Indiana Department of Transportation

County Greene Route SR 157 Des. No. 1700141

FHWA-Indiana Environmental Document

CATEGORICAL EXCLUSION / ENVIRONMENTAL ASSESSMENT FORM

GENERAL PROJECT INFORMATION

Road No./County:	State Road (SR) 157 over Branch of Lemon Creek, Greene County
Designation Number:	1700141
Project Description/Termini:	Bridge Replacement Project on SR 157, approximately 2.35 miles north of SR 67

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

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

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

Approval _____ _____ _____ _____
ESM Signature Date ES Signature Date

_____ _____
FHWA Signature Date

Release for Public Involvement

RF 12/7/2020 _____ _____
ESM Initials Date ES Initials Date

Certification of Public Involvement _____ _____
Office of Public Involvement Date

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

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

Name and Organization of CE/EA Preparer: Raquel Walker, GAI Consultants, Inc.

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.

Remarks: Notice of Entry letters were mailed to potentially affected property owners near the project area on October 25, 2018 notifying them about the project and that individuals responsible for land surveying and field activities may be seen in the area. A sample copy of the Notice of Entry letter is included in Appendix G, page G1.

The project will meet the minimum requirements described in the current Indiana Department of Transportation (INDOT) Public Involvement Manual which requires the project sponsor to offer the public an opportunity to submit comment 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	Yes	No
Will the project involve substantial controversy concerning community and/or natural resource impacts?		X

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

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

Sponsor of the Project: INDOT INDOT District: Vincennes

Local Name of the Facility: State Road (SR) 157

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

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

PURPOSE AND NEED:

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

The need for this project stems from the deteriorating condition of the existing structure (Bridge No. 157-28-06075B). The existing structure is a 48 foot (ft.) long, single span prestressed concrete box beam (PCBB) bridge that carries SR 157 over Branch of Lemon Creek. An Indiana Department of Transportation (INDOT) Bridge Inspection Report dated May 8, 2019 documented longitudinal cracking and leakage between beams on the deck of the bridge. The superstructure exhibited signs of spalling, rusting and 100% section loss on one of the beam strands. The timber substructure also showed signs of minor section loss and the center splice cap exhibited hollow sounds. Widespread minor damage due to bank slumping was seen on the channel bank. According to the INDOT Bridge Inspection Report dated May 8, 2019, this structure has an overall condition rating of “5”. Condition Ratings range from “0” to “9” with “0” being a failed structure and “9” being a structure in excellent condition.

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The purpose of this project is to provide a structurally and hydraulically sufficient structure on SR 157 over Branch of Lemon Creek. This project should result in an overall condition rating of "9", indicating excellent condition.

PROJECT DESCRIPTION (PREFERRED ALTERNATIVE):

County: Greene Municipality: SR 157

Limits of Proposed Work: Approximately 283 ft. to the north and 238 ft. to the south from the center of the structure

Total Work Length: 0.06 Mile(s) Total Work Area: 0.96 Acre(s)

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

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

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

Location

This project is located on SR 157 over Branch of Lemon Creek approximately 2.35 miles north of SR 67 in Jefferson Township, Greene County, Indiana. Specifically, this project is located in Section 8, Township 8 North, Range 5 West, as shown in the Arney U.S Geological Survey (USGS) 7.5 Minute Topographic Map (Appendix B, page B2).

Existing Conditions

SR 157 is a two lane, north-south, rural-major collector (State Road) with one 11-foot (ft) travel lanes and accompanying 2 ft. 6-inch unpaved shoulders at the project area. SR 157 had an Average Annual Daily Traffic (AADT) count of 1,261 vehicles per day (VPD) in 2019 (source: INDOT Traffic Count Database System). Bridge No. 157-28-06075B is a 48 ft. long, single span prestressed concrete box beam (PCBB) bridge that was built in 1965 and reconstructed in 1980 and is showing signs of deterioration. The deck has longitudinal cracking and leakage between beams. The superstructure exhibits signs of spalling, rusting and 100% section loss on one of the beam strands, the timber substructure shows signs of minor section loss, and the center splice cap exhibits hollow sounds. In addition, there is widespread minor damage due to bank slumping on the channel bank. This bridge carries SR 157 over Branch of Lemon Creek. Surrounding land use is primarily agricultural and residential, with suitable summer habitat for bat species present in all four quadrants of the project area

Preferred Alternative

INDOT Vincennes District and the Federal Highway Administration (FHWA) are proposing a bridge replacement project. The project proposes to replace the existing structure with a new prestressed, single span, box beam bridge. The scope of work includes the following:

- Replace the existing structure
- Widen the roadway embankments and shoulders
- Mill and overlay the roadway pavement
- Remove and replace the guardrail
- Clear and realign the channel
- Place riprap along the abutments and channel banks
- Construct riprap drainage turnouts
- Replace a pipe in the northeast quadrant
- Reconstruct the existing embankment slopes
- Provide side slope stabilization
- Install temporary check dams and cofferdams to dewater the work-zone

Please refer to Appendix B, pages B18 to B21 for plan sheets that illustrates the above stated work.
Every effort will be made to avoid, minimize and/or mitigate environmental impacts during this bridge replacement project. This project demonstrates independent utility because it will replace the existing structure as a stand-alone project and is not dependent on any other planned projects. The project area is localized to the immediate area surrounding the bridge. This project will extend approximately 283 ft. to the north and 238 ft. to the south from the center of the structure.

Due to the scope of work, disruptions to traffic will occur. The Maintenance of Traffic (MOT) for this project will a road closure with the use of a detour. Please refer to the MOT section of this document for details.

Based on the above information, the preferred alternative will meet the purpose and need of the project by replacing the existing structure that carries SR 157 over Branch of Lemon Creek in order to address the structural deficiencies.

OTHER ALTERNATIVES CONSIDERED:

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

The "No-Build" Alternative
The "No-Build" alternative was considered for the proposed project. This alternative would eliminate any environmental impacts and no expenditure of funds for improvement would be needed. However, this alternative would not meet the purpose and need of the project and was eliminated from further consideration.

Single Span Spill Through Bridge
This alternative would include replacing the existing structure with a single span spill through bridge, with a 54 ft. opening width. This alternative would have greater environmental impacts and cost than the preferred alternative. The greater environmental impacts would be due to the need to relocate the channel to allow for a three sided structure to be effectively implemented. The greater costs of this alternative would stem from the significant increased span lengths that would be necessary in order to provide an adequate hydraulic opening for a three sided structure. This alternate would cost approximately $150,000 more than the preferred alternative. Although this alternative meets the purpose and need of the project it was ultimately dismissed for a more feasible and prudent alternative.

Three Span Spill Through Bridge This alternative would include replacing the existing structure with a three span spill through bridge with a 67 ft. opening width. The greater environmental impacts would be due to the need to relocate the channel to allow for a three sided structure to be effectively implemented. The greater costs of this alternative would stem from the significant increased span lengths that would be necessary in order to provide an adequate hydraulic opening for a three sided structure and the installation of piers. This alternate would cost approximately $300,000 more than the preferred alternative. Although this alternative meets the purpose and need of the project it was ultimately dismissed for a more feasible and prudent alternative.

Single Span Spread I-Beam Bridge
This alternative would include replacing the existing structure with a single span bridge with Type II AASHTO I-Beams. This alternative would have similar environmental impacts and less cost than the preferred alternative due to I-Beams being more economical and easier to construct than spread box-beams. This alternate would cost approximately $24,000 less than the preferred alternative. Although this alternative meets the purpose and need of the project it was eliminated from consideration due to structure depth constraints that would be needed for the Type II AASHTO I-Beams.

Three Span Prestressed Concrete Box Beam Bridge
This alternative would include replacing the existing structure with a three-span, prestressed box beam bridge. This alternative would have greater environmental impacts and costs than the preferred alternative due to driving piles and constructing interior substructures to support the beams. This alternate would cost approximately $80,700 more than the preferred alternative. Although this alternative meets the purpose and need of the project it was ultimately dismissed for a more feasible and prudent alternative.

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

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

ROADWAY CHARACTER: SR 157

Functional Classification: Rural Major Collector
Current ADT: 1,384 VPD (2021) Design Year ADT: 1,548 VPD (2041)
Design Hour Volume (DHV): N/A Truck Percentage (%) 22
Designed Speed (mph): 45 Legal Speed (mph): 45

	Existing		Proposed	
Number of Lanes:	2		2	
Type of Lanes:	11 ft. Travel Lanes		11 ft. Travel Lanes	
Pavement Width:	22	ft.	30	ft.
Shoulder Width:	2.6	ft.	4	ft.
Median Width:	N/A	ft.	N/A	ft.
Sidewalk Width:	N/A	ft.	N/A	ft.

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

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

DESIGN CRITERIA FOR BRIDGES:

Structure/NBI Number(s): 157-28-06075B (NBI #: 027940) Sufficiency Rating: 79.2, Bridge Inspection Report
(Rating, Source of Information)

	Existing		Proposed	
Bridge Type:	Prestressed Concrete Box Beam		Prestressed Concrete I-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:	28.3	ft.	30	ft.
Outside to Outside Width:	30.3	ft.	32.8	ft.
Shoulder Width:	N/A	ft.	N/A	ft.
Length of Channel Work:				ft.

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

Remarks: Bridge No. 157-28-06075B is a 48 ft. long, single span prestressed concrete box beam (PCBB) bridge that was built in 1965 and reconstructed in 1980. This structure carries SR 157 over Branch of Lemon Creek. This structure is not listed as a Select or Non-Select bridge and is not identified on the most recent Historic Bridge Inventory list as a historic bridge. In addition, a pipe that runs beneath the field entrance in the northeast quadrant of the project area will be replaced.

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

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

MAINTENANCE OF TRAFFIC (MOT) DURING CONSTRUCTION:

	Yes	No
Is a temporary bridge proposed?		X
Is a temporary roadway proposed?		X
Will the project involve the use of a detour or require a ramp closure? (describe in remarks)	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

Remarks: The Maintenance of Traffic (MOT) for this project will require a road closure and official detour on State Routes. The best available detour route would be SR 48 to SR 59 to SR 54 to SR 67 for southbound traffic and opposite for northbound. The detour will add a distance of 30.6 miles for traveling motorists. Please refer to the plan sheet illustrating the MOT in Appendix B, page B17.

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 will cease upon project completion. Delays may occur during construction but will cease with project completion.

ESTIMATED PROJECT COST AND SCHEDULE:

***Please note that this project is included under Lead Des No. 1700174 in the 2020-2024 STIP under contract B-40558.**

Engineering: $ 182,000 (2019) Right-of-Way: $ 82,000 (2021) Construction: $ 2,875,263 (2022)

Anticipated Start Date of Construction: Spring of 2022

Date project incorporated into STIP July 2, 2019

	Yes	No
Is the project in an MPO Area?		X

If yes,

Name of MPO

Location of Project in TIP

Date of incorporation by reference into the STIP

RIGHT OF WAY:

Land Use Impacts	Amount (acres) Permanent	Temporary
Residential	0.014	0
Commercial	0	0
Agricultural	0.667	0
Forest	0.199	0
Wetlands	0	0
Other:	0	0
Other:	0	0
TOTAL	0.88	0

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

Remarks: Existing right-of-way (ROW) ends at the edge of the roadway pavement. The ROW is used to maintain the existing roadway.

This project will require approximately 0.88 acre of permanent ROW from two parcels on the west side of SR 157 and one parcel on the east side of SR 157. No temporary ROW is needed for this project.

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 – ECOLOGICAL RESOURCES

	Presence	Impacts Yes	Impacts No
Streams, Rivers, Watercourses & Jurisdictional Ditches	**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			

Remarks: Based on a desktop review, site visits on October 18, 2018 and June 8, 2020 by GAI, the aerial map of the project area (Appendix B, page B3), and the water resources map in the Red Flag Investigation (RFI) report (Appendix E, page E8), six stream segments are located within the 0.5-mile search radius. One stream segment, Branch of Lemon Creek, is present within the project area.

A *Waters of the U.S. Determination/Wetland Delineation Report* was approved by the INDOT Ecology and Waterway Permitting Office on April 1, 2019. Please refer to Appendix F, pages F1 to F32 for the *Waters of the U.S. Determination/ Wetland Delineation Report*. It was determined that Branch of Lemon Creek is a likely jurisdictional waterway. No other waterways were identified within the project area. The U.S Army Corp of Engineers (USACE) makes all final determinations regarding jurisdiction.

Branch of Lemon Creek is classified as an intermittent stream that flows west to east through the project area and exhibits an ordinary high-water mark (OHWM). The OHWM is 4.5 ft. wide and 6 inches (in) deep. Impacts to Branch of Lemon Creek will be necessary for the placement of riprap, realignment of the stream channel and placement of temporary cofferdams to dewater the work-zone. Total permanent impacts will equal approximately 331.5 linear feet and/or 0.04 acre. Total temporary impacts will equal 16.5 linear feet and/or 0.002 acre. Stream mitigation will be required for this project as cumulative stream impacts will be more than 300 linear feet. Permits for impacts to Branch of Lemon Creek will be necessary. Please refer to the *Permits* section of this document for details.

Early coordination letters were sent to the Indiana Department of Natural Resources, Division of Fish and Wildlife (IDNR-DFW), the USACE, and the U.S. Fish and Wildlife Service (USFWS) on November 6, 2018 (Appendix C, pages C1 to C2). The IDNR-DFW indicated in their letter dated December 6, 2018 (Appendix C, pages C20 to C22), that the project would not require formal IDNR approval under the programs administered by the Division of Water. The IDNR-DFW letter also provided a list of recommendations to help avoid and minimize impacts to Branch of Lemon Creek. All applicable recommendations can be found in the *Environmental Commitments* section of this CE document.

The USACE did not respond to the early coordination letter.

The USFWS responded in a letter dated November 13, 2018 (Appendix C, pages C23 to C24), stating, "Based on a review of the information you provided, the U.S. Fish and Wildlife Service has no objections to the project as currently proposed". The USFWS also provided a list of standard recommendations. All applicable recommendations can be found in the *Environmental Commitments* section of this CE document.

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

Remarks:

Based on a desktop review, site visits on October 18, 2018 and June 8, 2020 by GAI, the aerial map of the project area (Appendix B, page B3), and the water resources map in the Red Flag Investigation (RFI) report (Appendix E, page E8), there are five lakes located within the 0.5 mile search radius. No other surface waters present within or adjacent to the project area; therefore, no impacts are expected.

Early coordination letters were sent to the IDNR-DFW, the USACE, and the USFWS on November 6, 2018 (Appendix C, pages C1 to C2). The IDNR-DFW responded on December 6, 2018 (Appendix C, pages C20 to C22), with no specific recommendations regarding other surface waters. The IDNR-DFW letter did provide a list of standard recommendations. All applicable recommendations can be found in the *Environmental Commitments* section of this CE document.

The USACE did not respond to the early coordination letter.

The USFWS responded in a letter dated November 13, 2018 (Appendix C, pages C23 to C24),with no specific recommendations regarding other surface waters. All applicable recommendations can be found in the *Environmental Commitments* section of this CE document.

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	Presence	Impacts Yes	Impacts No
Wetlands	X		X

Total wetland area: 0.01 acre(s) Total wetland area impacted: 0.0 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
Wetland A	PEMf	0.01	0.0	

Wetlands (*Mark all that apply*)	Documentation	ES Approval Dates
Wetland Determination	X	April 1, 2019
Wetland Delineation	X	April 1, 2019
USACE Isolated Waters Determination		
Mitigation Plan		

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

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

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

Remarks:

Based on a review of the National Wetlands Inventory (NWI) online mapper (https://www.fws.gov/wetlands/data/Mapper.html), site visits on October 18, 2018 and June 8, 2020 by GAI, the USGS topographic map (Appendix B, Page B2), and the RFI report (Appendix E, pages E1 to E13) there are fourteen NWI wetlands located within the 0.5 mile search radius. There is one wetland located adjacent to the project area.

A *Waters of the U.S. Determination/Wetland Delineation Report* was INDOT Ecology and Waterway Permitting Office approved on April 1, 2019. Please refer to Appendix F, pages F1 to F32 for the *Waters of the U.S. Determination/ Wetland Delineation Report*. It was determined that one wetland was delineated in the study area. The USACE makes all final determinations regarding jurisdiction.

Wetland A is a palustrine emergent, farmed wetland located on the edge of a farm field in the northeast quadrant of the project area. Due to the location of Wetland A, it would likely be hydrologically connected to Branch of Lemon Creek. Wetland A is outside the proposed construction limits; therefore, no impacts are expected.

Early coordination letters were sent to the IDNR-DFW, the USACE, and the USFWS on November 6, 2018 (Appendix C, pages C1 to C2). The IDNR-DFW responded on December 6, 2018 (Appendix C, Pages C20 to C22), with no specific recommendations in regard to wetlands. The IDNR-DFW letter did provide a list of standard recommendations. All applicable recommendations can be found in the *Environmental Commitments* section of this CE document.

The USACE did not respond to the early coordination letter.

The USFWS responded in a letter dated November 13, 2018 (Appendix C, pages C23 to C24), stating, “Based on a review of the information you provided, the U.S. Fish and Wildlife Service has no objections to

the project as currently proposed". The USFWS provided a recommendation on wetland mitigation should impacts to wetlands occur. All applicable recommendations can be found in the *Environmental Commitments* section of this CE document.

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

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

Remarks: Based on a desktop review, site visits on October 18, 2018 and June 8, 2020 by GAI, and the aerial map of the project area (Appendix B, page B3), forested riparian habitat exists in all four quadrants of the project area. Vegetation consists primarily of calico aster (*Symphyotrichum lateriflorum*), yellow nutsedge (*Cyperus esculentus*), giant foxtail, (*Seteria faberi*), meadow garlic (*Allium canadense*), soybeans (*Glycine max*) due to the surrounding cropland, and box elder (*Acer negundo*). This habitat would not be considered prime or unique. Impacts to this habitat will be necessary as minor tree trimming and/or clearing will be needed to accommodate the wider structure, clear and realign the stream channel, perform side slope stabilization, add a wildlife crossing and place riprap for scour protection. Approximately 0.20 acre of tree trimming/clearing is anticipated. The total area of soil disturbance associated with this project is anticipated to be 0.70 acre. Avoidance alternatives are not practical for this project as impacts are necessary to meet the purpose and need of the project. However, impacts have been reduced to the greatest extent practicable to complete this project. No mitigation for impacts to terrestrial habitat is anticipated for this project.

Early coordination letters were sent to the IDNR-DFW and the USFWS on November 6, 2018 (Appendix C, pages C1 to C2). The IDNR-DFW responded in a letter dated December 6, 2018 (Appendix C, pages C20 to C22) with recommendations to help minimize impacts to riparian habitat. All applicable recommendations can be found in the *Environmental Commitments* section of this CE document.

The USFWS responded in a letter dated November 13, 2018 (Appendix C, pages C23 to C24) stating, "the U.S. Fish and Wildlife Service has no objections to the project as currently proposed". The USFWS provided a list of standard recommendations. All applicable recommendations can be found in the *Environmental Commitments* section of this CE document.

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

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

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

Remarks: Based on a desktop review, the project is located inside the designated karst region of Indiana as outlined in the October 13, 1993 Memorandum of Understanding (MOU). According to the topo map of the project area (Appendix B, page B2), and the RFI report (Appendix E, pages E1 to E13), there are no karst features identified within or adjacent to the project area. In the early coordination response, the Indiana Geological Survey (IGS) did indicate that karst features may exist in the project area (Appendix C, pages C14 to C16) Their response went on to state that there is high potential for encountering bedrock resources, low potential for sand and gravel resources in the area, and that no active or abandoned mineral resource extraction sites have been documented in the area. The response from IGS has been communicated with the designer on August 19, 2019. No impacts are expected.

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

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

Remarks:

Based on a desktop review and the RFI (Appendix E, pages E1 to E13), completed by GAI on March 21, 2019, the IDNR Greene County Endangered, Threatened, and Rare (ETR) Species List has been checked and is included in Appendix E, pages E11 to E13. The highlighted species on the list reflect the federal and state identified ETR species located within the county. According to the IDNR-DFW early coordination response letter dated December 6, 2018 (Appendix C, pages C20 to C22), 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 in the project vicinity.

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 C25 to C31). The project is within range of the federally endangered Indiana bat (*Myotis sodalis*) and the federally threatened Northern Long-eared bat (NLEB) (*Myotis septentrionalis*). No additional species were found within or adjacent to the project area other than the Indiana bat and NLEB.

