FHWA-Indiana Environmental Document

CATEGORICAL EXCLUSION / ENVIRONMENTAL ASSESSMENT FORM

GENERAL PROJECT INFORMATION

Road No./County:	State Road (SR) 9/Madison County
Designation Number(s):	2100572
Project Description/Termini:	Bridge Replacement Project over Mud Creek, 2.83 Miles North of SR 28

X	**Categorical Exclusion, Level 2** – Required Signatories: INDOT DE and/or INDOT ESD
	Categorical Exclusion, Level 3 – Required Signatories: INDOT ESD
	Categorical Exclusion, Level 4 – Required Signatories: INDOT ESD and FHWA
	Environmental Assessment (EA) – Required Signatories: INDOT ESD and FHWA
	Additional Investigation (AI) – The proposed action included a design change from the original approved environmental document. Required Signatories must include the appropriate environmental approval authority

Approval

INDOT DE Signature and Date

INDOT ESD Signature and Date

FHWA Signature and Date

Release for Public Involvement

REB 11/19/2024
INDOT DE Initials and Date

N/A
INDOT ESD Initials and Date

Certification of Public Involvement

INDOT Consultant Services Signature and Date

INDOT DE/ESD Reviewer Signature and Date:

Name and Organization of CE/EA Preparer: Delaney Weston, INDOT Greenfield District

County Madison Route SR 9 Des. No. 2100572

Note: Refer to the most current INDOT CE Manual, guidance language, and other ESD resources for further guidance regarding any section of this form.

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*?		X
If No, then:		
Opportunity for a Public Hearing Required?	X	

**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.

Notice of Entry letters for environmental survey were not sent to potentially affected property owners as it was assumed all project activities would occur within existing Indiana Department of Transportation (INDOT) right-of-way (ROW).

The project will meet the minimum requirements described in the current *Indiana Department of Transportation (INDOT) Project Development Public Involvement Procedures Manual* which requires the project sponsor to offer the public an opportunity to submit comments and/or request a public hearing. Therefore, a legal notice will appear in a local publication contingent upon the release of this document for public involvement. This document will be revised after the public involvement requirements are fulfilled.

Public Controversy on Environmental Grounds

Discuss public controversy concerning community and/or natural resource impacts, including what is being done during the project to minimize impacts.

At this time, there is no substantial public controversy concerning impacts to the community or natural resources.

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

Sponsor of the Project: Indiana Department of Transportation INDOT District: Greenfield

Local Name of the Facility: State Road 9

Funding Source (*mark all that apply*): Federal [X] State [X] Local [ ] Other* [ ]

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

PURPOSE AND NEED:

The need should describe the specific transportation problem or deficiency that the project will address. The purpose should describe the goal or objective of the project. The solution to the traffic problem should NOT be discussed in this section.

Need: Structure # 009-48-00157 B is a concrete girder bridge. The structure has shown signs of deterioration and is currently rated a "4" (Poor) out of "9" (excellent) in condition on the INDOT Bridge Condition Rating Categories Table. The bridge has shown evidence of extensive cracking, spalling, and heavy delamination. The superstructure alignment to the south has moved 1.5". See the Abbreviated Engineering Assessment (Appendix H, page 8) for more information.

Purpose: The purpose of this project is to address the overall structural and geometric associated with the bridge, and to provide continued safe vehicular passage at this location for at least 75 years.

PROJECT DESCRIPTION (PREFERRED ALTERNATIVE):

County: Madison Municipality: N/A

Limits of Proposed Work: 2.77 miles north of SR 28 to 2.96 miles north of SR 28, approximately 560 feet north of the center of the structure to approximately 455 feet south of the center of the structure.

Total Work Length: 0.2 Mile(s) Total Work Area: 2 Acre(s)

	Yes[1]	No
Is an Interstate Access Document (IAD)[1] required?		X
If yes, when did the FHWA provide a Determination of Engineering and Operational Acceptability?	Date:	

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

Describe location of project including township, range, city, county, roads, etc. Existing conditions should include current conditions, current deficiencies, roadway description, surrounding features, etc. Preferred alternative should include the scope of work, anticipated impacts, and how the project will meet the Purpose and Need. Logical termini and independent utility also need discussed.

INDOT and the Federal Highway Administration (FHWA) intend to proceed with bridge replacement project.

Location:
The proposed project area is located on SR 9, over Mud Creek, approximately 2.83 miles north of SR 28 in Madison County, Indiana. More specifically, the project is located in Section 36, Township 22 N, and Range 7 E and Section 31, Township 22 N, and Range 8 E as seen on the USGS 7.5' Alexandria, Indiana topographic quadrangle. Please refer to Appendix B, pages 1-3 for maps of the project area.

Existing Conditions:
This section of SR 9 is classified as a Minor Collector roadway. The existing SR 9 approach consists of two approximately 11 ft lanes bordered by two approximately 3.5ft paved shoulders. Structure # 009-48-00157 B is an approximately 40.1 ft wide by 29.7 ft long concrete girder bridge. The structure has shown signs of deterioration and is currently rated a "4" (Poor) out of "9" (excellent) in condition on the INDOT Bridge Condition Rating Categories Table. The bridge has shown evidence of extensive cracking, spalling, and heavy delamination. The superstructure alignment to the south has moved 1.5 inches.

Preferred Alternative:
INDOT proposes to replace the existing structure with an approximately 39.25 ft clear roadway width by 70.25 ft long composite pre-stressed concrete bulb-tee beam bridge. Three culverts (Structures #1, 2, and 3) within the project area will also be removed and replaced in kind. Structure #1 is located approximately 300 ft south of the bridge, on the east side of SR 9. Structure #2 is located approximately 230 ft north of the bridge on the west side of SR 9. Structure #3 is located approximately 415 ft north of the bridge on the east side of SR 9. Revetment riprap will be placed along the roadside and underneath the bridge. Guardrail and signage will be removed and replaced in kind. The roadway will be milled and overlaid with Hot Mix Asphalt (HMA). The right of way (ROW) of SR 9 in the vicinity of the structure is approximately 55 feet each side of the centerline of SR 9 throughout the project. However, improvements cannot be made within the existing ROW, and approximately 0.6482 acre of permanent right of way (ROW) will be acquired for this project. Acquisition is anticipated to occur to the southwest of 009-48-00157 B for access and placement of riprap, as well as along the entire east side of the project area for grading, placement of riprap, and other construction activities. Approximately 0.0092 acre of temporary ROW will be acquired on the northwest side of the project area for removal and replacement of a driveway. Approximately 0.36 acres of trees will be trimmed or cleared as part of this project. The maintenance of traffic (MOT) is anticipated to utilize a full road closure with a detour. The detour route includes SR 28, SR 37, and SR 26 for an added travel length of approximately 22 miles. Construction is anticipated to begin Fall 2025.

Logical Termini/Independent Utility:
The preferred alternative satisfies the purpose and need for the project as described above because it will address the overall structural and geometric deficiencies associated with the bridge. This alternative includes the minimum area necessary to complete this project, therefore it has logical termini. This alternative does not create the need for additional work and does not rely on another project to meet the purpose and need, therefore it has independent utility.

Please refer to Appendix B for maps depicting the project area (Appendix B, pages 1-3).

OTHER ALTERNATIVES CONSIDERED:

Provide a header for each alternative. Describe all discarded alternatives, including the No Build Alternative. Explain why each discarded alternative was not selected. Make sure to state how each alternative meets or does not meet the Purpose and Need and why.

Bridge Rehabilitation
A bridge rehabilitation was not considered for this structure due to its advanced state of deterioration.

Reinforced Concrete Slab Bridge
This alternative would replace the existing structure with a reinforced concrete slab bridge. This alternative does meet the purpose and need of the project, but would include higher construction cost, and more environmental impacts, including stream impacts. Due to these reasons, it was dismissed from further consideration.

Prestressed Concrete Box Beam Bridge
This alternative would replace the existing structure with a prestressed concrete box beam bridge. This alternative does meet the purpose and need of the project, but would have more environmental impacts, including stream impacts. It would also have higher maintenance costs through its lifetime. Due to these reasons, it was dismissed from further consideration.

No Build Alternative
This alternative would leave the existing structures as is. While this alternative would avoid impacts to surrounding resources and would include no construction costs, the structures would continue to deteriorate. Because this alternative does not meet the purpose and need of the project, it was dismissed from further consideration.

The No Build 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;	X
It would not correct existing deteriorated conditions and maintenance problems; or	X
It would result in serious impacts to the motoring public and general welfare of the economy.	
Other (Describe):	

ROADWAY CHARACTER:

If the proposed action includes multiple roadways, complete and duplicate for each roadway.

Name of Roadway	State Road 9				
Functional Classification:	Minor Collector				
Current ADT:	4331	VPD (2021)	Design Year ADT:	5500	VPD (2041)
Design Hour Volume (DHV):	9.74	Truck Percentage (%)	9		
Designed Speed (mph):	55	Legal Speed (mph):	55		

Indiana Department of Transportation

County Madison Route SR 9 Des. No. 2100572

	Existing		Proposed	
Number of Lanes:	2		2	
Type of Lanes:	Travel		Travel	
Pavement Width:	11		12	ft.
Shoulder Width:	8	ft.	7.67	ft.
Median Width:	N/A	ft.	N/A	ft.
Sidewalk Width:	N/A	ft.	N/A	ft.

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

BRIDGES AND/OR SMALL STRUCTURE(S):

If the proposed action includes multiple structures, complete and duplicate for each bridge and/or small structure. Include both existing and proposed bridge(s) and/or small structure(s) in this section.

Structure/NBI Number(s): 009-48-00157 B/002560 Sufficiency Rating: 61.2, iTAMS, 3/23/23
(Rating, Source of Information)

	Existing		Proposed	
Bridge/Structure Type:	Concrete Girder		Pre-stressed concrete bulb-tee beam	
Number of Spans:	1		1	
Weight Restrictions:	N/A	ton	N/A	ton
Height Restrictions:	N/A	ft.	N/A	ft.
Curb to Curb Width:	40.1	ft.	39.4	ft.
Outside to Outside Width:	43.1	ft.	42.4	ft.
Shoulder Width:	8	ft.	7.67	ft.

Describe impacts and work involving bridge(s), culvert(s), pipe(s), and small structure(s). Provide details for small structure(s): structure number, type, size (length and dia.), location and impacts to water. Use a table if the number of small structures becomes large. If the table exceeds a complete page, put it in the appendix and summarize the information below with a citation to the table.

The existing bridge (Structure no. 009-48-00157 B) is a single span concrete girder bridge. The total length of the bridge is 29.7 ft and carries SR 9 over Mud Creek. The bridge was built in 1923 and rehabilitated in 1953 and 2010. This bridge is not a historic bridge per the Indiana Historic Bridge Inventory.

INDOT proposes to remove the existing bridge and replace it with a 70.25 ft long single span pre-stressed concrete bulb-tee beam bridge. The proposed structure will have an out-to-out coping width of 42 ft, 4 inches, with the clear roadway width of 39 ft, 4 inches. The structure will be skewed 15 degrees to accommodate Mud Creek. Revetment riprap will be placed along the roadside and underneath the bridge.

In addition to Structure no. 009-48-00157 B, three culverts within the project area will be removed and replaced in kind. These structures do not have NBI or structure numbers, but are referred to as Structure #1, Structure #2, and Structure #3 on the plans. Structure #1 is an 18 inch wide by 54 ft long corrugated metal pipe (CMP) located approximately 300 ft south of the bridge, on the east side of SR 9. Structure #2 is a 15 inch wide by 52 ft long CMP, located approximately 230 ft north of the bridge on the west side of SR 9. Structure #3 is an 18 inch wide by 56 ft long CMP located approximately 415 ft north of the bridge on the east side of SR 9. Please refer to Appendix B, pages 24-36 for more information.

MAINTENANCE OF TRAFFIC (MOT) DURING CONSTRUCTION:

	Yes	No
Is a temporary bridge proposed?		X
Is a temporary roadway proposed?		X
Will the project involve the use of a detour or require a ramp closure? (describe below)	X	
Provisions will be made for access by local traffic and so posted.	X	
Provisions will be made for through-traffic dependent businesses.	X	
Provisions will be made to accommodate any local special events or festivals.		X
Will the proposed MOT substantially change the environmental consequences of the action?		X
Is there substantial controversy associated with the proposed method for MOT?		X
Will the project require a sidewalk, curb ramp, and/or bicycle lane closure? (describe below)		X
Provisions will be made for access by pedestrians and/or bicyclist and so posted (describe below).		

Discuss closures, detours, and/or facilities (if any) that will be provided for maintenance of traffic. Any known impacts from these temporary measures should be quantified to the extent possible, particularly with respect to properties such as Section 4(f) resources and wetlands. Discuss any pedestrian/bicycle closures. Any local concerns about access and traffic flow should be detailed as well.

The maintenance of traffic (MOT) is anticipated to utilize a full road closure with a detour. The detour route includes SR 28, SR 37, and SR 26 for an added travel length of approximately 22 miles. Please refer to Appendix B, page 28 for more information on the MOT.

The closures/lane restrictions will pose a temporary inconvenience to traveling motorists (including school buses and emergency services); however, no significant delays are anticipated, and all inconveniences and delays will cease upon project completion.

ESTIMATED PROJECT COST AND SCHEDULE:

Engineering: $ 476,610 (2024) Right-of-Way: $ 56,200 (2025) Construction: $ 2,292,358 (2026)

Anticipated Start Date of Construction: Spring 2026

RIGHT OF WAY:

	Amount (acres)	
Land Use Impacts	Permanent	Temporary
Residential	0	0.0092
Commercial	0	0
Agricultural	0.6482	0
Forest	0	0
Wetlands	0	0
Other:	0	0
Other:	0	0
TOTAL	0.6482	0.0092

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, reacquisition or easements, either known or suspected, and their impacts on the environmental analysis should be discussed.

The right of way (ROW) within the project area is approximately 55 feet each side of the centerline of SR 9. However, improvements cannot be made within the existing ROW, and approximately 0.6482 acre of permanent right of way (ROW) will be acquired for this

project. Acquisition of agricultural land is anticipated to occur to the southwest of 009-48-00157 B for access and placement of riprap, as well as along the entire east side of the project area for grading, placement of riprap, and other construction activities.

Approximately 0.0092 acre of temporary ROW will be acquired on the northwest side of the project area for removal and replacement of a culvert. The land use in this area is residential.

If the scope of work or permanent or temporary right-of-way amounts change, the INDOT Environmental Services Division (ESD) and the INDOT District Environmental Section will be contacted immediately.

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

SECTION A - EARLY COORDINATION:

List the date(s) coordination was sent and all resource 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.

Agency	Date Sent	Date Response Received	Appendix
Federal Highway Administration (FHWA)	January 9, 2024	No response received	N/A
Indiana Department of Natural Resources, Division of Fish and Wildlife (IDNR, DFW)	January 9, 2024	February 6, 2024	Appendix C, Pages 4-7
Indiana Geological and Water Survey (IGWS)	January 5, 2024 (completed online)	January 5, 2024 (automated response)	Appendix C, Pages 8-10
U.S. Department of Housing and Urban Development (HUD)	January 9, 2024	No response received	N/A
U.S. Army Corps of Engineers (USACE)	January 9, 2024	No response received	N/A
Natural Resources Conservation Service (NRCS)	January 9, 2024	January 23, 2024	Appendix C, Page 11
Madison County Commissioner	January 9, 2024	No response received	N/A
Madison County Council	January 9, 2024	No response received	N/A
Madison County Highway Department	January 9, 2024	No response received.	N/A
Madison County Surveyor	January 9, 2024	No response received.	N/A
Madison County Drainage Board	January 9, 2024	No response received.	N/A
Madison Grant School Corporation	January 9, 2024	No response received.	N/A
Madison County Council of Governments (MCCOG)	January 9, 2024	No response received.	N/A
Van Buren Township Fire Department	January 9, 2024	No response received	N/A
Mud Creek Floodplain Administrator	August 9, 2024	No response received.	N/A

All applicable recommendations are included in the Environmental Commitments section of this CE document.

SECTION B – ECOLOGICAL RESOURCES:

	Presence	Impacts	
		Yes	No
Streams, Rivers, Watercourses & Other Jurisdictional Features	X	X	
Federal Wild and Scenic Rivers			
State Natural, Scenic or Recreational Rivers			
Nationwide Rivers Inventory (NRI) listed			
Outstanding Rivers List for Indiana			
Navigable Waterways			

Total stream(s) in project area: 150 Linear feet Total impacted stream(s): 68 Linear feet

Stream Name	Classification	Total Size in Project Area (linear feet)	Impacted linear feet	Comments (i.e. location, flow direction, likely Water of the US, appendix reference)
Mud Creek	Perennial	150	68	Flows southwest, likely Waters of the US

Describe all streams, rivers, watercourses and other jurisdictional features adjacent or within the project area. Include whether or not impacts (both permanent and temporary) will occur to the features identified. Include if the streams or rivers are listed on any federal or state lists for Indiana. Include if features are likely subject to federal or state jurisdiction. Discuss measures to avoid, minimize, and mitigate if impacts will occur.

Based on the desktop review, the aerial map of the project area, and the RFI report (Appendix E, Pages 1-8) there are three streams within the 0.5-mile search radius, and one within the project area. That number was confirmed after the site visits on September 28, 2022 and April 9, 2024, by INDOT Environmental Staff at Greenfield District.

A *Waters of the U.S. Determination / Wetland Delineation Report* was approved by INDOT Ecology and Waterway Permitting Office on October 21, 2024. Please refer to Appendix F for the *Waters of the U.S. Determination / Wetland Delineation Report*. It was determined that one likely jurisdictional stream, Mud Creek, is located within the project area.

The field reconnaissance identified the presence of stream, Mud Creek, within the investigated area. Mud Creek is mapped as a USGS blue line stream and flows from east to west through the investigated area. Based on field investigations, Mud Creek is likely to be a perennial stream. Mud Creek appears to flow year-round and is supplemented by rain events and runoff. Vegetation in the area consisted primarily of Kentucky bluegrass (*Poa Pratensis*, FAC), reed canary grass (*Phalaris arundinacea*, FACW), and tall fescue (*Schedonorus arundinaceus*, FACU). The existing structure carries Mud Creek under SR 9. The upstream drainage area of Mud Creek is 11.527 square miles, according to StreamStats. Mud Creek exhibited a defined bed and bank and an OHWM. The OHWM was measured at 15.67 feet across, and 0.83 feet deep. The substrate of Mud Creek consisted of silt. No riffles or pools were observed. Mud Creek is likely of poor quality due to runoff from SR 9 and the surrounding agricultural area. Mud Creek flows into Pipe Creek, which flows into the White River. The White River is a Traditionally Navigable Waterway (TNW). Because Mud Creek exhibits a defined bed and bank, an OHWM, and connectivity to a TNW, it should likely be considered a jurisdictional Waters of the US.

Mud Creek is not listed as a Federal Wild and Scenic River or on the National Rivers Inventory and is not listed as a State Natural, Scenic, and Recreational River or as an Outstanding River for Indiana.

IDNR-DFW responded on February 6, 2024 with recommendations regarding conditions for working within the waterway, bank stabilization, and riparian habitat (Appendix C, pages 4-7).

All applicable recommendations are included in the Environmental Commitments section of this CE document.

Open Water Feature(s)	**Presence**	**Impacts**	
		Yes	**No**
Reservoirs			
Lakes			
Farm Ponds			
Retention/Detention Basin			
Storm Water Management Facilities			
Other: _____			

Describe all open water feature(s) identified adjacent or within the project area. Include whether or not impacts (both permanent and temporary) will occur to the features identified. Include if features are likely subject to federal or state jurisdiction. Discuss measures to avoid, minimize, and mitigate if impacts will occur.

Based on the desktop review, the aerial map of the project area, and the RFI report (Appendix E, pages 1-8*)* there are no open water features within the 0.5-mile search radius. There are no open water features within or adjacent to the project area, which was confirmed by the site visits on September 28, 2022 and April 9, 2024, by INDOT Environmental Staff at Greenfield District.

Therefore, no impacts are expected.

	Presence	Impacts Yes	Impacts No
Wetlands			

Total wetland area: 0 Acre(s) Total wetland area impacted: 0 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 (i.e. location, likely Water of the US, appendix reference)

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

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.	

Describe all wetlands identified adjacent or within the project area. Include whether or not impacts (both permanent and temporary) will occur to the features identified. Include if features are likely subject to federal or state jurisdiction. Discuss measures to avoid, minimize, and mitigate if impacts will occur.

Based on the desktop review, the aerial map of the project area, and the RFI report (Appendix E, pages 1-8*)* there are four wetlands within the 0.5-mile search radius. There are no wetlands within or adjacent to the project area, which was confirmed by the site visits on September 28, 2022, and April 9, 2024, by INDOT Environmental Staff at Greenfield District. Therefore, no impacts are expected.

	Presence	Impacts Yes	Impacts No
Terrestrial Habitat	X	X	

Total terrestrial habitat in project area: 1.91 Acre(s) Total tree clearing: 0.36 Acre(s)

Describe types of terrestrial habitat (i.e. forested, grassland, farmland, lawn, etc) adjacent or within the project area. Include whether or not impacts will occur to habitat identified. Include total terrestrial habitat impacted and total tree clearing that will occur. Discuss measure to avoid, minimize, and mitigate if impacts will occur.

Based on a desktop review, site visits on September 28, 2022, and April 9, 2024, by INDOT Environmental Staff at Greenfield District, and the aerial map of the project area (Appendix B*,* Page 3), the surrounding area consists of roadside grasses and agricultural land. The dominant vegetation within the investigated area consists of maintained roadside grasses. Approximately 1.91

acres of terrestrial disturbance will occur. Approximately 0.36 acre of tree clearing is anticipated. Dominant species of trees to be removed include maple (*Acer spp.*). Avoidance and Minimization Measures (AMMs) are included as firm commitments. No mitigation is anticipated.

IDNR-DFW responded on February 6, 2024, with recommendations to avoid or minimize impacts to terrestrial habitat. These recommendations included post-construction revegetation measures and implementing sediment and erosion control measures (Appendix C, pages 4-7).

All applicable recommendations are included in the Environmental Commitments section of this CE document.

Protected Species

Federally Listed Bats	**Yes**	**No**
Information for Planning and Consultation (IPaC) determination key completed	X	
Section 7 informal consultation completed (IPaC cannot be completed)		
Section 7 formal consultation Biological Assessment (BA) required		

Determination Received for Listed Bats from USFWS: NE [ ] NLAA [X] LAA [ ]

Other Species not included in IPaC	**Yes**	**No**
Additional federal species found in project area (based on IPaC species list)		X
State species (not bird) found in project area (based upon consultation with IDNR)		X

Migratory Birds	**Yes**	**No**
Known usage or presence of birds (i.e. nests)		X
State bird species based upon coordination with IDNR		X

Discuss IDNR coordination and species identified. Describe USFWS Section 7 consultation and determination received for Indiana bat and northern long-eared bat impacts. Discuss if other federally listed species were identified. If so, include consultation that has occurred and the determination that was received. Discuss if migratory birds have been observed and any impacts.

Based on a desktop review and the RFI report (Appendix E, pages 1-8), completed by INDOT Environmental Staff at Greenfield District on February 10, 2023, the IDNR Madison County Endangered, Threatened and Rare (ETR) Species List has been checked. According to the IDNR-DFW early coordination response letter dated February 6, 2024 (Appendix C, Pages 4-7), the Natural Heritage Program's Database has been checked and to date, no plant or animal species listed as state or federally threatened, endangered, or rare have been reported to occur within the project vicinity. An INDOT 0.5-mile bat review occurred on December 9, 2022. No bats were found within 0.5 mile of the project area.

Project information was submitted through the USFWS's Information for Planning and Consultation (IPaC) portal, and an official species list was generated (Appendix C, Pages 12-20). The project is within range of the federally endangered Indiana bat *(Myotis sodalis*) and northern long-eared bat (NLEB) (*Myotis septentrionalis*).

The project is also within range of three other species. The monarch butterfly (*Danaus plexippus*) is listed as a candidate species. The tricolored bat (*Perimyotis subflavus*) is listed as proposed endangered. The whooping crane (*Grus americana*) is listed as an experimental population, non-essential. No coordination is needed for experimental, candidate, and proposed species. No additional species were generated in the IPaC species list other than the ones listed above.

The project qualifies for the *Range-wide Programmatic Informal Consultation for the Indiana bat and northern long-eared bat (NLEB)*, dated May 2016 (revised February 2018), between FHWA, Federal Railroad Administration (FRA), Federal Transit Administration (FTA), and USFWS. A culvert inspection for bats occurred on December 20, 2023 and was found to have no signs of birds or bats using the structure. (Appendix H, Page 2). An effect determination key was completed on August 1, 2024, by INDOT Greenfield, and based on the responses provided, the project was found to "May Affect, Not Likely to Adversely Affect" the Indiana bat and/or the NLEB (Appendix *C,* Pages 21-35). No response was received from USFWS within the 14-day review period; therefore, it was concluded they concur with the finding. The Avoidance and Minimization Measures (AMMs) included general construction and lighting recommendations. These AMMs are included as firm commitments in the Environmental Commitments section of this

document.

Structure # 009-48-00157 B and the project's surrounding habitat is conducive for use (i.e. nests) by a bird species protected under the Migratory Bird Treaty Act (MBTA). Prior to the start of nesting season (May 1) the structure must be inspected for birds or signs of birds. If birds or signs of birds are found during the inspection avoidance and minimization measures must be implemented prior to the start of and during the nesting season. Nests without eggs or young should be removed prior to construction during the non-nesting season (September 8 – April 30) and during the nesting season if no eggs or young are present. Nests with eggs or young cannot be removed or disturbed during the nesting season (May 1 – September 7). Nests with eggs or young should be screened or buffered from active construction. Details of the required procedures are outlined in the "Potential Migratory Bird on Structure" USP/RSP.

This precludes the need for further consultation on this project as required under Section 7 of the Endangered Species Act, as amended. If new information on endangered species at the site becomes available, or if project plans are changed, USFWS will be contacted for consultation

Geological and Mineral Resources	**Yes**	**No**
Project located within the Indiana Karst Region		X
Karst features identified within or adjacent to the project area		X
Oil/gas or exploration/abandoned wells identified in the project area		X

Date Karst Evaluation reviewed by INDOT EWPO (if applicable): _____

Discuss if project is located in the Indiana Karst Region and if any karst features have been identified in the project area (from RFI). Discuss response received from IGWS coordination. Discuss if any mines, oil/gas, or exploration/abandoned wells were identified and if impacts will occur. Include discussion of karst study/report was completed and results. (Karst investigation must comply with the current Protection of Karst Features during Planning and Construction guidance and coordinated and reviewed by INDOT EWPO)

Based on a desktop review and the Indiana Karst Region map, the project is located outside the designated Indiana Karst Region as outlined in the most current *Protection of Karst Features during Project Development and Construction*. According to the topo map of the project area (Appendix B, Page 2), and the RFI report (Appendix E, Pages 1-8), there are no karst features identified within or adjacent to the project area. In the early coordination response on January 5, 2024, the Indiana Geological and Water Survey (IGWS) did not indicate that karst features exist in the project area (Appendix C, Pages 8-10). The IGWS response also indicated a moderate liquefaction potential, 1% annual chance flood hazard, high potential for bedrock, and low potential for sand and gravel resources. The response from IGWS has been communicated to the designer on August 16, 2024. No impacts are expected.

SECTION C – OTHER RESOURCES

	Presence	**Impacts**	
Drinking Water Resources		**Yes**	**No**
Wellhead Protection Area(s)			
Source Water Protection Area(s)			
Water Well(s)			
Urbanized Area Boundary			
Public Water System(s)			

	Yes	**No**
Is the project located in the St. Joseph Sole Source Aquifer (SSA):		X
If Yes, is the FHWA/EPA SSA MOU Applicable?		
If Yes, is a Groundwater Assessment Required?		

Check the appropriate boxes and discuss each topic below. Provide details about impacts and summarize resource-specific

coordination responses and any mitigation commitments. Reference responses in the Appendix.

Sole Source Aquifer
The project is located in Madison County, which is not located within the area of the St. Joseph Sole Source Aquifer, the only legally designated sole source aquifer in the state of Indiana. Therefore, the FHWA/EPA/INDOT Sole Source Aquifer Memorandum of Understanding (MOU) is not applicable to this project, a detailed groundwater assessment is not needed, and no impacts are expected.

Wellhead Protection Area and Source Water
The Indiana Department of Environmental Management's Wellhead Proximity Determinator website (http://www.in.gov/idem/cleanwater/pages/wellhead/) was accessed on August 9, 2024 by INDOT Environmental Staff at Greenfield District. This project is not located within a Wellhead Protection Area or Source Water Area. Therefore, no impacts are expected.

Water Wells
The Indiana Department of Natural Resources Water Well Record Database website (https://www.in.gov/dnr/water/3595.htm) was accessed on August 9, 2024 by INDOT Environmental Staff at Greenfield District. No wells are located near this project. Therefore, no impacts are expected.

Urban Area Boundary
Based on a desktop review of the INDOT Roadway Inventory Viewer by INDOT Environmental Staff at Greenfield District on August 9, 2024, and the RFI report; this project is not located in an Urban Area Boundary. No impacts are expected.

