	3,597
White alone	26,254	3,574
Black or African American alone	48	0
American Indian and Alaska Native alone	67	7
Asian alone	80	0
Native Hawaiian and Other Pacific Islander alone	25	0
Some other race alone	16	16
Two or more races:	212	0
Hispanic or Latino:	281	75

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

While the 2006-2010 American Community Survey (ACS) data generally reflect the December 2009 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural population, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2000 data. Boundaries for urban areas have not been updated since Census 2000. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau, 2006-2010 American Community Survey

Explanation of Symbols:

1. An '**' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
2. An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.

3. An '-' following a median estimate means the median falls in the lowest interval of an open-ended distribution.
4. An '+' following a median estimate means the median falls in the upper interval of an open-ended distribution.
5. An '***' entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.
6. An '*****' entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.
7. An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.
8. An '(X)' means that the estimate is not applicable or not available.

B17001

POVERTY STATUS IN THE PAST 12 MONTHS BY SEX BY AGE

Universe: Population for whom poverty status is determined
2006-2010 American Community Survey 5-Year Estimates

Note: This is a modified view of the original table.

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Data and Documentation section.

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	Clay County, Indiana	Census Tract 405, Clay County, Indiana
	Estimate	Estimate
Total:	26,472	3,513
Income in the past 12 months below poverty level:	3,307	492

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

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