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), and USFWS. An effect determination key was completed on September 15, 2020, and based on the responses provided, the project was found "*Not Likely to Adversely Affect*" the Indiana bat and/or the NLEB. INDOT reviewed and verified the effect finding on September 15, 2020 and requested USFWS's review of the finding (Appendix C*,* pages C33 to C48). No response was received from USFWS within the 14-day review period; therefore, it was concluded they concur with the finding. Avoidance and Mitigation Measures (AMMs) are included as firm commitments in the *Environmental Commitments* section of this CE document.

This project is within the Critical Habitat area for the Indiana bat. Coordination was completed with the INDOT Vincennes District on September 11, 2020. INDOT Vincennes District responded on September 14, 2020 (Appendix C, page C32), stating that the project area is located within the MYSO 10-mile Hibernacula Buffer and though the project area would not qualify for documented habitat nor being within 0.5-mile of a MYSO/MYSE hibernacula, the tree clearing dates would be changed to November 1-March 31, if applicable. This statement has been added as a firm commitment in the *Environmental Commitments* section of this document.

Bridge No. 157-28-06075B has shown evidence of use (i.e. nests) by a bird species protected under the Migratory Bird Treaty Act (MBTA) during the May 8, 2019 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 Unique Special Provision". This firm commitment is included in the *Environmental Commitments* of this CE document.

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.

SECTION B – OTHER RESOURCES

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

If a SSA is present, answer the following:

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

Remarks:

The project is located in Greene 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 Sole Source Aquifer Memorandum of Understanding (MOU) is not applicable to this project. No impacts are expected.

In an early coordination letter dated September 5, 2019, the Indiana Department of Environmental Management (IDEM) stated that the project is not located within a wellhead area (Appendix C, page C13). IDEM's Wellhead Proximity Determinator website (http://www.in.gov/idem/cleanwater/pages/wellhead/) was also accessed on March 2, 2020 by GAI to ensure this project is not within a Source Water Area. It was determined that this project is not located within a Wellhead Protection Area or Source Water Area. No impacts are expected.

The Indiana Department of Natural Resources Water Well Record Database website (https://www.in.gov/dnr/water/3595.htm) was accessed on August 13, 2020 by GAI. The nearest well is located approximately 0.04 mile from the project area. The features will not be affected due to the distance of the well from the construction limits. Therefore, no impacts are expected. Should it be determined during the right-of-way phase that these wells are affected, a cost to cure will likely be included in the appraisal to restore the wells.

Based on a desktop review of the INDOT MS4 website (https://entapps.indot.in.gov/MS4/) by GAI on August 13, 2020 and the RFI report; this project is not located in an Urban Area Boundary location. No impacts are expected

Based on a desktop review, a site visit on October 18, 2018 by GAI, and the aerial map of the project area (Appendix B, page B3), no public water systems were identified. Therefore, no impacts are expected.

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

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

Remarks:

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 GAI on October 2, 2018 and the RFI report, this project is located in a regulatory floodplain as determined from approved IDNR floodplain maps (Appendix F, page F15). An early coordination letter was sent on May 14, 2019 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 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.

The project will include both longitudinal and transverse encroachment within the floodplain. Longitudinal encroachment will be necessary for the work on the roadway, side slopes, and stream channel. Transverse encroachment will be necessary for the replacement of the existing structure.

An early coordination letter was sent to the IDNR-DFW on November 6, 2018 (Appendix C, pages C1 to C2). The IDNR-DFW indicated in their letter dated December 6, 2018 (Appendix C, pages C20 to C22), that the project would not require formal IDNR approval under the programs administered by the Division of Water. A Construction in a Floodway (CIF) Permit will not be needed for this project as the upstream drainage area is less than 1 square mile.

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

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

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

Remarks: Based on a desktop review, a site visit October 18, 2018 by GAI, the aerial map of the project area (Appendix B, page B3), the project will convert 0.20 acre of farmland as defined by the Farmland Protection Policy Act. An early coordination letter was sent on November 6, 2018 to the Natural Resources Conservation Services (NRCS). Coordination with NRCS resulted in a score of 105 on the NRCS-CPA-106 Form (Appendix *C,* pages C17 to C19). 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 C – CULTURAL RESOURCES

	Category	Type	INDOT Approval Dates	N/A
Minor Projects PA Clearance	B	12	October 19, 2020	

Results of Research

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

Project Effect

No Historic Properties Affected [X] No Adverse Effect [ ] Adverse Effect [ ]

Indiana Department of Transportation

County Greene Route SR 157 Des. No. 1700141

Documentation (mark all that apply)	**Documentation Prepared**	**ES/FHWA Approval Date(s)**	**SHPO Approval Date(s)**
Historic Properties Short Report			
Historic Property Report			
Archaeological Records Check/ Review			
Archaeological Phase Ia Survey Report	X	October 18, 2020	N/A
Archaeological Phase Ic Survey Report			
Archaeological Phase II Investigation Report			
Archaeological Phase III Data Recovery			
APE, Eligibility and Effect Determination			
800.11 Documentation			

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

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

Remarks:

On October 19, 2020 the INDOT Cultural Resource Office (CRO) determined that this project falls within the guidelines of Category B, Type 12 and Category A, Types 4, 6 and 9 under the Minor Projects Programmatic Agreement, (Appendix D, pages D1 to D4).

MPPA Category B, Type 12: Includes the replacement, widening, or raising the elevation of the superstructure on existing bridges, and bridges, and bridge replacement projects (when both superstructure and substructure are removed).

MPPA Category A, Type 4: Includes roadway work associated within 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.

MPPA Category A, Type 6: Includes the repair, replacement, or upgrade of existing safety appurtenances such as guardrails, barriers, glare screens, and crash attenuators in previously disturbed soils.

MPPA Category A, Type 9: Includes the installation, repair, or replacement of erosion control measures along roadways, waterways, and bridge piers within previously disturbed soils.

As this project takes place in undisturbed soils an archaeological survey was required. The archaeological survey concluded that no archaeological resources or sites exist within the project area and it was recommended that the project be allowed to proceed as planned (Appendix D, pages D6 to D7). However, they did state that if any archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, construction in the immediate area of the find will be stopped, and the INDOT CRO and the Division of Historic Preservation and Archaeology will be notified immediately. INDOT CRO also stated that if the scope of work of the project or project limits should change, their office will need to re-examine the information to determine whether the MPPA still applies (Appendix D, page D5).

This completes the Section 106 process and the responsibilities of the FHWA under Section 106 have been fulfilled.

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

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

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

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

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

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

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

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

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

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

Remarks:

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, a site visit on October 18, 2018 by GAI, the aerial map of the project area (Appendix B, page B3), and the RFI report (Appendix E, pages E1 to E13) there are no Section 4(f) resources within the 0.5 mile search radius, and 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 proposed alternatives that satisfy the requirements of Section 6(f). Discuss any Section 6(f) involvement.

Remarks: 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 Land and Water Conservation Fund (LWCF) website at https://www.lwcfcoalition.com/tools revealed a total of three (3) properties in Greene County (Appendix J, page J1). In addition, the IDNR's Division of Outdoor Recreation list, located on the INDOT Environmental Policy website at https://www.in.gov/indot/2523.htm, was also reviewed (Appendix J, page J2). This list revealed five (5) properties within Greene County. None of these properties are located within or adjacent to the project area. Therefore, there will be no impacts to 6(f) resources as a result of this project.

SECTION E – Air Quality

Air Quality

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

Level of MSAT Analysis required?

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

Remarks: The FY 2020-2024 State Transportation Improvement Plan (STIP) is listed based on the lead DES number in the contract. The lead DES number for this contract is DES number 1700174. The FY 2020-2024 STIP includes DES number 1700171 by reference with the contract number B-40558 (Appendix H, page H1).

This project is located in Greene County, which is currently in attainment for all criteria pollutants according to IDEM's website: https://www.in.gov/idem/airquality/2339.htm. Therefore, the conformity procedures of 40 CFR Part 93 do not apply.

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

SECTION F - NOISE

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

	No	Yes/ Date
ES Review of Noise Analysis		

Remarks: 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 G – 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?		N/A
Does the project comply with the transition plan? (explain in the remarks box)		N/A

Remarks: This project will benefit the community by providing a structurally and hydraulically sufficient structure that will ensure continued passage for motorists on SR 157 over Branch of Lemon Creek. This project is not anticipated to impact the tax base for the area or result in a division of the community. There are no long-term, foreseeable economic impacts from this project.

Within the project area, SR 157 is a rural route with no cities or towns, sidewalks, and/or curbs. Therefore, this project is not required to have a transition plan.

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

Remarks: Indirect impacts are effects which are caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate. Cumulative impacts affect the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such actions.

There have been no significant effects identified which could be caused by the proposed project and which will emerge later in time or farther removed in distance with regard to indirect impacts. In addition, there have been no significant effects identified which may induce changes in the pattern of land use, population density or growth rate, or related effects on air and water or other natural systems, including ecosystems. Additionally, with regard to cumulative impacts, no significant impacts on the environment have been identified which could result from the incremental impact of the proposed project when added to other past, present, and reasonably foreseeable future actions. This project involves the replacement of the structure conveying SR 157 over Branch of Lemon Creek. As such, this project will not cause any indirect or cumulative impacts. Furthermore, this project will not result in any positive or negative impacts.

Public Facilities & Services

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

Remarks:

Based on a desktop review, site visits on October 18, 2018 and June 8, 2020 by GAI, the aerial map of the project area (Appendix B, page B3), and the RFI report, (Appendix E, pages E1 to E13), there are no public facilities within the 0.5 mile search radius. There are no public facilities within or adjacent to the project area. Access to all properties will be maintained during construction. Therefore, no impacts are expected.

Early coordination letters were sent on December 11, 2018 to the Citizens Energy Group, Community Natural Gas (Spencer), Countrymark Refining Logistics, LLC, Duke Energy Electric Distribution, Eastern Heights Utilities, Inc., Frontier, Utilities District of Western Indiana REMC, and the Town of Worthington. Eastern Heights Utilities, Inc. responded on December 12, 2018 stating that they have facilities in the area, and Frontier responded on May 20, 2019 stating that they have a buried copper cable within the project area. Utility coordination will be ongoing as the project advances.

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.

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 or disproportionate impacts to EJ populations?		X

Remarks:

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 approximately 0.88 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 Greene County. The community that overlaps the project area is called the affected community (AC). In this project, the AC is Census Tract 9548. 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 Bureau, 2013-2017American Community Survey 5 Year Estimates was obtained from the US Census Bureau Website https://data.census.gov/cedsci/ on August 6, 2020 by GAI. The data collected for minority and low-income populations within the AC are summarized in the below table.

Table: Minority and Low-Income Data (U.S Census Bureau and 2013-2017)

	COC - (Greene County)	AC-1 – (Census Tract 9548 Greene County, Indiana)
Percent Minority	(3.18%)	(3.22%)
125% of COC	(3.98 %)	AC < 125% COC
EJ Population of Concern		No
Percent Low-Income	(12.86%)	(16.37%)
125% of COC	(16.07 %)	AC > 125% COC
EJ Population of Concern		Yes

AC-1, Census Tract 9548 has a percent minority of 3.22 which is below 50% and is below the 125% COC threshold. Therefore, AC-1 is not a minority population of EJ concern.

AC-1, Census Tract 9548 has a percent low-income of 16.37 which is below 50% but is above the 125% COC threshold. Therefore, AC-1 is a low-income population of EJ concern.

This project requires approximately 0.88 acre of permanent right-of-way. However, this project requires no relocations and would not disrupt the community cohesion or create a physical barrier. The identified low-income population will not experience a disproportionately high or adverse impact from this project as its main purpose is to provide a structurally and hydraulically sufficient structure for traveling motorists crossing Branch of Lemon Creek. Coordination with the INDOT Environmental Services Division (ESD) was completed on September 10, 2020 (Appendix I, page I5). In their response the INDOT ESD stated that they would not consider the impacts associated with this project as causing a disproportionately high and adverse effect on minority and/or low income populations of EJ concern relative to non EJ populations in accordance with the provisions of Executive Order 12898 and FHWA Order 6640.23a and that no further EJ Analysis is required. The census data sheets, map and calculations can be found in Appendix I, pages I1 to I4 of this document. No further EJ analysis is required.

Relocation of People, Businesses or Farms

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

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

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

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

SECTION H – HAZARDOUS MATERIALS & REGULATED SUBSTANCES

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

	No	Yes/ Date
ES Review of Investigations		June 28, 2019

Include a summary of findings for each investigation.

Remarks: Based on a review of GIS and available public records, a Red Flag Investigation (RFI) was approved on June 28, 2019 by INDOT (Appendix E, pages E1 to E13). No sites with hazardous material concerns (hazmat sites) or sites involved with regulated substances were identified in or within 0.5 mile of the project area. Further investigation for hazardous material concerns or regulated substances is not required at this time.

A review of the RFI resources took place again on November 12, 2020, and no substantive changes or additional resources within a 0.5 mile search radius were found that would impact the project. Please refer to Appendix E, page E14 for the email correspondence with the INDOT SAM Unit, indicating that an addendum report for the RFI is not necessary for this project.

SECTION I – PERMITS CHECKLIST

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

Remarks:

The following permits will likely be needed for this project:

- IDEM Individual 401 Water Quality Certification (WQC): An Individual Section 401 WQC will likely be required from IDEM as stream impacts exceed 300 linear feet and stream mitigation will likely be required.
- USACE 404 Regional General Permit (RGP): A Section 404 RGP from USACE is anticipated as impacts to Branch of Lemon Creek will be necessary. However, stream mitigation with the USACE will not be required as stream impacts are less than 1500 linear feet.

Applicable recommendations provided by the IDNR-DFW and IDEM 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.

An early coordination letter was sent to the IDNR-DFW on November 6, 2018 (Appendix C, pages C1 to C2). The IDNR-DFW indicated in their letter dated December 6, 2018 (Appendix C, pages C20 to C22), that the project would not require formal IDNR approval under the programs administered by the Division of Water.

Early coordination was accomplished electronically with IDEM on November 6, 2018. They provided a standard automated response (Appendix C, pages C4 to C12) with a list of standardized recommendations and permitting requirements regarding impacts to water and biotic quality.

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

SECTION J- ENVIRONMENTAL COMMITMENTS

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

Remarks:

Firm:

1. If 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 Vincennes 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. Bridge No. 157-28-06075B has shown evidence of use (i.e. nests) by a bird species protected under the Migratory Bird Treaty Act (MBTA) during the May 8, 2019 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 Unique Special Provision”. (INDOT EWPO)
4. USFWS Bridge/Structure Assessment shall take place no earlier than two (2) years prior to the start of construction. If construction will begin after June 8, 2022 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 ESD)
5. The project area is located within the MYSO 10-mile Hibernacula Buffer, and though the project area would not qualify for documented habitat nor being within 0.5-mile of a MYSO/MYSE hibernacula, the tree clearing dates are from November 1-March 31. (INDOT ES)
6. 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 AMM’s. (USFWS)
7. HIBERNACULA AMM 1: For projects located within karst areas, on-site personnel will use best management practices, secondary containment measures, or other standard spill prevention and countermeasures to avoid impacts to possible hibernacula. Where practicable, a 300 foot buffer will be employed to separate fueling areas and other major containment risk activities from caves, sinkholes, losing streams, and springs in karst topography. (USFWS)
8. LIGHTING AMM 1: Direct temporary lighting away from suitable habitat during the active season. (USFWS)
9. TREE REMOVAL AMM 1: Modify all phases/aspects of the project (e.g., temporary work areas, alignments) to avoid tree removal. (USFWS)
10. 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)
11. 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)
12. 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)

For Consideration:

1. Restrict below low-water work in streams to placement of culverts, piers, pilings and/or footings, shaping of the spill slopes around the bridge abutments, and placement of riprap. Culverts should span the active stream channel, should be either embedded or a 3-sided or open-arch culvert, and be installed where practicable on an essentially flat slope. When an open-bottomed culvert or arch is used in a stream, which has a good natural bottom substrate, such as gravel, cobbles and boulders,

the existing substrate should be left undisturbed beneath the culvert to provide natural habitat for the aquatic community. (USFWS)

2. Minimize the extent of hard armor (riprap) in bank stabilization by using bioengineering techniques whenever possible. If rip rap is utilized for bank stabilization, extend it below low-water elevation to provide aquatic habitat. (USFWS)
3. Avoid all work within the inundated part of the stream channel (in perennial streams and larger intermittent streams) during the fish spawning season (April 1 through June 30), except for work within sealed structures such as caissons or cofferdams that were installed prior to the spawning season. No equipment shall be operated below Ordinary High-Water Mark during this time unless the machinery is within the caissons or on the cofferdams. (USFWS)
4. Evaluate wildlife crossings under bridge/culverts projects in appropriate situations. Suitable crossings include flat areas below bridge abutments with suitable ground cover, high water shelves in culverts, amphibian tunnels and diversion fencing. (USFWS)
5. Do not cut any trees suitable for Indiana bat or Northern Long-eared bat roosting (greater than 3 inches dbh, living or dead, with loose hanging bark, or with cracks, crevices or cavities) from April 1 through September 30. (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)
7. Do not construct any temporary runarounds, access bridges, causeways, cofferdams, diversions, or pumparounds. (IDNR-DFW)
8. Use minimum average 6-inch graded riprap stone extended below the normal water level to provide habitat for aquatic organisms in the voids. (IDNR-DFW)
9. Plant native hardwood trees along the top of the bank and right-of-way to replace the vegetation destroyed during construction. (IDNR-DFW)
10. Post “Do Not Mow or Spray” signs along the right-of-way. (IDNR-DFW)
11. 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 non-wetland 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)
12. Riprap must not be placed in the active thalweg channel or placed in the streambed in a manner that precludes fish or aquatic organism passage (riprap must not be placed above the existing streambed elevation). 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 [site indicated] and specifically for stream bank/floodway stabilization purposes as soon as possible upon completion. (IDNR-DFW)

SECTION K- EARLY COORDINATION

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

Remarks:

Agency	Coordination Sent	Response Received	Appendix Page(s)
U.S. Fish Wildlife Service	November 6, 2018	November 14, 2018	C23 to C24
Natural Resources Conservation Service	November 6, 2018	December 4, 2018	C17 to C18
Department of the Army, Louisville District, Corps of Engineers	November 6, 2018	No Response	-
National Park Service, Midwest Regional Office	November 6, 2018	No Response	-
U.S. Department of Housing & Urban Development, Chicago Regional Office	November 6, 2018	No Response	-
Indiana Geological Survey, Environmental Geology Section	November 6, 2018	November 6, 2018	C14 to C16
IDNR, Division of Fish and Wildlife	November 6, 2018	December 7, 2018	C20 to C22
IDEM	November 6, 2018	November 7, 2018	C4 to C12
INDOT Aviation Section	November 6, 2018	No Response	-
INDOT, Public Hearings	November 6, 2018	November 7, 2018	C19
Greene County Surveyor	November 6, 2018	No Response	-
Greene County Highway Department	November 6, 2018	No Response	-
Greene County Floodplain Administrator	May 14, 2019	No Response	-
IDEM, Office of Water Quality	August 19, 2019	September 5, 2019	C13