Public Water System
Based on a desktop review, a site visit on July 19, 2022, by INDOT Greenfield Environmental staff, and the aerial map of the project area (Appendix B, page 3), no public water systems were identified. Therefore, no impacts are expected.

Early coordination letters were sent on January 9, 2024, to the Madison County Drainage Board. No response was received.

	Presence	Impacts	
Floodplains		Yes	No
Project located within a regulated floodplain	X	X	
Longitudinal encroachment			
Transverse encroachment			
Homes located in floodplain within 1000' up/downstream from project			

If applicable, indicate the Floodplain Level?

Level 1 [ ] Level 2 [ ] Level 3 [X] Level 4 [ ] Level 5 [ ]

Use the IDNR Floodway Information Portal to help determine potential impacts. Include floodplain map in appendix. Discuss impacts according to the classification system. If encroachment on a flood plain will occur, coordinate with the Local Flood Plain Administrator during design to insure consistency with the local flood plain planning.

Based on a desktop review of The Indiana Department of Natural Resources Indiana Floodway Information Portal website (http://dnrmaps.dnr.in.gov/appsphp/fdms/) by INDOT Greenfield District on August 9, 2024, and the RFI report, this project is located in a regulatory floodplain as determined from approved IDNR floodplain maps (Appendix F, page 8). An early coordination letter was sent on August 9, 2024 to the local Floodplain Administrator. The floodplain administrator did not respond within the 30-day time frame. This project qualifies as a Category 3 per the current INDOT CE Manual, which states, "The modifications to drainage structures included in this project will result in an insubstantial change in their capacity to carry flood water. This change could cause a minimal increase in flood heights and flood limits. These minimal increases will not result in any substantial adverse impacts on the natural and beneficial floodplain values; they will not result in substantial change in flood risks or damage; and they do not have substantial potential for interruption or termination of emergency service or emergency routes; therefore, it has been determined that this encroachment is not substantial."

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

Total Points (from Section VII of CPA-106/AD-1006*) _____
**If 160 or greater, see CE Manual for guidance.*

Discuss existing farmland resources in the project area, impacts that will occur to farmland, and mitigation and minimization measures considered.

Based on a desktop review, site visits on September 28, 2022, and April 9, 2024, by INDOT Environmental Staff at Greenfield District, and the aerial map of the project area, the project will convert 0.60 acre of farmland as defined by the Farmland Protection Policy Act. An early coordination letter was sent on January 9, 2024, to Natural Resources Conservation Service (NRCS). Coordination with NRCS resulted in a score of 148 on the AD 1006 Form (Appendix C, page 11). NRCS's threshold score for significant impacts to farmland that result in the consideration of alternatives is 160. Since this project score is less than the threshold, no significant loss of prime, unique, statewide, or local important farmland will result from this project. No alternatives other than those previously discussed in this document will be investigated without reevaluating impacts to prime farmland.

SECTION D – CULTURAL RESOURCES

	Category(ies) and Type(s)	INDOT Approval Date(s)	N/A
Minor Projects PA	A.3, A.4, A.6, A.9, B.12	February 2, 2024	

Full 106 Effect Finding

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

Eligible and/or Listed Resources Present

NRHP Building/Site/District(s) ☐ Archaeology ☐ NRHP Bridge(s) ☐

Documentation Prepared (mark all that apply)		ESD Approval Date(s)	SHPO Approval Date(s)
APE, Eligibility and Effect Determination			
800.11 Documentation			
Historic Properties Report or Short Report			
Archaeological Records Check and Assessment			
Archaeological Phase Ia Survey Report			
Archaeological Phase Ic Survey Report			
Other:			

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

If the project falls under the MPPA, describe the category(ies) that the project falls under and any approval dates. If the project requires full Section 106, use the headings provided. The completion of the Section 106 process requires that a Legal Notice be published in local newspapers. Please indicate the publication date, name of the paper(s) and the comment period deadline. Include any further Section 106 work which must be completed at a later date, such as mitigation from a MOA or avoidance commitments.

On February 2, 2024, the INDOT Cultural Resource Office (CRO) determined that this project falls within the guidelines of Category

A, Types 3, 4, 6 and 9, and Category B, Type 12 under the Minor Projects Programmatic Agreement, (Appendix D). The Category descriptions are as follows:

A-3.
Replacement, repair, lining, or extension of culverts and other drainage structures that do not exhibit wood, stone or brick structures or parts therein and are in previously disturbed soils.

A-4.
Roadway work associated with surface replacement, reconstruction, rehabilitation, or resurfacing projects, including overlays, shoulder treatments, pavement repair, seal coating, pavement grinding, and pavement marking within previously disturbed soils where replacement, repair, or installation of curbs, curb ramps or sidewalks will not be required.

A-6.
Repair, replacement, or upgrade of existing safety appurtenances such as guardrails, barriers, glare screens, and crash attenuators in previously disturbed soils.

A-9.
Installation, repair, or replacement of erosion control measures along roadways, waterways and bridge piers within previously disturbed soils.

B-12.
Replacement, widening, or raising the elevation of the superstructure on existing bridges, and bridge replacement projects (when both the superstructure and substructure are removed).

An archaeological survey was not required because all work is occurring in previously disturbed soils. No further consultation is required. This completes the Section 106 process and the responsibilities of the FHWA under Section 106 have been fulfilled.

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

	Presence	Use	
Parks and Other Recreational Land		**Yes**	**No**
Publicly owned park	☐	☐	☐
Publicly owned recreation area	☐	☐	☐
Other (school, state/national forest, bikeway, etc.)	☐	☐	☐
Wildlife and Waterfowl Refuges			
National Wildlife Refuge	☐	☐	☐
National Natural Landmark	☐	☐	☐
State Wildlife Area	☐	☐	☐
State Nature Preserve	☐	☐	☐
Historic Properties			
Site eligible and/or listed on the NRHP	☐	☐	☐

	Evaluations Prepared
Programmatic Section 4(f)	☐
"De minimis" Impact	☐
Individual Section 4(f)	☐
Any exception included in 23 CFR 774.13	☐

Discuss Programmatic Section 4(f) and "de minimis" Section 4(f) impacts in the discussion below. Individual Section 4(f) documentation must be included in the appendix and summarized below. Discuss proposed alternatives that satisfy the requirements of Section 4(f).

FHWA has identified various exceptions to the requirement for Section 4(f) approval. Refer to 23 CFR § 774.13 - Exceptions.

Section 4(f) of the U.S. Department of Transportation Act of 1966 prohibits the use of certain public and historic lands for federally funded transportation facilities unless there is no feasible and prudent alternative. The law applies to significant publicly owned parks, recreation areas, wildlife / waterfowl refuges, and NRHP eligible or listed historic properties regardless of ownership. Lands subject to this law are considered Section 4(f) resources.

Based on a desktop review, the aerial map of the project area (Appendix B, page 3), and the RFI report (Appendix E, pages 1-8) there are no potential 4(f) resources located within the 0.5-mile search radius. According to additional research and by the site visits on site visits on September 28, 2022, and April 9, 2024 by INDOT Environmental Staff at Greenfield District, there are no Section 4(f) resources within or adjacent to the project area. Therefore, no use is expected.

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

Discuss Section 6(f) resources present or not present. Discuss if any conversion would occur as a result of this project. If conversion will occur, discuss the conversion approval.

The U.S. Land and Water Conservation Fund Act of 1965 established the Land and Water Conservation Fund (LWCF), which was created to preserve, develop, and assure accessibility to outdoor recreation resources. Section 6(f) of this Act prohibits conversion of lands purchased with LWCF monies to a non-recreation use.

A review of 6(f) properties on the INDOT ESD website revealed a total of twenty-five properties in Madison County (Appendix H, page 1). None of these properties are located within or adjacent to the project area. Therefore, there will be no impact to 6(f) resources.

SECTION F – Air Quality

STIP/TIP and Conformity Status of the Project	**Yes**	**No**
Is the project in the most current STIP/TIP?	X	
Is the project located in an MPO Area?	X	
Is the project in an air quality non-attainment or maintenance area?	X	
If Yes, then:		
Is the project in the most current MPO TIP?	X	
Is the project exempt from conformity?	X	
If No, then:		
Is the project in the Transportation Plan (TP)?		
Is a hot spot analysis required (CO/PM)?		

Location in STIP: N/A

Name of MPO (if applicable): Madison County Council of Governments (MCCOG)

Location in TIP (if applicable): Page 11

Level of MSAT Analysis required?

Level 1a [X] Level 1b [ ] Level 2 [ ] Level 3 [ ] Level 4 [ ] Level 5 [ ]

Describe if the project is listed in the STIP and if it is in a TIP. Describe the attainment status of the county(ies) where the project is located. Indicate whether the project is exempt from a conformity determination. If the project is not exempt, include information about the TP and TIP. Describe if a hot spot analysis is required and the MSAT Level.

This project is included in the Fiscal Year (FY) Statewide 2024 – 2028 Transportation Improvement Program (STIP) via the MCCOG 2022 – 2026 Transportation Improvement Program (TIP). (Appendix G, page 1).

This project is located in Madison County, which is currently a maintenance area for Ozone, under the *1997 Ozone 8-hour standard, which was revoked in 2015 but is being evaluated for conformity due to the February 16, 2018, South Coast Air Quality Management District V. Environmental Protection Agency, Et. Al. Decision.* The project's design concept and scope are accurately reflected in the Transportation Improvement Program (TIP) and incorporated by reference into the STIP. Therefore, the conformity requirements of 40 CFR 93 have been met.

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 G - NOISE

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

Date Noise Analysis was approved/technically sufficient by INDOT ESD: _____

Describe if the project is a Type I or Type III project. If it is a Type I project, describe the studies completed to date and if noise impacts were identified. If noise impacts were identified, describe if abatement is feasible and reasonable and include a statement of likelihood.

This project is a Type III project. In accordance with 23 CFR 772 and the current *Indiana Department of Transportation Traffic Noise Analysis Procedure*, this action does not require a formal noise analysis.

SECTION H – COMMUNITY IMPACTS

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

Discuss how the project complies with the area's local/regional development patterns; whether the project will impact community cohesion; and impact community events. Discuss how the project conforms with the ADA Transition Plan.

Early coordination letters were sent to the Madison County Drainage Board, the Madison County Council, the Madison County Commissioners, the Madison County Surveyor, and the Madison County Highway Department, on October 25, 2022. Please refer to

Appendix C, pages 1-3, for an example of the early coordination letter that was sent to agencies.

The Indiana Festivals website (https://indianafestivals.org/) was checked on August 9, 2024, for any events that may be impacted by construction. No impacts to any fairs or festivals are anticipated.

In February 2013, the MCCOG adopted the 2010 ADA Standards for Accessible Design for the town of Summitville (https://irp-cdn.multiscreensite.com/65a760a0/files/uploaded/Summitville_final.pdf). The Town of Summitville ADA Transition Plan includes Title II ADA and Title VI assurances with INDOT and FHWA standards. There are no existing ADA compliant facilities and no ADA compliant facilities are proposed for this project.

Public Facilities and Services

Discuss what public facilities and services are present in the project area and impacts (such as MOT) that will occur to them. Include how the impacts have been minimized and what coordination has occurred. Some examples of public facilities and services include health facilities, educational facilities, public and private utilities, emergency services, religious institutions, airports, transportation or public pedestrian and bicycle facilities.

Based on a desktop review, the aerial map of the project area (Appendix B, page 3), and the RFI report (Appendix E, pages 1-8), there is one school within the 0.5-mile search radius. There are no public facilities within or adjacent to the project area, which was confirmed by the site visits on September 28, 2022, and April 9, 2024, by INDOT Greenfield District. Therefore, no impacts are expected. Access to all properties will be maintained during construction.

An early coordination letter was sent to the Madison Grant School Corporation and Van Buren Township Fire Department on January 9, 2024. No responses were received.

It is the responsibility of the project sponsor to notify school corporations and emergency services at least two weeks prior to any construction that would block or limit access.

All applicable recommendations are included in the Environmental Commitments section of this CE document.

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

Indicate if EJ issues were identified during project development. If an EJ analysis was not required, discuss why. If an EJ analysis was required, describe how the EJ population was identified. Include if the project has a disproportionately high or adverse effect on EJ populations and explain your reasoning. If yes, describe actions to avoid, minimize and mitigate these effects.

Under FHWA Order 6640.23A, FHWA and the project sponsor, as a recipient of funding from FHWA, are responsible to ensure that their programs, policies, and activities do not have a disproportionately high and adverse effect on minority or low-income populations. Per the current INDOT Categorical Exclusion Manual, an Environmental Justice (EJ) Analysis is required for any project that has two or more relocations or 0.5 acre of additional permanent right-of-way. The project will require greater than 0.5 acre of permanent right-of-way. Therefore, an EJ Analysis is required.

Potential EJ impacts are detected by locating minority and low-income populations relative to a reference population to determine if populations of EJ concern exists and whether there could be disproportionately high and adverse impacts to them. The reference population may be a county, city or town and is called the community of comparison (COC). In this project, the COC is Madison County, Indiana. The community that overlaps the project area is called the affected community (AC). In this project, the AC is Census Tracts 101/105. An AC has a population of concern for EJ if the population is more than 50% minority or low-income or if the low-income or minority population is 125% of the COC. Data from the U.S. Census Tract – 5 year (2018-2022) American Community Survey (ACS) Data was obtained from (https://data.census.gov/all) on 7/3/2024 by INDOT Greenfield District. The data collected for minority and low-income populations within the AC are summarized in the below table.

	Madison County, IN (COC)	Madison County, IN Census Tract 101/105 (AC)
Percent Minority	16.6%	4.7%
125% COC	20.8%	AC < 125% of COC
EJ Population of Concern		No
Percent Low-Income	14.1%	11.1%
125% COC	17.7%	AC < 125% of COC
EJ Population of Concern		No

AC, Madison County, IN, Census Tracts 101/105, has a percent minority of 4.7%, which is below 50%, and is below the 125% COC threshold of 20.8%. Therefore, AC does not have a minority population of EJ concern.

AC, Madison County, IN, Census Tracts 101/105, has a percent low-income of 11.1%, which is below 50% and is below the 125% COC threshold of 17.7%. Therefore, AC does not have a low-income population of EJ concern.

The census data sheets, map, and calculations can be found in Appendix H. No populations of EJ concern were identified through demographic analysis. The project is anticipated to require greater than 0.5 acre of permanent right of way and no relocations. The project will require a road closure which will be a temporary inconvenience for traveling motorists. No further environmental justice analysis is warranted.

Relocation of People, Businesses or Farms	**Yes**	**No**
Will the proposed action result in the relocation of people, businesses or farms?		X
Is a BIS or CSRS required?		X

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

Discuss any relocations that will occur due to the project. If a BIS or CSRS is required, discuss the results in the discussion below.

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

SECTION I – HAZARDOUS MATERIALS & REGULATED SUBSTANCES

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

Date RFI concurrence by INDOT SAM (if applicable): February 10, 2024

Include a summary of the potential hazardous material concerns found during review. Discuss in depth sites found within, directly adjacent to, or ones that could impact the project area. Refer to current INDOT SAM guidance. If additional documentation (special provisions, pay quantities, etc.) will be needed, include in discussion. Include applicable commitments.

Based on a review of GIS and available public records, the RFI was completed on January 10, 2024, by INDOT Environmental Staff at Greenfield District (Appendix E, pages 1-8). INDOT SAM provided concurrence on January 10, 2024. There is one national

pollution discharge elimination system (NPDES), and two NPDES pipes within a half mile of the project area. None of the hazmat sites will affect the project. Further investigation for hazardous material concerns is not required at this time.

Part IV – Permits and Commitments

PERMITS CHECKLIST

Permits (mark all that apply)	**Likely Required**
Army Corps of Engineers (404/Section10 Permit)	
Nationwide Permit (NWP)	X
Regional General Permit (RGP)	
Individual Permit (IP)	
Other	
IN Department of Environmental Management (401/Rule 5)	
Nationwide Permit (NWP)	X
Regional General Permit (RGP)	
Individual Permit (IP)	
Isolated Wetlands	
Rule 5	X
Other	
IN Department of Natural Resources	
Construction in a Floodway	
Navigable Waterway Permit	
Other	
Mitigation Required	
US Coast Guard Section 9 Bridge Permit	
Others (Please discuss in the discussion below)	

List the permits likely required for the project and summarize why the permits are needed, including permits designated as "Other."

A USACE Section 404 Nationwide permit and IDEM Section 401 Water Quality Certification will likely be required due to stream impacts. A Construction Stormwater General Permit (CSGP) will likely be required due to greater than 1 acre of land disturbance.

Applicable recommendations provided by resource agencies are included in the Environmental Commitments section of this document. If permits are found to be necessary, the conditions of the permit will be requirements of the project and will supersede these recommendations.

It is the responsibility of the project sponsor to identify and obtain all required permits.

ENVIRONMENTAL COMMITMENTS

List all commitments and include the name of agency/organization requesting/requiring the commitment(s). Listed commitments should be numbered.

Firm:

1. If the scope of work or permanent or temporary right-of-way amounts change, the INDOT Environmental Services Division (ESD) and the INDOT District Environmental Section will be contacted immediately. (INDOT ESD and INDOT District)

2. It is the responsibility of the project sponsor to notify school corporations and emergency services at least two weeks prior to any construction that would block or limit access. (INDOT ESD)
3. Any work in a wetland area within INDOT's right-of-way or in borrow/waste areas is prohibited unless specifically allowed in the US Army Corps of Engineers or IDEM permit. (INDOT)
4. Lighting AMM 1: Direct all temporary lighting away from suitable habitat during the active season. (USFWS)
5. General AMM 1: Ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable AMMs. (USFWS)
6. Tree Removal AMM 1: Modify all phases/aspects of the project (e.g., temporary work areas, alignments) to avoid tree removal. (USFWS)
7. Tree Removal AMM 2: Apply time of year restrictions for tree removal when bats are not likely to be present, or limit tree removal to 10 or fewer trees per project at any time of year within 100 feet of existing road/rail surface and outside of documented roosting/foraging habitat or travel corridors; visual emergence survey must be conducted with no bats observed. (USFWS and IDNR-DFW)
8. Tree Removal AMM 3: Ensure tree removal is limited to that specified in project plans and ensure that contractors understand clearing limits and how they are marked in the field (e.g., install bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits). (USFWS)
9. Tree Removal AMM 4: Do not remove documented Indiana bat or NLEB roosts that are still suitable for roosting, or trees within 0.25 miles of roosts, or documented foraging habitat any time of year. (USFWS)
10. Structure # 009-48-00157 B and the project's surrounding habitat is conducive for use (i.e. nests) by a bird species protected under the Migratory Bird Treaty Act (MBTA). Prior to the start of nesting season (May 1) the structure must be inspected for birds or signs of birds. If birds or signs of birds are found during the inspection avoidance and minimization measures must be implemented prior to the start of and during the nesting season. Nests without eggs or young should be removed prior to construction during the non-nesting season (September 8 – April 30) and during the nesting season if no eggs or young are present. Nests with eggs or young cannot be removed or disturbed during the nesting season (May 1 – September 7). Nests with eggs or young should be screened or buffered from active construction. Details of the required procedures are outlined in the "Potential Migratory Bird on Structure" USP/RSP. (INDOT Greenfield District)
11. USFWS Bridge/Structure Assessment shall take place no earlier than two (2) years prior to the start of construction. If construction will begin after December 20, 2025, an inspection of the structure by a qualified individual, must be performed. Inspection of the structure should check for presence of bats/bat indicators and/or presence of birds. The results of the inspection must indicate no signs of bats or birds. If signs of bats or birds are documented during this inspection, the INDOT District Environmental Manager must be contacted immediately. (INDOT Greenfield District)

For Further Consideration:

1. Do not construct any temporary runarounds, access bridges, causeways, cofferdams, diversions, or pumparounds. (IDNR – DFW)
2. Use minimum average 6-inch graded riprap stone extended below the normal water level to provide the habitat for aquatic organisms in the voids. (IDNR – DFW)
3. If box or pipe culverts are used, the bottoms should be buried to a minimum of 6" (or 20% of the culvert height/pipe diameter, whichever is greater up to a maximum of 2') below the stream bed elevation to allow a natural streambed to form within or under the crossing structure. Crossings should: span the entire channel width (a minimum of 1.2 times the bankful width); maintain the natural stream substrate within the structure; have a minimum openness ratio (height x width/length) of 0.25; and have stream depth and water velocities during low-flow conditions that are approximate to those in the natural

stream channel. The new, replacement, or rehabbed structure should not create conditions that are less favorable for wildlife passage under the structure compared to the current conditions (IDNR – DFW)

4. Riprap may be used only at the toe of the sideslopes up to the ordinary high-water mark (OHWM). The banks above the OHWM must be restored, stabilized, and revegetated using geotextiles and a mixture of grasses, sedges, wildflowers, shrubs, and trees native to Southern Indiana and specifically for stream bank/floodway stabilization purposes as soon as possible upon completion. (IDNR-DFW)

5. Impacts to non-wetland forest of one (1) acre or more should be mitigated at a minimum 2:1 ratio. If less than one acre of non-wetland forest is removed in a rural setting, replacement should be at a 1:1 ratio based on area. Impacts to nonwetland forest under one (1) acre in an urban setting should be mitigated by planting five trees, at least 2 inches in diameter-at-breast height (dbh), for each tree which is removed that is 10 inches dbh or greater (5:1 mitigation based on the number of large trees). (IDNR-DFW)

6. Do not excavate in the low flow area except for the placement of piers, foundations, and riprap, or removal of the old structure. (IDNR-DFW)

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Appendix F Water Resources

Appendix G Air Quality

Appendix H Additional Information

Appendix A

Threshold Table

Categorical Exclusion Level Thresholds

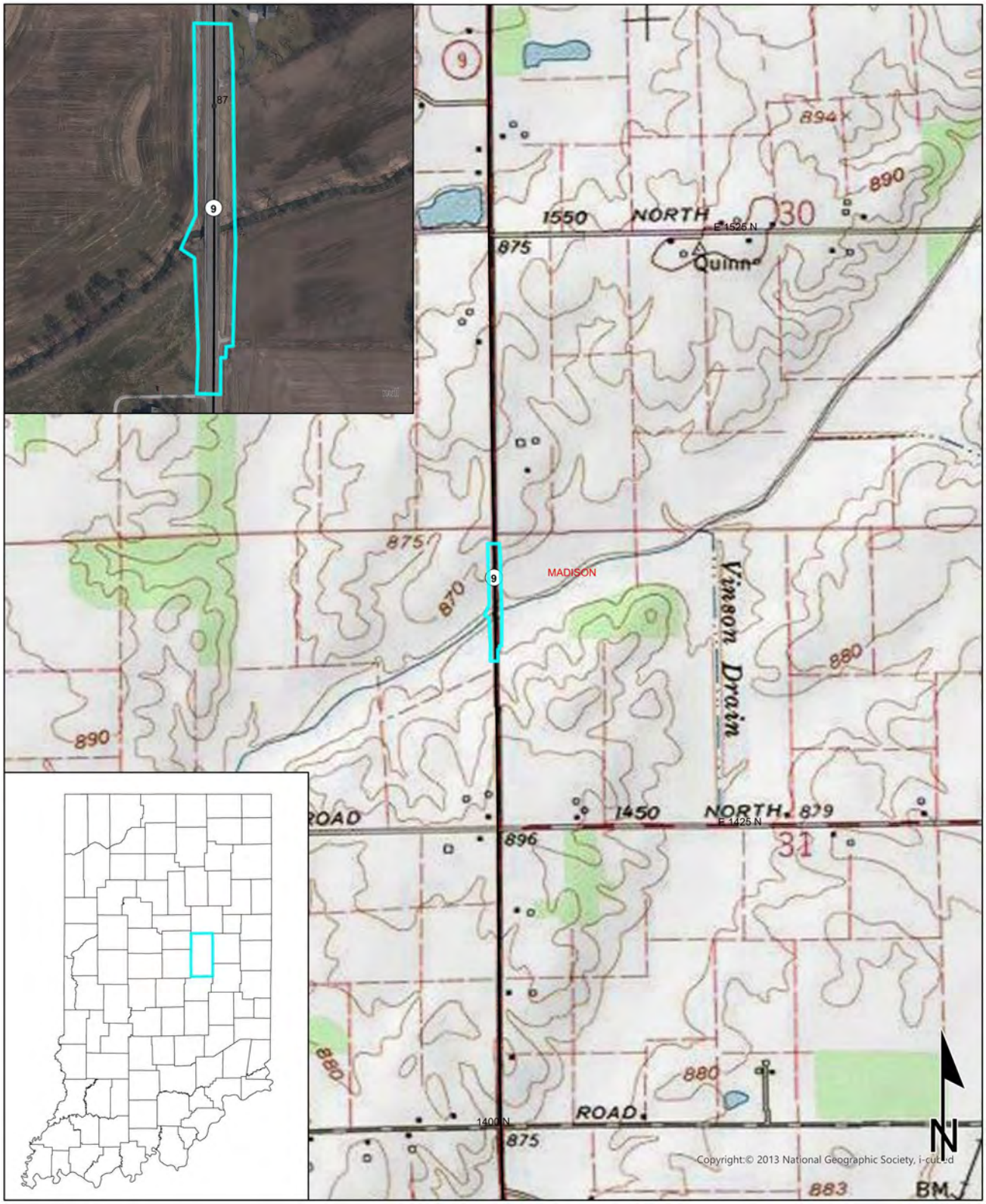
	PCE	Level 1	Level 2	Level 3	Level 4[1]
Section 106	Falls within guidelines of Minor Projects PA	"No Historic Properties Affected"	"No Adverse Effect"	-	"Adverse Effect" Or Historic Bridge involvement[2]
Stream Impacts[3]	No construction in waterways or water bodies	< 300 linear feet of stream impacts	≥ 300 linear feet of stream impacts	-	USACE Individual 404 Permit[4]
Wetland Impacts[3]	No adverse impacts to wetlands	< 0.1 acre	-	< 1.0 acre	≥ 1.0 acre
Right-of-way[5]	Property acquisition for preservation only or none	< 0.5 acre	≥ 0.5 acre	-	-
Relocations	None	-	-	< 5	≥ 5
Threatened/Endangered Species (Species Specific Programmatic for Indiana bat & northern long eared bat)*	"No Effect", "Not likely to Adversely Affect" (With select AMMs[6])	"Not likely to Adversely Affect" (With any AMMs or commitments)	-	"Likely to Adversely Affect"	Project does not fall under Species Specific Programmatic[7]
Threatened/Endangered Species (Any other species)*	Falls within guidelines of USFWS 2013 Interim Policy or "No Effect"	"Not likely to Adversely Affect"	-	-	"Likely to Adversely Affect"
Environmental Justice	No disproportionately high and adverse impacts	-	-	-	Potential[8]
Sole Source Aquifer	No Detailed Groundwater Assessment	-	-	-	Detailed Groundwater Assessment
Floodplain	No Substantial Impacts	-	-	-	Substantial Impacts
Section 4(f) Impacts	None	-	-	-	Any[9]
Section 6(f) Impacts	None	-	-	-	Any
Permanent Traffic Alteration	None	-	-	-	Any
Noise Analysis Required	No	-	-	-	Yes
Air Quality Analysis Required	No	-	-	-	Yes[10]
Approval Level • **District Env. (DE)** • **Env. Serv. Div. (ESD)** • **FHWA**	Concurrence by DE or ESD	DE or ESD	DE or ESD	DE and/or ESD	DE and/or ESD; and FHWA

[1] Coordinate with INDOT Environmental Services Division. INDOT will then coordinate with the appropriate FHWA Environmental Specialist.
[2] Any involvement with a bridge processed under the Historic Bridge Programmatic Agreement.
[3] Total permanent impacts to streams (linear feet) and wetlands (acres).
[4] US Army Corps of Engineers Individual 404 Permit
[5] Total permanent and temporary right-of-way. This does not include reacquisition of existing apparent right-of-way.
[6] Avoidance and Mitigation Measures (AMMs) determined by the IPAC determination key to be required that are not tree AMMs, bridge AMMs, or structure AMMs.
[7] Projects that do not fall under a Species Specific Programmatic and results in a "Likely to Adversely Affect". Other findings can be processed as a lower level CE.
[8] Potential for causing a disproportionately high and adverse impact.
[9] Section 4(f) use resulting in an Individual, Programmatic, or *de minimis* evaluation. The only exception is a *de minimis* evaluation for historic properties (Effective January 2, 2020). If a historic property *de minimis* and no other use, mark the *None* column.
[10] Hot Spot Analysis and/or MSAT Quantitative Emission Analysis.
* Includes the threatened/endangered species critical habitat
Note: Substantial public or agency controversy may require a higher-level NEPA document.

Appendix B

Graphics

General Location Map
SR 9 Over Mud Creek, 2.83 Miles N of SR 28
Des No. 2100572, Bridge Replacement
Madison County, Indiana



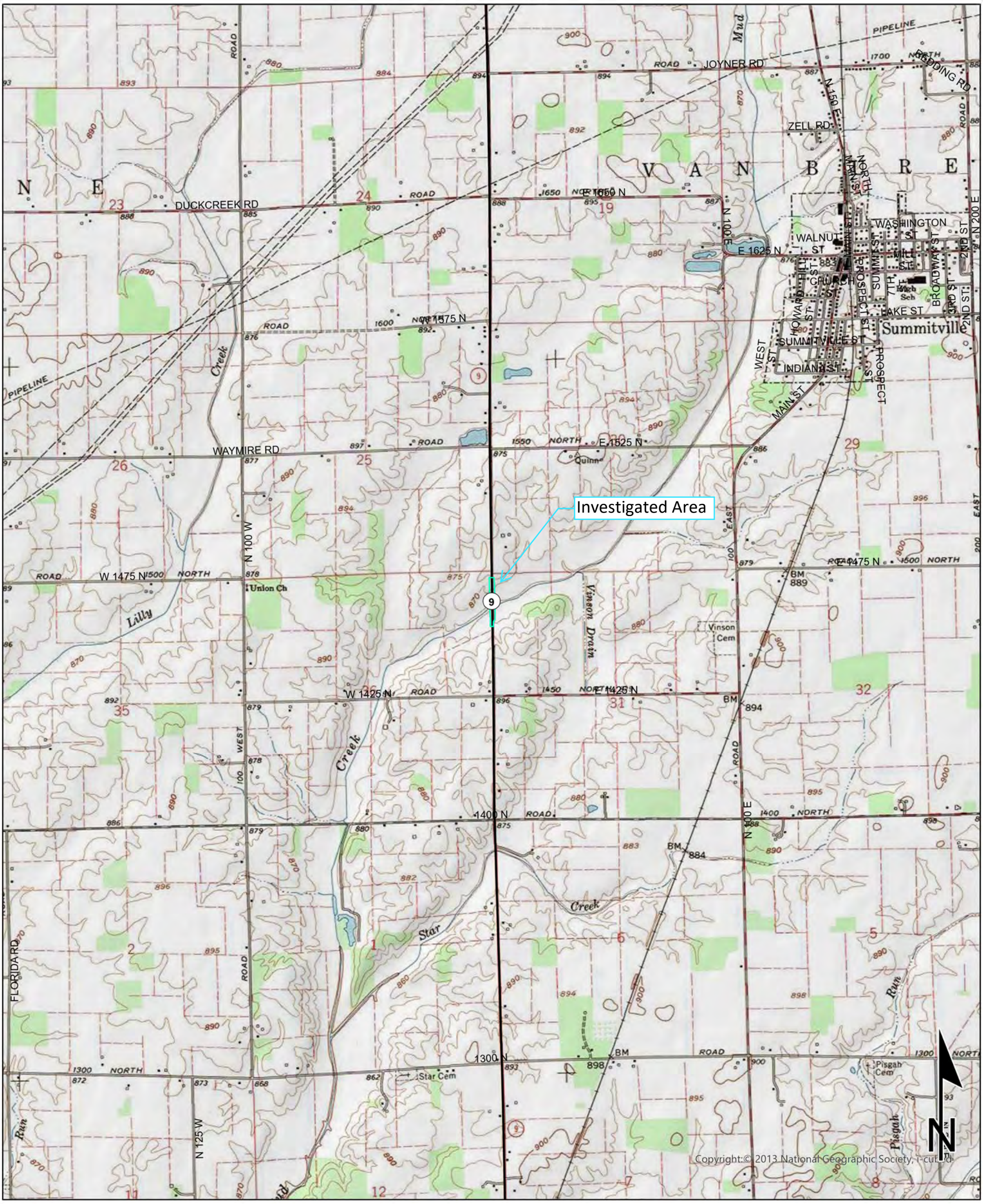
0.2 0.1 0 0.2 Miles

Investigated Area

Sources:
Non Orthophotography Data - Obtained from the State of Indiana Geographical Information Office Library
Orthophotography - Obtained from Indiana Map Framework Data (www.indianamap.org)
Map Projection: UTM Zone 16 N **Map Datum:** NAD83

This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.

Topographic Map
SR 9 Over Mud Creek, 2.83 Miles N of SR 28
Des No. 2100572, Bridge Replacement
Madison County, Indiana



0.45 0.23 0 0.45 Miles

Sources:

Non Orthophotography Data - Obtained from the State of Indiana Geographical Information Office Library

Orthophotography - Obtained from Indiana Map Framework Data (www.indianamap.org)

Map Projection: UTM Zone 16 N **Map Datum:** NAD83

This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.

ALEXANDRIA QUADRANGLE
INDIANA
7.5 MINUTE SERIES
(TOPOGRAPHIC)

Aerial Map
SR 9 Over Mud Creek, 2.83 Miles N of SR 28
Des No. 2100572, Bridge Replacement
Madison County, Indiana

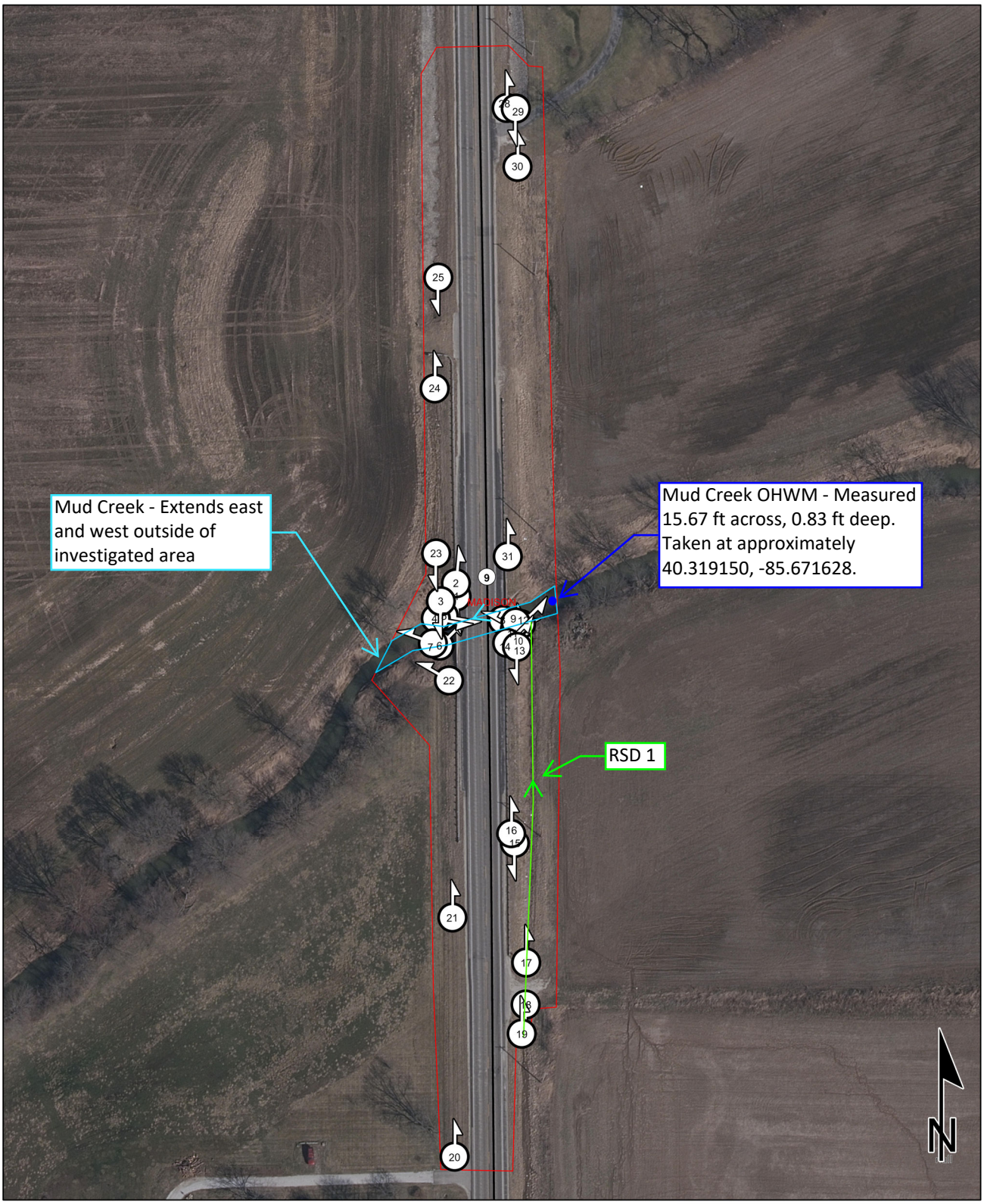
0.02 0.01 0 0.02
Miles

Investigated Area

Sources:
Non Orthophotography Data - Obtained from the State of Indiana Geographical Information Office Library
Orthophotography - Obtained from Indiana Map Framework Data (www.indianamap.org)
Map Projection: UTM Zone 16 N **Map Datum:** NAD83

This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.

Photokey Map
SR 9 Over Mud Creek, 2.83 Miles N of SR 28
Des No. 2100572, Bridge Replacement
Madison County, Indiana



0.01 0.01 0 0.01 Miles

Sources:
Non Orthophotography Data - Obtained from the State of Indiana Geographical Information Office Library
Orthophotography - Obtained from Indiana Map Framework Data (www.indianamap.org)
Map Projection: UTM Zone 16 N **Map Datum:** NAD83

This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.

Pictures

RSD 1
Mud Creek
Investigated Area
Mud Creek OHWM

Photokey Map
SR 9 Over Mud Creek, 2.83 Miles N of SR 28
Des No. 2100572, Bridge Replacement
Madison County, Indiana

0.01 0 0 0.01 Miles

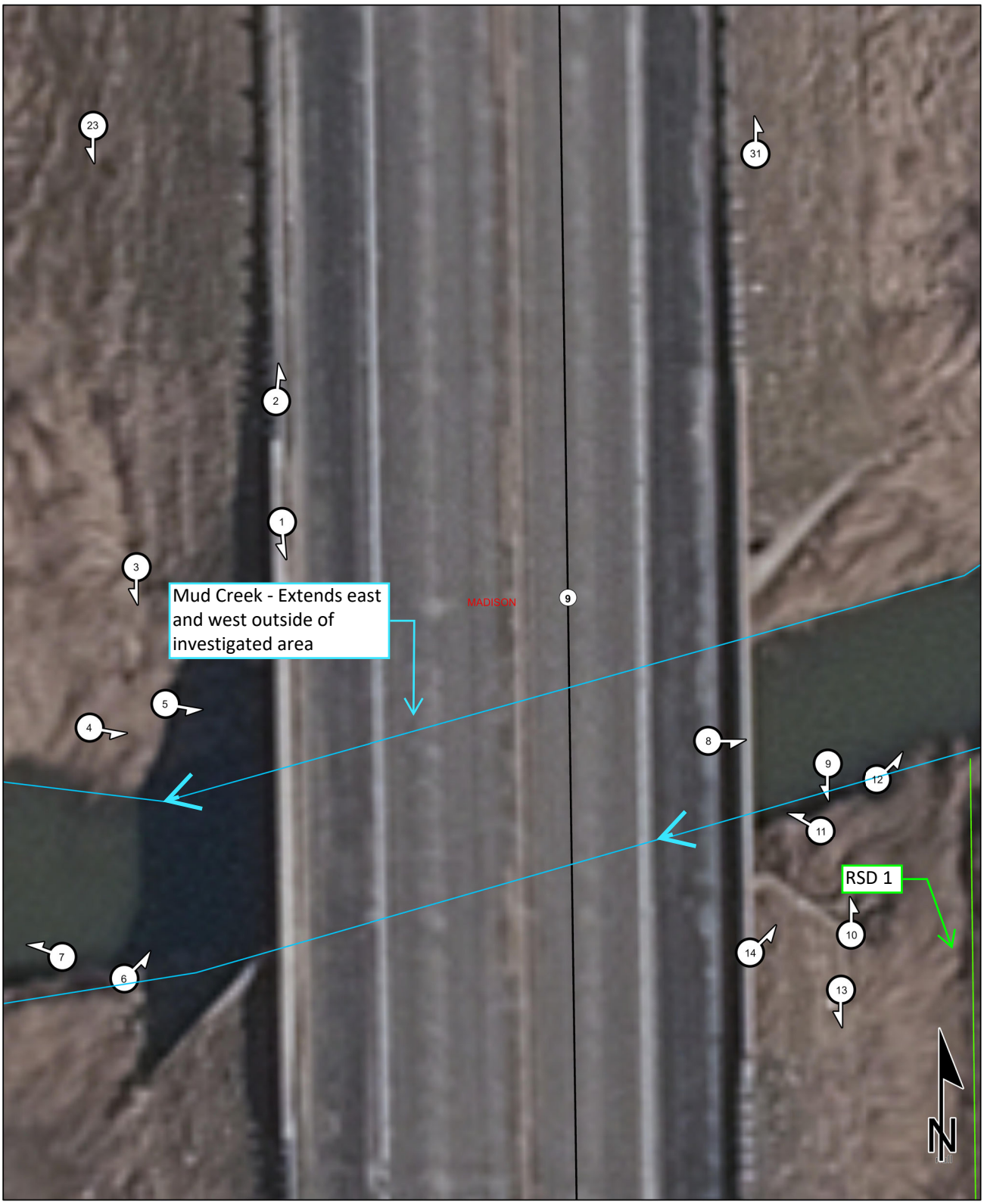
Sources:
Non Orthophotography Data - Obtained from the State of Indiana Geographical Information Office Library
Orthophotography - Obtained from Indiana Map Framework Data (www.indianamap.org)
Map Projection: UTM Zone 16 N **Map Datum:** NAD83

This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.

Investigated Area

Pictures

Photokey Map
SR 9 Over Mud Creek, 2.83 Miles N of SR 28
Des No. 2100572, Bridge Replacement
Madison County, Indiana



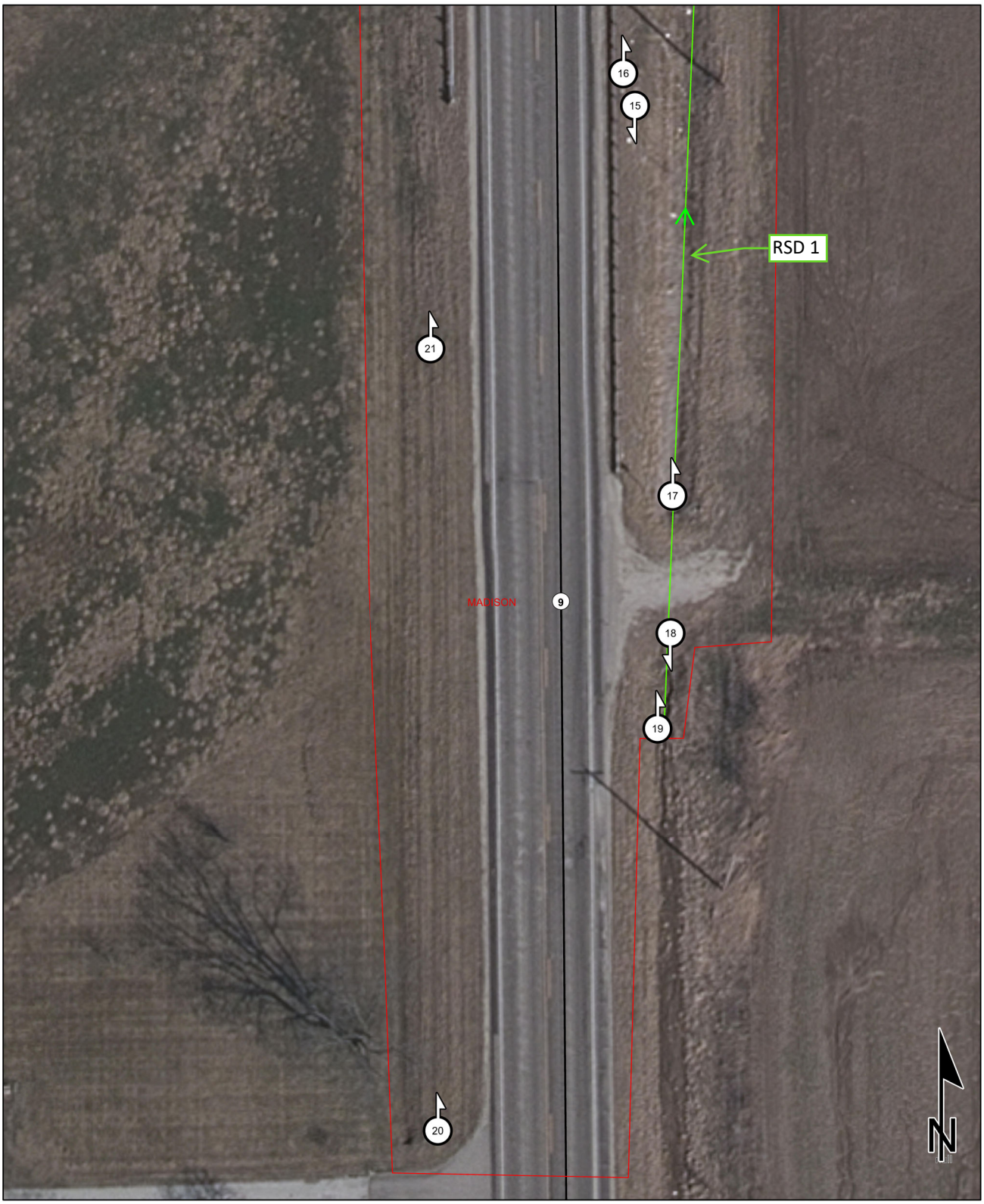
Sources:
Non Orthophotography Data - Obtained from the State of Indiana Geographical Information Office Library
Orthophotography - Obtained from Indiana Map Framework Data (www.indianamap.org)
Map Projection: UTM Zone 16 N **Map Datum:** NAD83

0 0 0 0 Miles

This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.

Investigated Area
Mud Creek
RSD 1
Pictures

Photokey Map
SR 9 Over Mud Creek, 2.83 Miles N of SR 28
Des No. 2100572, Bridge Replacement
Madison County, Indiana



0.01 0 0 0.01 Miles

Sources:
Non Orthophotography Data - Obtained from the State of Indiana Geographical Information Office Library
Orthophotography - Obtained from Indiana Map Framework Data (www.indianamap.org)
Map Projection: UTM Zone 16 N **Map Datum:** NAD83

This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.

Investigated Area

RSD 1

Pictures

1. Looking south along SR 9

2. Looking north along SR 9

3. Looking south at Structure # 009-48-00157 B and Mud Creek on the west side of SR 9

4. Looking southeast at Structure # 009-48-00157 B and Mud Creek on the west side of SR 9

5. Looking east at Structure # 009-48-00157 B and upstream at Mud Creek on the west side of SR 9

6. Looking northeast, upstream, at Mud Creek and Structure # 009-48-00157 B on the west side of SR 9

7. Looking northwest, downstream, at Mud Creek on the west side of SR 9

8. Looking east, upstream, at the OHWM for Mud Creek on the east side of SR 9

9. Looking south at RSD 1 on the east side of SR 9

10. Looking north at RSD 1 on the east side of SR 9

11. Looking northwest, downstream, at Mud Creek and Structure # 009-48-00157 B on the east side of SR 9

12. Looking northeast, upstream, at Mud Creek on the east side of SR 9

13. Looking south at RSD 1 on the east side of SR 9

14. Looking northeast, upstream, at Mud Creek on the east side of SR 9

15. Looking south at RSD 1 and the outlet of Structure # 1 on the east side of SR 9

16. Looking north at RSD 1 on the east side of SR 9

17. Looking north from Structure # 1 at RSD 1

18. Looking south at RSD 1

19. Looking north at RSD 1 and Structure # 1

20. Looking north on the west side of SR 9 towards Structure # 009-48-00157 in the southwest quadrant of the project area.

21. Looking north towards Structure # 009-48-00157 on the west side of SR 9

22. Looking northwest from Structure # 009-48-00157 on the west side of SR 9

23. Looking south towards Structure # 009-48-00157 on the west side of SR 9

24. Looking north along the west side of SR 9 at Structure #2

25. Looking south towards Structure #2

26. Looking south along the west side of SR 9

27. Looking south on the east side of SR 9

28. Looking north along the east side of SR 9 at the inlet of Structure #3

29. Looking south towards Structure # 009-48-00157 from Structure #3

30. Looking north along the east side of SR 9 at the outlet of Structure #3

31. Looking north on the east side of SR 9

PROJECT	DESIGNATION
2100572	2100572
CONTRACT	BRIDGE FILE
B-43949	009-48-10798

STRUCTURE INFORMATION				
STRUCTURE	TYPE	SPAN AND SKEW	OVER	STATION
009-48-10798	Composite Pre-stressed Concrete Bulb-Tee Beam Bridge	1 Span: 68'-0" Skew: 15°00'00" Lt.	Mud Creek	15+00.00 "PR-1"

INDIANA DEPARTMENT OF TRANSPORTATION

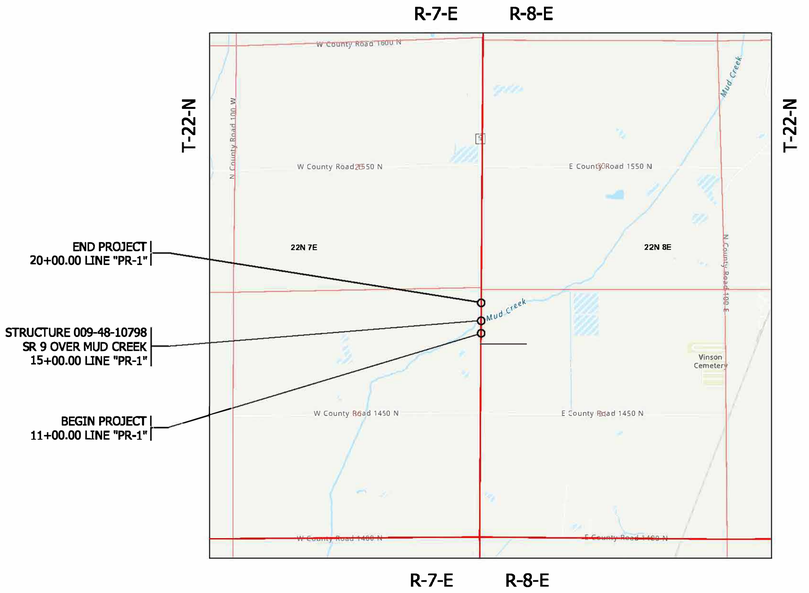
BRIDGE PLANS

FOR SPANS OVER 20 FEET

ROUTE: S.R. 9 AT: RP 86+100

PROJECT NO. 2100572 P.E.
2100572 R/W
2100572 CONST.

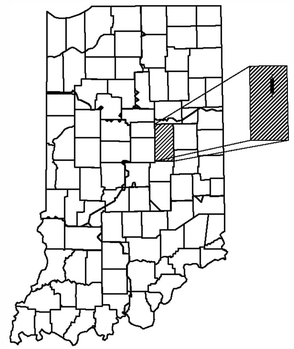
Bridge Replacement on SR 9 over Mud Creek
Located 2.83 Miles North of SR 28
Section 31, T-22-N, R-8-E, Van Buren Township, Madison County, Indiana
Section 36, T-22-N, R-7-E, Boone Township, Madison County, Indiana



SCALE: 1" = 2000'

TRAFFIC DATA		
A.A.D.T.	(2026)	4384 V.P.D.
A.A.D.T.	(2046)	4600 V.P.D.
D.H.V		448 V.P.H.
DIRECTIONAL DISTRIBUTION		50.73%
TRUCKS		9.24% A.A.D.T.
		8.53% D.H.V.

DESIGN DATA	
DESIGN SPEED	55 M.P.H.
PROJECT DESIGN CRITERIA	3R (NON-FREEWAY)
FUNCTIONAL CLASSIFICATION	MINOR ARTERIAL
RURAL/URBAN	RURAL
TERRAIN	LEVEL
ACCESS CONTROL	NONE



PROJECT LOCATION SHOWN BY
MADISON COUNTY

LATITUDE: 40°19'8.4"N LONGITUDE: 85°40'18.4"W

BRIDGE LENGTH: 0.013 MI.
ROADWAY LENGTH: 0.157 MI.
TOTAL LENGTH: 0.170 MI.
MAX. GRADE: +3.92 %

HUC: 051202010403

INDIANA DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS DATED 2024
TO BE USED WITH THESE PLANS.

Kimley»Horn

Kimley-Horn & Associates, Inc.
500 E. 96th Street, Suite 300
Indianapolis, IN 46240
(317) 218-9560

PLANS PREPARED BY: (317)-218-9560 PHONE NUMBER

CERTIFIED BY: DATE

APPROVED FOR LETTING: INDIANA DEPARTMENT OF TRANSPORTATION DATE

BRIDGE FILE	
009-48-10798	
DESIGNATION	
2100572	

SURVEY BOOK	SHEETS		
ELECTRONIC	1	of	22
CONTRACT	PROJECT		
B-43949	2100572		

Plot: 11/13/2024 10:41 AM

File: K:\IND_Structures\170268010_SR 9 over Mud Creek Bridge Replacement (2100572)\4 Plan Development\2100572_BR_SR 9 over Mud Creek\Plan Sheets\BR_2100572_Sht Title.dgn
Model: TITLE SHEET

UTILITIES

TELEPHONE: AT&T
240 N. MERIDIAN STREET ROOM 1791
INDIANAPOLIS, IN 46204
ATTN: KIM BARKES
PH: 812-390-2595
E-MAIL: g09871@att.com

POWER: AMERICAN ELECTRIC POWER
8600 SMITHS MILL ROAD
NEW ALBANY, OH 43054
ATTN: JOSHUA ADAMS
PH:
E-MAIL: TL publicprojects@aep.com

CABLE: COMCAST CABLE
688 INDUSTRIAL DRIVE
ELMHURST, IL 60126
ATTN: RHONDA DALTON
PH:
E-MAIL: rhonda_dalton@comcast.com

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

INDIANA UNDERGROUND
1-800-382-5544 OR CALL 811
24 HOURS A DAY 7 DAYS A WEEK

GENERAL NOTES

All earth shoulders, median areas, and cut and fill slopes shall be plain or mulch seeded except where sodding is specified.

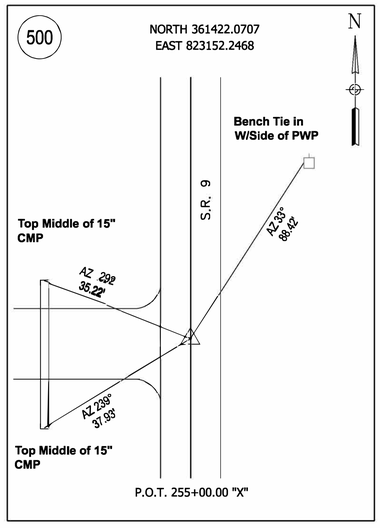
The final cross sections of the grading contract will be the original cross sections of the paving contract. However, partial or complete cross sections shall be taken if necessary to determine the actual excavation quantities.

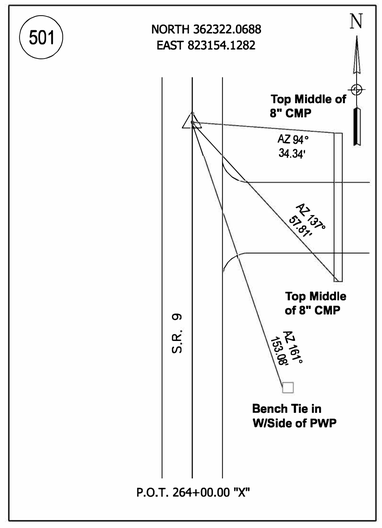
The paper relocation will be cross sectioned by the Engineer before construction.