Table of Appendices

Appendix A

INDOT Supporting Documentation

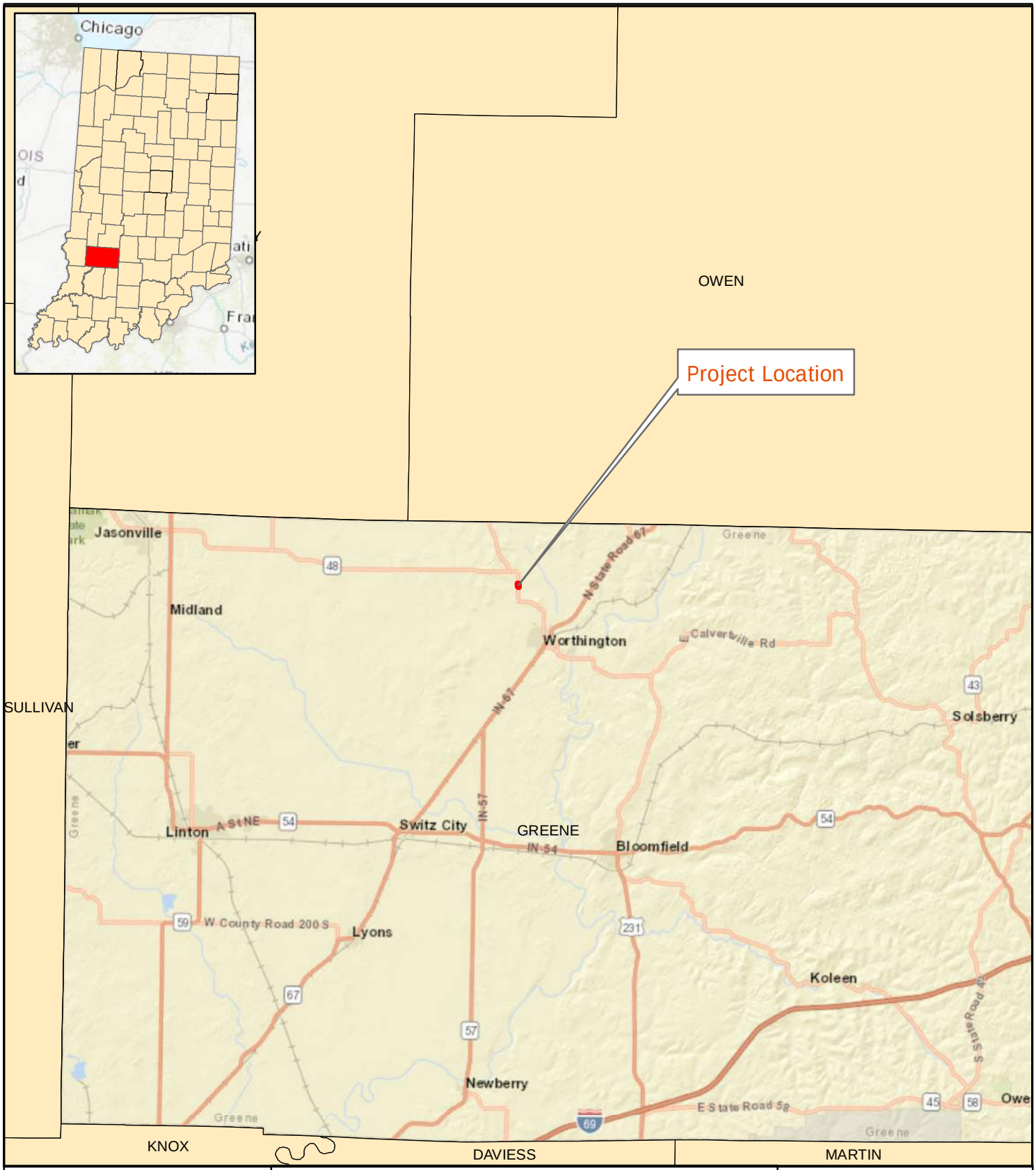
Categorical Exclusion Level Thresholds

	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	No construction in waterways or water bodies	< 300 linear feet of stream impacts	≥ 300 linear feet of stream impacts	-	Individual 404 Permit
Wetland Impacts	No adverse impacts to wetlands	< 0.1 acre	-	< 1 acre	≥ 1 acre
Right-of-way[3]	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" (Without AMMs[4] or with AMMs required for all projects[5])	"Not likely to Adversely Affect" (With any other AMMs)	-	"Likely to Adversely Affect"	Project does not fall under Species Specific Programmatic
Threatened/Endangered Species (Any other species)	Falls within guidelines of USFWS 2013 Interim Policy	"No Effect", ""Not likely to Adversely Affect"	-	-	"Likely to Adversely Affect"
Environmental Justice	No disproportionately high and adverse impacts	-	-	-	Potential[6]
Sole Source Aquifer	Detailed Assessment Not Required	-	-	-	Detailed Assessment
Floodplain	No Substantial Impacts	-	-	-	Substantial Impacts
Coastal Zone Consistency	Consistent	-	-	-	Not Consistent
National Wild and Scenic River	Not Present	-	-	-	Present
New Alignment	None	-	-	-	Any
Section 4(f) Impacts	None	-	-	-	Any
Section 6(f) Impacts	None	-	-	-	Any
Added Through Lane	None	-	-	-	Any
Permanent Traffic Alteration	None	-	-	-	Any
Coast Guard Permit	None	-	-	-	Any
Noise Analysis Required	No	-	-	-	Yes
Air Quality Analysis Required	No	-	-	-	Yes[7]
Approval Level • **District Env. Supervisor** • **Env. Services Division** • **FHWA**	Concurrence by INDOT District Environmental or Environmental Services	Yes	Yes	Yes Yes	Yes Yes Yes

[1]Coordinate with INDOT Environmental Services. INDOT will then coordinate with the appropriate FHWA Environmental Specialist.
[2]Any involvement with a bridge processed under the Historic Bridge Programmatic Agreement.
[3]Permanent and/or temporary right-of-way.
[4]AMMs = Avoidance and Mitigation Measures.
[5]AMMs determined by the IPAC decision key to be needed that are listed in the USFWS *User's Guide for the Range-wide Programmatic Consultation for Indiana bat and Northern long-eared bat* as "required for all projects".
[6]Potential for causing a disproportionately high and adverse impact.
[7]Hot Spot Analysis and/or MSAT Quantitative Emission Analysis.
*Substantial public or agency controversy may require a higher-level NEPA document.

Appendix B

Graphics



gai consultants

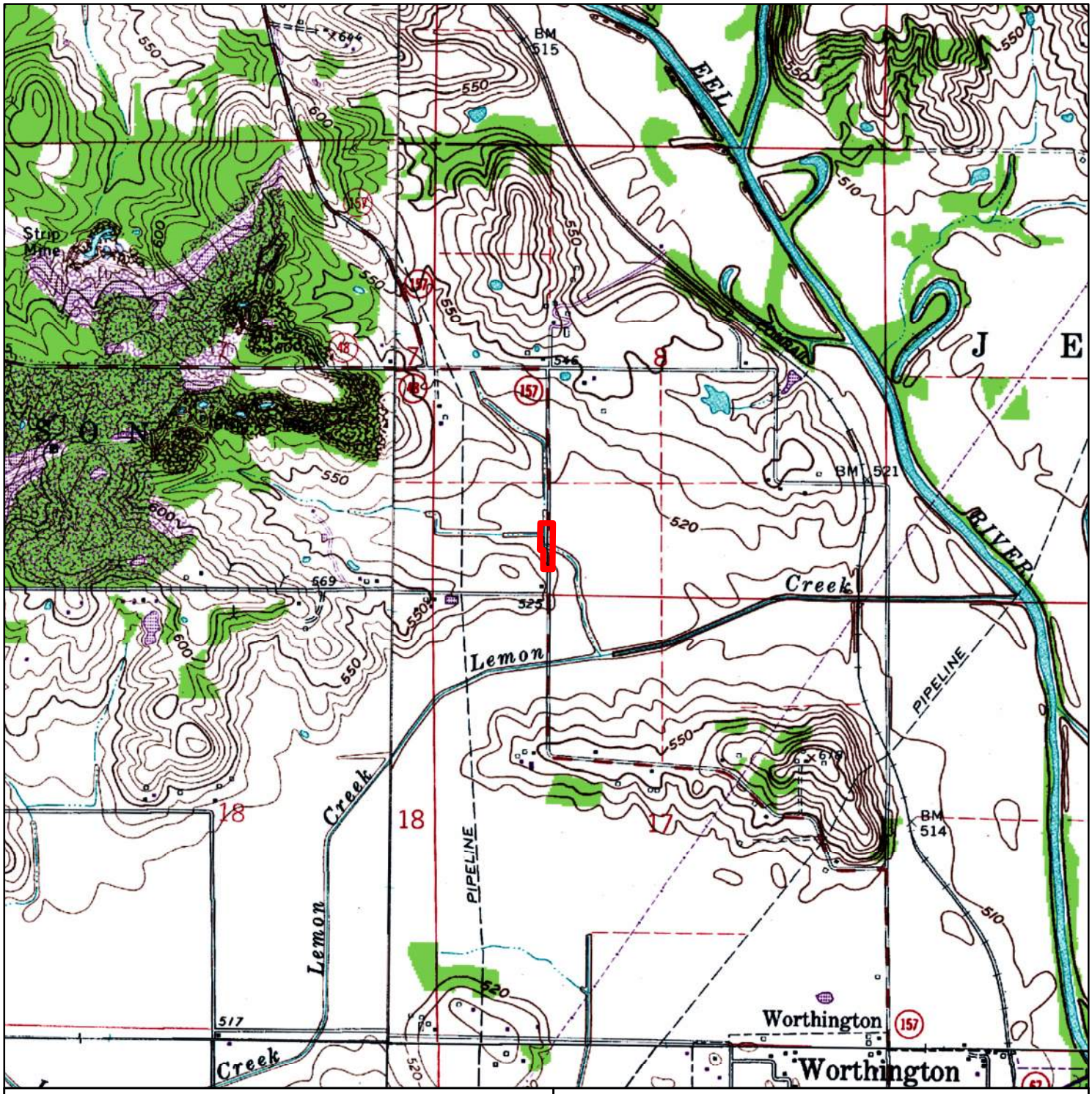
State Location Map

SR 157 over Br. Lemon Creek
Bridge Replacement Project
Greene County, Indiana
Des No. 1700141

3

0 1.25 2.5 5 Miles

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Study Area

USGS Topo Map

SR 157 over Br. Lemon Creek
Bridge Replacement Project
Greene County, Indiana
Des 1700141

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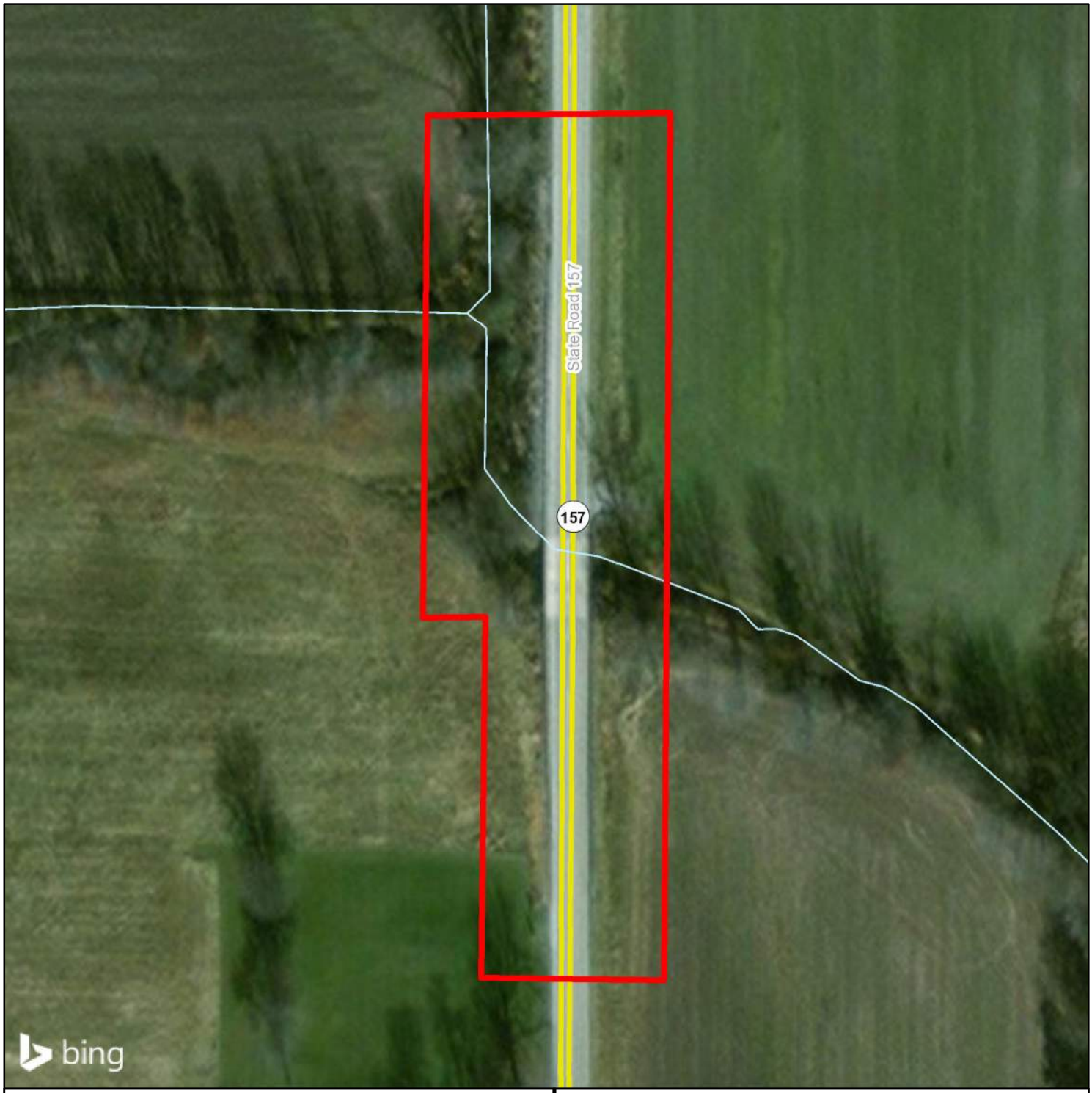
transforming ideas into reality

0 800 1,600 3,200 Feet

ARNEY USGS 7.5 Minute Topo Map

Service Layer Credits: United States Geological Survey (USGS)

3



Aerial Location Map

SR 157 over Br. Lemon Creek
Bridge Replacement Project
Greene County, Indiana
Des 1700141

- Study Area
- Interstate
- State Route
- US Route
- Local Road
- Railroad

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0 40 80 160 Feet

Service Layer Credits: INDOT

3

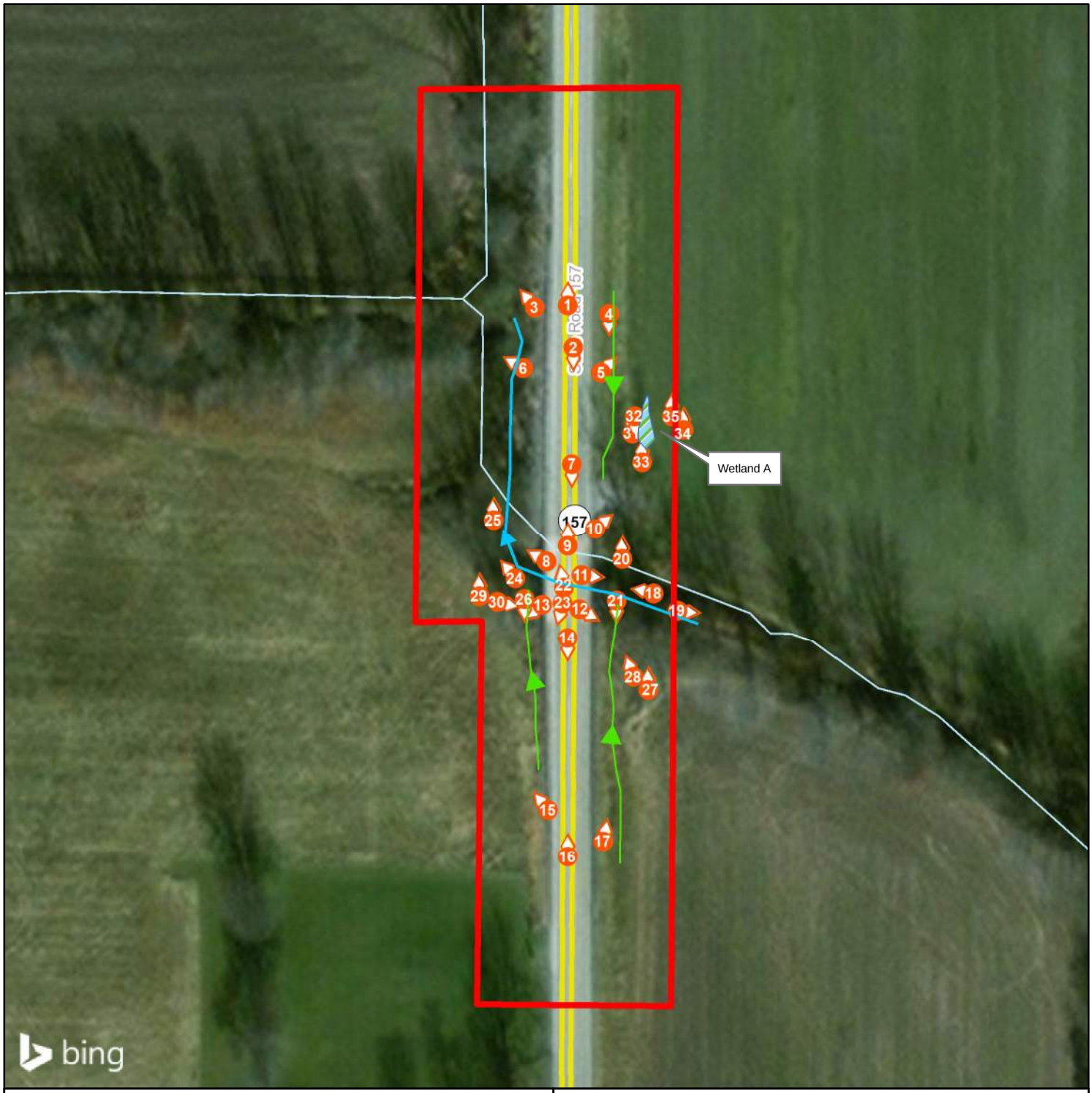

Photo Location Map

SR 157 over Br. Lemon Creek
Bridge Replacement Project
Greene County, Indiana
Des 1700141

- Study Area
- Interstate
- State Route
- US Route
- Local Road
- Railroad
- Delineated Streams
- Drainage Feature
- Delineated Wetland
- Photo Point

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0 40 80 160 Feet

Service Layer Credits: INDOT
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

3

Photo 1. Looking north up SR-157.

Photo 2. Looking south down SR-157 towards project area.

Photo 3. Looking northwest at the northwestern project quadrant.

Photo 4. Looking southeast at a roadside ditch in the northeastern project quadrant.

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Photo 5. Looking northeast at the northeastern project quadrant.

Photo 6. Looking northwest at BR. Lemon Creek in the northwest quadrant of the project area

Photo 7. Looking south along SR 157 at the bridge over BR. Lemon Creek.

Photo 8. Looking northwest at BR Lemon Creek just north of the structure.

Photo 9. Looking north up SR 157 from center of structure.

Photo 10. Looking northeast from the structure at the northeast quadrant.

Photo 11. Looking east down BR. Lemon Creek from structure.

Photo 12. Looking southeast at the vegetation and southeast quadrant of project area.

Photo 13. Looking southwest at the southwest quadrant from the structure.

Photo 14. Looking south down SR 157 from the structure.

Photo 15. Looking northwest at the northwest quadrant of the project area.

Photo 16. Looking north up SR 157 towards the structure.

Photo 17. Looking northeast at the northeastern quadrant of the project area.

Photo 18. Looking west up BR. Lemon Creek underneath the structure.

Photo 19. Looking east down BR. Lemon Creek.

Photo 20. Looking north at the vegetation in the northeast quadrant.

Photo 21. Looking south at the vegetation in the southeast quadrant.

Photo 22. Looking northwest at the underside of the structure.

Photo 23. Looking southwest at the underside of the structure.

Photo 24. Looking northwest up BR. Lemon Creek.

Photo 25. Looking north up BR. Lemon Creek in the northwest quadrant.

Photo 26. Looking south at the vegetation in the southwest quadrant.

Photo 27. Looking at the soil profile for DP-1 located in the southeast quadrant. DP-1 was determined not to be within a wetland.

Photo 28. Looking northwest at the vegetation in the southeast quadrant from DP-1.

Photo 29. Looking at the soil profile for DP-2 located in the southwest quadrant. DP-2 was determined not to be within a wetland.

Photo 30. Looking east at the soil pit for DP-2 and surrounding vegetation in the southwest quadrant.

Photo 31. Looking at the soil profile for DP-3. This point was determined to be in a wetland (Wetland A). DP-3 is located in the northeast quadrant.

Photo 32. Looking at the vegetation surrounding DP-3 in the northeast quadrant and at Wetland A.

Photo 33. Looking northeast at the vegetation Wetland A in the northeast quadrant.

Photo 34. Looking at the soil profile for DP-4. DP-4 is located in the northeast quadrant and was determined not to be within a wetland.