INDEX

REVISIONS

SHEET NO.	DATE	REVISED





REFERENCE TIES

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: RD DRAWN: LPK

CHECKED: KMS CHECKED: KMS

INDIANA
DEPARTMENT OF TRANSPORTATION

INDEX

HORIZONTAL SCALE	BRIDGE FILE
N/A	009-48-10798
VERTICAL SCALE	DESIGNATION
N/A	2100572

SURVEY BOOK	SHEETS
ELECTRONIC	2 of 22
CONTRACT	PROJECT
B-43949	2100572

Plot: 11/13/2024 10:41 AM

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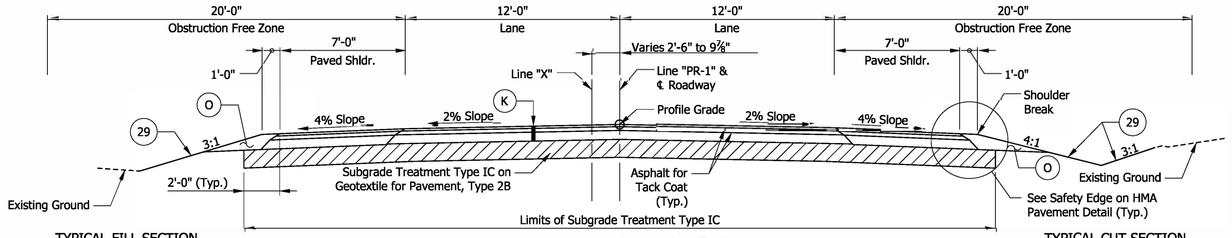
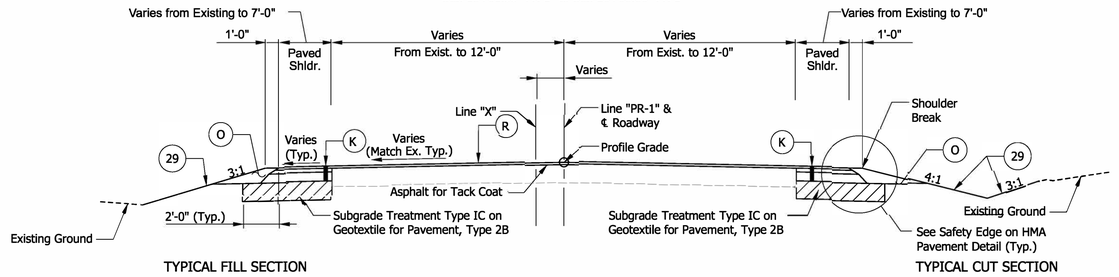


TYPICAL APPROACH SECTION

Scale: ¼" - 1'-0"

Sta. 11+00.00 "PR-1" to Sta. 14+38.66 "PR-1"
Sta. 15+61.33 "PR-1" to Sta. 20+00.00 "PR-1"



MILL & OVERLAY INCIDENTAL CONSTRUCTION SECTION

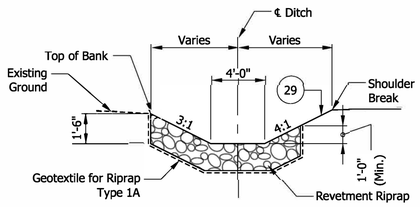
Scale: ¼" - 1'-0"

Sta. 10+50.00 "PR-1" to Sta. 11+00.00 "PR-1"
Sta. 20+00.00 "PR-1" to Sta. 20+50.00 "PR-1"

LEGEND

- (K) HMA Pavement
  165 LB/SYS QC/QA HMA, 3, 64, Surface, 9.5mm on
  275 LB/SYS QC/QA HMA, 3, 64, Int., 19.00mm on
  660 LB/SYS QC/QA HMA, 3, 64, Base, 25.0mm
  Subgrade Treatment Type IC on
  Geotextile for Pavement, Type 2B
- (O) Variable Depth Compacted Aggregate Base, No. 53
- (R) 165 LB/SYS QC/QA HMA, 3, 64, Surface, 9.5mm on Transition Milling
- (29) Mulched Seeding, Type R
- Subgrade Treatment Type IC

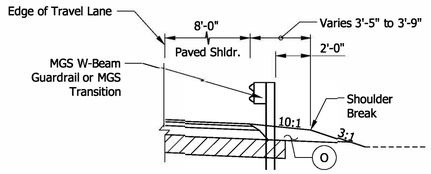
NOTES:
*A safety ledge shall be placed in the surface and intermediate layers of all edges of pavements that are not bound by a curb or barrier wall or adjacent to guardrail.
*See E601-DRIV for additional information regarding Class II & Class V Drives.



TYPICAL REVETMENT RIPRAP FLAT BOTTOM DITCH DETAIL

Not to Scale

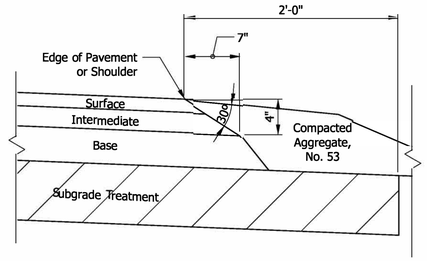
Sta. 12+20 "PR-1" Rt. to Sta. 14+65 "PR-1" Rt.
Sta. 17+65 "PR-1" Lt. to Sta. 20+50 "PR-1" Lt.
Sta. 19+45 "PR-1" Rt. to Sta. 20+50 "PR-1" Rt.



TYPICAL HALF SECTION WITH GUARDRAIL

Scale: ¼" - 1'-0"

See Plan & Profile Sheet for Locations



SAFETY EDGE ON HMA PAVEMENT

Not to Scale

Plot: 11/13/2024 10:41 AM

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER _____ DATE

DESIGNED: RD | DRAWN: LPK

CHECKED: KMS | CHECKED: KMS

INDIANA
DEPARTMENT OF TRANSPORTATION

TYPICAL CROSS SECTIONS

HORIZONTAL SCALE	BRIDGE FILE
As Noted	009-48-10798
VERTICAL SCALE	DESIGNATION
As Noted	2100572
SURVEY BOOK	SHEETS
ELECTRONIC	3 of 22
CONTRACT	PROJECT
B-43949	2100572

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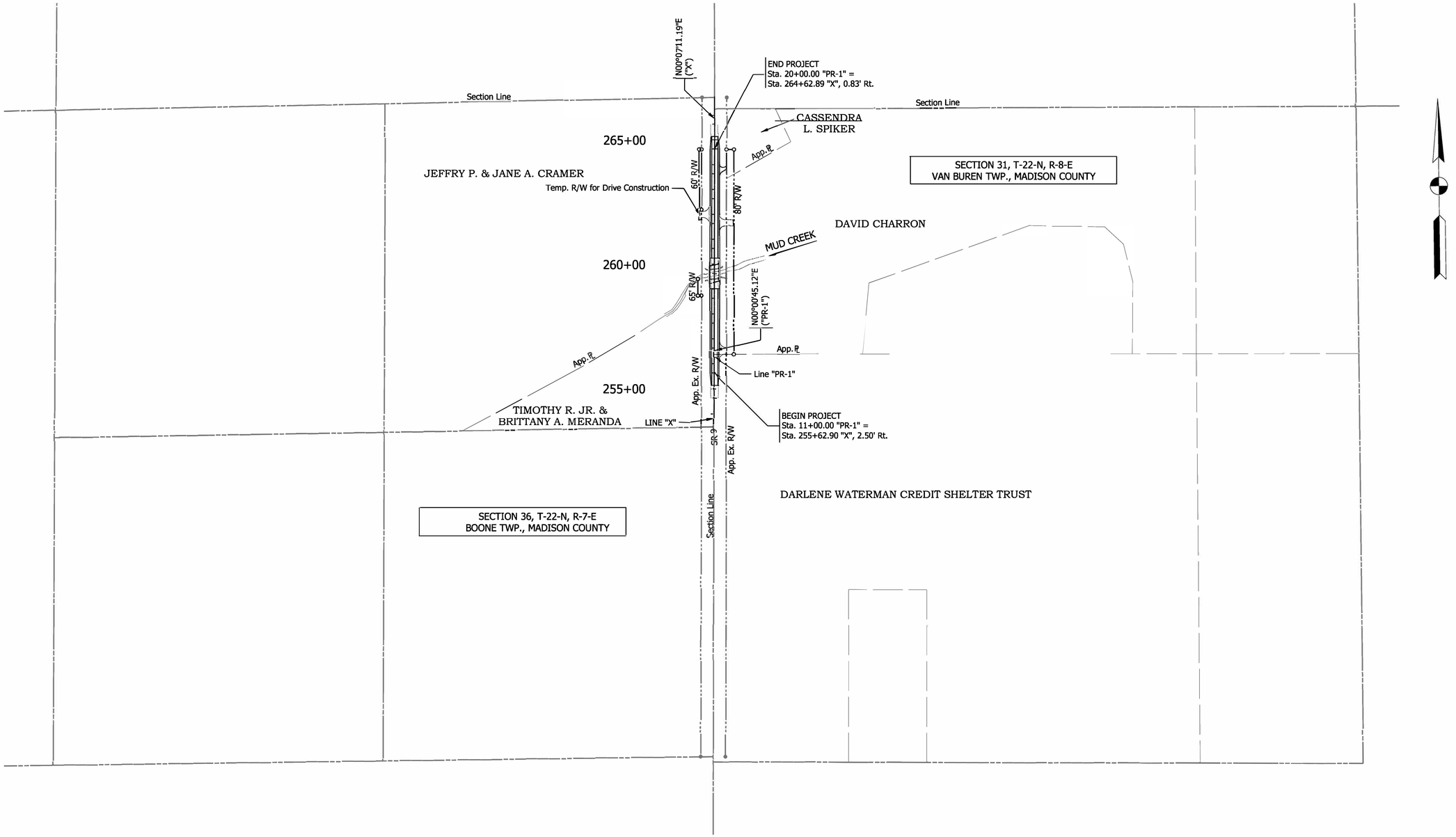

All R/W described from Line "X"
All stationing described from Line "X" except as shown

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: LPK DRAWN: LPK

CHECKED: AGP CHECKED: AGP

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAT NO. 1

HORIZONTAL SCALE	BRIDGE FILE
1" = 200'	009-48-10798
VERTICAL SCALE	DESIGNATION
N/A	2100572
SURVEY BOOK	SHEETS
ELECTRONIC	4 of 22
CONTRACT	PROJECT
B-43949	2100572

Plot: 11/13/2024 10:41 AM

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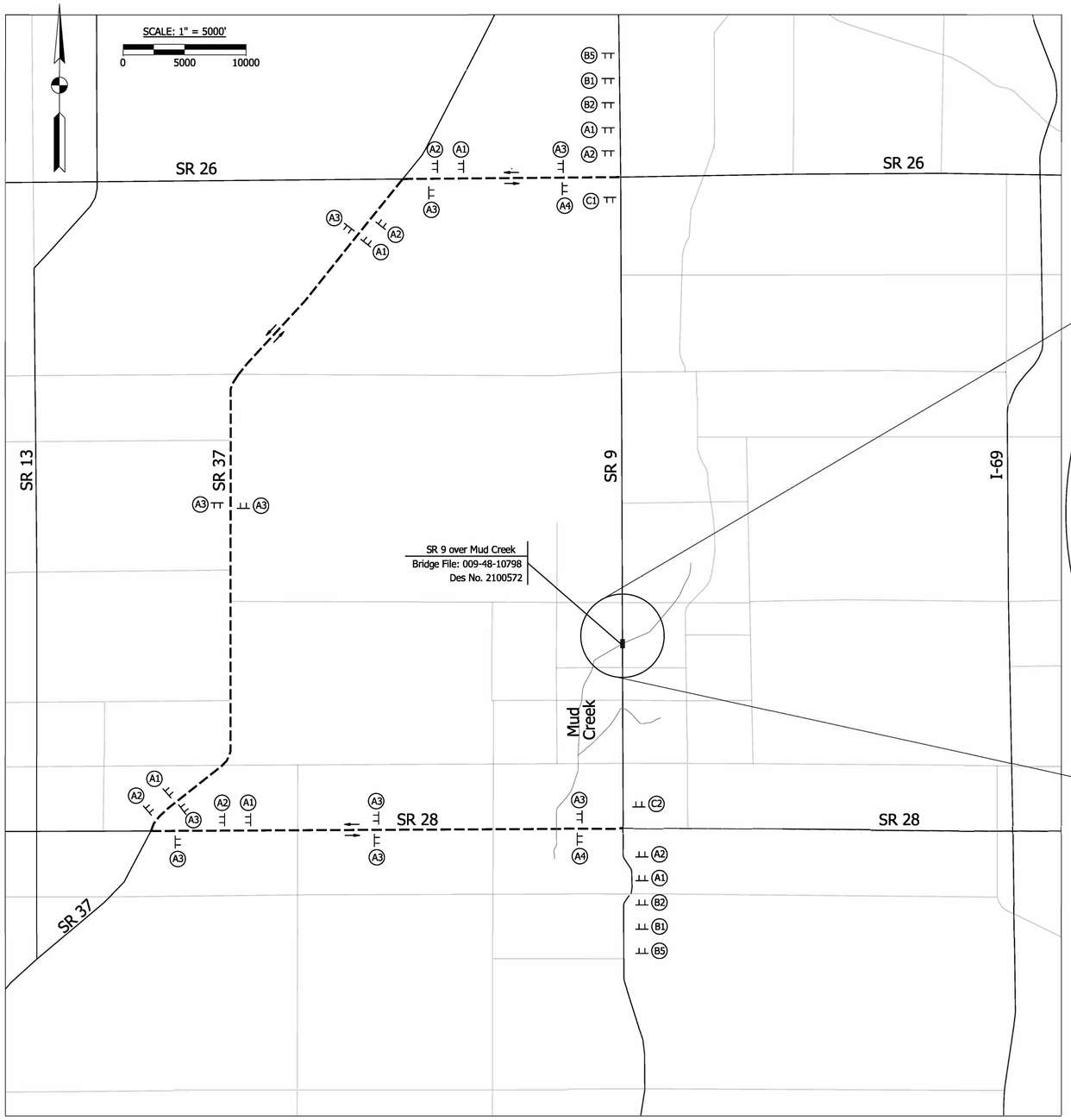
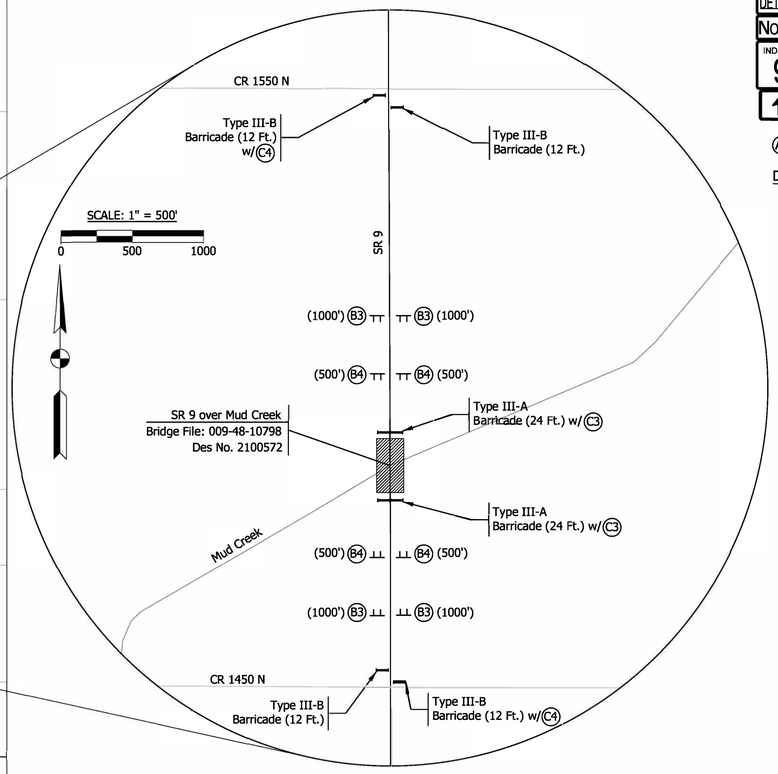
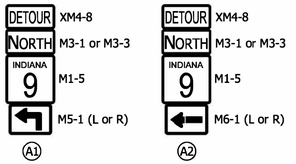


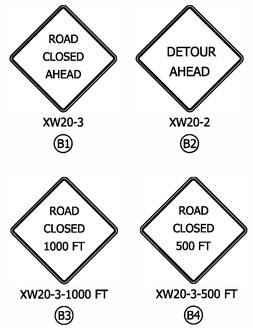


QUANTITY SUMMARY TABLE

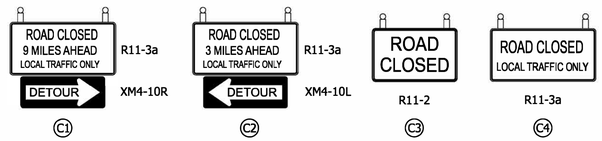
ITEM	QUANTITY
Construction Sign, A	14 Each
Detour Route Marker Sign Assembly	24 Each
Road Closure Sign Assembly	6 Each
Barricade, III-A	48 Ft.
Barricade, III-B	48 Ft.
Maintaining Traffic	1 LS



DETOUR ROUTE MARKER ASSEMBLIES



CONSTRUCTION SIGNS



ROAD CLOSURE SIGN ASSEMBLIES

LEGEND

- Construction Zone
- Construction Sign
- Barricade Type III-A or III-B
- Detour Route
- Detour Traffic

NOTES

1. SR 9 shall be closed to through traffic from County Road 1450 N to County Road 1550 N.
2. Through traffic shall be detoured along SR 28, SR 37, and SR 26 throughout construction.
3. Access to all driveways shall be maintained throughout construction.
4. See Std. Drawing E 801-TCSN-01 through -08 for additional sign details.
5. See Std. Drawing E 801-TCDT-01 and -04 for additional details.

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: RD | DRAWN: RD

CHECKED: KMS | CHECKED: KMS

INDIANA
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC
DETOUR ROUTE

HORIZONTAL SCALE	BRIDGE FILE
As Noted	009-48-10798
VERTICAL SCALE	DESIGNATION
As Noted	2100572

SURVEY BOOK	SHEETS
ELECTRONIC	5 of 22
CONTRACT	PROJECT
B-43949	2100572

Plot: 11/13/2024 10:42 AM

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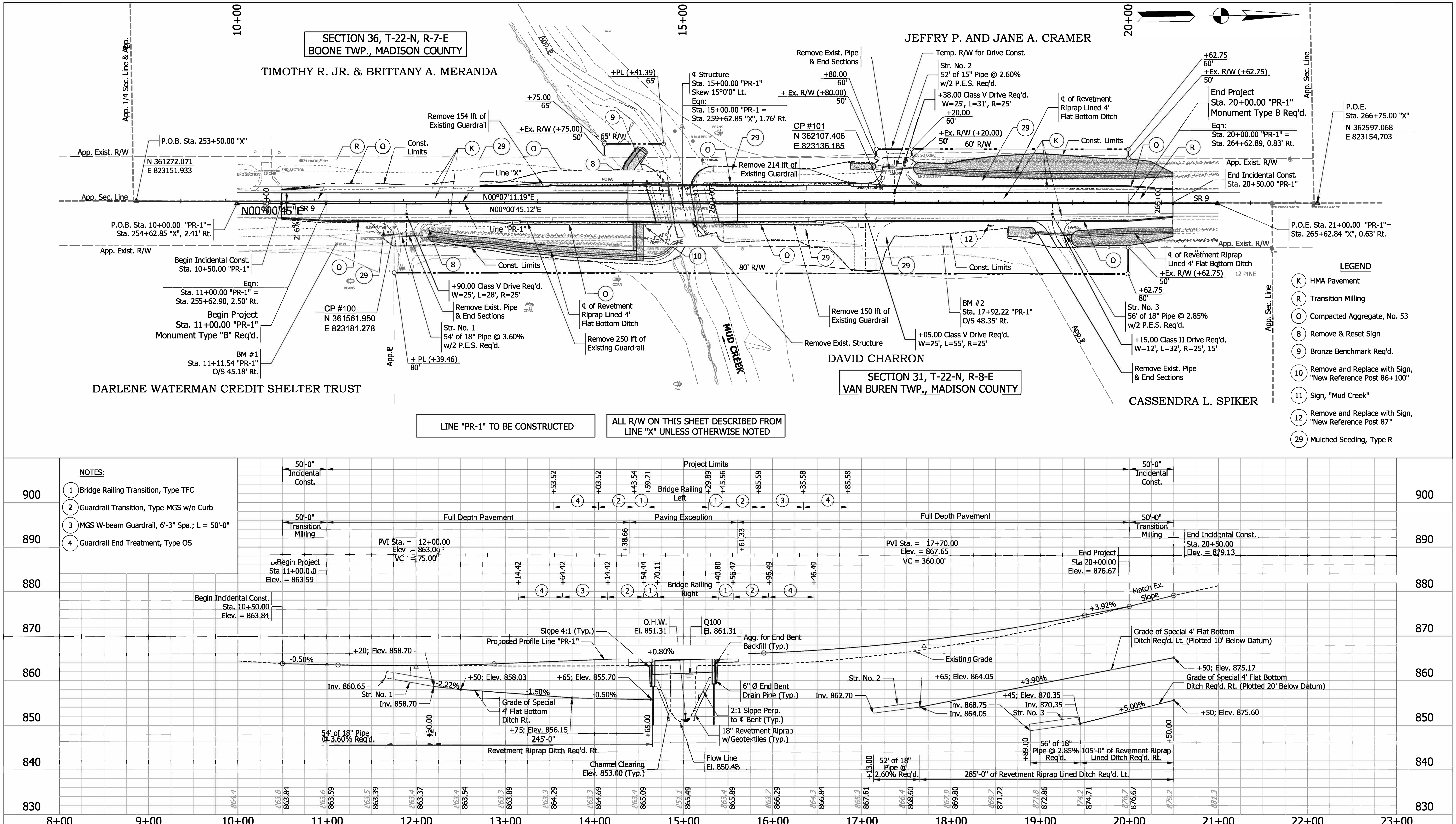


SECTION 36, T-22-N, R-7-E
BOONE TWP., MADISON COUNTY
TIMOTHY R. JR. & BRITTANY A. MERANDA
JEFFRY P. AND JANE A. CRAMER
DARLENE WATERMAN CREDIT SHELTER TRUST
DAVID CHARRON
SECTION 31, T-22-N, R-8-E
VAN BUREN TWP., MADISON COUNTY
CASSENDRA L. SPIKER
MUD CREEK
LINE "PR-1" TO BE CONSTRUCTED
ALL R/W ON THIS SHEET DESCRIBED FROM LINE "X" UNLESS OTHERWISE NOTED
P.O.B. Sta. 253+50.00 "X"
N 361272.071
E 823151.933
P.O.B. Sta. 10+00.00 "PR-1"= Sta. 254+62.85 "X", 2.41' Rt.
Begin Incidental Const. Sta. 10+50.00 "PR-1"
Eqn: Sta. 11+00.00 "PR-1" = Sta. 255+62.90, 2.50' Rt.
Begin Project Sta. 11+00.00 "PR-1" Monument Type "B" Req'd.
BM #1 Sta. 11+11.54 "PR-1" O/S 45.18' Rt.
CP #100 N 361561.950 E 823181.278
℄ Structure Sta. 15+00.00 "PR-1" Skew 15°0'0" Lt.
Eqn: Sta. 15+00.00 "PR-1 = Sta. 259+62.85 "X", 1.76' Rt.
CP #101 N 362107.406 E 823136.185
Str. No. 2 52' of 15" Pipe @ 2.60% w/2 P.E.S. Req'd.
+38.00 Class V Drive Req'd. W=25', L=31', R=25'
BM #2 Sta. 17+92.22 "PR-1" O/S 48.35' Rt.
+05.00 Class V Drive Req'd. W=25', L=55', R=25'
Str. No. 3 56' of 18" Pipe @ 2.85% w/2 P.E.S. Req'd.
+15.00 Class II Drive Req'd. W=12', L=32', R=25', 15'
End Project Sta. 20+00.00 "PR-1" Monument Type B Req'd.
Eqn: Sta. 20+00.00 "PR-1" = Sta. 264+62.89, 0.83' Rt.
End Incidental Const. Sta. 20+50.00 "PR-1"
P.O.E. Sta. 21+00.00 "PR-1"= Sta. 265+62.84 "X", 0.63' Rt.
P.O.E. Sta. 266+75.00 "X" N 362597.068 E 823154.703
Str. No. 1 54' of 18" Pipe @ 3.60% w/2 P.E.S. Req'd.
+90.00 Class V Drive Req'd. W=25', L=28', R=25'
Remove 154 lft of Existing Guardrail
Remove 214 lft of Existing Guardrail
Remove 250 lft of Existing Guardrail
Remove 150 lft of Existing Guardrail
Remove Exist. Structure
Remove Exist. Pipe & End Sections
Temp. R/W for Drive Const.
℄ of Revetment Riprap Lined 4' Flat Bottom Ditch
Const. Limits
80' R/W
60' R/W
LEGEND
K HMA Pavement
R Transition Milling
O Compacted Aggregate, No. 53
8 Remove & Reset Sign
9 Bronze Benchmark Req'd.
10 Remove and Replace with Sign, "New Reference Post 86+100"
11 Sign, "Mud Creek"
12 Remove and Replace with Sign, "New Reference Post 87"
29 Mulched Seeding, Type R
NOTES:
1 Bridge Railing Transition, Type TFC
2 Guardrail Transition, Type MGS w/o Curb
3 MGS W-beam Guardrail, 6'-3" Spa.; L = 50'-0"
4 Guardrail End Treatment, Type OS
Project Limits
Full Depth Pavement
Paving Exception
Bridge Railing Left
Bridge Railing Right
PVI Sta. = 12+00.00 Elev = 863.09 VC = 75.00'
PVI Sta. = 17+70.00 Elev. = 867.65 VC = 360.00'
Begin Project Sta 11+00.00 Elev. = 863.59
Begin Incidental Const. Sta. 10+50.00 Elev. = 863.84
End Project Sta 20+00.00 Elev. = 876.67
End Incidental Const. Sta. 20+50.00 Elev. = 879.13
O.H.W. El. 851.31
Q100 El. 861.31
Proposed Profile Line "PR-1"
Existing Grade
Channel Clearing Elev. 853.00 (Typ.)
Flow Line El. 850.48
18" Revetment Riprap w/Geotextiles (Typ.)
6" Ø End Bent Drain Pipe (Typ.)
Revetment Riprap Ditch Req'd. Rt.
285'-0" of Revetment Riprap Lined Ditch Req'd. Lt.
105'-0" of Revetment Riprap Lined Ditch Req'd. Rt.

NOTE:
See Index Sheet for Alignment Reference Tie Diagrams

TBM #1 - Bench Tie in PWP #MA22-409
Sta. 11+11.54 "PR-1"; 45.18' Rt.
Elev. = 867.950

TBM #2 - Bench Tie in PWP #MA22-412
Sta. 17+92.22 "PR-1"; 48.35' Rt.
Elev. = 868.778

RECOMMENDED FOR APPROVAL		DESIGN ENGINEER	DATE
DESIGNED: RD	DRAWN: LPK		
CHECKED: KMS	CHECKED: KMS		

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN & PROFILE
LINE "PR-1"

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	009-48-10798
VERTICAL SCALE	DESIGNATION
1" = 10'	2100572
SURVEY BOOK	SHEETS
ELECTRONIC	7 of 22
CONTRACT	PROJECT
B- 43949	2100572

Plot: 11/13/2024 10:43 AM

File:K:\IND_Structures\170268010_SR 9 over Mud Creek Bridge Replacement (2100572)\ Plan Development \2100572_BR_SR 9 over Mud Creek\Plan Sheets\BR_2100572_Plan & Profile.dgn
Model:LINE PR-1 - Plan 1 50 SC [Sheet]

RESOURCE INTERNATIONAL, INC.

BORING LOG

BORING NO.: TB-01
SHEET 1 OF 3
NORTHING: 361830.374
EASTING: 823139.652
DATUM: NAD83
DATE STARTED : 08-23-23
DATE COMPLETED : 08-23-23

ROUTE #: SR-9 COUNTY : Madison
PROJECT TYPE: Bridge Replacement
LOCATION : SR 9 over Mud Creek, 2.83 mi. N. of SR 28
DES NO. : 2100572 RII PROJECT NO.: I-22-082

ELEVATION : 862.8 ft
STATION : 259+08
OFFSET : 15.1 ft Left
LINE : 'X'
DEPTH : 65.5 ft

BORING METHOD : 3.25" HSA
RIG TYPE : CME 55 Truck
CASING DIA. : 4 in
CORE SIZE : 3 in

HAMMER : Automatic
DRILLER/INSP : LH
TEMPERATURE : 94 °F
WEATHER : Partly Cloudy

GROUNDWATER: ▽ Encountered at Dry ▼ At completion Dry

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6"	% RECOVERY	N	MOISTURE CONTENT	DRY UNIT WEIGHT, PCF	ATTERBERG LIMITS LL	PL	PI	POCKET PEN., tsf	UNCONF. COMP., ksf
861.7	1	**13.0" - Asphalt.** 1.1											
861.0	2	**8.0" - Aggregate Base.** 1.8											
	3	**Sandy Loam A-6 (2)**, Dark Brownish Gray, Moist to Very Moist, Soft To Medium Stiff, (Lab-3).	SS 1	3 4 6	44	10	15					1.5	
	4		SS 2	1 2 3	56	5	17		27	15	12	1.5	
	5												
	6												
	7		SS 3	2 2 2	72	4	22					1.5	
	8												
	9		ST 4		96							0.75	
	10												
	11												
	12		SS 5	1 2 3	83	5	21					0.5	
	13												
	14		SS 6	3 3 5	89	8	21					1.0	
	15												
	16												
	17		SS 7	2 3 4	89	7	21					1.0	
844.8	18	18.0											
	19	**Sandy Gravel A-1-a (0)**, Gray, Moist, Medium Dense, (Lab-9).	SS 8	5 12 16	94	28	8		NP	NP	NP		
	20												
	21	-Drilling fluid added at 21.0'.											
	22		SS 9	10 10 11	83	21	12						
839.8	23	23.0											
	24	**Clay Loam A-6**, Gray, Slightly Moist, Very Stiff To Hard, (Same as Lab-4).	SS 10	10 14 14	83	28	11					4.0	
	25												

Continued on next page

RESOURCE INTERNATIONAL, INC.