Photo 35. Looking north from DP-4 at the surrounding vegetation. DP-4 is located within a farm field in the northeast quadrant

PROJECT	DESIGNATION
1700141	1700141
CONTRACT	BRIDGE FILE
B-40558	157-28-10455

INDIANA DEPARTMENT OF TRANSPORTATION

STRUCTURE INFORMATION

STRUCTURE	TYPE	SPAN AND SKEW	OVER	STATION
157-28-10455	Composite Prestressed AASHTO Type II Concrete Beam Bridge	1 Span: 57'-0" Skew: Square	Branch Lemon Creek	16+27.83 "PR-A"

KIN PROJECT INFORMATION

DESIGNATION	PROJECT DESCRIPTION				
	Work Type	Route	Location	Feature Crossed	County
1700174*	Bridge Replacement	US 48	1.16 miles E. of SR 59	Howesville Ditch	Greene County
1700175	Bridge Replacement	US 48	2.66 miles E. of SR 59	UNT Howesville Ditch	Greene County
1701051	Small Structure Replacement	SR 54	2.37 miles E. of SR 59	Unnamed Ditch	Greene County

Note: * Lead Designation Number

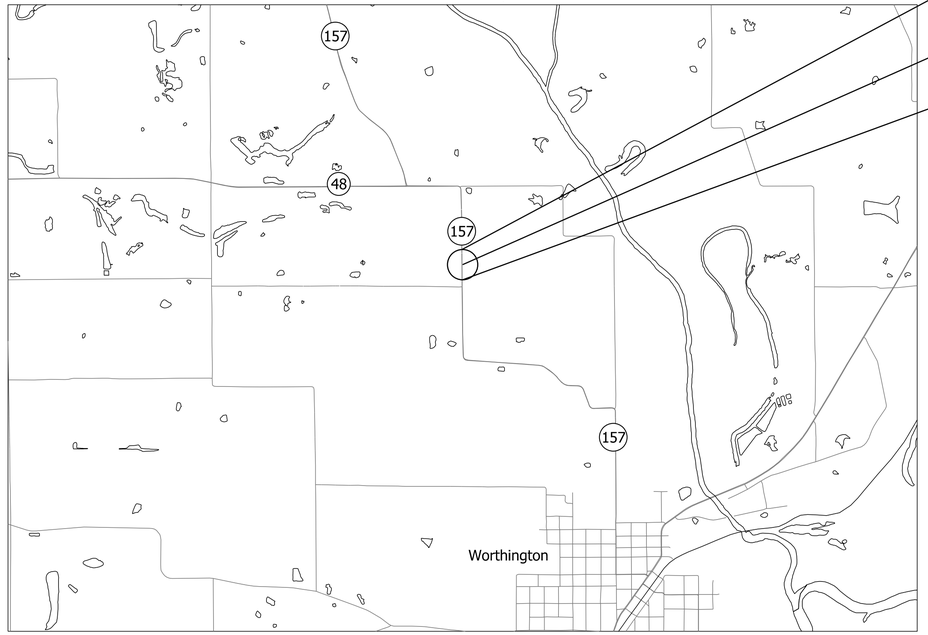
BRIDGE PLANS

FOR SPANS OVER 20 FEET

ROUTE: SR 157 AT: RP 11+84

PROJECT NO. 1700141 P.E
1700141 R/W
1700141 CONST.

Bridge Replacement on State Road 157 over Branch Lemon Creek located 2.35 miles North of State Road 67 in Section 8 T-8-N, R-5-W, Jefferson Township, Greene Co., IN.



End Project
Sta. 17+50.00 "PR-A"

Structure No. 157-28-10455
Sta. 15+75.83 "PR-A" to Sta. 16+79.93 "PR-A"

Begin Project
Sta. 14+50.00 "PR-A"

SCALE: 1" = 1,500'

GREENE COUNTY

TRAFFIC DATA

A.A.D.T.	(2021)	1,282 V.P.D.
A.A.D.T.	(2041)	1,442 V.P.D.
D.H.V		142 V.P.H.
DIRECTIONAL DISTRIBUTION		50.4/49.6 %
TRUCKS		7.5 % A.A.D.T.
		7.2 % D.H.V.

DESIGN DATA

DESIGN SPEED	45 M.P.H.
PROJECT DESIGN CRITERIA	3R (NON-FREEWAY)
FUNCTIONAL CLASSIFICATION	MAJOR COLLECTOR
RURAL/URBAN	RURAL
TERRAIN	LEVEL
ACCESS CONTROL	NONE

PROJECT LOCATION SHOWN BY
GREENE COUNTY

LATITUDE: 39° 8' 28.03" N LONGITUDE: 86° 59' 36.78" W

BRIDGE LENGTH: 0.019 MI.
ROADWAY LENGTH: 0.037 MI.
TOTAL LENGTH: 0.056 MI.
MAX. GRADE: -1.76 %

H.U.C. 05120203090130

gai consultants
Indianapolis: 201 North Illinois Street, Suite 1700, Indianapolis, IN 46204
Fishers:9998 Crosspoint Boulevard, Suite 110, Indianapolis, IN 46256

INDIANA DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS DATED 2020
TO BE USED WITH THESE PLANS

PLANS PREPARED BY: GAI Consultants Inc. (317) 436-9150 PHONE NUMBER

CERTIFIED BY: _____ DATE

APPROVED FOR LETTING: _____ INDIANA DEPARTMENT OF TRANSPORTATION DATE

BRIDGE FILE
157-28-10455
DESIGNATION
1700141

DRAWING NUMBER	SHEETS
	1 of 25
CONTRACT	PROJECT
B-40558	1700141

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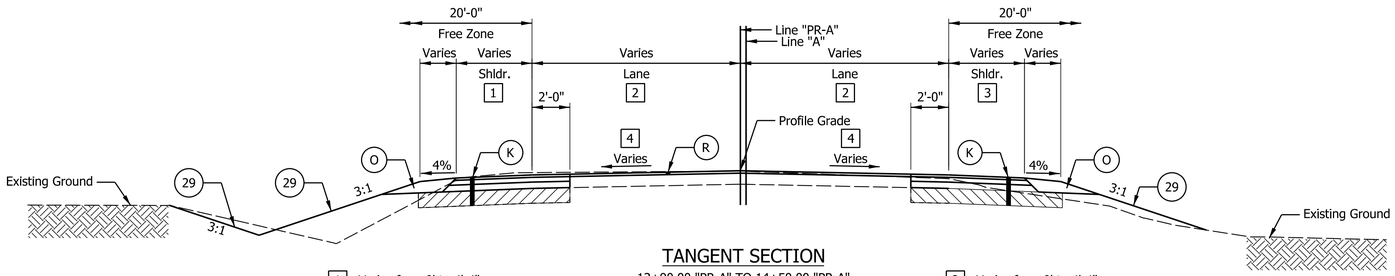


TANGENT SECTION

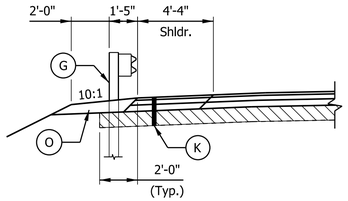
13+90.00 "PR-A" TO 14+50.00 "PR-A"
Scale: ¼" = 1'-0"

1 Varies from 0' to 4'-4"
From 13+90.00 "PR-A" TO 14+50.00 "PR-A"

2 Varies from Existing to 11'-0"
From 13+90.00 "PR-A" TO 14+50.00 "PR-A"

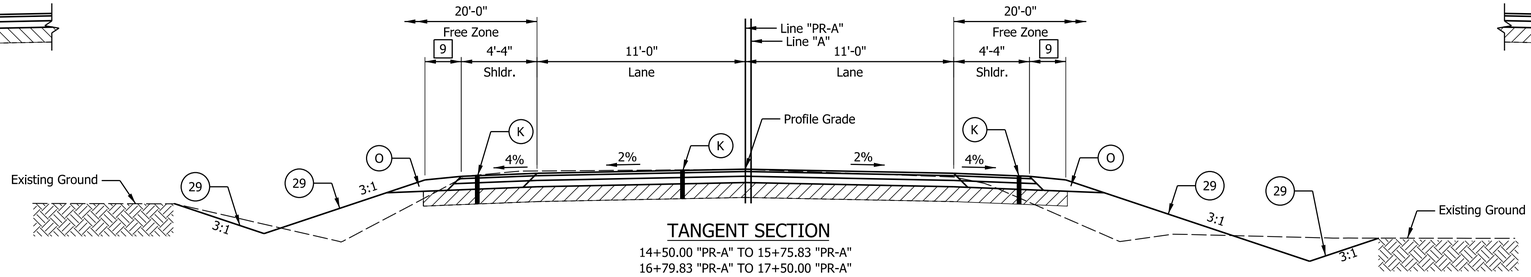
3 Varies from 0' to 4'-4"
From 13+90.00 "PR-A" TO 14+50.00 "PR-A"

4 Transitions from Existing to 2%
From 13+90.00 "PR-A" TO 14+50.00 "PR-A"



INSET SECTION (LEFT GUARDRAIL)

17+13.06 "PR-A" TO 17+81.81 "PR-A"

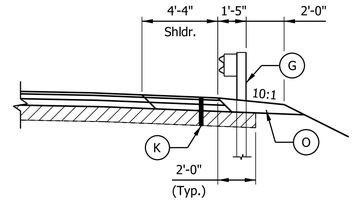


TANGENT SECTION

14+50.00 "PR-A" TO 15+75.83 "PR-A"
16+79.83 "PR-A" TO 17+50.00 "PR-A"
Scale: ¼" = 1'-0"

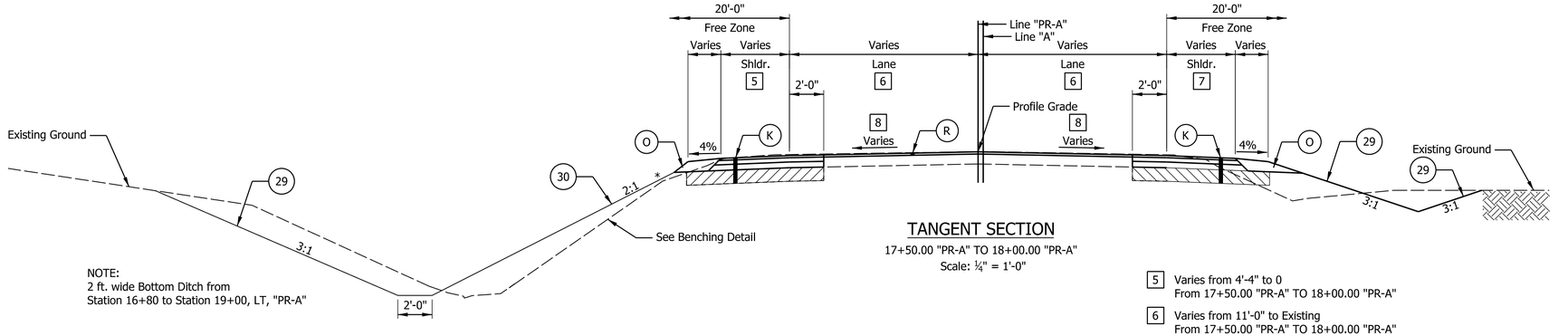
PAVING EXCEPTION
Sta. 15+75.83 "PR-A" to Sta. 16+79.83 "PR-A"

9 3'-5" within Guardrail Limits
1'-0" outsie Guardrail Limits



INSET SECTION (RIGHT GUARDRAIL)

15+30.10 "PR-A" TO 15+42.60 "PR-A"



NOTE:
2 ft. wide Bottom Ditch from
Station 16+80 to Station 19+00, LT, "PR-A"

TANGENT SECTION

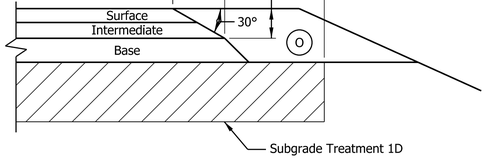
17+50.00 "PR-A" TO 18+00.00 "PR-A"
Scale: ¼" = 1'-0"

5 Varies from 4'-4" to 0
From 17+50.00 "PR-A" TO 18+00.00 "PR-A"

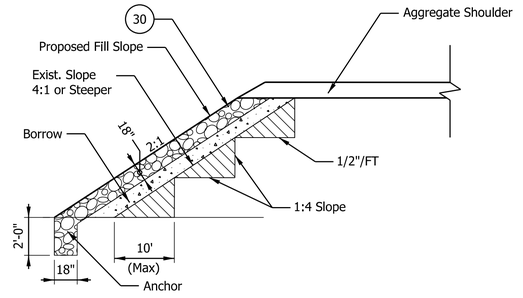
6 Varies from 11'-0" to Existing
From 17+50.00 "PR-A" TO 18+00.00 "PR-A"

7 Varies from 4'-0" to 0
From 17+50.00 "PR-A" TO 18+00.00 "PR-A"

8 Transitions from 2% to Existing
From 17+50.00 "PR-A" TO 18+00.00 "PR-A"



SAFETY EDGE ON HMA PAVEMENT (LT and RT)



BENCHING AND RIPRAP DETAIL

Not To Scale

LEGEND

- (K) 165 lbs/syd QC/QA-HMA, 3, 64, Surface, 9.5mm on 275 lbs/syd QC/QA-HMA, 2, 64, Intermediate, 19.0mm on 660 lbs/syd QC/QA-HMA, 2, 64, Base, 19.0mm on Subgrade Treatment, Type 1D
- (R) 165 lbs/syd QC/QA-HMA, 3, 64, Surface, 9.5mm on 1.5" Milling Asphalt
- (O) Compacted Aggregate No. 53
- (G) MGS Guardrail
- (29) Mulched Seeding, RU
- (30) Revetment Riprap over Geotextile Type 1B

gai consultants

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: KMP DRAWN: TMT

CHECKED: MHW CHECKED: KMP, CH

INDIANA
DEPARTMENT OF TRANSPORTATION

S.R. 157
TYPICAL CROSS SECTIONS

SCALE	BRIDGE FILE
AS NOTED	157-28-10455
	DESIGNATION
	1700141

DRAWING NUMBER	SHEETS
of	3 of 25
CONTRACT	PROJECT
B-40558	1700141

Plot: 11/3/2020 2:22:54 PM By: ThomaTM Pen: Transportation.tbl

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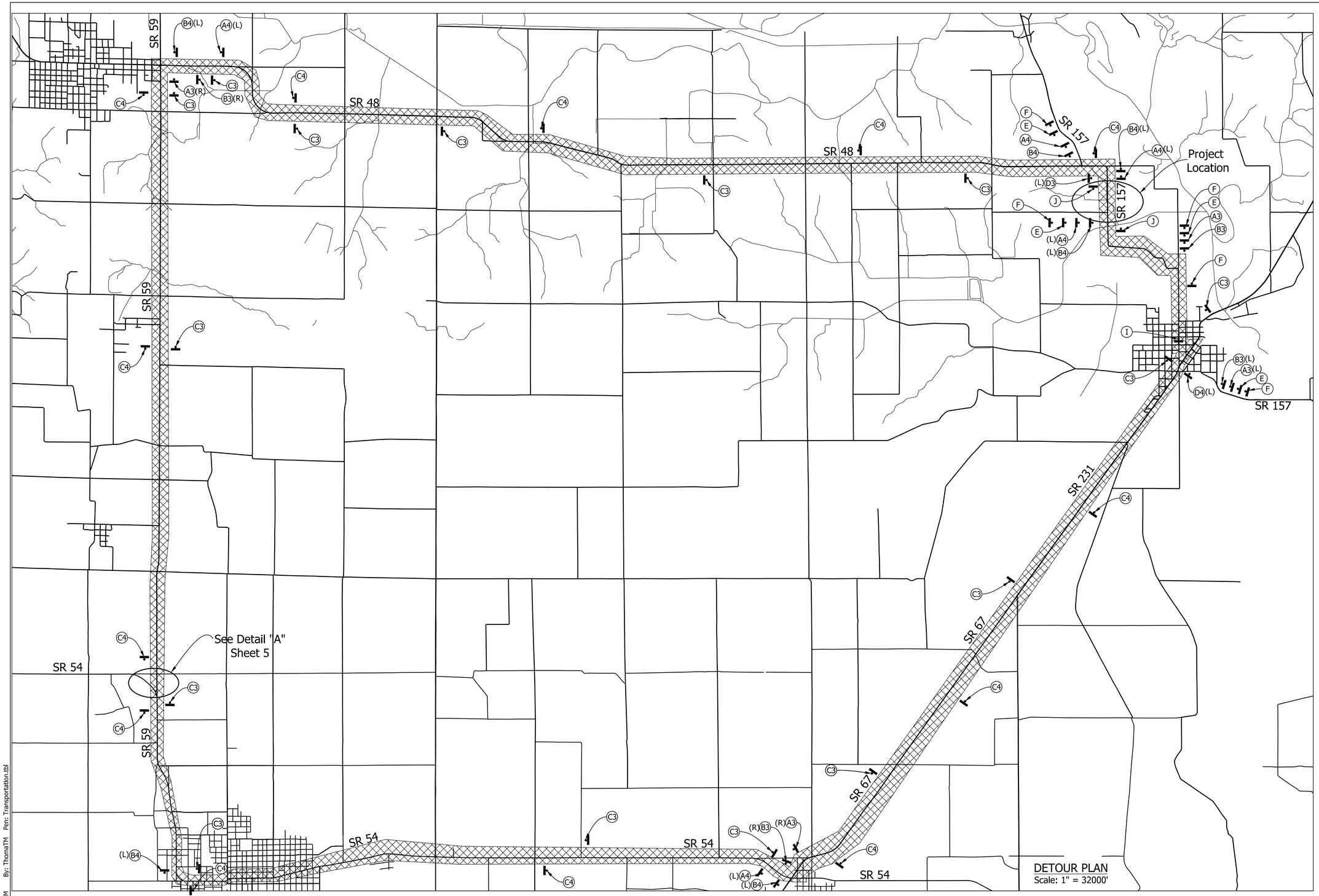

E DETOUR AHEAD
XW20-2
48"x48"

F ROAD CLOSED AHEAD
XW20-3
48"x48"

G ROAD CLOSED 500 FT
XW20-3
48"x48"

H ROAD CLOSED 1000 FT
XW20-3
48"x48"

I ROAD CLOSED MILES AHEAD LOCAL TRAFFIC ONLY
R11-3
60"x30"

J ROAD CLOSED
R11-2
48"x30"

K DETOUR
XM4-10(L or R)
48" x18"

LEGEND
- Detour Route
- Construction Sign
- Type III Barricade

gai consultants

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER _____ DATE

DESIGNED: TMW | DRAWN: MWM

CHECKED: NRT, CH | CHECKED: NRT, CH

INDIANA
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC

SCALE	BRIDGE FILE
	157-28-10455
	DESIGNATION
	1700141
	SHEETS
	4 of 25
CONTRACT	PROJECT
B-40558	1700141

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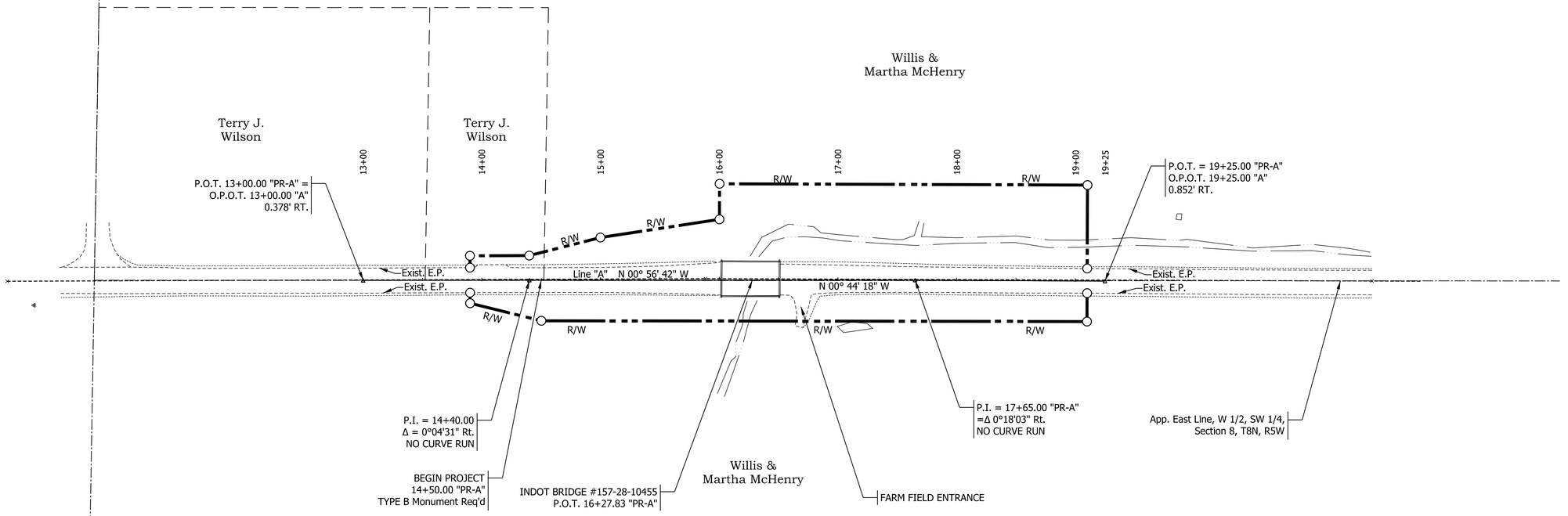
SECTION 17 T8N, R5W
JEFFERSON TOWNSHIP
GREENE COUNTY

SECTION 8 T8N, R5W
JEFFERSON TOWNSHIP
GREENE COUNTY



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gai consultants

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: KMP | DRAWN: TMT, MWM

CHECKED: TDJ | CHECKED: KMP, CH

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAT NO.1

SCALE	BRIDGE FILE
AS NOTED	157-28-10455
	DESIGNATION
	1700141
DRAWING NUMBER	SHEETS
	6 of 25
CONTRACT	PROJECT
B-40558	1700141

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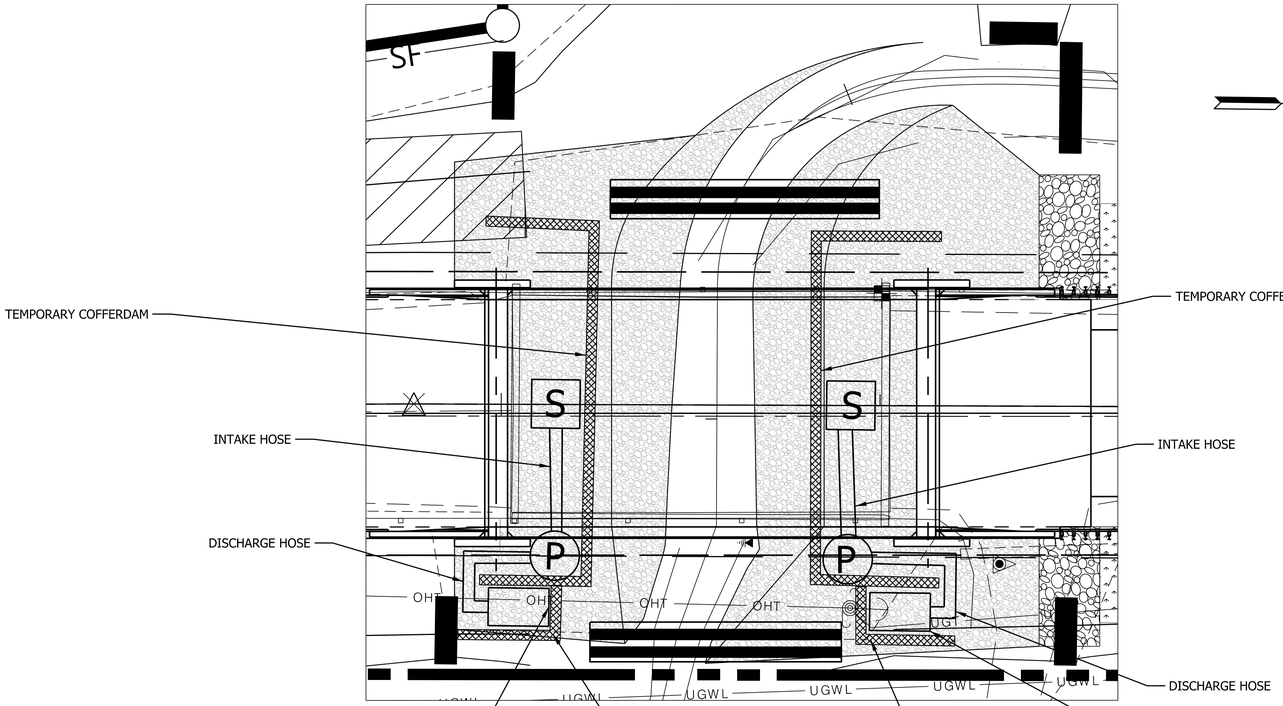
EROSION CONTROL NOTES:

1) PERIMETER PROTECTION SHOULD BE INSTALLED PRIOR TO LAND DISTURBANCE ACTIVITIES.
2) TEMPORARY SEEDING AND MULCH SHALL BE PLACED ON DISTURBED AREAS WHERE ADDITIONAL WORK IS NOT SCHEDULED FOR AT LEAST 7 CALENDAR DAYS.
   QUANTITIES (ESTIMATED TWO TIMES AREA OF SEED)
   TEMPORARY SEED MIXTURE 156 LBS (150 LBS / ACRE)
   TEMPORARY MULCH 2.6 TON (2.5 TONS / ACRE)
3) CHECK DAMS SHOULD BE INSTALLED AS SOON AS PRACTICAL AFTER DITCH GRADING.
4) SOD / SEEDING SHALL BE PLACED IMMEDIATELY AFTER FINAL GRADE IS ESTABLISHED.
5) EXISTING DITCHES OUTSIDE OF CONSTRUCTION LIMITS SHALL BE UNDISTURBED AS MUCH AS PRACTICAL.
6) ANY VEGETATION DISTURBED DURING INSTALLATION OR REMOVAL OF PERIMETER PROTECTION MEASURES SHALL BE RESTORED IMMEDIATELY.

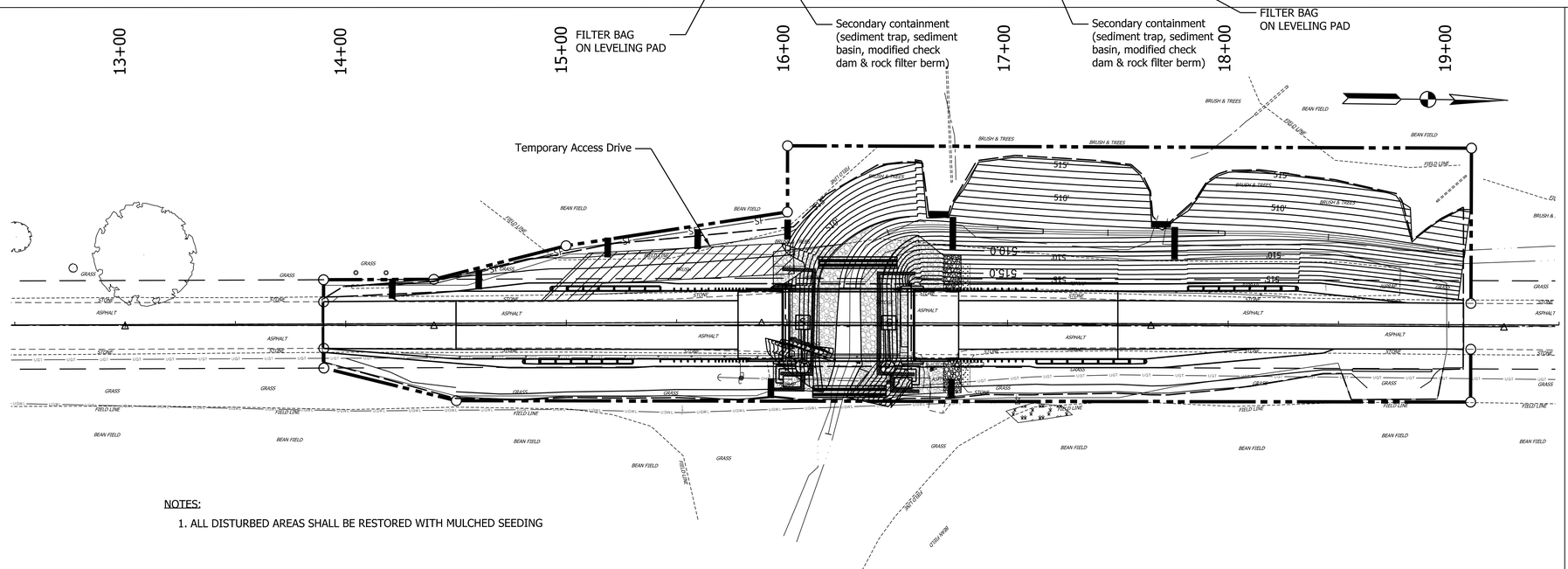
LEGEND

- (P) BYPASS PUMP
- [S] SUMP HOLE (3'X3'X3')
- TEMPORARY CHECK DAM
- TEMPORARY CHECK DAM



EROSION CONTROL TABLE

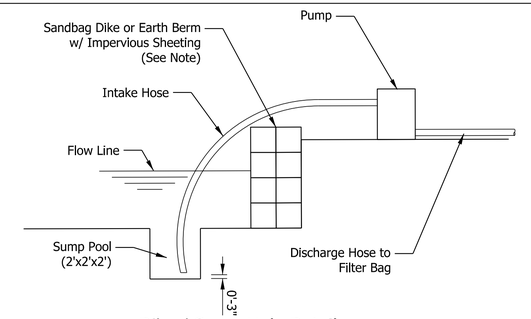
LOCATION		OFFSET		TEMPORARY SILT FENCE	TEMPORARY CHECK DAM, TRAVERSABLE	TEMPORARY CHECK DAM, REVETMENT RIPRAP	TEMPORARY SEDIMENT TRAP	TEMPORARY SEED MIXTURE	TEMPORARY MULCH
FROM STATION	TO STATION	LT	RT	LFT	LFT	TON	TON	LBS	TON
13+90	19+07	X						21.45	0.4
13+90	19+07		X					58.65	1
14+21	16+00	X		180					
14+21		X			12				
14+60		X			12				
15+19		X			18				
15+60		X			18				
16+00		X				21			
16+00			X			7			
16+28		X					158		
16+28			X				104		
16+75			X			7			
16+70		X				8			
16+75		X				20			
17+70		X				16			
17+75		X				20			
TOTAL				180	60	99	262	80.1	1.4



NOTES:

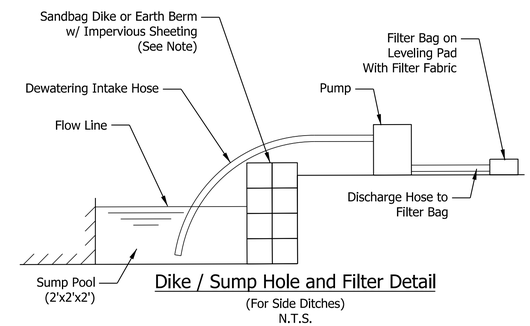
1. ALL DISTURBED AREAS SHALL BE RESTORED WITH MULCHED SEEDING

TEMPORARY PUMP AROUND



Dike / Sump Hole Detail

(At Upstream)
N.T.S.



Dike / Sump Hole and Filter Detail

(For Side Ditches)
N.T.S.

gai consultants

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: KMP DRAWN: XXX

CHECKED: MHW, CH CHECKED: KMP, CH

INDIANA
DEPARTMENT OF TRANSPORTATION

EROSION CONTROL PLAN AND TEMPORARY PUMP AROUND

HORIZONTAL SCALE	BRIDGE FILE
1"=30'-0"	157-28-10455
VERTICAL SCALE	DESIGNATION
1"=10'-0"	1700141
DRAWING NUMBER	SHEETS
	7 of 25
CONTRACT	PROJECT
B-40558	1700141

Plot: 11/3/2020 2:29:37 PM By: ThomaTM Pen: Transportation.tbl

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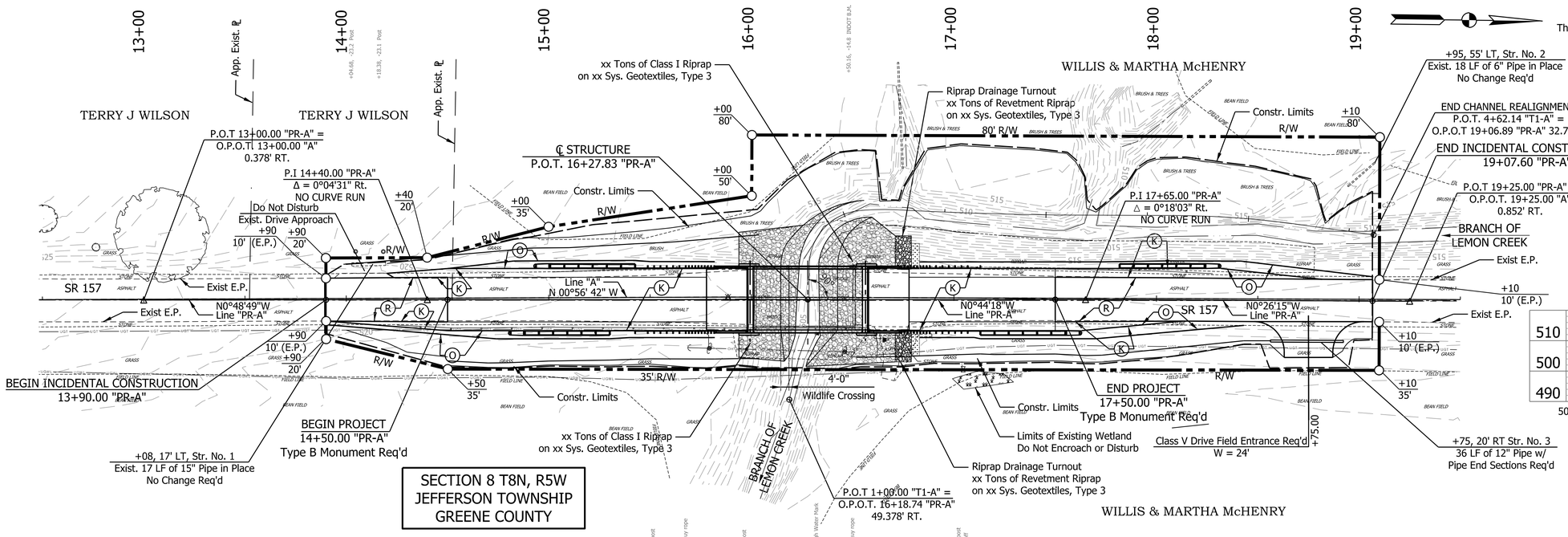
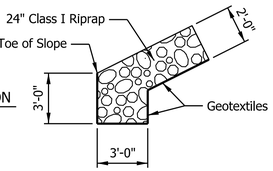


NOTE:
Line PR-1 to be Constructed

NOTES:
All R/W on this sheet is described from Line "A".
Additional R/W may be required if the grant lines are determined to be invalid evidence of existing R/W.

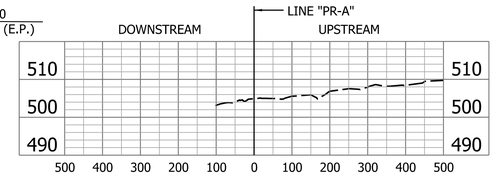
EXISTING STRUCTURES

The Present structure is a single span adjacent concrete box beam bridge, built in 1965 with a 28'-3" clear roadway.
Existing structure to be removed.



TYPICAL RIPRAP KEYWAY DETAIL

No Scale



EXISTING STREAM PROFILE

Scales: 1" = 200'-0" Horizontal, 1" = 10'-0" Vertical

HYDRAULIC DATA

Waterway Opening Required =	78.60 sq.ft.
Waterway Opening Provided =	78.60 sq.ft.
Proposed Road Overflow Waterway Area =	0 sq.ft.
Drainage Area =	0.755 sq.mi.
Design Discharge =	452.9 cfs
Velocity Existing=	5.55 ft/s
Velocity Proposed=	5.55 ft/s
Q100 Elevation =	509.65 ft.
Existing Backwater at Q100 =	0.21 ft.
Proposed Backwater at Q100 =	0.21 ft.
Existing Q100 Headwater Elevation =	510.34 ft.
Proposed Q100 Headwater Elevation =	510.34 ft.
Existing Low Structure Elevation =	515.77 ft.
Proposed Low Structure Elevation =	515.11 ft.

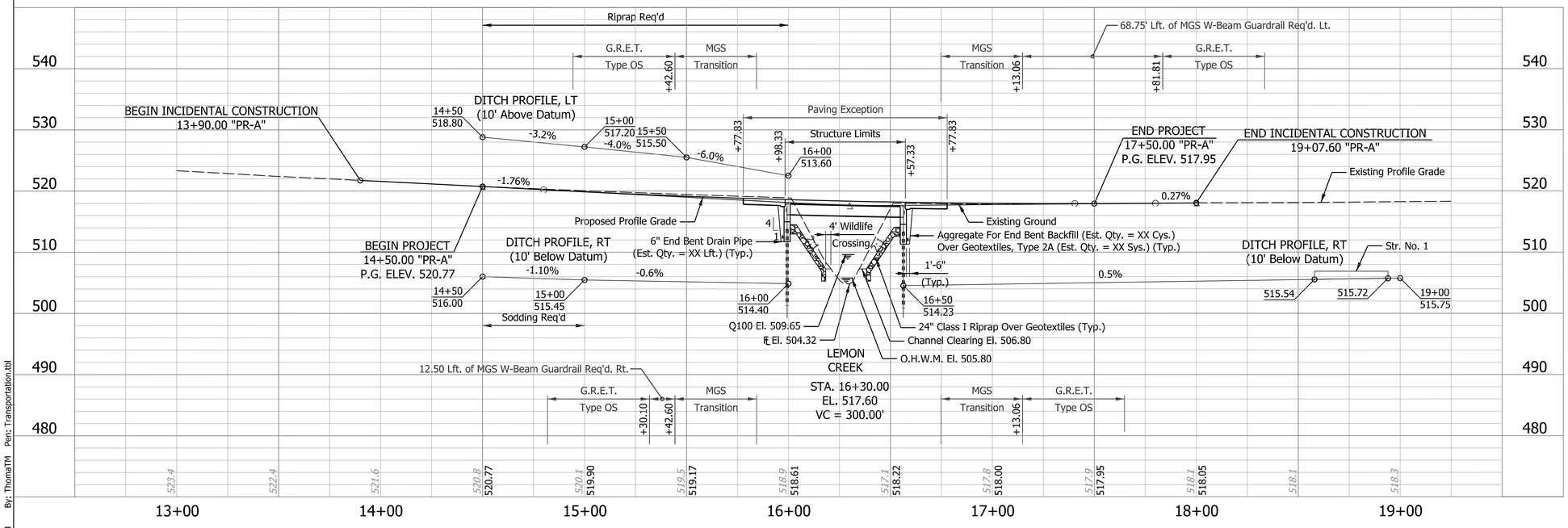
HYDRAULIC SCOUR DATA

Q100 Discharge =	452.9 cfs
Q100 Elevation =	509.65 ft.
Maximum Velocity at Q100 =	9.01 ft/sec
Scour Depth (Contraction) =	3.65 ft.
Scour Depth (Total) =	3.65 ft.
Low Scour Elevation =	500.67 ft.
Q500 Discharge =	634.06 cfs
Q500 Elevation =	510.51 ft.
Maximum Velocity at Q500 =	9.65 ft/sec
Scour Depth (Contraction) =	4.22 ft.
Scour Depth (Total) =	4.22 ft.
Low Scour Elevation =	500.10 ft.

EARTHWORK SUMMARY

Fill +20% =	___ Cys.
Common Excavation =	___ Cys.
Usable Waterway Excavation (70%) =	___ Cys.
Surplus Foundation Excavation =	___ Cys.
Borrow or Waste =	___ Cys.
Total Waterway Excavation =	___ Cys.
Benching* =	___ Cys.

* Benching will not be paid for directly, but shall be included in the cost of other items.