BORING LOG

BORING NO.: TB-01
SHEET 2 OF 3
NORTHING: 361830.374
EASTING: 823139.652
DATUM: NAD83

ROUTE #: SR-9 COUNTY : Madison
PROJECT TYPE: Bridge Replacement

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6"	% RECOVERY	N	MOISTURE CONTENT	DRY UNIT WEIGHT, PCF	ATTERBERG LIMITS LL	PL	PI	POCKET PEN., tsf	UNCONF. COMP., ksf
	26	**Clay Loam A-6**, Gray, Slightly Moist, Very Stiff To Hard, (Same as Lab-4).	SS 11	8 12 18	94	30	11					4.5	
	27												
	28												
	29		SS 12	5 12 16	83	28	13					4.5	
	30												
	31												
	32												
	33												
	34		SS 13	16 25 50/4"	78		10					4.5	
	35												
	36												
825.8	37	37.0											
	38	**Sandy Gravel A-1-a**, Gray, Moist, Very Dense, (Same as Lab-9).											
	39		SS 14	8 23 28	72	51	18						
	40												
	41												
820.8	42	42.0											
	43	**Clay Loam A-6 (6)**, Dark Gray To Gray, Moist, Hard, (Lab-4).											
	44												
	45		SS 15	17 19 35	94	54	10		26	13	13	4.5	
	46												
	47												
	48												
	49		SS 16	8 22 48	28	70	15					4.5	
	50												
	51	Auger refusal @ 51.5'. 51.5											
811.3	52	**Siltstone** Gray, Slightly Weathered, Hard, Very fine grained, Medium bedded, Moderately Close Joints, Horizontal, Parallel Planar. -Qu @ 53.0' = 7,673 psi.	RC 1 RQD= 50%										
	53												
	54				87								
	55												

Continued on next page

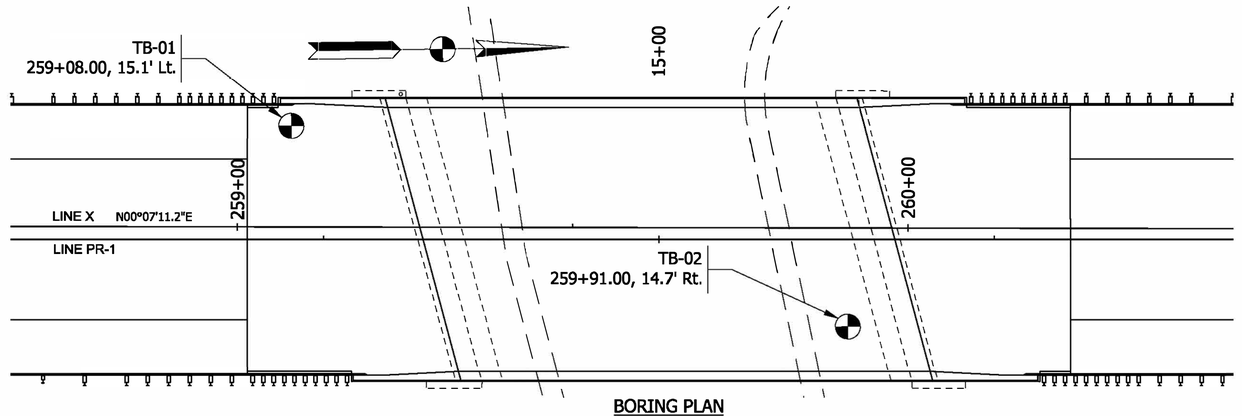
RESOURCE INTERNATIONAL, INC.

BORING LOG

BORING NO.: TB-01
SHEET 3 OF 3
NORTHING: 361830.374
EASTING: 823139.652
DATUM: NAD83

ROUTE #: SR-9 COUNTY : Madison
PROJECT TYPE: Bridge Replacement

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6"	% RECOVERY	N	MOISTURE CONTENT	DRY UNIT WEIGHT, PCF	ATTERBERG LIMITS LL	PL	PI	POCKET PEN., tsf	UNCONF. COMP., ksf
	56	**Siltstone** Gray, Slightly Weathered, Hard, Very fine grained, Medium bedded, Moderately Close Joints, Horizontal, Parallel Planar.											
	57		RC 2 RQD= 73%		86								
	58												
	59												
	60												
	61												
	62												
	63		RC 3 RQD= 0%		0								
	64												
	65												
797.3	66	65.5											
	67	Bottom of Boring at 65.5 ft											
	68	Backfilled with 94 lbs cement, 50 lbs bentonite powder and 40 gal water. Pavement patched with concrete.											
	69												
	70												
	71												
	72												
	73												
	74												
	75												
	76												
	77												
	78												
	79												
	80												
	81												
	82												
	83												
	84												
	85												
	86												



BORING PLAN
Scale: 3/32" = 1'-0"

PILE LOADING FOR GEOTECHNICAL TESTING

	Bent No. 1	Bent No. 2
Pile Size, Type, and Grade	HP 12 x 53 Grade 50 ksi	HP 12 x 53 Grade 50 ksi
Factored Design Load, Qf (kip)	TBD	TBD
Factored Design Soil Resistance, Rr (kip)	TBD	TBD
Resistance Factor	TBD	TBD
Downdrag Load, DD (kip), Due to Embankment Fill	TBD	TBD
Downdrag Load, D (kip), Due to Liquefaction	TBD	TBD
Nominal Soil Resistance, Rn (kip)	TBD	TBD
Downdrag Friction, Rs (kip)	TBD	TBD
Scour Zone Friction, Rn (kip)	TBD	TBD
Relaxation of Tip in Shale (kip)	TBD	TBD
Nominal Driving Resistance, Rndr (kip)	TBD	TBD
Estimated Pile Tip Elevation (Minimum)	TBD	TBD
Testing Method	ISS Section 701.05(b) (PDA)	

NOTES:

Pile shoes are required at all locations.

The restrike tests for piles shall be performed no sooner than 2 days following the initial drive.

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: RD DRAWN: LPK
CHECKED: KMS CHECKED: KMS

INDIANA DEPARTMENT OF TRANSPORTATION

SOIL BORINGS

HORIZONTAL SCALE	BRIDGE FILE
3/32" = 1'-0"	009-48-10798
VERTICAL SCALE	DESIGNATION
3/32" = 1'-0"	2100572
SURVEY BOOK	SHEETS
ELECTRONIC	8 of 22
CONTRACT	PROJECT
B-43949	2100572

Plot: 11/13/2024 10:43 AM
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Model: LINE PR-1 - PLAN PR-1 [Sheet]

RESOURCE INTERNATIONAL, INC.

BORING LOG

BORING NO.: TB-02
SHEET 1 OF 3
NORTHING: 361914.211
EASTING: 823169.648
DATUM: NAD83
DATE STARTED: 08-21-23
DATE COMPLETED: 08-21-23

ROUTE #: SR-9 COUNTY: Madison
PROJECT TYPE: Bridge Replacement
LOCATION: SR 9 over Mud Creek, 2.83 mi. N. of SR 28
DES NO.: 2100572 RII PROJECT NO.: I-22-082

ELEVATION: 863.2 ft
STATION: 259+91
OFFSET: 14.7 ft Right
LINE: X
DEPTH: 64.0 ft

BORING METHOD: 3.25" HSA
RIG TYPE: CME 55 Truck
CASING DIA.: 4 in
CORE SIZE: 3 in

HAMMER: Automatic
DRILLER/INSP: LH
TEMPERATURE: 93 °F
WEATHER: Partly Cloudy

GROUNDWATER: ▽ Encountered at Dry ▼ At completion Dry

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6"	% RECOVERY	N	MOISTURE CONTENT	DRY UNIT WEIGHT, PCF	ATTERBERG LIMITS LL	PL	PI	POCKET PEN., tsf	UNCONF. COMP., ksf
862.2	1	**12.0" - Asphalt.** 1.0											
861.1	2	**13.0" - Aggregate Base.** 2.1											
860.0	3	**Sand and Gravel A-1-a**, Brownish Gray, Slightly Moist, Loose, (Aggregate Base). 3.2	SS 1	5 3 3	56	6							
	4	**Clay Loam A-6 (8)**, Grayish Brown, Very Moist, Very Soft To Soft, (Lab-5).	SS 2	2 2 3	33	5	25					1.25	
	5												
	6												
	7		SS 3	2 1 2	67	3	30		32	17	15	0.75	
	8												
	9		SS 4	0 1 1	0	2							
853.2	10	10.0											
	11	**Silty Clay Loam A-6 (8)**, Brownish Gray, Slightly Moist, Soft To Very Stiff, (Lab-6).	2S 4A	2	100		31					0.75	
	12		SS 5	1 2 2	72	4	22					0.75	
	13												
	14		ST 6		100				28	14	14		0.76
	15												
	16												
	17		SS 7	3 6 11	33	17	19					0.5	
845.2	18	18.0											
	19	**A-1-b (0)**, Brown, Moist, Medium Dense To Dense, (Lab-7).	SS 8	10 17 14	83	31	13						
	20												
	21												
	22		SS 9	15 16 14	72	30	10		NP	NP	NP		
	23												
838.9	24	24.3	SS 10	5 17 16	61	33	8 10						
	25												

Continued on next page

RESOURCE INTERNATIONAL, INC.

BORING LOG

BORING NO.: TB-02
SHEET 2 OF 3
NORTHING: 361914.211
EASTING: 823169.648
DATUM: NAD83

ROUTE #: SR 9 COUNTY: Madison
PROJECT TYPE: Bridge Replacement

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6"	% RECOVERY	N	MOISTURE CONTENT	DRY UNIT WEIGHT, PCF	ATTERBERG LIMITS LL	PL	PI	POCKET PEN., tsf	UNCONF. COMP., ksf
	26	**Silty Clay Loam A-6**, Gray, Slightly Moist to Moist, Hard, (Same as Lab-6).	SS 11	12 16 22	67	38	12					4.25	
	27												
	28												
	29		SS 12	7 14 26	83	40	11					4.5	
	30												
	31												
	32												
	33												
	34		SS 13	3 17 28	89	45	16						
	35												
	36												
826.2	37	37.0											
	38	**Gravelly Sand A-1-b (0)**, Grayish Brown To Gray, Moist to Wet, Dense To Very Dense, (Lab-8).											
	39												
	40		SS 14	16 20 26	100	46	7						
	41												
	42												
	43												
	44		SS 15	33 50/4"	56		9						
	45												
	46												
	47												
	48												
	49		SS 16	22 33 50/5"	94		18		NP	NP	NP		
	50												
	51												
	52												
	53												
809.2	54	54.0	SS 17	50/0"	0								
	55	**Siltstone** Gray, Slightly Weathered, Hard, Very fine grained, Medium bedded, Moderately Close Joints, Horizontal, Parallel Planar.											

Continued on next page

RESOURCE INTERNATIONAL, INC.

BORING LOG

BORING NO.: TB-02
SHEET 3 OF 3
NORTHING: 361914.211
EASTING: 823169.648
DATUM: NAD83

ROUTE #: SR 9 COUNTY: Madison
PROJECT TYPE: Bridge Replacement

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6"	% RECOVERY	N	MOISTURE CONTENT	DRY UNIT WEIGHT, PCF	ATTERBERG LIMITS LL	PL	PI	POCKET PEN., tsf	UNCONF. COMP., ksf
	56	-Qu @ 54.0' = 9,407 psi. **Siltstone** Gray, Slightly Weathered, Hard, Very fine grained, Medium bedded, Moderately Close Joints, Horizontal, Paralel Planar.	RC 1 RQD= 82%		84								
	57												
	58												
	59												
	60												
	61												
	62		RC 2 RQD= 100%		100								
	63												
799.2	64	64.0											
	65	Bottom of Boring at 64.0 ft											
	66	Backfilled with 94 lbs cement, 50 lbs bentonite powder and 40 gal water. Pavement patched with concrete.											
	67												
	68												
	69												
	70												
	71												
	72												
	73												
	74												
	75												
	76												
	77												
	78												
	79												
	80												
	81												
	82												
	83												
	84												
	85												
	86												

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: RD DRAWN: LPK
CHECKED: AGP CHECKED: AGP

INDIANA DEPARTMENT OF TRANSPORTATION

SOIL BORINGS

HORIZONTAL SCALE	BRIDGE FILE
1/32" = 1'-0"	009-48-10798
VERTICAL SCALE	DESIGNATION
1/32" = 1'-0"	2100572
SURVEY BOOK	SHEETS
ELECTRONIC	9 of 22
CONTRACT	PROJECT
B-43949	2100572

Plot: 11/13/2024 10:43 AM
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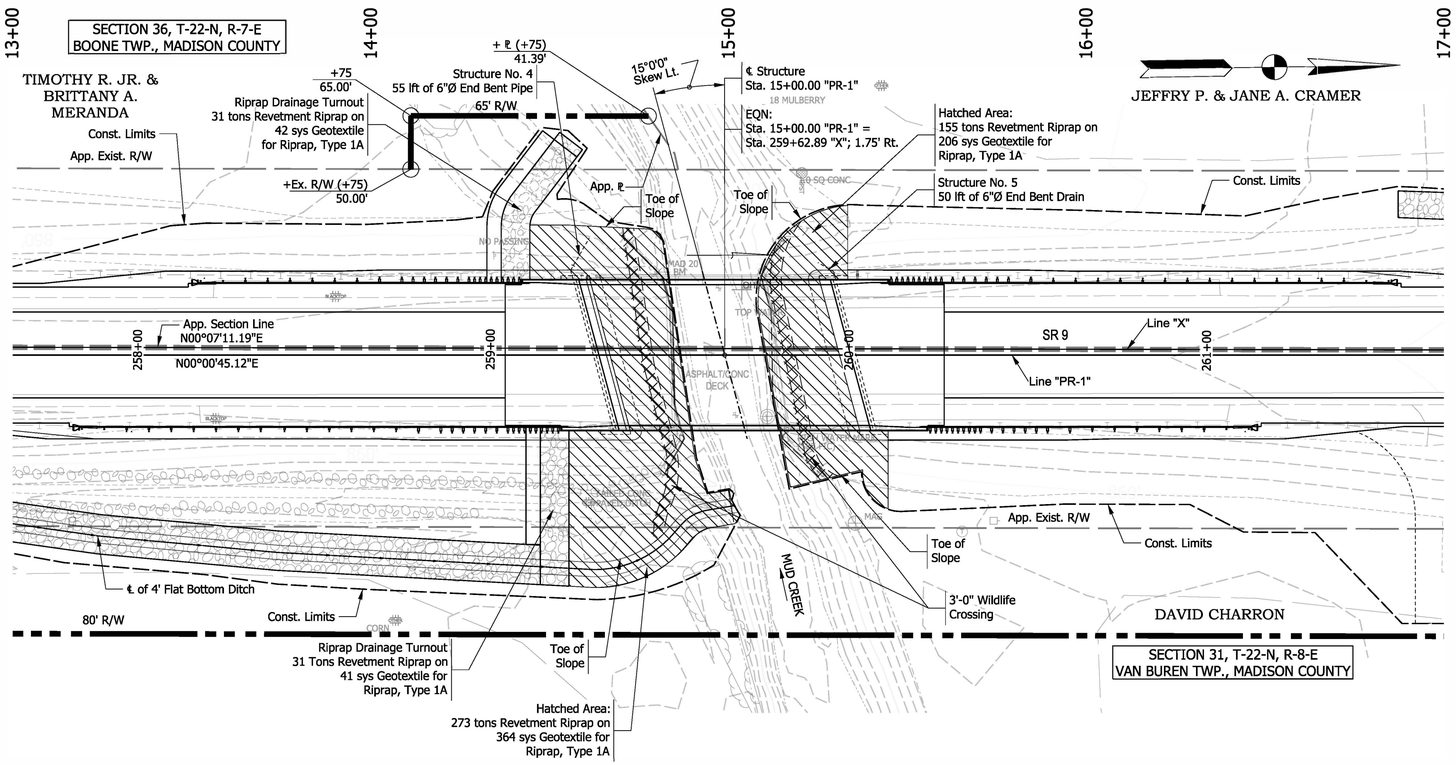
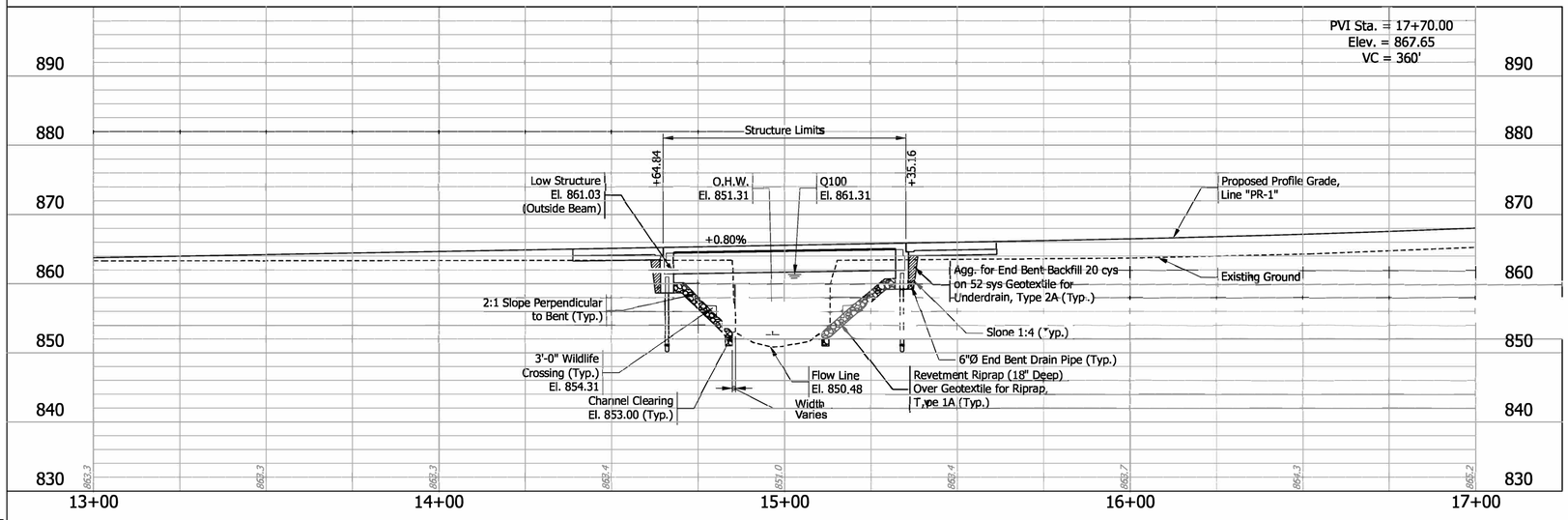


ALL R/W ON THIS SHEET DESCRIBED FROM LINE "X" UNLESS OTHERWISE NOTED

LINE "PR-1" TO BE CONSTRUCTED



EXISTING STRUCTURE

The existing structure (009-48-00157B) is a single span reinforced concrete girder bridge constructed in 1923. It was rehabilitated in 1953 and 2010, with a bridge length of 29'-9" and a 41'-0" clear roadway width. Existing structure to be removed.

HYDRAULIC DATA

Waterway Opening Provided	393.34 sq ft
Drainage Area	11.53 sq mi
Design Discharge, Q100	1600 cfs
Proposed Q100 Velocity	4.05 ft/sec
Q100 Elevation	861.31 ft
Proposed Backwater at Q100	0.75 ft
Existing Waterway Opening	244.22 sq ft
Existing Backwater	1.47 ft
Proposed Low Structure Elevation	861.02 ft
Existing Low Structure Elevation	860.41 ft

HYDRAULIC SCOUR DATA

Q100 Discharge	1600 cfs
Q100 Elevation	861.31 ft
Q100 Max Velocity	6.18 ft/sec
Q100 Scour Depth (Contraction)	16.11 ft
Q100 Scour Depth (Total)	16.11 ft
Q100 Low Scour Elevation	834.07 ft
Q500 Discharge	2054 cfs
Q500 Elevation	861.62 ft
Q500 Max. Velocity	8.05 ft/sec
Q500 Scour Depth (Contraction)	22.25 ft
Q500 Scour Depth (Total)	22.25 ft
Q500 Low Scour Elevation	827.93 ft

EARTHWORK TABULATION

Fill + 20%	2695 cys
Common Excavation	1805 cys
Usable Waterway Excavation (70%)	625 cys
Surplus Foundation Excavation (70%)	- cys
Borrow	265 cys
Total Waterway Excavation	890 cys
Excavation Unclassified	- cys
Benching (Estimated)	300 cys

No direct payment for Benching. Benching will not be paid for as Common Excavation

COMPOSITE PRE-STRESSED CONCRETE
BULB-TEE BEAM BRIDGE
1 SPAN @ 68'-0"
CLEAR ROADWAY 39'-4"; 15°00'00" SKEW LT.
SR 9 OVER MUD CREEK
MADISON COUNTY

NOTE:
See Index Sheet for Alignment Reference Ties
See Plan & Profile for Benchmark Data

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: RD DRAWN: LPK

CHECKED: KMS CHECKED: KMS

INDIANA DEPARTMENT OF TRANSPORTATION

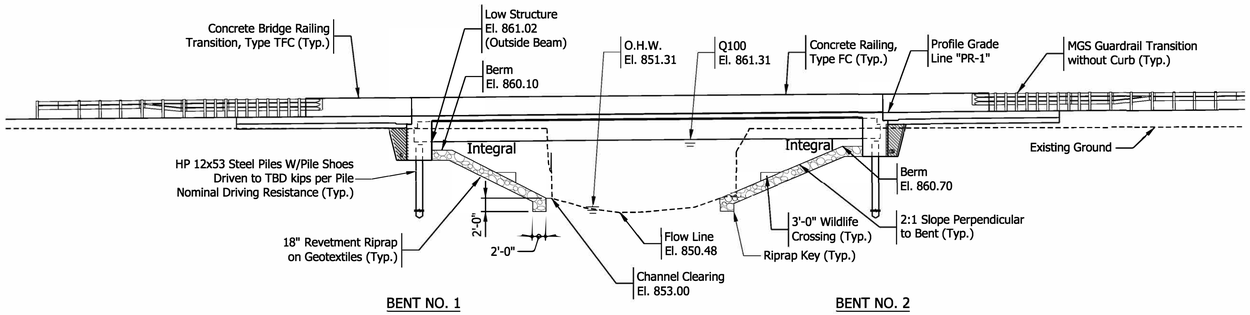
LAYOUT

HORIZONTAL SCALE	BRIDGE FILE
1" = 20'	009-48-10798
VERTICAL SCALE	DESIGNATION
1" = 10'	2100572
SURVEY BOOK	SHEETS
ELECTRONIC	10 of 22
CONTRACT	PROJECT
B-43949	2100572

Plot: 11/13/2024 10:43 AM

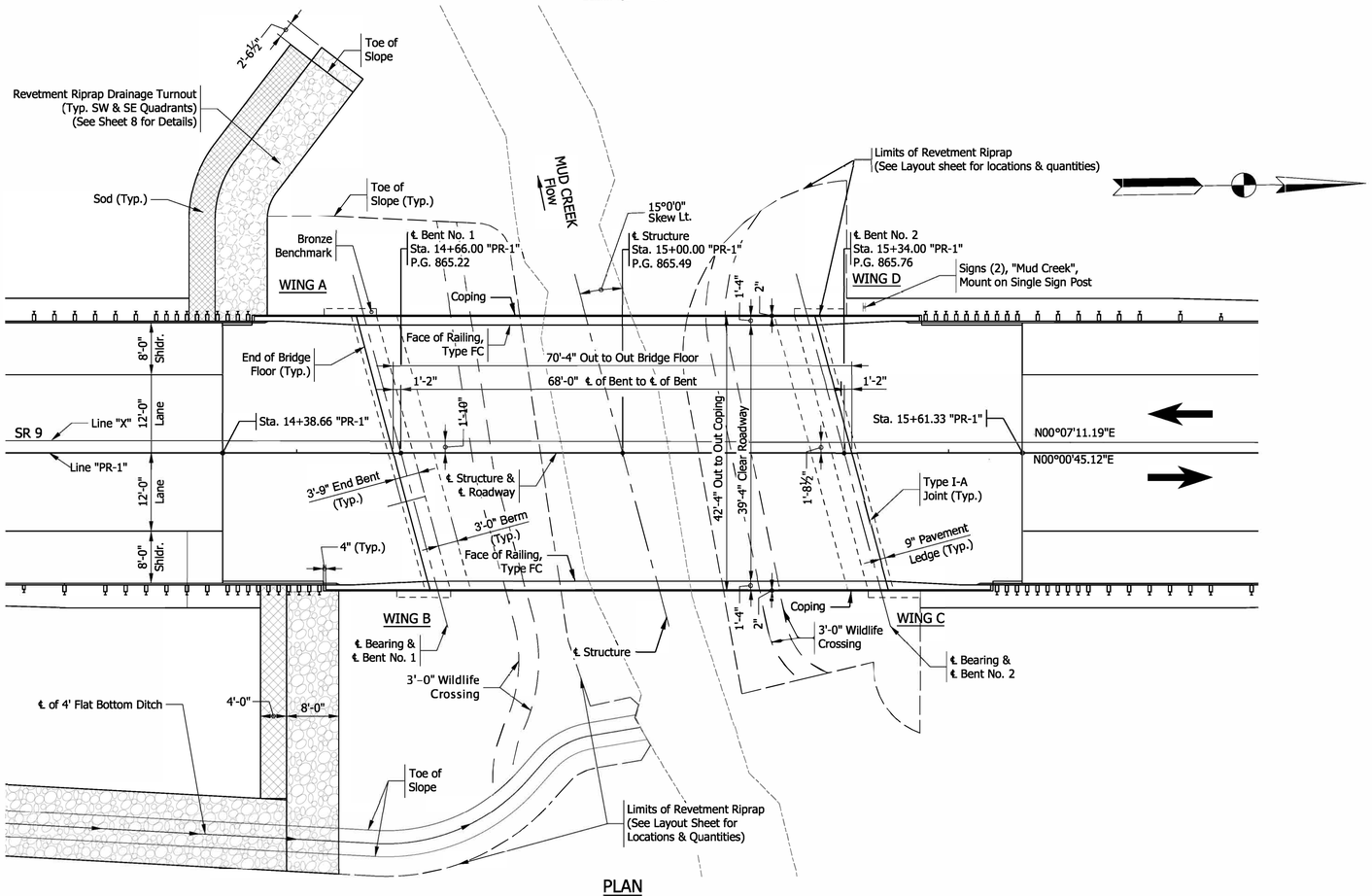
File: K:\IND_Structures\170268010_SR 9 over Mud Creek Bridge Replacement (2100572)\4 Plan Development\2100572_BR_SR 9 over Mud Creek\Plan Sheets\BR_2100572_Layout.dgn
Model:SHEET MODEL

STRUCTURE TO BE BUILT ON +0.80% GRADE



ELEVATION

Scale: 3/32" = 1'-0"



PLAN

Scale: 3/32" = 1'-0"

GENERAL NOTES

Reinforcing steel cover shall be 2 1/2" in top and 1" minimum in bottom of floor slab and 2" in all other parts, unless noted.

DESIGN DATA

Designed for HL-93 loading, in accordance with AASHTO LRFD bridge Design Specifications, Ninth Edition, 2020 and its subsequent revisions.

DEAD LOAD

Actual weight plus 35 lb/ft' for future wearing surface and 15 lb/ft' for permanent metal deck forms.

FLOOR SLAB

Designed with a 7½" structural depth plus ½" sacrificial wearing surface.

DESIGN STRESSES

CONCRETE

Class C	f'c	= 4,000 psi
Class A	f'c	= 3,500 psi

REINFORCING STEEL

Grade 60	f'y	= 60,000 psi

CONSTRUCTION LOADING

The exterior beam 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 beam. Finishing machine was assumed to be supported 6 in. outside the vertical coping form. The top overhang brackets were assumed to be located 6 in. past the edge of the vertical coping form. The bottom overhang brackets were assumed to be braced against the intersection of the beam bottom flange and web.

DECK FALSEWORK LOADS

Designed for 15 lb/ft' for permanent metal stay-in-place deck forms, removable deck forms, and 2-ft exterior walkway.

CONSTRUCTION LIVE LOAD

Designed for 20 lb/ft' 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

Designed for 70 mph horizontal wind loading in accordance with LRFD 3.8.1.