LEGEND

Ⓞ Ⓜ Ⓚ 30 Ⓡ See Roadway Typical Cross Sections (Sheet 3)

gai consultants

PRESTRESSED CONCRETE BOX BEAM BRIDGE
1 SPAN @ 57'-0"
30'-0" CLEAR ROADWAY: SKEW: SQUARE
SR 157 OVER BRANCH LEMON CREEK
GREENE COUNTY

RECOMMENDED FOR APPROVAL
DESIGN ENGINEER DATE

DESIGNED: KMP DRAWN: TMT
CHECKED: MHW, CH CHECKED: KMP, CH

INDIANA
DEPARTMENT OF TRANSPORTATION

LAYOUT & PLAN/PROFILE

HORIZONTAL SCALE	BRIDGE FILE
1"=30'-0"	157-28-10455
VERTICAL SCALE	DESIGNATION
1"=10'-0"	1700141
DRAWING NUMBER	SHEETS
	10 of 25
CONTRACT	PROJECT
B-40558	1700141

Plot: 11/3/2020 2:34:48 PM By: ThomaTM Pen: Transportation.tbl

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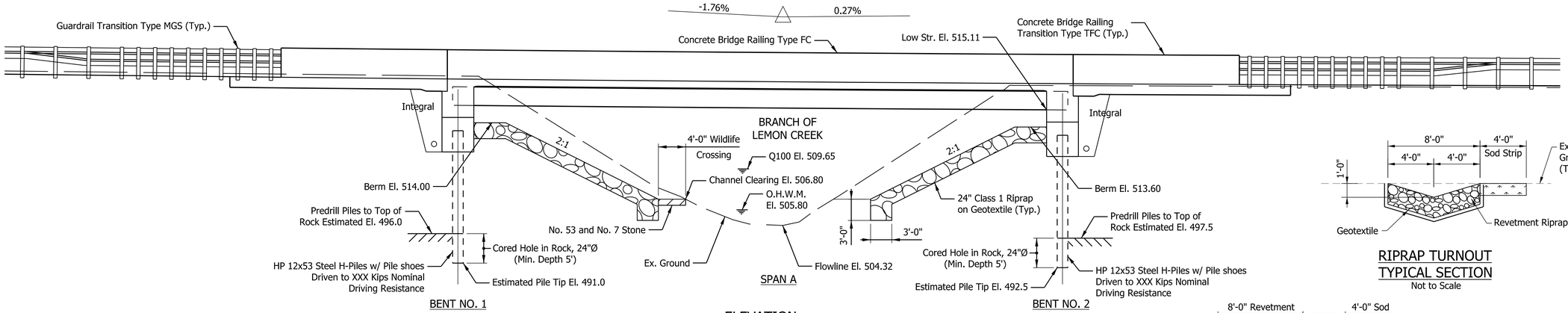
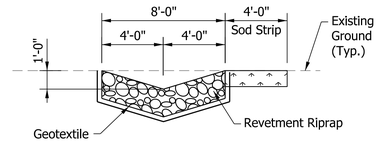
STRUCTURE TO BE BUILT ON A 300' VERTICAL CURVE



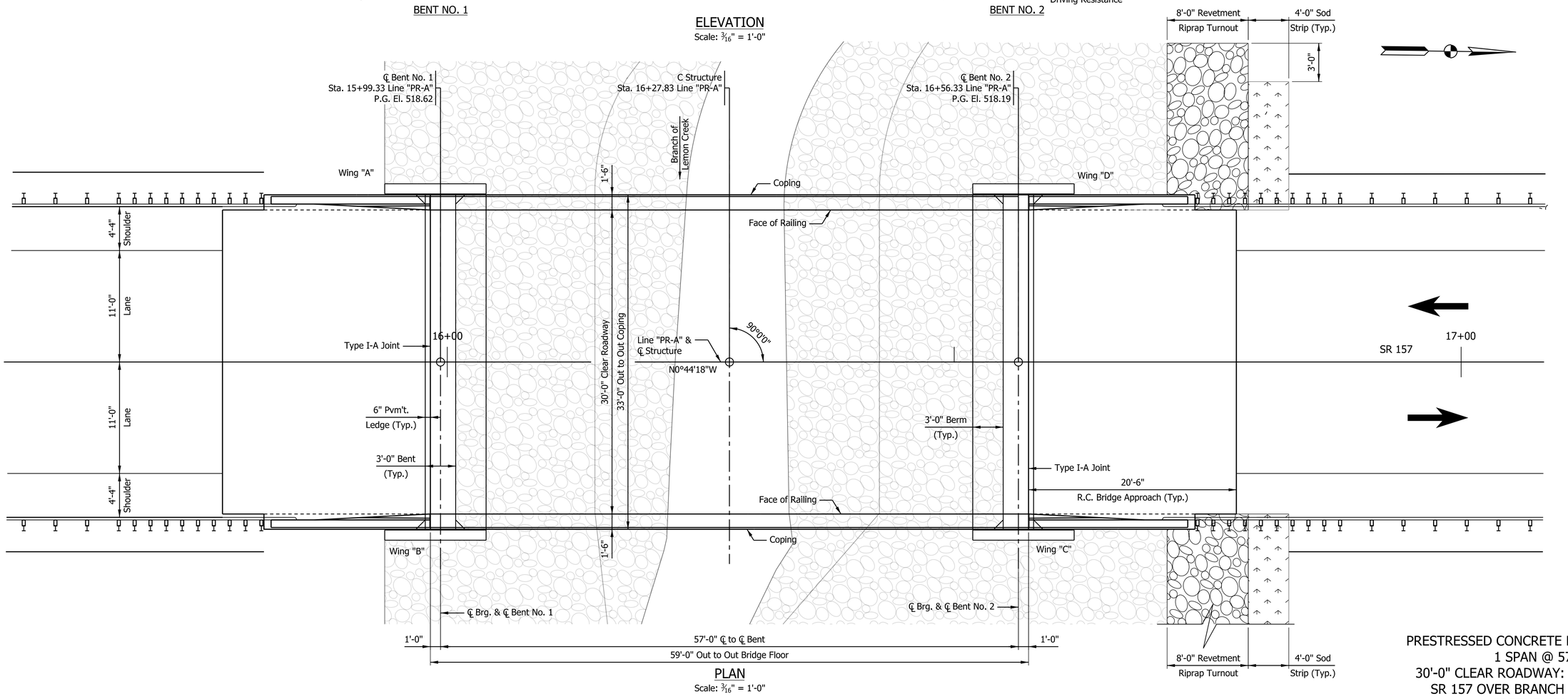
ELEVATION

Scale: 3/16" = 1'-0"



RIPRAP TURNOUT TYPICAL SECTION

Not to Scale



PLAN

Scale: 3/16" = 1'-0"

PRESTRESSED CONCRETE BOX BEAM BRIDGE
1 SPAN @ 57'-0"
30'-0" CLEAR ROADWAY: SKEW: SQUARE
SR 157 OVER BRANCH LEMON CREEK
GREENE COUNTY

gai consultants

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: KMP DRAWN: TMT

CHECKED: XXX CHECKED: XXX

INDIANA DEPARTMENT OF TRANSPORTATION

STRUCTURE DETAILS

SCALE	BRIDGE FILE
AS NOTED	157-28-10455
	DESIGNATION
	1700141
DRAWING NUMBER	SHEETS
of	11 of 25
CONTRACT	PROJECT
B-40558	1700141

Plot: 11/3/2020 2:35:31 PM By: ThomaTM Pen: Transportation.tbl

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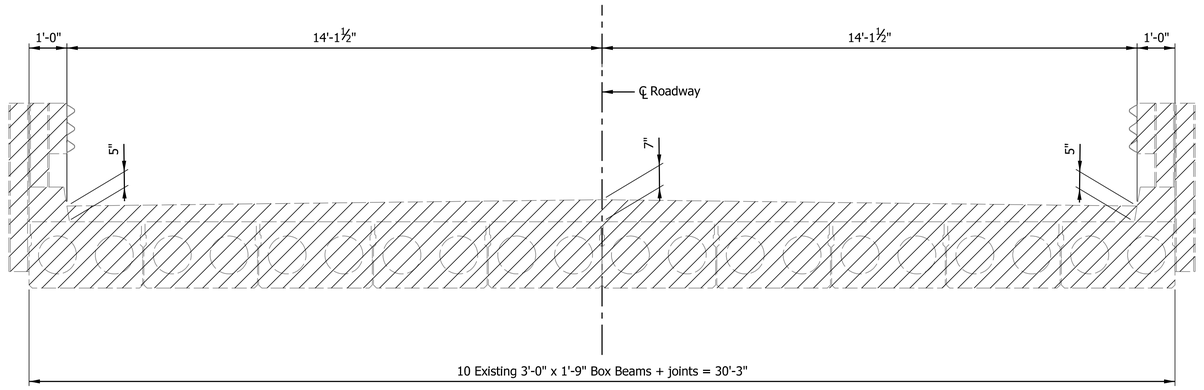
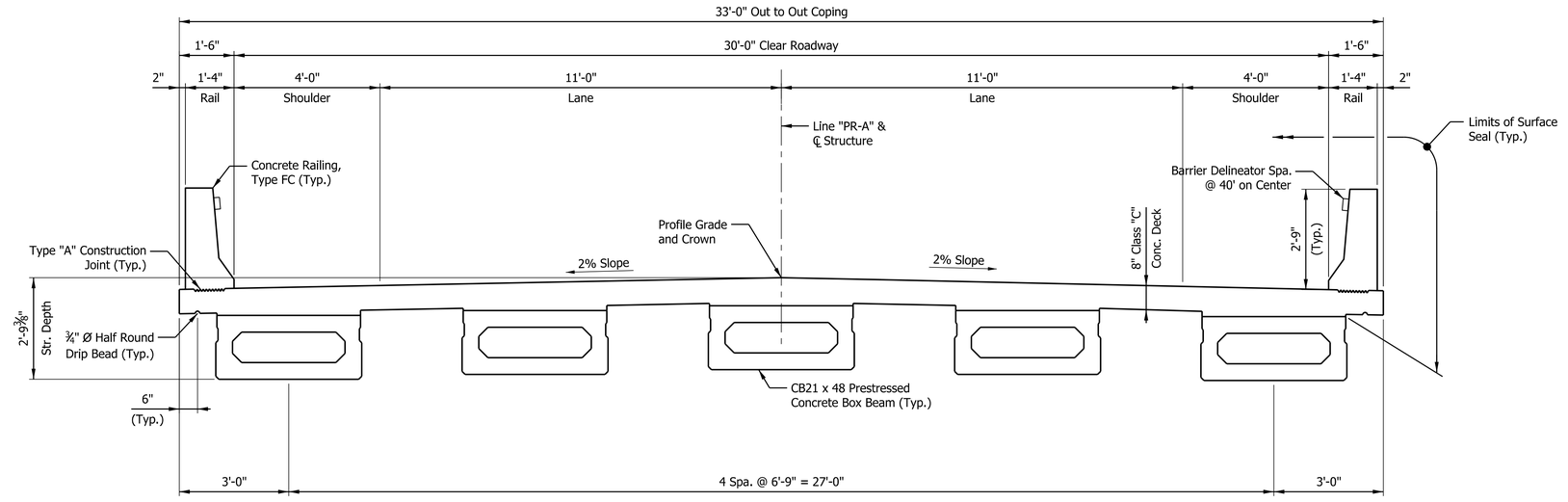


EXISTING TYPICAL SECTION

Scale: ½" = 1'-0"

- Indicates Limits of Removal



PROPOSED TYPICAL SECTION

Scale: ½" = 1'-0"

GENERAL NOTES

Reinforcing steel cover shall be 2 1/2" in top and 1" minimum in bottom of floor slab, 3" in footings, except bottom steel which shall be 4", and 2" in all other parts, unless noted.

Plans for the existing structure are on file in the central office of the Indiana Department of Transportation as bridge file 157-28-6075 B and SRS-29740 A are available upon request.

Surface Seal top of bridge deck, concrete railing, concrete transitions, copings, underside of deck from coping to face of outside beam, top of approach slab, and all exposed surfaces of substructures.

DESIGN DATA

Superstructure and Substructure designed for HL-93 loading in accordance with AASHTO LRFD Bridge Design Specifications for Highway Bridges 8th Edition, 2019 and its subsequent interims .

DEAD LOAD

Actual weight plus 35 psf (composite) for future wearing surface and 15 (non-composite) for permanent metal deck forms.

FLOOR SLAB

Designed with a 7 1/2" structural depth plus a 1/2" sacrificial wearing surface.

DESIGN STRESSES

CONCRETE

Class "A" Concrete:	f'c = 3,500 psi
Class "B" Concrete:	f'c = 3,000 psi
Class "C" Concrete:	f'c = 4,000 psi

REINFORCING STEEL

Grade 60 Fy = 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 of overhang brackets were assumed to be braced against the intersection of the girder bottom flange and web.

DECK FALSEWORK LOADS

Designed for 15 lb/ft2 for permanent metal stay-in-place deck forms, removable deck forms, and 2-ft exterior walkways.

CONSTRUCTION LIVE LOAD

Designed for 20 lb/ft2 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 DATA

SD1:	0.187
Seismic Performance Zone:	Zone 2
Acceleration Coefficient (As):	0.231
Seismic Soil Profile Type:	Class D

PRESTRESSED CONCRETE BOX BEAM BRIDGE
1 SPAN @ 57'-0"
30'-0" CLEAR ROADWAY: SKEW: SQUARE
SR 157 OVER BRANCH LEMON CREEK
GREENE COUNTY

gai consultants

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: KMP DRAWN: TMT

CHECKED: XXX CHECKED: XXX

INDIANA
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN

SCALE	BRIDGE FILE
AS NOTED	157-28-10455
	DESIGNATION
	1700141
DRAWING NUMBER	SHEETS
of	12 of 25
CONTRACT	PROJECT
B-40558	1700141

Plot: 11/3/2020 2:35:55 PM By: ThomaTM Pen: Transportation.tbl

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Appendix C

Early Coordination

gai consultants

Indianapolis Office
201 N. Illinois Street, Suite 1700
Indianapolis, Indiana 46204

T 317.570.6800
F 317.570.6810

November 6, 2018

GAI Project No. D180014.01

Sample Early Coordination Letter

Early Coordination
Designation No. 1700141
SR 157 over Branch of Lemon Creek
Bridge Replacement Project
Greene County, Indiana

Dear Interested Agency:

The Indiana Department of Transportation (INDOT) is proposing to replace the bridge carrying State Road (SR) 157 over Branch of Lemon Creek (Structure No. 157-28-06075B), located in Greene County, Indiana. This letter is part of the early coordination phase of the environmental review process. We are requesting comments from your area of expertise regarding any possible environmental effects associated with this project. **Please use the above designation number and description in your reply.** We will incorporate your comments into a study of the project's environmental impacts.

This project is located at the SR 157 Bridge over Branch of Lemon Creek, approximately 2.35 miles north of SR 67, specifically in Section 8 of Township 8 North, Range 5 West, as shown on the Arney USGS 7.5 Minute Topographic Map. The existing bridge is a 48ft. long one span bridge that was built in 1965 and reconstructed in 1980. The structure is a prestressed concrete box beam (PCBB) structure that is showing signs of advanced deterioration. It is proposed to be replaced with a new PCBB structure that is wider and that meets current minimum design standards. Since the new proposed structure will be wider than its predecessor, the roadway embankments and shoulders will also need to be widened to transition into the new structure. Tree clearing (approximately .08 acres) may be required to complete this project. Riprap will also need to be placed along the slope walls as a scour countermeasure. Apparent existing right-of-way extends approximately 30ft. from the edge of pavement. Right-of-way is expected to be needed for this project, but it is unknown at this time how much will be required. It is anticipated that 0.2 acres of permanent right-of-way will be required. The project limits will extend approximately 300 ft. along SR 157. No relocations will be required to complete this project as it is proposed.

A Red Flag Investigation is currently being performed to determine items of concern within the project area. Land use in the vicinity is primarily rural residential and agricultural fields. A Wetland Delineation/Determination and Waters of the United States investigation will be conducted in accordance with the 1987 United States Army Corps of Engineers (USACE) *Corps of Engineers Wetlands Delineation Manual* (1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (Version 2.0, USACE, 2010) and coordinated with the INDOT Ecology & Permits Office. The Range-Wide Programmatic Informal Consultation process is anticipated for this project to evaluate potential

impacts to the Indiana Bat and the Northern Long-Eared Bat, which will involve coordination with the USFWS for review.

As the Section 106 process advances, the project area will be surveyed by individuals satisfying the *Secretary of the Interior Professional Qualification Standards* to determine an area of potential effect (APE), make recommendations on eligibility determinations and assess effects on potential historic resources. Additionally, the project area will be subjected to an archaeological reconnaissance by a qualified archaeologist. Coordination with the State Historic Preservation Officer (SHPO) and the identified consulting parties will be ongoing for the duration of the Section 106 process.

Should we not receive your response **within thirty (30) calendar days** from the date of this letter, it will be assumed that your agency or organization feels that there will be no adverse effects incurred as a result of the proposed project. However, should you find that an extension to the response time is necessary; a reasonable extension may be granted upon request.

Project location maps and photo documentation are attached. If you have any questions regarding this matter, please contact me at h.ford@gaiconsultants.com or (317) 436-9142.

Sincerely,
GAI Consultants, Inc.

Harlan Ford

Senior Environmental Specialist

Enc.: ~~Project Location Maps, Photo Documentation~~

Project location maps and photos have been removed and are included in Appendix B.

SR 157 over Branch of Lemon Creek
Bridge Rehabilitation Project
Des. No. 1700141

Agencies Receiving Early Coordination Packet:

Distributed on March 18, 2019

Mr. Scott Pruitt, Field Supervisor
U.S. Fish and Wildlife Service
Indiana Field Office
620 S. Walker Street
Bloomington, Indiana 47403
Attn: Ms. Robin McWilliams
Robin_McWillimas@fws.gov

Mr. Rick Neilson, State Conservationist
Natural Resources Conservation Service
6013 Lakeside Boulevard
Indianapolis, IN 46278
Rick.neilson@in.usda.gov

Ms. Nancy Hasenmueller, Section Head
Indiana Geological Survey, Environmental Geology
611 North Walnut Grove
Bloomington, IN 47405
IGSenvir@indiana.edu
https://igs.indiana.edu/eAssessment/
(Website Submittal)

Mr. Adam French, Development Specialist
IN Dept. of Transportation, Aviation Division
100 North Senate Avenue, Rm N955, IGCN
Indianapolis, IN 46204
afrench2@indot.in.gov

Regional Environmental Coordinator
National Park Service, Midwest Regional Office
601 Riverfront Drive
Omaha, NE 68102

Mr. Antonio Johnson
Planning & Enviornmental Specialist
Federal Highway Administration, Indiana Division
Federal Office Building, Room 254
575 North Pennsylvania Street,
Indianapolis, IN 46204
Antonio.Johnson@dot.gov

Ms. Christie Stanifer, Environmental Coordinator
IN Dept. of Natural Resources
Division of Water, Fish & Wildlife Unit
402 West Washington Street, Rm W273, IGCS
Indianapolis, IN 46204
environmentalreview@dnr.in.gov

Field Environmental Officer
U.S. Dept. of Housing & Urban Development
Chicago Regional Office, Metcalf Fed. Bldg.
77 West Jackson Boulevard, Room 2401
Chicago, IL 60604

Mr. Rickie Clark, Public Involvement Manager
IN Dept. of Transportation
Office of Public Involvement
100 N. Senate Ave., Room N642
Indianapolis, IN 46204
rclark@indot.in.gov

Mr. Doug Shelton, Chief, Environmental Resources
Department of the Army, Corps of Engineers
Louisville District
P.O. Box 59
Louisville, KY 40201
Attn: CEMP-P-E

IN Dept. of Environmental Management
Office of Planning and Assessment
http://www.in.gov/idem/5284.htm
(Website Submittal)

Wellhead Proximity Determinator
http://www.in.gov/idem/cleanwater/pages/wellhead/
(Website Investigation)

Mr. Alan Davis, Project Manager
IN Dept. of Transportation, Vincennes District
3650 S US Highway 41
Vincennes, IN 47591
aldavis@indot.in.gov

Mr. Ernie Stoops, Environmental/Design Manager
IN Dept. of Transportation, Vincennes District
3650 S US Highway 41
Vincennes, IN 47591
estoops@indot.in.gov

Greene County Highway Department
County Administration
847 N 800 W
Switz City, IN 47465

Greene County Surveyor
County Administration
217 E Spg
Bloomfield, IN 47424

Indiana Department of Environmental Management

We Protect Hoosiers and Our Environment.

100 North Senate Avenue - Indianapolis, IN 46204
(800) 451-6027 - (317) 232-8603 - www.idem.IN.gov

INDOT
Alan Davis
3650 S. US Highway 41
Vincennes , IN 47591
Date

GAI Consultants Inc.
Harlan Ford
201 N. Illinois Street
Indianapolis , IN 46204

To Engineers and Consultants Proposing Roadway Construction Projects:

RE: This project is located at the SR 157 Bridge over Branch of Lemon Creek, approximately 2.35 miles north of SR 67, specifically in Section 8 of Township 8 North, Range 5 West, as shown on the Arney USGS 7.5 Minute Topographic Map. The existing bridge is a 48ft. long one span bridge that was built in 1965 and reconstructed in 1980. The structure is a prestressed concrete box beam (PCBB) structure that is showing signs of advanced deterioration. It is proposed to be replaced with a new PCBB structure that is wider and that meets current minimum design standards. Since the new proposed structure will be wider than its predecessor, the roadway embankments and shoulders will also need to be widened to transition into the new structure. The project limits will extend approximately 300 ft. along SR 157. No relocations will be required to complete this project as it is proposed.

This letter from the Indiana Department of Environmental Management (IDEM) serves as a standardized response to enquiries inviting IDEM comments on roadway construction, reconstruction, or other improvement projects within existing roadway corridors when the proposed scope of the project is beneath the threshold requiring a formal National Environmental Policy Act-mandated Environmental Assessment or Environmental Impact Statement. As the letter attempts to address all roadway-related environmental topics of potential concern, it is possible that not every topic addressed in the letter will be applicable to your particular roadway project.