SEISMIC DESIGN DATA

Seismic Performance Zone	Zone 1
Acceleration Coefficient	0.106
Seismic Soil Profile	Site Class D

COMPOSITE PRE-STRESSED CONCRETE BULB-TEE BEAM BRIDGE
1 SPAN @ 68'-0"
CLEAR ROADWAY 39'-4"; 15°00'00" SKEW LT.
SR 9 OVER MUD CREEK
MADISON COUNTY

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER _____ DATE

DESIGNED: RD | DRAWN: LPK

CHECKED: KMS | CHECKED: KMS

INDIANA DEPARTMENT OF TRANSPORTATION

GENERAL PLAN

HORIZONTAL SCALE	BRIDGE FILE
3/32"= 1'-0"	009-48-10798
VERTICAL SCALE	DESIGNATION
3/32"= 1'-0"	2100572
SURVEY BOOK	SHEETS
ELECTRONIC	11 of 22
CONTRACT	PROJECT
B-43949	2100572

Plot: 11/13/2024 10:44 AM

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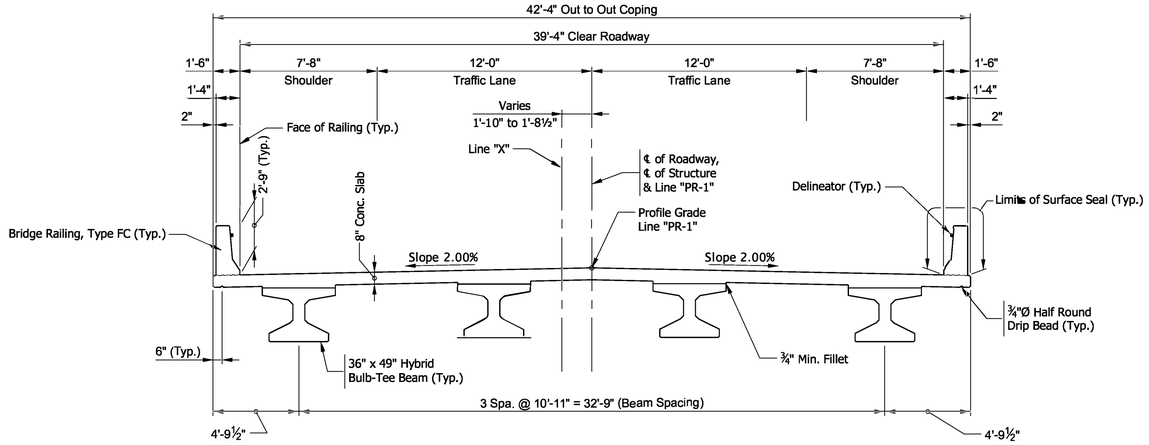
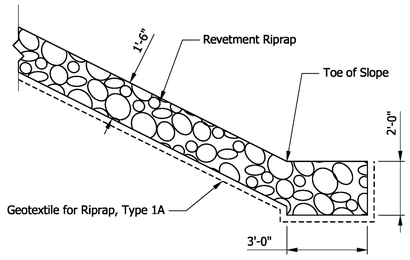
Model:SHEET MODEL



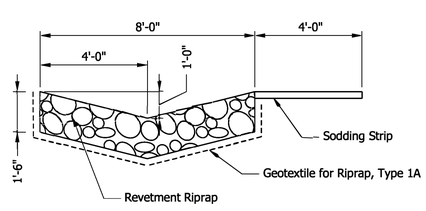
TYPICAL SECTION

Scale: ¼" = 1'-0"



RIPRAP DRAINAGE TURNOUT TYPICAL KEY

Scale: ⅜" = 1'-0"



RIPRAP DRAINAGE TURNOUT TYPICAL SECTION

Scale: ⅜" = 1'-0"

COMPOSITE PRE-STRESSED CONCRETE
BULB-TEE BEAM BRIDGE
1 SPAN @ 68'-0"
CLEAR ROADWAY 39'-4"; 15°00'00" SKEW LT.
SR 9 OVER MUD CREEK
MADISON COUNTY

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER _____ DATE

DESIGNED: RD DRAWN: LPK

CHECKED: KMS CHECKED: KMS

INDIANA
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN

HORIZONTAL SCALE	BRIDGE FILE
¼" = 1'-0"	009-48-10798
VERTICAL SCALE	DESIGNATION
¼" = 1'-0"	2100572
SURVEY BOOK	SHEETS
ELECTRONIC	12 of 22
CONTRACT	PROJECT
B-43949	2100572

Plot: 11/13/2024 10:44 AM

File: K:\IND_Structures\170268010_SR 9 over Mud Creek Bridge Replacement (2100572)\4 Plan Development\2100572_BR_SR 9 over Mud Creek\Plan Sheets\BR_2100572_General Plan-Typ Section.dgn
Model: Default

SUMMARY OF BRIDGE QUANTITIES

ITEM	CONCRETE				CONCRETE RAILING CLASS C	REINF. BARS	REINF. BARS, EPOXY COATED	RAILING STEEL	BARRIER DELIN-EATORS	REINF. CONC. BRIDGE APPROACH (SIZE)	DENSE GRADED SUBBASE	STRUCT. STEEL	ANCHOR PLATES MK-AP	PILES										GRATES BASINS, & FITTINGS, CAST IRON	EXP. JOINT TYPE __	CONC. STR. MEMBERS		SURFACE SEAL**	
	CLASS C	CLASS A	CLASS B											STEEL PIPE (SIZE)	STEEL PIPE EPOXY COATED (SIZE)	STEEL H (SIZE)	STEEL H EPOXY COATED	STEEL H REINF. CONC. ENCASED	TEST PILE, DYNAMIC, PRODUCTION	TEST PILE, DYNAMIC, RESTRIKE	PILE SHOE (SIZE)	PILE TIP STEEL H (SIZE)	CORED HOLE IN ROCK				BOX BEAM TYPE & SIZE	I BEAM TYPE & SIZE		
	SUPERSTR	SUBSTR	ABOVE FTG.	IN FTG.																		NO.						
	CYS	CYS	CYS	CYS	CYS	LBS	LBS	LFT	EACH	SYS	CYS	LBS	EACH	LFT	LFT	LFT	LFT	LFT	LFT	EACH	EACH	EACH		LFT	LBS	LFT	LFT	LFT	SFT	
TOTALS																														

** Estimated Quantity

		RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE: N/A	BRIDGE FILE: 009-48-10798
				VERTICAL SCALE: N/A	DESIGNATION: 2100572
		DESIGNED: RD / DRAWN: LPK	BRIDGE SUMMARY	SURVEY BOOK	SHEETS
		CHECKED: AGP / CHECKED: AGP		ELECTRONIC	13 of 22
				CONTRACT	PROJECT
				B-43949	2100572

Plot: 11/13/2024 10:44 AM

File: K:\IND_Structures\170268010_SR 9 over Mud Creek Bridge Replacement (2100572)\4 Plan Development\2100572_BR_SR 9 over Mud Creek\Plan Sheets\BR_2100572_Bridge Summary.dgn
Model: BRIDGE SUMMARY

PAVEMENT QUANTITIES AND APPROACH TABLE

LOCATION	DESCRIPTION (APPROACH TYPE OR CLASS)	WIDTH	LENGTH	RADII	DISTANCE BEYOND R/W LINE	SURFACE BEYOND R/W LINE			GRADE				EXCAVATION		CLEAR ZONE AT DRIVE	HMA FOR APPROACHES				HMA MATERIALS					HMA BASE 25 mm	SEAL COAT TYPE 2	SEAL COAT TYPE 5	HMA MATERIAL FOR:		COMPACTED AGGREGATE FOR BASE NO. 53				COMPACTED AGGREGATE FOR SURFACE NO. 73							REMARKS
						COMPACTED AGGREGATE BASE	HMA	CONCRETE	1	2	3	4	CUT	FILL		LBS. PER SYD.				SURFACE 9.5 mm		INTERMD. 19.0 mm		BASE 25.0 mm				PRIME COAT	TACK COAT	DEPTH				DEPTH							
		FT	FT	FT	FT	SYS	SYS	SYS	%	%	%	%	CYS	CYS	FT	SYS	SYS	SYS	SYS	SYS	SYS	SYS	SYS	SYS	TONS	SYS	SYS	SYS	SYS	SYS	SYS	SYS	SYS	SYS	SYS					

PAVEMENT MARKINGS SUMMARY OF QUANTITIES

LOCATION	LINE PAINT		LINE EPOXY				LINE EPOXY				TRANSVERSE MARKINGS THERMOPLASTIC STOP LINE		TRANSVERSE MARKINGS CROSSHATCH LINE		TRANSVERSE MARKINGS CROSSWALK LINE		PAVEMENT MESSAGE THERMOPLASTIC LANE INDICATION ARROW	PAVEMENT MESSAGE THERMOPLASTIC WORD "ONLY"	SNOWPLOWABLE RAISED PAVEMENT MARKERS
	SOLID WHITE 4 in	SOLID YELLOW 4 in	SOLID WHITE 4 in	SOLID YELLOW 4 in	SOLID WHITE 8 in	SOLID YELLOW 8 in	BROKEN WHITE 4 in	BROKEN YELLOW 4 in	BROKEN WHITE 8 in	BROKEN YELLOW 8 in	SOLID WHITE 12 in	SOLID WHITE 24 in	SOLID YELLOW 24 in	SOLID YELLOW 24 in	SOLID WHITE 4 in	SOLID WHITE 8 in			
	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	EACH	EACH	EACH

GUARDRAIL SUMMARY TABLE

LOCATION						MGS W-BEAM GUARDRAIL LENGTH					GUARDRAIL END TREATMENT, OS, 31"	GUARDRAIL, MGS TRANSITION WITHOUT CURB	LINEAR GRADING	GUARDRAIL REMOVE	MGS TERMINAL SYSTEM		REMARKS
FROM STATION	TO STATION	LEFT	MEDIAN LEFT	MEDIAN RIGHT	RIGHT	MGS W-BEAM, 6 FT 3 IN. SPA.	STANDARD POST AT 3 FT 1.5 IN. SPA.	DOUBLE FACED AT 6 FT 3 IN. SPA.	DOUBLE FACED AT 3 FT 1.5 IN. SPA.	SHOP CURVED AT ____ FT. SPA.					CABLE TERMINAL ANCHOR		
		LFT	LFT	LFT	LFT	LFT	LFT	LFT	LFT	LFT	EACH	EACH	LFT	LFT	EACH	EACH	
TOTALS																	

Right-of-Way Markers and Monuments Table

LOCATION					Monuments				REMARKS
Station	Left	Center	Right	Offset	A	B	C	D	
					Each	Each	Each	Each	
TOTAL									

PAVED SIDE DITCH, RIPRAP DITCH, AND SODDING SUMMARY TABLE

LOCATION					PAVED SIDE DITCH								RIPRAP DITCH			SODDING						NURSERY SODDING FOR LAWNS
FROM STATION	TO STATION	LEFT	MEDIAN	RIGHT	ACTUAL LENGTH	CUT OFF WALLS (8' EQUIVAL. LENGTH EACH)	LUGS (8' EQUIVAL. LENGTH EACH)	TOTAL EQUIVALENT PAY LENGTHS TYPE					REVETMENT RIPRAP	UNIFORM RIPRAP	GEOTEXTILES	FOR PAVED SIDE DITCHES	FOR DITCHES	FOR MEDIAN	FOR SHOULDER BREAK	SODDING AT BRIDGE CONE	TOTAL SODDING	
					LFT	EACH	EACH	LFT	LFT	LFT	LFT	LFT	TONS	TONS	SYS	SYS	SYS	SYS	SYS	SYS	SYS	SYS

STRUCTURE DATA TABLE

STRUCTURE NUMBER	LOCATION				SIZE	DESCRIPTION		LENGTH	SKEW	FLOW LINE			SERVICE LIFE	SITE DESIGNATION	pH	BACKFILL METHOD	STRUCTURE BACKFILL TYPE		REVETMENT RIPRAP	CONCRETE, CLASS A, FOR STR.	VIDEO INSPECTION	PIPE END SECTION	GRATED BOX END SECTION			SAFETY METAL END SECTION			REMARKS
	STATION	LEFT	RIGHT	CROSS		PIPE TYPE	MANHOLE, INLET, CATCH BASIN, OR SPECIALTY STRUCTURE AND TYPE			COVER	UP STREAM	DOWN STREAM					TYPE	CYS					TYPE	SLOPE	EA.	TYPE	SLOPE	EA.	
					IN.			LFT		FT	ELEV.	ELEV.	YR						TON	CYS	LFT	EA.	TYPE			TYPE			

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: RD DRAWN: LPK

CHECKED: AGP CHECKED: AGP

INDIANA DEPARTMENT OF TRANSPORTATION

ROAD SUMMARY

HORIZONTAL SCALE	BRIDGE FILE
N/A	009-48-10798
VERTICAL SCALE	DESIGNATION
N/A	2100572
SURVEY BOOK	SHEETS
ELECTRONIC	14 of 22
CONTRACT	PROJECT
B-43949	2100572

Plot: 11/13/2024 10:44 AM

File: K:\IND_Structures\170268010_SR 9 over Mud Creek Bridge Replacement (2100572)\4 Plan Development\2100572_BR_SR 9 over Mud Creek\Plan Sheets\BR_2100572_Road Summary.dgn
Model:ROAD SUMMARY

Appendix C

Early Coordination

INDIANA DEPARTMENT OF TRANSPORTATION

Greenfield District
32 South Broadway
Greenfield, IN, 46140

PHONE: (317) 462-7751
FAX: (317) 467-3987

Eric Holcomb, Governor
Michael Smith, Commissioner

August 9, 2024

Re: Des No. 2100572 State Road (SR) 9 Bridge Replacement Project over Mud Creek, Approximately 2.83 Miles North of SR 28 in Madison County, Indiana

To Whom it May Concern,

The Indiana Department of Transportation (INDOT) and the Federal Highway Administration (FHWA) are developing plans for the aforementioned project. In accordance with the National Environmental Policy Act (NEPA), its implementing regulations 40 CFR Part 1500-1508, and guidance from the Council on Environmental Quality (CEQ), this letter is being sent to you as part of the early coordination phase of the environmental review process, in which we are requesting comments from your area of expertise regarding any possible environmental effects associated with the project. **Please use the above designation number and description in your reply**. We will incorporate your comments into a study of the project's environmental impacts.

The Indiana Department of Transportation (INDOT) has identified the need to address the condition of a bridge, Structure Number 009-48-00157 B. The project is located in Madison County, Indiana. More specifically, the project is located in Section 36, Township 22 N, and Range 7 E and Section 31, Township 22 N, and Range 8 E as seen on the USGS 7.5' Alexandria, Indiana topographic quadrangle.

This section of SR 9 is classified as a *Minor Collector* roadway. The existing SR 9 approach consists of two approximately 11 ft lanes bordered by two approximately 3.5ft paved shoulders. Structure # 009-48-00157 B is an approximately 40.1 ft wide by 29.7 ft long concrete girder bridge. The structure has shown signs of deterioration and is currently rated a "4" (Poor) out of "9" (excellent) in condition. The bridge has shown evidence of extensive cracking, spalling, and heavy delamination. The superstructure alignment to the south has moved 1.5 inches. The draft purpose of the proposed project is to improve the overall structural, geometric, and hydraulic deficiencies associated with the bridge, and to provide continued safe vehicular passage at this location for at least 75 years.

INDOT proposes to replace the existing structure with an approximately 39.4 ft wide by 67 ft long concrete I-beam bridge. Three culverts (Structures #1, 2, and 3) within the project area will also be removed and replaced in kind. Structure #1 is located approximately 300 ft south of the bridge, on the east side of SR 9. Structure #2 is located approximately 230 ft north of the bridge on the west side of SR 9. Structure #3 is located approximately 415 ft north of the bridge on the east side of SR 9. Revetment riprap will be placed along the roadside and underneath the bridge. Guardrail and signage will be removed and replaced in kind. The roadway will be milled and overlaid with Hot Mix Asphalt (HMA). The right of way (ROW) of SR 9 in the vicinity of the structure is approximately 55 feet each side of the centerline of SR 9 throughout the project. However, improvements cannot be made within the existing ROW, and approximately 0.6482 acre of permanent right of way (ROW) will be acquired for this project. Acquisition is anticipated to occur to the southwest of 009-48-00157 B for access and placement of riprap, as well as along the entire east side of the project area for grading, placement of riprap, and other construction activities. Approximately 0.0092 acre of temporary ROW will be acquired on the northwest side of the project area for removal and replacement of a driveway. Tree

clearing is anticipated, however specific values will be finalized as the design progresses. The maintenance of traffic (MOT) is anticipated to utilize a full road closure with a detour. The detour route includes SR 28, SR 37, and SR 26 for an added travel length of approximately 22 miles. Construction is anticipated to begin Fall 2025.

Land use in the vicinity of the project is primarily agricultural with low-density residential development. The INDOT Environmental Staff at Greenfield District performed a site visit on September 28, 2022 and December 20, 2023. The field reconnaissance identified the presence of stream, Mud Creek, within the investigated area. It was concluded that the waterway would likely fall under the jurisdiction of the US Army Corps of Engineers (USACE) due to a downstream hydrologic connection to a Traditionally Navigable Waterway (TNW). However, the USACE will make the final determination of jurisdiction. Concurrence was provided by the INDOT Environmental and Waterways Permitting Office (EWPO) on September 22, 2023. Approximately 150 feet of Mud Creek would be impacted by the project.

No properties were noted that would potentially be an environmental concern. There are no properties listed in the Madison County Interim Report that are likely eligible for listing on the National Register of Historic Place adjacent to the project area. However, coordination will occur with INDOT Cultural Resources Office (CRO) to evaluate the project area for archaeological and historic resources and for Section 106 compliance. The results of this investigation will be forwarded to the State Historical Preservation officer (SHPO) for review and concurrence as appropriate.

The project is anticipated to qualify for the Rangewide Programmatic Agreement for the Indiana bat and northern long-eared bat by completing the Information for Planning and Consultation (IPaC). A review of the USFWS GIS information revealed that there are no roosting or capture sites recorded within a half mile of the project area.

Please provide your response within thirty (30) calendar days from the date of this letter. However, should you find that an extension to the response time is necessary, a reasonable amount may be granted upon request. If you have any questions regarding this matter, please feel free to contact Delaney Weston, of this section, at (317) 467-3901 or dweston@indot.in.gov or Kim Szewczak, the project manager, at (317)-289-3193 or kszewczak@indot.in.gov.

Thank you in advance for your input.

Sincerely,

Delaney Weston

Delaney Weston
Environmental Manager II
INDOT – Greenfield District
32 South Broadway
Greenfield, IN 46140
Dweston@indot.in.gov

Enclosures:
Aerial Map of the Project Area
Topographic Map of the Project Area
Photographs of the Project Area

CC:

Indiana Department of Natural Resource, Division of Fish and Wildlife
Federal Highway Administration
US Department of Housing and Urban Development
Natural Resources Conservation Service
US Army Corps of Engineers
Madison County Council of Governments
Madison County Drainage Board
Madison County Council
Madison County Commissioners
Madison County Surveyor
Madison County Highway Department
Madison-Grant School Corporation
Van Buren Township Fire Department

Attachments have been omitted to avoid duplication

THIS IS NOT A PERMIT

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

DNR#: ER-26201

Request Received: January 9, 2024

Requestor:
Delaney Weston
Indiana Department of Transportation
Greenfield District
32 South Broadway
Greenfield, IN 46140

Project:
SR 9 bridge (#009-48-00157 B) replacement over Mud Creek and three adjacent culvert replacements, 2.83 miles north of SR 28; Des #2100572

County/Site Info: Madison County

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 of our agency for construction in a floodway pursuant to the Flood Control Act (IC 14-28-1), unless it qualifies for a bridge exemption (see enclosure). Please include a copy of this letter with the permit application if the project does not meet the bridge exemption criteria.

Natural Heritage Database:
The Natural Heritage Program's data have been checked. To date, no plant or animal species listed as state or federally threatened, endangered, or rare have been reported to occur in the project vicinity.

Fish and Wildlife Comments:
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:

A) Stream Crossing Design
Bridges are preferred over culverts, and three-sided culverts are preferred over box or pipe culverts. Multiple culverts or culverts with multiple openings are not recommended for approval. These types of structures are often problematic for fish and wildlife passage as they tend to accumulate debris and become blocked. Crossings must span the entire channel width (a minimum of 1.2 times the ordinary high-water mark width). Crossings must maintain the natural stream substrate within the structure. Scour protection at the inlet and outlet must not extend above the existing flowline elevation. Stream depth, channel width and water velocities in the crossing structure during low-flow conditions must approximate those in the natural stream channel.

The replacement crossing structure, and any bank stabilization under or around the structure, must not create conditions that are less favorable for wildlife passage when compared to existing conditions. Upgrading wildlife passage for replacement/rehabilitated structures is recommended whenever possible to improve wildlife/vehicle safety. White-tailed deer passage must be incorporated into all new structures where no structure previously existed. Minimum structure dimensions for white-tailed deer passage are 20 feet of width clearance (overall span of the structure) and 8 feet of height clearance measured from the ordinary high-water mark (OHWM). Bank lines must be maintained or restored within structures to allow for wildlife passage above the OHWM. All wildlife passage designs must include a smooth level pathway a minimum of 1-3 feet in width composed of natural substrate (soil, sand, gravel, etc.) or compacted aggregate fill over riprap (#2, #53, #73, etc.) tied into existing elevations both upstream and downstream. The width and location of the wildlife pathway is dependent on the wildlife species using the area.

There are several techniques and materials for incorporating wildlife passage into the design of a crossing structure if maintaining or restoring banklines is not possible. Coordination with a Regional Environmental Biologist to address wildlife passage issues before submitting a permit application (if required) is encouraged to avoid delays in the permitting process. The following links are good resources to consider in the design of stream crossing structures to maintain fish and wildlife passage:

https://www.fs.usda.gov/ccrc/tool/fishxing-fish-passage-learning-systems
https://www.fs.usda.gov/wildlifecrossings/library/index.php
https://www.fhwa.dot.gov/clas/ctip/wildlife_crossing_structures/
https://www.fhwa.dot.gov/engineering/hydraulics/pubs/11008/hif11008.pdf

B) Streambank Stabilization

Some form of bank stabilization is almost always needed with the construction, repair, replacement, or modification of a stream channel or crossing structure. For streambank stabilization and erosion control, regrading to a stable slope (2:1 or shallower) and establishing native vegetation along the banks are typically the most effective techniques and allow a vegetated stream bank to develop. A variety of methods to accomplish this include planting plugs, whips, container stock, seeding, and live stakes. In addition to vegetation establishment, some additional level of bioengineered bank stabilization may be needed under certain circumstances (inability to regrade to a stable slope, flow velocities that exceed the limits of vegetation alone, etc.). Combining vegetation with any of the following bank stabilization methods can provide additional bank protection while not compromising benefits to fish, wildlife, and botanical resources:

- Geotextiles (erosion control blankets and/or turf reinforcement mats that are heavy-duty, biodegradable, and net free or that use loose-woven / Leno-woven netting to minimize the entrapment and snaring of small-bodied wildlife such as snakes and turtles)
- Vegetated geogrids or soil lifts, fiber rolls, glacial stone, or riprap.

Riprap or other hard bank stabilization materials should be used only at the toe of the sideslopes up to the OHWM with the exception of areas directly under bridges for instance. The banks above the OHWM should be restored, stabilized, and revegetated using geotextiles and a mixture of grasses, sedges, wildflowers, shrubs, and trees native to Central Indiana and specifically for stream bank/floodway stabilization purposes as soon as possible upon completion. Information about bioengineering techniques can be found at the following link to a USDA/NRCS document that outlines many different bioengineering techniques for streambank stabilization: https://directives.sc.egov.usda.gov/17553.wba.

C) Pavement Rehabilitation

Pavement rehabilitation projects typically do not have a significant impact on fish, wildlife, and botanical resources if best management practices (BMPs) are in place to limit the migration of polycyclic aromatic hydrocarbons (PAHs) into local waterways. PAHs are a byproduct of asphalt and coal tar-based sealants and negatively impact aquatic systems. The use of sealants that are free of petroleum and coal tar-based products is encouraged whenever possible. Contaminated road runoff can significantly impact the aquatic environment through increased turbidity and release of sediment into the stream which can be harmful to fish and other aquatic organisms, their eggs, and their food supply. Where possible, road runoff should be directed to riprap turnouts and sediment filtration prior to entering a stream to reduce impacts to aquatic species. We recommend the use of pollutant trapping technology such as storm drain inserts to reduce the runoff of roadside pollutants where appropriate.

D) Riparian Habitat

We recommend a mitigation plan be developed (and submitted with the permit application, if required) for any unavoidable habitat impacts that will occur. The DNR's Habitat Mitigation Guidelines (and plant lists) can be found online at: https://www.in.gov/nrc/files/IB-17.pdf.

Impacts to non-wetland forest of one (1) acre or more in a rural or urban area should be mitigated at a minimum 2:1 ratio based on area of impact. Impacts to non-wetland forest under one (1) acre but at least 0.10 acre in a rural or urban area should be mitigated at a minimum 1:1 ratio based on area of impact. Impacts under 0.10 acre in a rural area typically do not require mitigation or additional plantings beyond seeding and stabilizing disturbed areas, though there are exceptions for high quality habitat sites. Impacts under 0.10 acre in an urban area should be mitigated by replacing trees that are 10” diameter-at-breast height (dbh) or greater by planting five trees, 1” to 2” in dbh, for each tree which is removed that is 10" dbh or greater. Seeding and stabilizing disturbed areas is required regardless of the impact amount and location. If floodway impacts to forested wetland and non-wetland habitat areas combine to be 0.10 acres or more, mitigation should be done and coordinated with the biologist, as needed.

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 that are not currently mowed and maintained with a mixture of grasses, sedges, and wildflowers native to Central Indiana and specifically for stream bank/floodway stabilization purposes as soon as possible upon completion; turf-type grasses (including low-endophyte, friendly endophyte, and endophyte free tall fescue but excluding all other varieties of tall fescue) may be used in currently mowed areas only. A native herbaceous seed mixture must include at least 5 species of grasses and sedges and 5 species of wildflowers.
2. Minimize and contain within the project limits in-channel 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 or Northern Long-eared Bat roosting (3 inches or greater diameter-at-breast height, living or dead, with loose hanging bark, or with cracks, crevices, or cavities) from April 1 through September 30.
5. Do not construct any temporary runarounds, access bridges, causeways, cofferdams, diversions, or pumparounds beyond those specifically detailed in the permit application.
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. Do not use broken concrete as riprap.
8. Underlay the riprap with a bedding layer of well graded aggregate or a geotextile to prevent piping of soil underneath the riprap.
9. Minimize the movement of resuspended bottom sediment from the immediate project area.
10. Do not deposit or allow construction/demolition materials or debris to fall or otherwise enter the waterway. Any incidental fallen material or debris in the waterway must be removed within 24 hours using best management practices, particularly lifting material out of the waterway and not dragging it across the streambed whenever possible.
11. Appropriately designed measures for controlling erosion and sediment must be implemented to prevent sediment from entering the waterbody or leaving the construction site; maintain these measures until construction is complete and all disturbed areas are stabilized.
12. Seed and protect all disturbed streambanks and slopes not protected by other methods that are 3:1 or steeper with erosion control blankets that are heavy-duty, biodegradable, and net free or that use loose-woven / Leno-woven netting to minimize the entrapment and snaring of small-bodied wildlife such as snakes and turtles (follow manufacturer's recommendations for selection and installation); seed and apply mulch on all other disturbed areas.

Contact Staff:
Our agency appreciates this opportunity to be of service. Please contact me at RVanVoorhis@dnr.IN.gov or (317) 232-8163 if we can be of further assistance.