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

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

WATER AND BIOTIC QUALITY

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

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

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

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

2. In the event a Section 404 wetlands permit is required from the USACE, you also must obtain a Section 401 Water Quality Certification from the IDEM Office of Water Quality

Wetlands Program. To learn more about the Wetlands Program, visit: http://www.in.gov/idem/4384.htm (http://www.in.gov/idem/4384.htm).

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

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

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

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

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

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

    To obtain, and operate under, a Rule 5 permit you will first need to develop a Construction Plan (http://www.in.gov/idem/4917.htm#constreq (http://www.in.gov/idem/4917.htm#constreq)), and as described in 327 IAC 15-5-6.5 (http://www.in.gov/legislative/iac/T03270/A00150 [PDF] (http://www.in.gov/legislative/iac/T03270/A00150.PDF), pages 16 through 19). Before you

may apply for a Rule 5 Permit, or begin construction, you must submit your Construction Plan to your county Soil and Water Conservation District (SWCD) (http://www.in.gov/isda/soil/contacts/map.html (http://www.in.gov/isda/soil/contacts/map.html)).

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

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

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

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

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

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

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

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

AIR QUALITY

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

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

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

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

   Additionally, if construction or demolition is conducted in a wooded area where blackbirds have roosted or abandoned buildings or building sections in which pigeons or bats have roosted for 3-5 years precautionary measures should be taken to avoid an outbreak of histoplasmosis. This disease is caused by the fungus Histoplasma capsulatum, which stems from bird or bat droppings that have accumulated in one area for 3-5 years. The spores from this fungus become airborne when the area is disturbed and can cause infections over an entire community downwind of the site. The area should be wetted down prior to cleanup or demolition of the project site. For more detailed information on histoplasmosis prevention and control, please contact the Acute Disease Control Division of the Indiana State Department of Health at (317) 233-7272.

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

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

(http://www.in.gov/isdh/regsvcs/radhealth/pdfs/radon_testers_mitigators_list.pdf).) It also is recommended that radon reduction measures be built into all new homes, particularly in areas like Indiana that have moderate to high predicted radon levels.

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

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

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

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

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

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

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

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

paint work practice standards, licensing and notification requirements. For more information about lead-based paint removal visit: http://www.in.gov/isdh/19131.htm (http://www.in.gov/isdh/19131.htm).

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

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

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

LAND QUALITY

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

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

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

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

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

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

6. If the project involves the installation or removal of an underground storage tank, or involves contamination from an underground storage tank, you must contact the IDEM

Underground Storage Tank program at 317/308-3039. See: http://www.in.gov/idem/4999.htm (http://www.in.gov/idem/4999.htm).

FINAL REMARKS

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

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

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

Signature(s) of the Applicant

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

Project Description

This project is located at the SR 157 Bridge over Branch of Lemon Creek, approximately 2.35 miles north of SR 67, specifically in Section 8 of Township 8 North, Range 5 West, as shown on the Arney USGS 7.5 Minute Topographic Map. The existing bridge is a 48ft. long one span bridge that was built in 1965 and reconstructed in 1980. The structure is a prestressed concrete box beam (PCBB) structure that is showing signs of advanced deterioration. It is proposed to be replaced with a new PCBB structure that is wider and that meets current minimum design standards. Since the new proposed structure will be wider than its predecessor, the roadway embankments and shoulders will also need to be widened to transition into the new structure. The project limits will extend approximately 300 ft. along SR 157. No relocations will be required to complete this project as it is proposed.

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

Date: 11/07/18

Signature of the INDOT
Project Engineer or Other Responsible Agent _____

Alan Davis

Date: 11/6/2018

Signature of the
For Hire Consultant _____

Harlan Ford

Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov
Eric J. Holcomb
Governor
Bruno Pigott
Commissioner

September 5, 2019

66-33
GAI Consultants
Attention: Harlan Ford
201 North Illinois Street, Suite 1700
Indianapolis, Indiana 46204

Dear Harlan Ford,

RE: Wellhead Protection Area
Proximity Determination
Des No 1700141
This project involves the replacement of the existing bridge (Structure No. 157-28-06075B) that carries SR 157 over Branch of Lemon Creek in Greene County.

Upon review of the above referenced project site, it has been determined that the proposed project area **is not located within** a Wellhead Protection Area. The information is accurate to the best of our knowledge; however, there are in some cases a few factors that could impact the accuracy of this determination. Some Wellhead Protection Area Delineations have not been submitted, and many have not been approved by this office. In these cases we use a 3,000 foot fixed radius buffer to make the proximity determination. To find the status of a Public Water Supply System's (PWSS's) Wellhead Protection Area Delineation please visit our tracking database at http://www.in.gov/idem/cleanwater/2456.htm and scroll to the bottom of the page.

Note: the Drinking Water Branch has launched a new self service feature which allows one to determine wellhead proximity without submitting the application form. Use the following instructions:

1. Go to http://idemmaps.idem.in.gov/whpa2/
2. Use the search tool located in the upper left hand corner of the application to zoom to your site of interest by way of city, county, or address; or use the mouse to click on the site of interest displayed on the map.
3. Once the site of interest has been located and selected, use the print tool to create a .pdf of a wellhead protection area proximity determination response.

In the future please consider using this self service feature if it is suits your needs.

If you have any additional questions please feel free to contact me at the address above or at (317) 233-9158 and aturnbow@idem.in.gov.

Sincerely,

Alisha Turnbow

Alisha Turnbow,
Environmental Manager
Ground Water Section
Drinking Water Branch
Office of Water Quality

Organization and Project Information

Project ID:	1700141
Des. ID:	1700141
Project Title:	SR-157 over BR. Lemon Creek
Name of Organization:	GAI Consultants Inc.
Requested by:	Harlan Ford

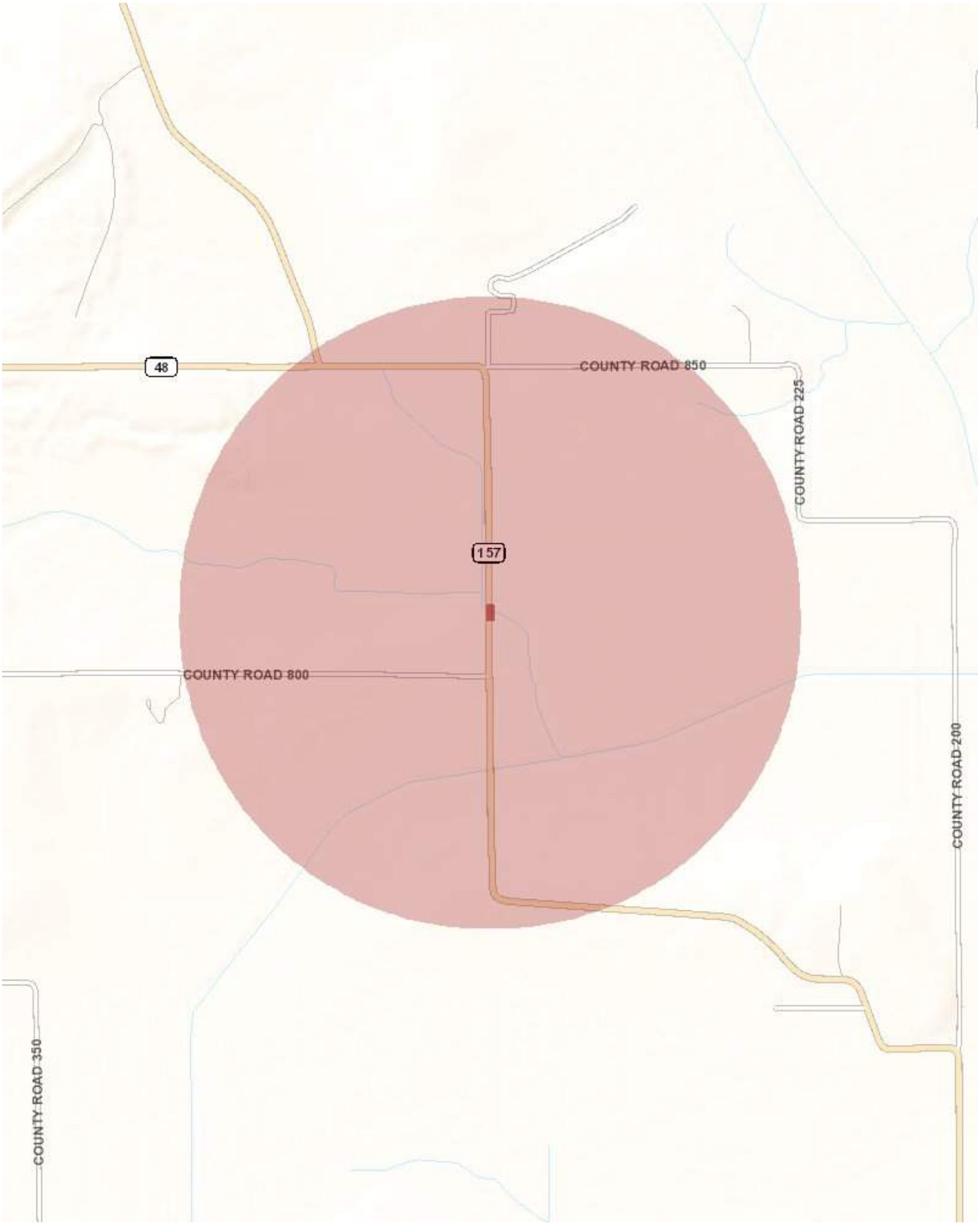
Environmental Assessment Report

1. Geological Hazards:
    - High 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:
    - None documented in the area

*All map layers from Indiana Map (maps.indiana.edu)

This information was furnished by Indiana Geological Survey
Address: 611 N. Walnut Grove Avenue, Bloomington, IN 47405-2208
Email: IGSEnvir@indiana.edu
Phone: 812 855-7428

Date: November 06, 2018



Metadata:

- https://maps.indiana.edu/metadata/Geology/Seismic_Earthquake_Liquefaction_Potential.html
- https://maps.indiana.edu/metadata/Geology/Industrial_Minerals_Sand_Gravel_Resources.html
- https://maps.indiana.edu/metadata/Hydrology/Floodplains_FIRM.html
- https://maps.indiana.edu/metadata/Geology/Bedrock_Geology.html

USDA
United States Department of Agriculture

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

December 4, 2018

Harlan Ford
GAI Consultants
201 North Illinois Street, Suite 1700
Indianapolis, Indiana 46204

Dear Mr. Ford:

The proposed project to rehabilitate the bridge carrying State Road 157 over Branch of Lemon Creek in Greene County, Indiana, (Des No. 1700141) as referred in your letter received on November 6, 2018 will cause a conversion of prime farmland.

The attached packet of information is for your use completing Parts VI and VII of the AD-1106. After Completion, the federal funding agency needs to forward one copy to NRCS for our records.

If you need additional information, please contact Daniel Phillips at 317-295-587.

Sincerely,

JILL REINHART Digitally signed by JILL REINHART
Date: 2018.12.04 14:42:35 -05'00'

JERRY RAYNOR
State Conservationist

Enclosures

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

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

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*	3. Date of Land Evaluation Request	4. Sheet 1 of of
1. Name of Project **Des No 1700141**	5. Federal Agency Involved	
2. Type of Project **Bridge Rehabilitation**	6. County and State **Greene County, Indiana**	

PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS **11/6/18**	2. Person Completing Form **SR**
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES ☑ NO ☐		4. Acres Irrigated | Average Farm Size **203Ac**
5. Major Crop(s) **Corn**	6. Farmable Land in Government Jurisdiction Acres: **261419** % **75**	7. Amount of Farmland As Defined in FPPA Acres: **175065** % **50**
8. Name Of Land Evaluation System Used **LESA**	9. Name of Local Site Assessment System	10. Date Land Evaluation Returned by NRCS **12/4/18**

PART III *(To be completed by Federal Agency)*	Alternative Corridor For Segment : Corridor 1	Corridor 2	Corridor 3	Corridor 4
A. Total Acres To Be Converted Directly	0.20			
B. Total Acres To Be Converted Indirectly, Or To Receive Services				
C. Total Acres In Corridor	0.20	0.00	0.00	0.00
PART IV *(To be completed by NRCS) Land Evaluation Information*				
A. Total Acres Prime And Unique Farmland	0.08			
B. Total Acres Statewide And Local Important Farmland	0.00			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	<.001			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	22.0			
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*	83			
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))* — Maximum Points				
1. Area in Nonurban Use — 15	10			
2. Perimeter in Nonurban Use — 10	10			
3. Percent Of Corridor Being Farmed — 20	1			
4. Protection Provided By State And Local Government — 20	0			
5. Size of Present Farm Unit Compared To Average — 10	1			
6. Creation Of Nonfarmable Farmland — 25	0			
7. Availablility Of Farm Support Services — 5	0			
8. On-Farm Investments — 20	0			
9. Effects Of Conversion On Farm Support Services — 25	0			
10. Compatibility With Existing Agricultural Use — 10	0			
TOTAL CORRIDOR ASSESSMENT POINTS — 160	22	0	0	0
PART VII *(To be completed by Federal Agency)*				
Relative Value Of Farmland (From Part V) — 100	83			
Total Corridor Assessment (From Part VI above or a local site assessment) — 160	22	0	0	0
TOTAL POINTS *(Total of above 2 lines)* — 260	105	0	0	0

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

5. Reason For Selection:

Signature of Person Completing this Part: | DATE

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

From: Wright, Mary <MWRIGHT@indot.IN.gov>
Sent: Wednesday, November 7, 2018 9:10 AM
To: Harlan Ford
Subject: RE: Early Coordination for Des No. 1700141

Early Coordination and Creating a Public Involvement Plan (PIP)

We have received your early coordination notification packet for the above referenced project(s). Our office prefers to be notified at the early coordination stage in order to encourage early and ongoing public involvement aside from the specific legal requirements as outlined in our Public Involvement Manual http://www.in.gov/indot/2366.htm . Seeking the public's understanding of transportation improvement projects early in the project development stage can allow the opportunity for the public to express their concerns, comments, and to seek buy-in. Early coordination is the perfect opportunity to examine the proposed project and its impacts to the community along with the many ways and or tools to inform the public of the improvements and seek engagement. A good public involvement plan, or PIP, should consider the type, scope, impacts, and the level of public awareness that should, or could, be implemented. In other words, although there are cases where no public involvement is legally required, sometimes it is simply the right thing to do in order to keep the public informed.
The public involvement office is always available to provide support and resources to bolster any public involvement activities you may wish to implement or discuss. Please feel free to contact our office anytime should you have any questions or concerns. Thank you for notifying our office about your proposed project. We trust you will not only analyze the appropriate public involvement required, but also consider the opportunity to do go above and beyond those requirements in creating a good PIP.

Rickie Clark, Manager
100 North Senate Avenue, Room N642
Indianapolis, IN 46204
Phone: 317-232-6601
Email: rclark@indot.in.gov

Mary Wright, Hearing Examiner
Phone: 317-234-0796
Email: mwright@indot.in.gov

From: Harlan Ford [mailto:H.Ford@gaiconsultants.com]
Sent: Tuesday, November 06, 2018 1:50 PM
To: Clark, Rickie <RCLARK@indot.IN.gov>
Cc: Wright, Mary <MWRIGHT@indot.IN.gov>
Subject: Early Coordination for Des No. 1700141

Mr. Clark,

I am contacting you today on behalf of INDOT to inform you of a upcoming project proposed by INDOT. Attached you will find an ECL packet with details concerning the project. If you have any questions or concerns with this project, please don't hesitate to contact me.

THIS IS NOT A PERMIT

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

DNR #: ER-21009 **Request Received:** November 6, 2018

Requestor:
GAI Consultants, Inc.
Harlan Ford
201 North Illinois Street
Suite 1700
Indianapolis, IN 46204

Project: SR 157 bridge (#157-28-06075B) replacement and widening over UNT Lemon Creek; Des #1700141

County/Site info: Greene

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: Formal approval by the Department of Natural Resources under the regulatory programs administered by the Division of Water is not required for this project.

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 & 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:

1) Crossing Structure:
For purposes of maintaining fish and wildlife passage through a crossing structure, the Environmental Unit recommends bridges rather than culverts and bottomless culverts rather than box or pipe culverts. Wide culverts are better than narrow culverts, and culverts with shorter through lengths are better than culverts with longer through lengths. If box or pipe culverts are used, the bottoms should be buried 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 OHWM 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, channel width, and water velocities during low-flow conditions that are approximate to those in the natural stream channel. Banklines should be restored within box and pipe structures to allow for wildlife passage above the ordinary highwater mark.

2) Bank Stabilization & Wildlife Passage:
The new, replacement, or rehabbed structure, and any bank stabilization under the structure, should not create conditions that are less favorable for wildlife passage under the structure compared to current conditions. Minimize the use of riprap and use alternative erosion protection materials whenever possible. Riprap must not be placed in the active thalweg channel or placed in the streambed in a manner that precludes fish or aquatic organism passage (riprap must not be placed above the existing streambed

elevation). Where riprap must be used, we recommend placing only enough riprap to provide stream bank toe protection, such as from the toe of the bank up to the ordinary high water mark (OHWM). 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 the area and specifically for stream bank/floodway stabilization purposes as soon as possible upon completion.

While hard armoring alone (e.g. riprap or glacial stone) may be needed in certain instances, soft armoring and bioengineering techniques should be considered first. In many instances, one or more methods are necessary to increase the likelihood of vegetation establishment. Combining vegetation with most bank stabilization methods can provide additional bank protection and help reduce impacts upon fish and wildlife. If hard armoring is needed, wildlife passage can be facilitated by using a smooth-surfaced armoring material instead of riprap, such as articulated concrete block mats, fabric-formed concrete mats, or other similar smooth-surfaced material.

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

3) Riparian Habitat:
We recommend a mitigation plan be developed for any unavoidable habitat impacts that will occur. The DNR's Floodway Habitat Mitigation guidelines (and plant lists) can be found online at: http://www.in.gov/legislative/iac/20140806-IR-312140295NRA.xml.pdf.

Impacts to non-wetland 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 wetland habitat should be mitigated at the appropriate ratio according to the 1991 INDOT/IDNR/USFWS Memorandum of Understanding.

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 in the floodway with a mixture of native grasses, sedges, wildflowers, and also native hardwood trees and shrubs as soon as possible upon completion. Do not use any varieties of Tall Fescue or other non-native plants (e.g. crown-vetch).
2. Minimize and contain within the project limits inchannel disturbance and the clearing of trees and brush.
3. Do not work in the waterway from April 1 through June 30 without the prior written approval of the Division of Fish and Wildlife.
4. Do not cut any trees suitable for Indiana bat or Northern Long-eared bat roosting (greater than 3 inches dbh, living or dead, with loose hanging bark, or with cracks, crevices, or cavities) from April 1 through September 30.
5. Do not excavate in the low flow area except for the placement of piers, foundations, and riprap, or removal of the old structure.
6. Do not construct any temporary runarounds, access bridges, causeways, cofferdams, diversions, or pumparounds.
7. Use minimum average 6 inch graded riprap stone extended below the normal water level to provide habitat for aquatic organisms in the voids.
8. Plant native hardwood trees along the top of the bank and right-of-way to replace the vegetation destroyed during construction.
9. Post "Do Not Mow or Spray" signs along the right-of-way.
10. Appropriately designed measures for controlling erosion and sediment must be implemented to prevent sediment from entering the stream or leaving the construction

THIS IS NOT A PERMIT

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

site; maintain these measures until construction is complete and all disturbed areas are stabilized.

11. 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: Christie L. Stanifer, Environ. Coordinator, Fish & Wildlife

Our agency appreciates this opportunity to be of service. Please contact the above staff member at (317) 232-4080 if we can be of further assistance.

Date: December 6, 2018

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

From: McWilliams, Robin <robin_mcwilliams@fws.gov>

Sent: Tuesday, November 13, 2018 9:43 AM

To: Harlan Ford

Subject: Re: [EXTERNAL] Early Coordination Letter for Des No. 1700141

Attachments: image001.png

Dear Harlan,

This responds to your recent letter, requesting our comments on the aforementioned project.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (l6 U.S.C. 661 et. seq.) and are consistent with the intent of the National Environmental Policy Act of l969, the Endangered Species Act of l973, and the U. S. Fish and Wildlife Service's Mitigation Policy.

The project is within the range of the Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*) and should follow the new Indiana bat/northern long-eared bat programmatic consultation process, if applicable (*i.e*. a federal transportation nexus is established). We will review that information once it is received.

Based on a review of the information you provided, the U.S. Fish and Wildlife Service has no objections to the project as currently proposed. However, should new information arise pertaining to project plans or a revised species list be published, it will be necessary for the Federal agency to reinitiate consultation. Standard recommendations are provided below.