Rachel Van Voorhis
Rachel Van Voorhis
Environmental Coordinator
Division of Fish and Wildlife

Date: February 6, 2024

INDIANA GEOLOGICAL & WATER SURVEY
INDIANA UNIVERSITY

Organization and Project Information

Project ID:
Des. ID: Des 2100572
Project Title: Des 2100572, SR 9 Over Mud Creek Bridge Replacement Project
Name of Organization: INDOT
Requested by: Delaney Weston

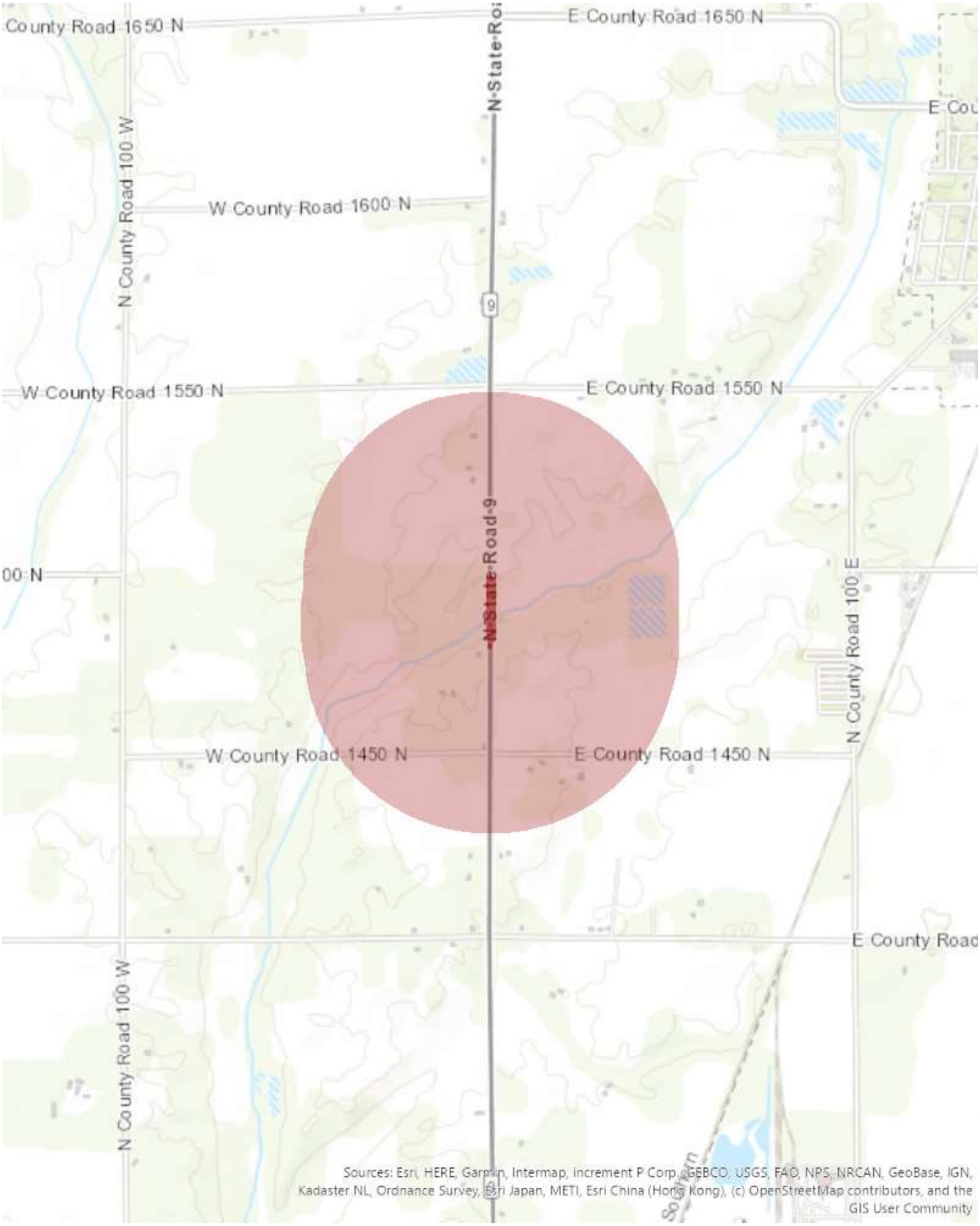
Environmental Assessment Report

1. Geological Hazards:
   - Moderate liquefaction potential
   - 1% Annual Chance Flood Hazard
2. Mineral Resources:
   - Bedrock Resource: High Potential
   - Sand and Gravel Resource: Low Potential
3. Active or abandoned mineral resources extraction sites:
   - Petroleum Exploration Wells

*Map layers from the Indiana Geological and Water Survey and Indiana Map

This information was furnished by Indiana Geological Survey
Address: 420 N. Walnut St., Bloomington, IN 47404
Email: IGSEnvir@indiana.edu
Phone: 812 855-7428

Date: January 05, 2024



Metadata:

- https://igws.indiana.edu/pdms/
- https://portal.igs.indiana.edu/arcgis/rest/services/Seismic_Earthquake_Liquefaction_Potential/MapServer/info/metadata
- https://portal.igs.indiana.edu/arcgis/rest/services/Industrial_Minerals_SandAndGravel_Resources/MapServer/info/metadata
- https://gisdata.in.gov/server/rest/services/Hosted/FIRM_Flood_Hazard_Zones_2023/FeatureServer/info/metadata
- https://portal.igs.indiana.edu/arcgis/rest/services/Bedrock_Geology/MapServer/info/metadata

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*		Date Of Land Evaluation Request 8/16/24	
Name of Project DES2100572_SR9 Bridge Repl		Federal Agency Involved Federal Highway Administration	
Proposed Land Use Transportation Right-of-Way		County and State Madison County, Indiana	
PART II *(To be completed by NRCS)*		Date Request Received By NRCS	Person Completing Form: JRA
Does the site 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 ☐	Acres Irrigated	Average Farm Size 312 ac
Major Crop(s) Corn	Farmable Land In Govt. Jurisdiction Acres: 281875 % 97	Amount of Farmland As Defined in FPPA Acres: 270120 % 93	
Name of Land Evaluation System Used LESA	Name of State or Local Site Assessment System	Date Land Evaluation Returned by NRCS 1/22/2024	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly				
B. Total Acres To Be Converted Indirectly	0			
C. Total Acres In Site				
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	0.60			
B. Total Acres Statewide Important or Local Important Farmland	0.00			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	<0.001			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	32			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	87			

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	**Maximum Points**	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)	15			
2. Perimeter In Non-urban Use	(10)	10			
3. Percent Of Site Being Farmed	(20)	10			
4. Protection Provided By State and Local Government	(20)	0			
5. Distance From Urban Built-up Area	(15)	15			
6. Distance To Urban Support Services	(15)	10			
7. Size Of Present Farm Unit Compared To Average	(10)	0			
8. Creation Of Non-farmable Farmland	(10)	0			
9. Availability Of Farm Support Services	(5)	1			
10. On-Farm Investments	(20)	0			
11. Effects Of Conversion On Farm Support Services	(10)	0			
12. Compatibility With Existing Agricultural Use	(10)	0			
TOTAL SITE ASSESSMENT POINTS	160	61	0	0	0
PART VII ***(To be completed by Federal Agency)***					
Relative Value Of Farmland *(From Part V)*	100	87	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	61	0	0	0
TOTAL POINTS ***(Total of above 2 lines)***	260	148	0	0	0

Site Selected: Site A	Date Of Selection 8/16/24	Was A Local Site Assessment Used? YES ☐ NO ☑

Reason For Selection:

Minimum amount of right-of-way needed to be acquired in order to implement the project and complete improvements.

Name of Federal agency representative completing this form: Delaney Weston	Date: 8/16/24

(See Instructions on reverse side) **Form AD-1006 (03-02)**

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Indiana Ecological Services Field Office
620 South Walker Street
Bloomington, IN 47403-2121
Phone: (812) 334-4261 Fax: (812) 334-4273

In Reply Refer To: 08/01/2024 15:21:10 UTC
Project Code: 2024-0032915
Project Name: Des No 2100572, SR 9 Over Mud Creek Bridge Replacement Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

Please use the species list provided and visit the U.S. Fish and Wildlife Service's Region 3 Section 7 Technical Assistance website at - http://www.fws.gov/midwest/endangered/section7/s7process/index.html. This website contains step-by-step instructions which will help you

determine if your project will have an adverse effect on listed species and will help lead you through the Section 7 process. For all **wind energy projects** and **projects that include installing towers that use guy wires or are over 200 feet in height**, please contact this field office directly for assistance, even if no federally listed plants, animals or critical habitat are present within your proposed project or may be affected by your proposed project.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of

Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. **Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.**

Attachment(s):

- Official Species List
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Indiana Ecological Services Field Office
620 South Walker Street
Bloomington, IN 47403-2121
(812) 334-4261

PROJECT SUMMARY

Project Code: 2024-0032915
Project Name: Des No 2100572, SR 9 Over Mud Creek Bridge Replacement Project
Project Type: Bridge - Replacement
Project Description: The Indiana Department of Transportation (INDOT) has identified the need to address the condition of a bridge, Structure Number 009-48-00157 B. The project is located in Madison County, Indiana. More specifically, the project is located in Section 36, Township 22 N, and Range 7 E and Section 31, Township 22 N, and Range 8 E as seen on the USGS 7.5' Alexandria, Indiana topographic quadrangle.

This section of SR 28 is classified as a Minor Collector roadway. The existing SR 9 approach consists of two approximately 11 ft lanes bordered by two approximately 3.5ft paved shoulders. Structure # 009-48-00157 B is an approximately 40.1 ft wide by 29.7 ft long concrete girder bridge. The structure has shown signs of deterioration and is currently rated a "4" (Poor) out of "9" (excellent) in condition. The bridge has shown evidence of extensive cracking, spalling, and heavy delamination. The superstructure alignment to the south has moved 1.5 inches. The draft purpose of the proposed project is to improve the overall structural, geometric, and hydraulic deficiencies associated with the bridge, and to provide continued safe vehicular passage at this location for at least 75 years.

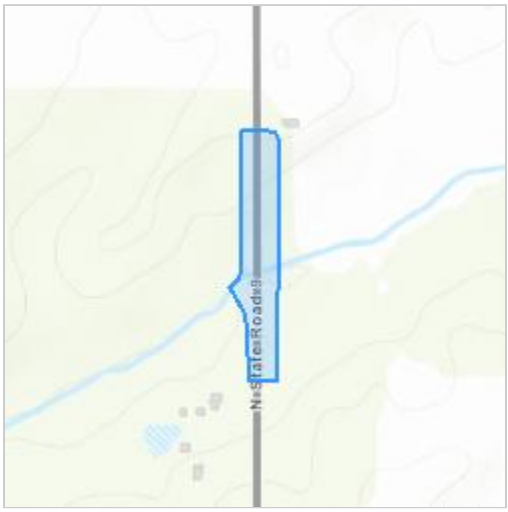
INDOT proposes to replace the existing structure with an approximately 39.4 ft wide by 67 ft long concrete I-beam bridge. Three culverts (Structures #1, 2, and 3) within the project area will also be removed and replaced in kind. Structure #1 is located approximately 300 ft south of the bridge, on the east side of SR 9. Structure #2 is located approximately 230 ft north of the bridge on the west side of SR 9. Structure #3 is located approximately 415 ft north of the bridge on the east side of SR 9. Revetment riprap will be placed along the roadside and underneath the bridge. Guardrail and signage will be removed and replaced in kind. The roadway will be milled and overlaid with Hot Mix Asphalt (HMA). The right of way (ROW) of SR 9 in the vicinity of the structure is approximately 55 feet each side of the centerline of SR 9 throughout the project. However, improvements cannot be made within the existing ROW, and approximately 0.6482 acre of permanent right of way (ROW) will be acquired for this project. Acquisition is anticipated to occur to the southwest of 009-48-00157 B for access and placement of riprap, as well as along the entire east side of the project area for grading, placement of riprap, and other construction activities. Approximately 0.0092 acre of temporary ROW will be acquired on the northwest side of the project area for removal and replacement of a driveway. The maintenance of traffic

(MOT) is anticipated to utilize a full road closure with a detour. The detour route includes SR 28, SR 37, and SR 26 for an added travel length of approximately 22 miles. Construction is anticipated to begin Fall 2025.

There is suitable summer habitat within and adjacent to the project area. Approximately 0.36 acre of trees will be trimmed or cleared as part of this project. Dominant species include maple (acer spp.) No permanent lighting will be installed, but temporary lighting may be used. A review of the USFWS bat database on 12/9/22 did not find any sites within a half mile of the project area.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@40.31991285,-85.67174154415522,14z



Counties: Madison County, Indiana

ENDANGERED SPECIES ACT SPECIES

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ This species only needs to be considered if the project includes wind turbine operations. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered

BIRDS

NAME	STATUS
Whooping Crane *Grus americana* Population: U.S.A. (AL, AR, CO, FL, GA, ID, IL, IN, IA, KY, LA, MI, MN, MS, MO, NC, NM, OH, SC, TN, UT, VA, WI, WV, western half of WY) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/758	Experimental Population, Non-Essential

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

BALD & GOLDEN EAGLES

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

1. The Bald and Golden Eagle Protection Act of 1940.

2. The Migratory Birds Treaty Act of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

THERE ARE NO BALD AND GOLDEN EAGLES WITHIN THE VICINITY OF YOUR PROJECT AREA.

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

THERE ARE NO FWS MIGRATORY BIRDS OF CONCERN WITHIN THE VICINITY OF YOUR PROJECT AREA.

WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

RIVERINE

- R2UBHx

IPAC USER CONTACT INFORMATION

Agency: Indiana Department of Transportation
Name: Delaney Weston
Address: 32 S Broadway
City: Greenfield
State: IN
Zip: 46140
Email dweston@indot.in.gov
Phone: 3174673901

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Highway Administration

You have indicated that your project falls under or receives funding through the following special project authorities:

- BIPARTISAN INFRASTRUCTURE LAW (BIL) (OTHER)

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Indiana Ecological Services Field Office
620 South Walker Street
Bloomington, IN 47403-2121
Phone: (812) 334-4261 Fax: (812) 334-4273

In Reply Refer To: 08/15/2024 16:13:37 UTC
Project code: 2024-0032915
Project Name: Des No 2100572, SR 9 Over Mud Creek Bridge Replacement Project

Subject: Concurrence verification letter for the 'Des No 2100572, SR 9 Over Mud Creek Bridge Replacement Project' project under the amended February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion (dated March 23, 2023) for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat (NLEB).

To whom it may concern:

The U.S. Fish and Wildlife Service (Service) has received your request dated August 15, 2024 to verify that the **Des No 2100572, SR 9 Over Mud Creek Bridge Replacement Project** (Proposed Action) may rely on the concurrence provided in the amended February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion (dated March 23, 2023) for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat (PBO) to satisfy requirements under Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 *et seq.*).

Based on the information you provided (Project Description shown below), you have determined that the Proposed Action is within the scope and adheres to the criteria of the PBO, including the adoption of applicable avoidance and minimization measures. **At least one of the qualification interview questions indicated an activity or portion of your project is consistent with a not likely to adversely affect determination therefore, the overall determination for your project is, may affect, and is not likely to adversely affect (NLAA) the endangered Indiana bat (*Myotis sodalis*) and/or the endangered northern long-eared bat (*Myotis septentrionalis*)**. Consultation with the Service pursuant to section 7(a)(2) of ESA (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) is required.

The Service has 14 calendar days to notify the lead Federal action agency or designated non-federal representative if we determine that the Proposed Action does not meet the criteria for a NLAA determination under the PBO. If we do not notify the lead Federal action agency or designated non-federal representative within that timeframe, you may proceed with the Proposed Action under the terms of the NLAA concurrence provided in the PBO. This verification period

allows Service Field Offices to apply local knowledge to implementation of the PBO, as we may identify a small subset of actions having impacts that were unanticipated. In such instances, Service Field Offices may request additional information that is necessary to verify inclusion of the proposed action under the PBO.

For Proposed Actions that include bridge/culvert or structure removal, replacement, and/or maintenance activities: If your initial bridge/culvert or structure assessment documented signs of bat use or occupancy, or an assessment failed to detect Indiana bats and/or NLEBs, yet are later detected prior to, or during construction, please submit the Post Assessment Discovery of Bats at Bridge/Culvert or Structure Form (User Guide Appendix E) to this Service Office within 2 working days of any potential take. In these instances, potential incidental take of Indiana bats and/or NLEBs is covered under the Incidental Take Statement in the 2018 FHWA, FRA, FTA PBO (provided that the take is reported to the Service).

If the Proposed Action is modified, or new information reveals that it may affect the Indiana bat and/or northern long-eared bat in a manner or to an extent not considered in the PBO, further review to conclude the requirements of ESA Section 7(a)(2) may be required.

For Proposed Actions that include bridge/culvert or structure removal, replacement, and/or maintenance activities:
If your initial bridge/culvert or structure assessments failed to detect Indiana bats and/or NLEB use or occupancy, yet bats are later detected prior to, or during construction, please submit the Post Assessment Discovery of Bats at Bridge/Culvert or Structure Form (User Guide Appendix E) to this Service Office within 2 working days of the incident. In these instances, potential incidental take of Indiana bats and/or NLEBs may be exempted provided that the take is reported to the Service.

If the Proposed Action may affect any other federally-listed or proposed species, and/or any designated critical habitat, additional consultation between the lead Federal action agency and this Service Office is required. If the proposed action has the potential to take bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act may also be required. In either of these circumstances, please contact this Service Office.

The following species may occur in your project area and **are not** covered by this determination:

- Monarch Butterfly *Danaus plexippus* Candidate
- Whooping Crane *Grus americana* Experimental Population, Non-Essential

PROJECT DESCRIPTION

The following project name and description was collected in IPaC as part of the endangered species review process.

NAME

Des No 2100572, SR 9 Over Mud Creek Bridge Replacement Project

DESCRIPTION

The Indiana Department of Transportation (INDOT) has identified the need to address the condition of a bridge, Structure Number 009-48-00157 B. The project is located in Madison County, Indiana. More specifically, the project is located in Section 36, Township 22 N, and Range 7 E and Section 31, Township 22 N, and Range 8 E as seen on the USGS 7.5' Alexandria, Indiana topographic quadrangle.

This section of SR 28 is classified as a Minor Collector roadway. The existing SR 9 approach consists of two approximately 11 ft lanes bordered by two approximately 3.5ft paved shoulders. Structure # 009-48-00157 B is an approximately 40.1 ft wide by 29.7 ft long concrete girder bridge. The structure has shown signs of deterioration and is currently rated a "4" (Poor) out of "9" (excellent) in condition. The bridge has shown evidence of extensive cracking, spalling, and heavy delamination. The superstructure alignment to the south has moved 1.5 inches. The draft purpose of the proposed project is to improve the overall structural, geometric, and hydraulic deficiencies associated with the bridge, and to provide continued safe vehicular passage at this location for at least 75 years.

INDOT proposes to replace the existing structure with an approximately 39.4 ft wide by 67 ft long concrete I-beam bridge. Three culverts (Structures #1, 2, and 3) within the project area will also be removed and replaced in kind. Structure #1 is located approximately 300 ft south of the bridge, on the east side of SR 9. Structure #2 is located approximately 230 ft north of the bridge on the west side of SR 9. Structure #3 is located approximately 415 ft north of the bridge on the east side of SR 9. Revetment riprap will be placed along the roadside and underneath the bridge. Guardrail and signage will be removed and replaced in kind. The roadway will be milled and overlaid with Hot Mix Asphalt (HMA). The right of way (ROW) of SR 9 in the vicinity of the structure is approximately 55 feet each side of the centerline of SR 9 throughout the project. However, improvements cannot be made within the existing ROW, and approximately 0.6482 acre of permanent right of way (ROW) will be acquired for this project. Acquisition is anticipated to occur to the southwest of 009-48-00157 B for access and placement of riprap, as well as along the entire east side of the project area for grading, placement of riprap, and other construction activities. Approximately 0.0092 acre of temporary ROW will be acquired on the northwest side of the project area for removal and replacement of a driveway. The maintenance of traffic (MOT) is anticipated to utilize a full road closure with a detour. The detour route includes SR 28, SR 37, and SR 26 for an added travel length of approximately 22 miles. Construction is anticipated to begin Fall 2025.

There is suitable summer habitat within and adjacent to the project area. Approximately 0.36 acre of trees will be trimmed or cleared as part of this project. Dominant species include maple (acer spp.) No permanent lighting will be installed, but temporary lighting may be used. A review of the USFWS bat database on 12/9/22 did not find any sites within a half mile of the project area.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@40.31991285,-85.67174154415522,14z

DETERMINATION KEY RESULT

Based on your answers provided, this project(s) may affect, but is not likely to adversely affect the endangered Indiana bat and/or the endangered northern long-eared bat, therefore, consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required. However, also based on your answers provided, this project may rely on the concurrence provided in the amended February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion (dated March 23, 2023) for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat.

QUALIFICATION INTERVIEW

1. Is the project within the range of the Indiana bat[1]?

   [1] See Indiana bat species profile

   Automatically answered
   Yes

2. Is the project within the range of the northern long-eared bat[1]?

   [1] See northern long-eared bat species profile

   Automatically answered
   No

3. Which Federal Agency is the lead for the action?

   A) Federal Highway Administration (FHWA)

4. Are *all* project activities limited to non-construction[1] activities only? (examples of non-construction activities include: bridge/abandoned structure assessments, surveys, planning and technical studies, property inspections, and property sales)

   [1] Construction refers to activities involving ground disturbance, percussive noise, and/or lighting.

   No

5. Does the project include *any* activities that are **greater than** 300 feet from existing road/rail surfaces[1]?

   [1] Road surface is defined as the actively used [e.g. motorized vehicles] driving surface and shoulders [may be pavement, gravel, etc.] and rail surface is defined as the edge of the actively used rail ballast.

   No

6. Does the project include *any* activities **within** 0.5 miles of a known Indiana bat and/or NLEB hibernaculum[1]?

   [1] For the purpose of this consultation, a hibernaculum is a site, most often a cave or mine, where bats hibernate during the winter (see suitable habitat), but could also include bridges and structures if bats are found to be hibernating there during the winter.

   No

7. Is the project located **within** a karst area?

   No

8. Is there *any* suitable[1] summer habitat for Indiana Bat or NLEB **within** the project action area[2]? (includes any trees suitable for maternity, roosting, foraging, or travelling habitat)

   [1] See the Service's summer survey guidance for our current definitions of suitable habitat.

   [2] The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR Section 402.02). Further clarification is provided by the User's Guide for the Range-wide Programmatic Consultation for Indiana Bat and Northern Long-eared Bat.

   Yes

9. Will the project remove *any* suitable summer habitat[1] and/or remove/trim any existing trees **within** suitable summer habitat?

   [1] See the Service's summer survey guidance for our current definitions of suitable habitat.

   Yes

10. Will the project clear more than 20 acres of suitable habitat per 5-mile section of road/rail?

    No

11. Have presence/probable absence (P/A) summer surveys[1][2] been conducted[3][4] **within** the suitable habitat located within your project action area?

    [1] See the Service's summer survey guidance for our current definitions of suitable habitat.

    [2] Presence/probable absence summer surveys conducted within the fall swarming/spring emergence home range of a documented Indiana bat hibernaculum (contact local Service Field Office for appropriate distance from hibernacula) that result in a negative finding requires additional consultation with the local Service Field Office to determine if clearing of forested habitat is appropriate and/or if seasonal clearing restrictions are needed to avoid and minimize potential adverse effects on fall swarming and spring emerging Indiana bats.

    [3] For projects within the range of either the Indiana bat or NLEB in which suitable habitat is present, and no bat surveys have been conducted, the transportation agency will assume presence of the appropriate species. This assumption of presence should be based upon the presence of suitable habitat and the capability of bats to occupy it because of their mobility.

    [4] Negative presence/probable absence survey results obtained using the summer survey guidance are valid for a minimum of two years from the completion of the survey unless new information (e.g., other nearby surveys) suggest otherwise.

    No

12. Does the project include activities **within documented Indiana bat habitat**[1][2]?

    [1] Documented roosting or foraging habitat – for the purposes of this consultation, we are considering documented habitat as that where Indiana bats and/or NLEB have actually been captured and tracked using (1) radio telemetry to roosts; (2) radio telemetry biangulation/triangulation to estimate foraging areas; or (3) foraging areas with repeated use documented using acoustics. Documented roosting habitat is also considered as suitable summer habitat within 0.25 miles of documented roosts.)

    [2] For the purposes of this key, we are considering documented corridors as that where Indiana bats and/or NLEB have actually been captured and tracked to using (1) radio telemetry; or (2) treed corridors located directly between documented roosting and foraging habitat.

    No

13. Will the removal or trimming of habitat or trees occur **within** suitable but **undocumented Indiana bat** roosting/foraging habitat or travel corridors?

    Yes

14. What time of year will the removal or trimming of habitat or trees **within** suitable but **undocumented Indiana bat** roosting/foraging habitat or travel corridors occur[1]?

    [1] Coordinate with the local Service Field Office for appropriate dates.

    B) During the inactive season

15. Will *any* tree trimming or removal occur **within** 100 feet of existing road/rail surfaces?

    Yes

16. Will *any* tree trimming or removal occur **between** 100-300 feet of existing road/rail surfaces?

    No

17. Are *all* trees that are being removed clearly demarcated?

    Yes

18. Will the removal of habitat or the removal/trimming of trees include installing new or replacing existing **permanent** lighting?

    No

19. Does the project include wetland or stream protection activities associated with compensatory wetland mitigation?

    No

20. Does the project include slash pile burning?

    No

21. Does the project include *any* bridge removal, replacement, and/or maintenance activities (e.g., any bridge repair, retrofit, maintenance, and/or rehabilitation work)?

    Yes

22. Is there *any* suitable habitat[1] for Indiana bat or NLEB **within** 1,000 feet of the bridge? (includes any trees suitable for maternity, roosting, foraging, or travelling habitat)

    [1] See the Service's current summer survey guidance for our current definitions of suitable habitat.

    Yes

23. Has a bridge assessment[1] been conducted **within** the last 24 months[2] to determine if the bridge is being used by bats?

    [1] See User Guide Appendix D for bridge/structure assessment guidance

    [2] Assessments must be completed no more than 2 years prior to conducting any work below the deck surface on all bridges that meet the physical characteristics described in the Programmatic Consultation, regardless of whether assessments have been conducted in the past. Due to the transitory nature of bat use, a negative result in one year does not guarantee that bats will not use that bridge/structure in subsequent years.

    Yes

    SUBMITTED DOCUMENTS

    - *2100572 Bridge Assessment.pdf https://ipac.ecosphere.fws.gov/project/UCZMCCBDERFSJMGMQJBE6FPXVU/projectDocuments/147309998*

24. Did the bridge assessment detect *any* signs of Indiana bats and/or NLEBs roosting in/under the bridge (bats, guano, etc.)[1]?

    [1] If bridge assessment detects signs of *any* species of bats, coordination with the local FWS office is needed to identify potential threatened or endangered bat species. Additional studies may be undertaken to try to identify which bat species may be utilizing the bridge prior to allowing *any* work to proceed.

    Note: There is a small chance bridge assessments for bat occupancy do not detect bats. Should a small number of bats be observed roosting on a bridge just prior to or during construction, such that take is likely to occur or does occur in the form of harassment, injury or death, the PBO requires the action agency to report the take. Report all unanticipated take within 2 working days of the incident to the USFWS. Construction activities may continue without delay provided the take is reported to the USFWS and is limited to 5 bats per project.

    No

25. Will the bridge removal, replacement, and/or maintenance activities include installing new or replacing existing **permanent** lighting?

    No

26. Does the project include the removal, replacement, and/or maintenance of *any* structure other than a bridge? (e.g., rest areas, offices, sheds, outbuildings, barns, parking garages, etc.)

    No

27. Will the project involve the use of **temporary** lighting *during* the active season?

    Yes

28. Is there *any* suitable habitat **within** 1,000 feet of the location(s) where **temporary** lighting will be used?

    Yes

29. Will the project install new or replace existing **permanent** lighting?

    No

30. Does the project include percussives or other activities (**not including tree removal/ trimming or bridge/structure work**) that will increase noise levels above existing traffic/ background levels?

    Yes

31. Will the activities that use percussives (**not including tree removal/trimming or bridge/ structure work**) and/or increase noise levels above existing traffic/background levels be conducted *during* the active season[1]?

    [1] Coordinate with the local Service Field Office for appropriate dates.

    Yes

32. Will *any* activities that use percussives (**not including tree removal/trimming or bridge/ structure work**) and/or increase noise levels above existing traffic/background levels be conducted *during* the inactive season[1]?

    [1] Coordinate with the local Service Field Office for appropriate dates.

    Yes

33. Are *all* project activities that are **not associated with** habitat removal, tree removal/ trimming, bridge and/or structure activities, temporary or permanent lighting, or use of percussives, limited to actions that DO NOT cause any additional stressors to the bat species?

    Examples: lining roadways, unlighted signage , rail road crossing signals, signal lighting, and minor road repair such as asphalt fill of potholes, etc.

    Yes

34. Will the project raise the road profile **above the tree canopy**?

    No

35. Are the project activities that use percussives (not including tree removal/trimming or bridge/structure work) consistent with a Not Likely to Adversely Affect determination in this key?

    Automatically answered
    Yes, because the activities are within 300 feet of the existing road/rail surface, greater than 0.5 miles from a hibernacula, and conducted during the active season within undocumented habitat.

36. Are the project activities that use percussives (not including tree removal/trimming or bridge/structure work) and/or increase noise levels above existing traffic/background levels consistent with a No Effect determination in this key?

    Automatically answered
    Yes, because the activities are within 300 feet of the existing road/rail surface, greater than 0.5 miles from a hibernacula, and conducted during the inactive season

37. Is the habitat removal portion of this project consistent with a Not Likely to Adversely Affect determination in this key?

    Automatically answered
    Yes, because the tree removal/trimming that occurs outside of the Indiana bat's active season occurs greater than 0.5 miles from the nearest hibernaculum, is less than 100 feet from the existing road/rail surface, includes clear demarcation of the trees that are to be removed, and does not alter documented roosts and/or surrounding summer habitat within 0.25 miles of a documented roost.

38. Is the bridge removal, replacement, or maintenance activities portion of this project consistent with a No Effect determination in this key?

    Automatically answered
    Yes, because the bridge has been assessed using the criteria documented in the BA and no signs of bats were detected

39. **General AMM 1**
    Will the project ensure *all* operators, employees, and contractors working in areas of known or presumed bat habitat are aware of *all* FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable Avoidance and Minimization Measures?

    Yes

40. **Tree Removal AMM 1**
    Can *all* phases/aspects of the project (e.g., temporary work areas, alignments) be modified, to the extent practicable, to avoid tree removal[1] in excess of what is required to implement the project safely?

    Note: Tree Removal AMM 1 is a minimization measure, the full implementation of which may not always be practicable. Projects may still be NLAA as long as Tree Removal AMMs 2, 3, and 4 are implemented and LAA as long as Tree Removal AMMs 3, 5, 6, and 7 are implemented.

    [1] The word “trees” as used in the AMMs refers to trees that are suitable habitat for each species within their range. See the USFWS’ current summer survey guidance for our latest definitions of suitable habitat.

    Yes

41. **Tree Removal AMM 3**
    Can tree removal be limited to that specified in project plans and ensure that contractors understand clearing limits and how they are marked in the field (e.g., install bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits)?

    Yes

42. **Tree Removal AMM 4**
    Can the project avoid cutting down/removal of *all* (1) **documented**[1] Indiana bat or NLEB roosts[2] (that are still suitable for roosting), (2) trees **within** 0.25 miles of roosts, and (3) documented foraging habitat any time of year?

    [1] The word documented means habitat where bats have actually been captured and/or tracked.

    [2] Documented roosting or foraging habitat – for the purposes of this consultation, we are considering documented habitat as that where Indiana bats and/or NLEB have actually been captured and tracked using (1) radio telemetry to roosts; (2) radio telemetry biangulation/triangulation to estimate foraging areas; or (3) foraging areas with repeated use documented using acoustics. Documented roosting habitat is also considered as suitable summer habitat within 0.25 miles of documented roosts.)

    Yes

43. **Lighting AMM 1**
    Will *all* **temporary** lighting be directed away from suitable habitat during the active season?

    Yes

PROJECT QUESTIONNAIRE

1. Please describe the proposed bridge work:

   NDOT proposes to replace the existing structure with an approximately 39.4 ft wide by 67 ft long concrete I-beam bridge. Three culverts (Structures #1, 2, and 3) within the project area will also be removed and replaced in kind. Structure #1 is located approximately 300 ft south of the bridge, on the east side of SR 9. Structure #2 is located approximately 230 ft north of the bridge on the west side of SR 9. Structure #3 is located approximately 415 ft north of the bridge on the east side of SR 9. Revetment riprap will be placed along the roadside and underneath the bridge. Guardrail and signage will be removed and replaced in kind. The roadway will be milled and overlaid with Hot Mix Asphalt (HMA). The right of way (ROW) of SR 9 in the vicinity of the structure is approximately 55 feet each side of the centerline of SR 9 throughout the project.

2. Please state the timing of all proposed bridge work:

   Fall 2025

3. Please enter the date of the bridge assessment:

   12/20/23

4. Have you made a No Effect determination for *all* other species indicated on the FWS IPaC generated species list?

   Yes

5. Have you made a May Affect determination for *any* other species on the FWS IPaC generated species list?

   No

6. How many acres[1] of trees are proposed for removal between 0-100 feet of the existing road/rail surface?

   [1] If described as number of trees, multiply by 0.09 to convert to acreage and enter that number.

   0.36

AVOIDANCE AND MINIMIZATION MEASURES (AMMS)

This determination key result includes the committment to implement the following Avoidance and Minimization Measures (AMMs):

TREE REMOVAL AMM 1

Modify all phases/aspects of the project (e.g., temporary work areas, alignments) to avoid tree removal.

LIGHTING AMM 1

Direct temporary lighting away from suitable habitat during the active season.

TREE REMOVAL AMM 2

Apply time of year restrictions for tree removal when bats are not likely to be present, or limit tree removal to 10 or fewer trees per project at any time of year within 100 feet of existing road/ rail surface and **outside of documented** roosting/foraging habitat or travel corridors; visual emergence survey must be conducted with no bats observed.

TREE REMOVAL AMM 3

Ensure tree removal is limited to that specified in project plans and ensure that contractors understand clearing limits and how they are marked in the field (e.g., install bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits).

TREE REMOVAL AMM 4

Do not remove **documented** Indiana bat or NLEB roosts that are still suitable for roosting, or trees within 0.25 miles of roosts, or
documented foraging habitat any time of year.

GENERAL AMM 1

Ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable AMMs.

DETERMINATION KEY DESCRIPTION: FHWA, FRA, FTA PROGRAMMATIC CONSULTATION FOR TRANSPORTATION PROJECTS AFFECTING NLEB OR INDIANA BAT

This key was last updated in IPaC on October 30, 2023. Keys are subject to periodic revision.

This decision key is intended for projects/activities funded or authorized by the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and/or Federal Transit Administration (FTA), which may require consultation with the U.S. Fish and Wildlife Service (Service) under Section 7 of the Endangered Species Act (ESA) for the endangered **Indiana bat** (*Myotis sodalis*) and the endangered **northern long-eared bat** (NLEB) (*Myotis septentrionalis*).

This decision key should only be used to verify project applicability with the Service's amended February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion (dated March 23, 2023) for Transportation Projects. The programmatic biological opinion covers limited transportation activities that may affect either bat species, and addresses situations that are both likely and not likely to adversely affect either bat species. This decision key will assist in identifying the effect of a specific project/activity and applicability of the programmatic consultation. The programmatic biological opinion is not intended to cover all types of transportation actions. Activities outside the scope of the programmatic biological opinion, or that may affect ESA-listed species other than the Indiana bat or NLEB, or any designated critical habitat, may require additional ESA Section 7 consultation.

IPAC USER CONTACT INFORMATION

Agency: Indiana Department of Transportation
Name: Delaney Weston
Address: 32 S Broadway
City: Greenfield
State: IN
Zip: 46140
Email dweston@indot.in.gov
Phone: 3174673901

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Highway Administration

You have indicated that your project falls under or receives funding through the following special project authorities:

- BIPARTISAN INFRASTRUCTURE LAW (BIL) (OTHER)

Appendix D

Section 106

SECTION 1

Submittal of this form is only required for projects where Category B applies. Projects qualifying under Category A do not require submittal of this form. SECTION 2 (for Conditions of Category B.1 for curb/sidewalk) or SECTION 3 (for Conditions of Category B.9 for drainage structures) may be required as determined by INDOT-Cultural Resources Office (INDOT-CRO) review. INDOT-CRO will notify applicant if the Minor Projects PA does not apply.

Part I: Project Information-Completed by Applicant (Consultant/PM/Project Sponsor/INDOT District Staff)*

**A qualified professional historian (QP) is not required to complete Part I. INDOT-Cultural Resources Office (INDOT-CRO) staff will be responsible for completion of Part II.*

Original Submission Date: 1/2/24 **Amended Submission Date*:**

**Consult with INDOT-CRO to determine whether an amendment is required. For revisions/updates to original form, please detail in applicable sections below. Please use red font to distinguish the revisions/updates.*

Submitted By (Provide Name and Firm/Organization): Delaney Weston/INDOT Greenfield Dist.

Project Designation Number: 2100572

Route Number: State Road (SR) 9

Feature crossed (if applicable): Mud Creek

City/Township: Alexandria/ Boone & Van Buren **County:** Madison

Project Description:.

The Indiana Department of Transportation (INDOT) has identified the need to address the condition of a bridge, Structure Number 009-48-00157 B. The project is located in Madison County, Indiana. More specifically, the project is located in Section 36, Township 22 N, and Range 7 E and Section 31, Township 22 N, and Range 8 E as seen on the USGS 7.5' Alexandria, Indiana topographic quadrangle.

Structure # 009-48-00157 B is an approximately 40.1 ft wide by 29.7 ft long concrete girder bridge. The structure has shown signs of deterioration and is currently rated a "4" (Poor) out of "9" (excellent) in condition. The bridge has shown evidence of extensive cracking, spalling, and heavy delamination. The superstructure alignment to the south has moved 1.5 inches. INDOT proposes to replace the existing structure with an approximately 39.4 ft wide by 67 ft long concrete I-beam bridge. Three culverts (Structures #1, 2, and 3) within the project area will also be removed and replaced in kind. Structure #1 is located approximately 300 ft south of the bridge, on the east side of SR 9. Structure #2 is located approximately 230 ft north of the bridge on the west side of SR 9. Structure #3 is located approximately 415 ft north of the bridge on the east side of SR 9. Revetment riprap will be placed along the roadside and underneath the bridge. Guardrail and signage will be removed and replaced in kind. The roadway will be milled and overlaid with Hot Mix Asphalt (HMA). The maintenance of traffic (MOT) is anticipated to utilize a full road closure with a detour. The detour route includes SR 28, SR 37, and SR 26 for an added travel length of approximately 22 miles.

If the project includes any curb, curb ramp, or sidewalk work, please specify the location(s) of such work: N/A

For bridge or small structure projects, please list feature crossed, structure number, NBI number, and structure type:

Feature Crossed: Mud Creek
Structure Number: 009-48-00157 B
NBI: 002560
Structure Type: Concrete Girder Bridge

Structures 1, 2, and 3 are corrugated metal equalizer pipes and do not cross features, nor have structure or NBI numbers.

For bridge projects, is the bridge included in INDOT's Historic Bridge Inventory (https://www.in.gov/indot/2531.htm)?

☐ **Yes** ☒ **No**

If yes, did the inventory determine the bridge eligible for or listed in the National Register of Historic Places? Please provide page # of entry in Historic Bridge Inventory.
☐ **Yes** ☐ **No**
Inventory Page #_____

Will there be right-of-way acquisition as part of this project?
☒ **Yes** ☐ **No**

If yes was checked above, please check all that apply:
☒ **Permanent** ☒ **Temporary** ☐ **Reacquisition**

If applicable, identify right-of-way acquisition locations in text below and in attached mapping. Please specify how much (both temporary and permanent) and indicate what activities are included in the proposed right-of-way:

Approximately 0.6482 acre of permanent right of way (ROW) will be acquired for this project. Acquisition is anticipated to occur to the southwest of 009-48-00157 B for access and placement of riprap, as well as along the entire east side of the project area for grading, placement of riprap, and other construction activities. Approximately 0.0092 acre of temporary ROW will be acquired on the northwest side of the project area for removal and replacement of a driveway.

Is there *any* potential for additional temporary right-of-way to be needed later for purposes such as access, staging, etc.?
☐ **Yes** ☒ **No**

Archaeology (check one):

☒ **All proposed activities are presumed to occur in previously disturbed soils***
**INDOT-CRO will notify you if project area incudes undisturbed soils and requires an archaeological reconnaissance.*

☐ **Project takes place in undisturbed soils and the archaeology report is included in submission or will be forthcoming***

** If an archaeology report is required, the Minor Projects PA Form will not be finalized until the report is reviewed and approved by INDOT-CRO. For INDOT-sponsored projects, INDOT-CRO may be able to complete the archaeological investigation. If you would like to request that INDOT-CRO complete an archaeological investigation, please contact the INDOT-CRO archaeology team lead. See CRM Pt. 1 Ch. 3 for current contact information.*

Please specify all applicable categories and condition(s) (highlight applicable conditions in yellow)*:

**Include full category text, including any conditions. INDOT-CRO will finalize categories upon their review.*

A-3.
Replacement, repair, lining, or extension of culverts and other drainage structures that do not exhibit wood, stone or brick structures or parts therein and are in previously disturbed soils.

A-4.
Roadway work associated with surface replacement, reconstruction, rehabilitation, or resurfacing projects, including overlays, shoulder treatments, pavement repair, seal coating, pavement grinding, and pavement marking within previously disturbed soils where replacement, repair, or installation of curbs, curb ramps or sidewalks will not be required.

A-6.
Repair, replacement, or upgrade of existing safety appurtenances such as guardrails, barriers, glare screens, and crash attenuators in previously disturbed soils.

A-9.
Installation, repair, or replacement of erosion control measures along roadways, waterways and bridge piers within previously disturbed soils.

B-12. Replacement, widening, or raising the elevation of the superstructure on existing bridges, and bridge replacement projects (when both the superstructure and substructure are removed), under the following conditions ***[BOTH Condition A, which pertains to Archaeological Resources, and Condition B, which pertains to Above-Ground Resources, must be satisfied]*:**

Condition A (Archaeological Resources)
One of the two conditions listed below must be met *(EITHER Condition i or Condition ii must be satisfied)*:

i. Work occurs in previously disturbed soils; *OR*

ii. Work occurs in undisturbed soils and an archaeological investigation conducted by the applicant and reviewed by INDOT Cultural Resources Office determines that no National Register-listed or potentially National Register- eligible archaeological resources are present within the project area. If the archaeological investigation locates National Register-listed or potentially National Register eligible archaeological resources, then full Section 106 review will be required. Copies of any archaeological reports prepared for the project will be provided to the DHPA and any archaeological site form information will be entered directly into the SHAARD by the applicant.The archaeological reports will also be available for viewing (by Tribes only) on INSCOPE**.**

Condition B (Above-Ground Resources)
The conditions listed below must be met ***(BOTH Condition i and Condition ii must be satisfied)***

i. Work does not occur adjacent to or within a National Register-listed or National Register-eligible district or individual above-ground resource; *AND*

ii. With regard to the subject bridge, at least one of the conditions listed below is satisfied *(AT LEAST one of the conditions a, b or c, must be fulfilled)*:

a. The latest Historic Bridge Inventory identified the bridge as non-historic (see http://www.in.gov/indot/2531.htm);

b. The bridge was built after 1945, and is a common type as defined in Section V of the *Program Comment Issued for Streamlining Section 106 Review for Actions Affecting Post-1945 Concrete and Steel Bridges* issued by the Advisory Council on Historic Preservation on November 2, 2012 for so long as that Program Comment remains in effect AND the considerations listed in Section IV of the Program Comment do not apply;

c. The bridge is part of the Interstate system and was determined not eligible for the National Register under the Section 106 Exemption Regarding Effects to the Interstate Highway System adopted by the Advisory Council on Historic Preservation on March 10, 2005, for so long as that Exemption remains in effect.

Check ☐ if SECTION 2: Minor Projects PA Category B-1, Condition B-ii Submission is included

Check ☐ if SECTION 3: Minor Projects PA Category B-9, Condition B-i-c-2 or B-ii-b-3 Submission is included

Part II: Completed by INDOT-CRO

Amendments will be shown in red font.

Information reviewed (please check all that apply):

General project location map ☒ USGS map ☒ Aerial photograph ☒ Soil survey data ☒

General project area photos ☒ Archaeology Reports ☐ Historic Property Reports ☐

Indiana Historic Buildings, Bridges, and Cemeteries Map/Interim Report ☒

Bridge inspection information/BIAS ☒ Historic Bridge Inventory Database ☐

SHAARD ☒ SHAARD GIS ☒ Streetview Imagery ☒ County GIS Data/Property Cards ☐

Other (please specify):

Are there any commitments associated with this project? If yes, please explain and include in the Additional Comments Section below. Yes ☐ No ☒

Does the project result in a de minimis impact to a Section 4(f) protected historic resource? If yes, please explain in the Additional Comments Section below. Yes ☐ No ☒

Additional Comments:

Above-ground Resources

An INDOT-CRO historian who meets the Secretary of the Interior's Professional Qualification Standards as per 36 CFR Part 61 first performed a desktop review, checking the Indiana Register of Historic Sites and Structures (State Register) and National Register of Historic Places (National Register) lists for Madison County. No listed resources are present within 0.15 mile of the project area, a distance that would serve as an adequate area of potential effects (APE) given the scope of the project and the surrounding terrain.

The *Madison County Interim Report* of the Indiana Historic Sites and Structures Inventory (IHSSI) was also consulted. The National Register & IHSSI information is available in the Indiana State Historic Architectural and Archaeological Research Database (SHAARD) and the Indiana Historic Buildings, Bridges, and Cemeteries Map (IHBBCM). The SHAARD information was checked against the interim report hard copy maps. No IHSSI-surveyed sites are recorded within 0.15 mile of the project.

Land surrounding the project area is agricultural with densely wooded areas and riparian growth present along the

stream banks. Area topography is gently rolling. The structure is present in a dip in the roadway, which limits the viewshed of the project area. Trees/riparian growth lining the stream banks, as well as other vegetation serve to obscure the project area from the north.

No above-ground properties that are currently—or that will be--50 years of age by the proposed project letting date of 2026 are present near the project area. The subject structure can be seen from a single late 20th-early 21st century residential property that is located south of the subject structure and on the west side of SR 9. Another late 20th century residential property is located to the north of the project area, on the east side of SR 9. Views toward the project area from this resource are blocked by the presence of extensive vegetation, as well as the structure's location in the previously referenced 'dip' in the SR 9 roadway. No other above-ground resources are present within 0.15 mile of the project area.

The subject structure (Bridge No. 009-48-00157B/NBI No. 002560) is a concrete stringer/multi-beam or girder bridge constructed in 1923 and reconstructed in 1953. The INDOT-sponsored *Historic Bridge Inventory* determined that this bridge is not eligible for listing in the National Register (Volume 2, Section 2, page 689).

Based on the available information, as summarized above, no above-ground concerns exist as long as the project scope does not change.

Archaeological Resources

An INDOT-CRO archaeologist who meets the Secretary of the Interior's Professional Qualification Standards as per 36 CFR Part 61 reviewed the proposed project area, conducted a desktop review, and prepared an archaeological assessment. No archaeological resources have been recorded within or adjacent to the proposed project area.

The project area is comprised of two residential driveways; two sections of residential lawns; two agricultural fields; and SR 9–a two-lane paved road with paved shoulders flanked by guardrails and ditched embankments, raising the road above the natural floodplain–carried over Mud Creek by a bridge (Structure # 009-48-00157 B) with additional drainage via three culverts. The only areas within the proposed project area that are not obviously disturbed are the two sections of agricultural fields on the east side of the project area contained within the proposed acquisition of new ROW. However, digital elevation models and mapped soil data (Washtenaw Complex [Wc], a poorly drained hydric soil) reveal these areas fall entirely within the historic floodplain of Mud Creek, meaning archaeological resources are highly unlikely to be present and these areas can be considered disturbed.

Since the project is limited to previously disturbed soils, there are no archaeological concerns provided the project scope and footprint do not change.

Accidental Discovery: If any archaeological artifacts or human remains are uncovered during construction, demolition, or earth moving activities, construction within 100 feet of the discovery will be stopped, and INDOT-CRO and the Indiana Department of Natural Resources-Division of Historic Preservation and Archaeology (IDNR-DHPA) will be notified immediately.

INDOT-CRO staff reviewer(s): Susan Branigin and David Walton

INDOT Approval Date: February 2, 2024

Amendment Approval Date (if applicable):

****Be sure to attach this form to the National Environmental Policy Act documentation for this project. Also, the NEPA documentation shall reference and include the description of the specific stipulation in the PA that qualifies the project as exempt from further Section 106 review.*

Please attach the following to this form:

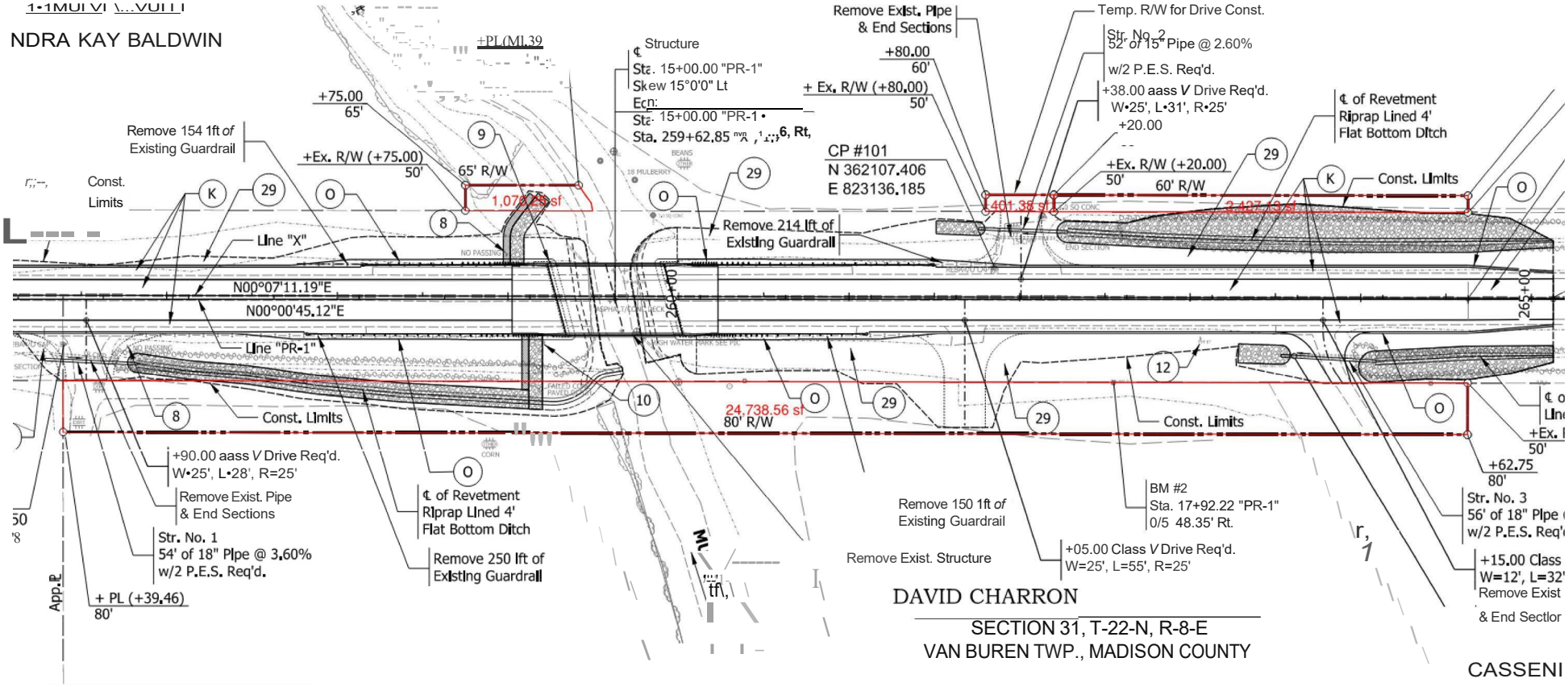
- **General Location Map.** This map should allow the INDOT-CRO reviewer to quickly locate the project.
- **Aerial photography map(s) of project area.** This map must include project limits. It may also include SHAARD data, but SHAARD data is not required.
- **If bridge or small structure project, please attach photographs of bridge or small structure.** Photographs can be found in inspection reports located in INDOT's Bridge Inspection Application System (BIAS), as well as other project documents, such as engineering assessments or mini-scopes.

Map depicting potential temporary and/or permanent right-of-way acquisitions. In the email submission to INDOT-CRO, please also include:

- **A GIS polygon shapefile or KMZ file of the project area** (shapefiles are preferred). Shapefiles should use "NAD_1983_UTM" projected coordinate system. In addition, these files should contain the following *text* attribute field: DES_NO. The project designation number should be entered in this field.

- **If the project takes place in undisturbed soils, attach the results of the archaeological investigation, if completed.** *Note: The MPPA Submission Form may be submitted before the archaeology report. INDOT-CRO staff will process the above-ground portion of the form in advance of the archaeological portion of the form. However, a completed determination form will not be returned to the applicant until after the archaeology report has been reviewed and approved by INDOT-CRO.*

Some attachments have been omitted to avoid duplication.



LINE "PR-1" TO BE CONSTRUCTED

ALL R/W ON THIS SHEET DESCRIBED FROM LINE "X" UNLESS OTHERWISE NOTED

Appendix E

Red Flag Investigation

INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N758-ES
Indianapolis, Indiana 46204

PHONE: (855) 463-6848
(855) INDOT4U

Eric Holcomb, Governor
Michael Smith, Commissioner

Date: February 10, 2023

To: Site Assessment & Management (SAM)
Environmental Policy Office - Environmental Services Division (ESD)
Indiana Department of Transportation (INDOT)
100 N Senate Avenue, Room N758-ES
Indianapolis, IN 46204

From: Delaney Weston
INDOT Greenfield District
32 South Broadway
Greenfield, Indiana
DWeston@indot.in.gov

Re: RED FLAG INVESTIGATION
DES # 2100572, State Project
Bridge Replacement
State Road 9 Over Mud Creek, 2.83 Miles North of SR 28
Madison County, Indiana

PROJECT DESCRIPTION

The Indiana Department of Transportation (INDOT) has identified the need to address the condition of a bridge, Structure # 009-48-00157 B, along State road (SR) 9, 2.83 miles north of SR 28. The project is located in Madison County, Indiana. More specifically, the project is located in Section 36, Township 22 N, and Range 7 E and Section 31, Township 22 N, and Range 8 E as seen on the USGS 7.5' Alexandria, Indiana topographic quadrangle.

Structure # 009-48-00157 B is a concrete girder bridge. The structure has shown signs of deterioration and is currently rated a "4" (Poor) out of "9" (excellent) in condition. The bridge has shown evidence of extensive cracking, spalling, and heavy delamination. The superstructure alignment to the south has moved 1.5". INDOT proposes to entirely replace the existing structure. The maintenance of traffic (MOT) is anticipated to utilize a full road closure with a detour. Right of way (ROW) acquisition is anticipated to be required, but exact amounts are not yet known. However, it is anticipated that less than 0.5 acre of temporary and permanent ROW acquisition will be required.

Bridge Work Included in Project: Yes ☒ No ☐ Structure #(s) 009-48-00157 B
If this is a bridge project, is the bridge Historical? Yes ☐ No ☒, Select ☐ Non-Select ☐

Culvert Work Included in Project: Yes ☐ No ☒ Structure #(s) _____
Proposed right of way: Temporary ☒ # Acres <0.5 Permanent ☒ # Acres <0.5, Not Applicable ☐

Type and proposed depth of excavation: Excavation of up to 20 feet below ground surface will occur for the removal and replacement of the existing structure.

Maintenance of traffic (MOT): The Maintenance of Traffic will likely require a road closure with a detour.

Work in waterway: Yes ☒ No ☐ Below ordinary high-water mark: Yes ☒ No ☐
State Project: ☒ LPA: ☐
Any other factors influencing recommendations: N/A

INFRASTRUCTURE TABLE AND SUMMARY

Infrastructure Indicate the number of items of concern found within the 0.5-mile search radius. If there are no items, please indicate N/A:			
Religious Facilities	**N/A**	Recreational Facilities	**N/A**
Airports[1]	**N/A**	Pipelines	**N/A**
Cemeteries	**N/A**	Railroads	**N/A**
Hospitals	**N/A**	Trails	**N/A**
Schools	**N/A**	Managed Lands	**N/A**

[1]In order to complete the required airport review, a review of public-use airports within 3.8 miles (20,000 feet) is required.

Explanation: No mapped infrastructure resources were identified. No impact is expected.

WATER RESOURCES TABLE AND SUMMARY

Water Resources Indicate the number of items of concern found within the 0.5-mile search radius. If there are no items, please indicate N/A:			
NWI - Points	**N/A**	Canal Routes - Historic	**N/A**
Karst Springs	**N/A**	NWI - Wetlands	**4**
Canal Structures – Historic	**N/A**	Lakes	**N/A**
NPS NRI Listed	**N/A**	Floodplain - DFIRM	**1**
NWI-Lines	**1**	Cave Entrance Density	**N/A**
IDEM 303d Listed Streams and Lakes (Impaired)	**N/A**	Sinkhole Areas	**N/A**
Rivers and Streams	**3**	Sinking-Stream Basins	**N/A**

If unmapped water features are identified that might impact the project area, direct coordination with INDOT ESD Ecology and Waterway Permitting will occur.

Explanation:

NWI-Lines: One (1) NWI-Line segment is located within the 0.5-mile search radius. The segment is located within the project area. Coordination with INDOT ESD Ecology and Waterway Permitting will occur.

Rivers and Streams: Three (3) river and stream segments are located within the 0.5-mile search radius. The nearest segment, Mud Creek, flows through the project area. Coordination with INDOT ESD Ecology and Waterway Permitting will occur.

NWI – Wetlands: Four (4) NWI-Wetland polygons are located within the 0.5-mile search radius. The nearest polygon is located approximately 0.11 mile southwest of the project area. No impact is expected.

Floodplain – DFIRM: One (1) floodplain polygon is located within the 0.5-mile search radius. The polygon is located within the project area. Coordination with INDOT ESD Ecology and Waterway Permitting will occur.

MINING AND MINERAL EXPLORATION TABLE AND SUMMARY

Mining/Mineral Exploration Indicate the number of items of concern found within the 0.5-mile search radius. If there are no items, please indicate N/A:			
Petroleum Wells	**4**	Mineral Resources	**N/A**
Mines – Surface	**N/A**	Mines – Underground	**N/A**

Explanation:

Petroleum Wells: Four (4) petroleum wells are located within the 0.5-mile search radius. The nearest is located 0.27 mile southeast of the project area. No impacts are expected.

HAZARDOUS MATERIAL CONCERNS TABLE AND SUMMARY

Hazardous Material Concerns Indicate the number of items of concern found within the 0.5-mile search radius. If there are no items, please indicate N/A:			
Superfund	**N/A**	Manufactured Gas Plant Sites	**N/A**
RCRA Generator/ TSD	**N/A**	Open Dump Waste Sites	**N/A**
RCRA Corrective Action Sites	**N/A**	Restricted Waste Sites	**N/A**
State Cleanup Sites	**N/A**	Waste Transfer Stations	**N/A**
Septage Waste Sites	**N/A**	Tire Waste Sites	**N/A**
Underground Storage Tank (UST) Sites	**N/A**	Confined Feeding Operations (CFO)	**N/A**
Voluntary Remediation Program	**N/A**	Brownfields	**N/A**
Construction Demolition Waste	**N/A**	Institutional Controls	**N/A**
Solid Waste Landfill	**N/A**	NPDES Facilities	**1**
Infectious/Medical Waste Sites	**N/A**	NPDES Pipe Locations	**2**
Leaking Underground Storage (LUST) Sites	**N/A**	Notice of Contamination Sites	**N/A**

Unless otherwise noted, site specific details presented in this section were obtained from documents reviewed on the Indiana Department of Environmental Management (IDEM) Virtual File Cabinet (VFC).