We appreciate the opportunity to comment at this early stage of project planning. If project plans change such that fish and wildlife habitat may be affected, please recoordinate with our office as soon as possible. If you have any questions about our recommendations, please call (812) 334-4261 x. 207.

Sincerely,

Robin McWilliams Munson

Standard Recommendations:

1. Do not clear trees or understory vegetation outside the construction zone boundaries. (**This restriction is not related to the "tree clearing" restriction for potential Indiana Bat habitat.)**

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

Culverts should span the active stream channel, should be either embedded or a 3-sided or open-arch culvert, and be installed where practicable on an essentially flat slope. When an open-bottomed culvert or arch is used in a stream, which has a good natural bottom substrate, such as gravel, cobbles and boulders, the existing substrate should be left undisturbed beneath the culvert to provide natural habitat for the aquatic community.

3. Restrict channel work and vegetation clearing to the minimum necessary for installation of the stream crossing structure.

4. Minimize the extent of hard armor (riprap) in bank stabilization by using bioengineering techniques whenever possible. If rip rap is utilized for bank stabilization, extend it below low-water elevation to provide aquatic habitat.

5. Implement temporary erosion and sediment control methods within areas of disturbed soil. All disturbed soil areas upon project completion will be vegetated following INDOT's standard specifications.

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

7. Evaluate wildlife crossings under bridge/culverts projects in appropriate situations. Suitable crossings include flat areas below bridge abutments with suitable ground cover, high water shelves in culverts, amphibian tunnels and diversion fencing.

Robin McWilliams Munson

U.S. Fish and Wildlife Service

620 South Walker Street

Bloomington, Indiana 46403

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
http://www.fws.gov/midwest/Endangered/section7/s7process/step1.html

In Reply Refer To: September 15, 2020
Consultation Code: 03E12000-2020-SLI-2598
Event Code: 03E12000-2020-E-10493
Project Name: Des. 1700141: SR 157 over Branch of Lemon Creek - Bridge Replacement

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies any federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat if present within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the Service if they determine their project “may affect” listed species or critical habitat.

Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally. You may verify the list by visiting the ECOS-IPaC website http://ecos.fws.gov/ipac/ at regular intervals during project planning and implementation and completing the same process you used to receive the attached list. As an alternative, you may contact this Ecological Services Field Office for updates.

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.

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*) and Migratory Bird Treaty Act *(*16 U.S.C. 703 *et seq*), as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, see our Eagle Permits website at http://www.fws.gov/midwest/midwestbird/EaglePermits/index.html to help you determine if you can avoid impacting eagles or if a permit may be necessary.

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number 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

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

Consultation Code: 03E12000-2020-SLI-2598

Event Code: 03E12000-2020-E-10493

Project Name: Des. 1700141: SR 157 over Branch of Lemon Creek - Bridge Replacement

Project Type: TRANSPORTATION

Project Description: This project is located on SR 157 over Brank of Lemon Creek, approximately 2.35 miles north of SR 67 in Jefferson Township, Greene County, Indiana. Specifically, this project is located in Section 8, Township 8 North, Range 5 West, as shown in the Arney USGS 7.5 Minute Topographic Map. The need for this project stems from the deteriorating condition of the existing structure (Bridge No. 157-28-06075B / NBI #: 027940) that exhibits longitudinal cracking and leakage between beams on the bridge deck, spalling, rusting and 100% section loss on one of the beams of the superstructure, and minor section loss and hollow sounds on the center splice cap of the timber substructure. In addition, widespread minor damage due to bank slumping was seen on the channel bank. The scope of this project includes replacing the existing bridge with a Type II AASHTO I-Beam bridge. In addition to the bridge replacement, this project will also involve widening the roadway embankments and shoulders, milling and overlaying the roadway pavement, removing and replacing the existing guardrail, clearing and realigning the stream channel, replacing a pipe in the northeast quadrant, placing riprap along the banks as a scour countermeasure, constructing riprap drainage turnouts, reconstructing the existing embankment slopes and, and providing side slope stabilization measures. The purpose of this project is to provide a structurally and hydraulically sufficient structure at this location. Suitable summer habitat is located within the project area, and approximately 0.20 acre of tree/shrub clearing may be necessary to complete this project. The dominant tree species in the project area is box elder (Acer negundo). Additional vegetation within the project area consists of calico aster (Symphyotrichum lateriflorum), yellow nutsedge (Cyperus esculentus), giant foxtail, (Seteria faberi), meadow garlic (Allium canadense), and soybeans (Glycine max) due to the surrounding cropland. All tree clearing will take place during the inactive season. On September 14, 2020, INDOT Vincennes District environmental personnel stated, “A review of the USFWS database indicated the presence of endangered bat species in or within 0.5 mile of the project area (MYSO 10-mile Hibernacula Buffer). Additional coordination with INDOT ES will be necessary, and the range−wide programmatic consultation for the

Indiana Bat and Northern Long−eared Bat will be completed according to the most recent Using the USFWS's IPaC System for Listed Bat Consultation for INDOT Projects. This would not qualify for documented habitat nor being within 0.5-mile of a MYSO/MYSE hibernacula; however, tree clearing dates would be changed to November 1-March 31, if applicable." On October 18, 2018 and June 8, 2020 qualified personnel from GAI consultants inspected the bridge for the presence of bats. The inspections did not detect any bats or signs of bats at this structure. No permanent lighting will be installed or replaced as part of this project; however, the use of temporary lighting may be needed. Existing right-of-way (ROW) ends at the edge of the roadway pavement. This project is expected to require approximately 0.88 acre of permanent ROW and will extend approximately 280 ft. to the north and 238 ft. to the south from the center of the structure. Construction for this project is expected to begin in the Spring of 2022.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/39.14120529524546N86.99359261452246W

Counties: Greene, IN

Endangered Species Act Species

There is a total of 2 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.

---

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 overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/1/office/31440.pdf	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: ▪ Incidental take of the NLEB is not prohibited here. Federal agencies may consult using the 4(d) rule streamlined process. Transportation projects may consult using the programmatic process. See www.fws.gov/midwest/endangered/mammals/nleb/index.html Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Indiana Bat *Myotis sodalis*	Final

NAME	STATUS

https://ecos.fws.gov/ecp/species/5949#crithab

Raquel Walker

From: Falls, Ryan G <RFalls@indot.IN.gov>
Sent: Monday, September 14, 2020 10:40 AM
To: Raquel Walker
Cc: Wright, Kristy
Subject: RE: IPaC Review Request for Des No. 1700141 & 1st Comments & USFWS GIS Layer Update (Positive)

Raquel Walker,

Since the USFWS GIS check date was two years old, I went ahead and rechecked it. A new finding is in order.

> A review of the USFWS database indicated the presence of endangered bat species in or within 0.5 mile of the project area. Additional coordination with INDOT ES will be necessary, and the range-wide programmatic consultation for the Indiana Bat and Northern Long-eared Bat will be completed according to the most recent "Using the USFWS's IPaC System for Listed Bat Consultation for INDOT Projects".
>
> -MYSO 10-mile Hibernacula Buffer
>
> *Site specific MYSO and/or MYSE hibernacula, capture, or roost tree location data (e.g., geographic coordinates, GIS shapefiles or maps) will not be shared, distributed, or published without prior written consent from USFWS Bloomington Field Office.*

This would not qualify for documented habitat nor being within 0.5-mile of a MYSO/MYSE hibernacula; however, tree clearing dates would be changed to November 1-March 31, if applicable. Please note these dates for the CE.

Unfortunately, IPaC is down so I cannot review your project in its entirety. But, you will need to update the project description to show the new language. All that in needed IPaC description is the following:

> On September 14, 2020, INDOT Vincennes District environmental personnel stated, "A review of the USFWS database indicated the presence of endangered bat species in or within 0.5 mile of the project area (MYSO 10-mile Hibernacula Buffer). Additional coordination with INDOT ES will be necessary, and the range-wide programmatic consultation for the Indiana Bat and Northern Long-eared Bat will be completed according to the most recent *Using the USFWS's IPaC System for Listed Bat Consultation for INDOT Projects*. This would not qualify for documented habitat nor being within 0.5-mile of a MYSO/MYSE hibernacula; however, tree clearing dates would be changed to November 1-March 31, if applicable.

Please be sure your project includes the following:

Title
-DES,
-Primary road number, and
-Short project description

Description
-Describe the basic work to be done, the project limits, and bridges and culverts involved;

United States Department of the Interior

FISH AND WILDLIFE SERVICE
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http://www.fws.gov/midwest/Endangered/section7/s7process/step1.html

In Reply Refer To: September 15, 2020
Consultation Code: 03E12000-2020-I-2598
Event Code: 03E12000-2020-E-10499
Project Name: Des. 1700141: SR 157 over Branch of Lemon Creek - Bridge Replacement

Subject: Concurrence verification letter for the 'Des. 1700141: SR 157 over Branch of Lemon Creek - Bridge Replacement' project under the revised February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat.

To whom it may concern:

The U.S. Fish and Wildlife Service (Service) has received your request to verify that the **Des. 1700141: SR 157 over Branch of Lemon Creek - Bridge Replacement** (Proposed Action) may rely on the concurrence provided in the February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion 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, and may affect, but is not likely to adversely affect (NLAA) the endangered Indiana bat (*Myotis sodalis*) and/or the threatened Northern long-eared bat (*Myotis septentrionalis*).

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/structure removal, replacement, and/or maintenance activities: If your initial bridge/structure assessments failed to detect Indiana bats, but you later detect bats during construction, please submit the Post Assessment Discovery of Bats at Bridge/Structure Form (User Guide Appendix E) to this Service Office. In these instances, potential incidental take of Indiana bats may be exempted 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. 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.

Project Description

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

Name

Des. 1700141: SR 157 over Branch of Lemon Creek - Bridge Replacement

Description

This project is located on SR 157 over Brank of Lemon Creek, approximately 2.35 miles north of SR 67 in Jefferson Township, Greene County, Indiana. Specifically, this project is located in Section 8, Township 8 North, Range 5 West, as shown in the Arney USGS 7.5 Minute Topographic Map. The need for this project stems from the deteriorating condition of the existing structure (Bridge No. 157-28-06075B / NBI #: 027940) that exhibits longitudinal cracking and leakage between beams on the bridge deck, spalling, rusting and 100% section loss on one of the beams of the superstructure, and minor section loss and hollow sounds on the center splice cap of the timber substructure. In addition, widespread minor damage due to bank slumping was seen on the channel bank. The scope of this project includes replacing the existing bridge with a Type II AASHTO I-Beam bridge. In addition to the bridge replacement, this project will also involve widening the roadway embankments and shoulders, milling and overlaying the roadway pavement, removing and replacing the existing guardrail, clearing and realigning the stream channel, replacing a pipe in the northeast quadrant, placing riprap along the banks as a scour countermeasure, constructing riprap drainage turnouts, reconstructing the existing embankment slopes and, and providing side slope stabilization measures. The purpose of this project is to provide a structurally and hydraulically sufficient structure at this location. Suitable summer habitat is located within the project area, and approximately 0.20 acre of tree/shrub clearing may be necessary to complete this project. The dominant tree species in the project area is box elder (Acer negundo). Additional vegetation within the project area consists of calico aster (Symphyotrichum lateriflorum), yellow nutsedge (Cyperus esculentus), giant foxtail, (Seteria faberi), meadow garlic (Allium canadense), and soybeans (Glycine max) due to the surrounding cropland. All tree clearing will take place during the inactive season. On September 14, 2020, INDOT Vincennes District environmental personnel stated, “A review of the USFWS database indicated the presence of endangered bat species in or within 0.5 mile of the project area (MYSO 10-mile Hibernacula Buffer). Additional coordination with INDOT ES will be necessary, and the range−wide programmatic consultation for the Indiana Bat and Northern Long−eared Bat will be completed according to the most recent Using the USFWS’s IPaC System for Listed Bat Consultation for INDOT Projects. This would not qualify for documented habitat nor being within 0.5-mile of a MYSO/MYSE hibernacula; however, tree clearing dates would be changed to November 1-March 31, if applicable." On October 18, 2018 and June 8, 2020 qualified personnel from GAI consultants inspected the bridge for the presence of bats. The inspections did not detect any bats or signs of bats at this structure. No permanent lighting will be installed or replaced as part of this project; however, the use of temporary lighting may be needed. Existing right-of-way (ROW) ends at the edge of the roadway pavement. This project is expected to require approximately 0.88 acre of permanent ROW and will extend approximately 280 ft. to the north and 238 ft. to the south from the center of the structure. Construction for this project is expected to begin in the Spring of 2022.

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 threatened 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 revised February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion 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
   Yes

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?

   Yes

8. Will the project include *any* type of activity that could impact a **known** hibernaculum[1], or impact a karst feature (e.g., sinkhole, losing stream, or spring) that could result in effects to a **known** hibernaculum?

   [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

9. 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 national consultation FAQs.

   Yes

10. 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

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

    No

12. 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

13. 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

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

    Yes

15. 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

16. Does the project include activities **within documented NLEB 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

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

    Yes

18. What time of year will the removal or trimming of habitat or trees **within** suitable but **undocumented NLEB** roosting/foraging habitat or travel corridors occur?

    B) During the inactive season

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

    Yes

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

    No

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

    Yes

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

    No

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

    No

24. Does the project include slash pile burning?

    No

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

    Yes

26. 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

27. 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

    - *Bridge Culvert Bat Assessment Form_1700141 - printed.pdf https://ecos.fws.gov/ipac/project/32Z37JNPEJBHNECFHGLB2NFHGM/projectDocuments/23431544*

28. 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

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

    No

30. 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

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

    Yes

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

    Yes

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

    No

34. 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

35. 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

36. 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

37. 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

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

    No

39. 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.

40. 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

41. 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.

42. 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 NLEB'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.

43. 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

44. **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

45. **Hibernacula AMM 1**
    Will the project ensure that on-site personnel will use best management practices[1], secondary containment measures, or other standard spill prevention and countermeasures to avoid impacts to possible hibernacula?

    [1] Coordinate with the appropriate Service Field Office on recommended best management practices for karst in your state.

    Yes

46. **Hibernacula AMM 1**
Will the project ensure that, where practicable, a 300 foot buffer will be employed to separate fueling areas and other major containment risk activities from caves, sinkholes, losing streams, and springs in karst topography?

Yes

47. **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

48. **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

49. **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

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

    Yes

Project Questionnaire

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

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

3. 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.

   0.20

4. Please describe the proposed bridge work:
   This project would involve the replacement of the existing bridge with a new I-Beam bridge.

5. Please state the timing of all proposed bridge work:
   Spring of 2022

6. Please enter the date of the bridge assessment:
   June 8, 2020

Avoidance And Minimization Measures (AMMs)

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

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.

HIBERNACULA AMM 1

For projects located within karst areas, on-site personnel will use best management practices, secondary containment measures, or other standard spill prevention and countermeasures to avoid impacts to possible hibernacula. Where practicable, a 300 foot buffer will be employed to separate fueling areas and other major containment risk activities from caves, sinkholes, losing streams, and springs in karst topography.

LIGHTING AMM 1

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

TREE REMOVAL AMM 1

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

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.

Determination Key Description: FHWA, FRA, FTA Programmatic Consultation For Transportation Projects Affecting NLEB Or Indiana Bat

This key was last updated in IPaC on December 02, 2019. 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 threatened **Northern long-eared bat** (NLEB) (*Myotis septentrionalis*).

This decision key should only be used to verify project applicability with the Service's February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion 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.

Raquel Walker

From: Falls, Ryan G <RFalls@indot.IN.gov>
Sent: Tuesday, September 15, 2020 12:32 PM
To: Raquel Walker
Cc: Wright, Kristy
Subject: RE: IPaC Review Request for Des No. 1700141 - NLAA

The document's finding of May Effect, NLAA-With AMMs for DES 1700141 has been deemed sufficient. It has been verified and submitted to USFWS. The Service has 14 days after the "Not Likely to Adversely Affect" determination letter is generated. They will review that information once it is received; if you do not receive a response within 14 days, they have no additional comments for the two bats covered under the programmatic. The NEPA document submittal may not occur until this review period has ended. The Official Species List, Consistency Letter, and Concurrence Verification Letter are all now immediately available for your use. It is suggested that these documents be downloaded at this time. This concludes the IPaC phase of coordination with the Vincennes environmental office.

Ryan Falls
Capital Program Management-Senior Environmental Manager Supervisor
Indiana Department of Transportation
3650 South US Highway 41
Vincennes, IN 47591
Email: rfalls@indot.IN.gov
Cell: 812-582-1387
Office: 812-895-7326

From: Raquel Walker <R.Walker@gaiconsultants.com>
Sent: Tuesday, September 15, 2020 12:26 PM
To: Falls, Ryan G <RFalls@indot.IN.gov>
Cc: Wright, Kristy <KWright@indot.IN.gov>
Subject: RE: IPaC Review Request for Des No. 1700141 & 2nd Comments

Ryan,

Sorry about that. I have updated the project description and generated a new Official Species List and Consistency letter in IPaC.

The IPaC Record Locator ID is: 671-23432838.

Let me know if you need anything else,

Thanks,

Bridge/Structure Bat Assessment Form

Date & Time of Assessment	DOT Project Number	Route/Facility Carried	County
6/8/2020 - 2:00 pm	1700141	SR 157	Greene
Federal Structure ID 027940 (157-28-06075 B)	**Structure Coordinates** (latitude and longitude) 39.14112, -86.99354	**Structure Height** (approximate) 12 ft.	**Structure Length** 50 ft.

Structure Type (check one)

Bridge Construction Style

- (•) Cast-in-place
- ( ) Flat Slab/Box
- ( ) Truss (Side View)
- ( ) Parallel Box Beam
- ( ) Pre-stressed Girder
- ( ) Steel I-beam
- ( ) Covered
- ( ) Other:

Culvert Type

- ( ) Box
- ( ) Pipe/Round
- ( ) Other:

Other Structure

- ( )

Structure Material (check all that apply)

Deck Material	*Beam Material*	*End/Back Wall Material*
[ ] Metal	[ ] None	[X] Concrete
[X] Concrete	[X] Concrete	[X] Timber
[ ] Timber	[ ] Steel	[ ] Stone/Masonry
[ ] Open grid	[ ] Timber	[ ] Other:
[ ] Other:	[ ] Other:	

Culvert Material

- [ ] Metal
- [X] Concrete
- [ ] Plastic
- [ ] Stone/Masonry
- [ ] Other:

Creosote Evidence

- ( ) Yes ( ) No
- (•) Unknown

Notes:

Crossings Traversed (check all that apply)

[X] Bare ground	[X] Open vegetation
[X] Rip-rap	[ ] Closed vegetation
[X] Flowing water	[ ] Railroad
[ ] Standing water	[ ] Road/trail - Type:
[ ] Seasonal water	[ ] Other:

Surrounding Habitat (check all that apply)

[X] Agricultural	[ ] Grassland
[ ] Commercial	[ ] Ranching
[ ] Residential-urban	[X] Riparian/wetland
[X] Residential-rural	[ ] Mixed use
[ ] Woodland/forested	[ ] Other:

Areas Assessed (check all that apply)

Check all areas that apply. If an area is not present in the structure, check the "not present" box.
Document all bat indicators observed during the assessment. Include the species present, if known, and provide photo documentation as indicated.

Area (check if assessed)	**Assessment Notes**	**Evidence of Bats** (include photos if present)
[X] All crevices and cracks: **Bridges/culverts:** rough surfaces or imperfections in concrete **Other structures:** soffits, rafters, attic areas	[X] Not present	[ ] Visual - live # dead # [ ] Guano [ ] Staining [ ] Audible [ ] Odor [ ] Photos [ ] Species
[X] Concrete surfaces (open roosting on concrete)	[X] Not present	[ ] Visual - live # dead # [ ] Guano [ ] Staining [ ] Audible [ ] Odor [ ] Photos [ ] Species
[X] Spaces between concrete end walls and the bridge deck	[X] Not present	[ ] Visual - live # dead # [ ] Guano [ ] Staining [ ] Audible [ ] Odor [ ] Photos [ ] Species
[ ] Crack between concrete railings on top of the bridge deck (Gap, Railing)	[ ] Not present	[ ] Visual - live # dead # [ ] Guano [ ] Staining [ ] Audible [ ] Odor [ ] Photos [ ] Species
[ ] Vertical surfaces on concrete I-beams	[ ] Not present	[ ] Visual - live # dead # [ ] Guano [ ] Staining [ ] Audible [ ] Odor [ ] Photos [ ] Species
[X] Spaces between walls, ceiling joists	[X] Not present	[ ] Visual - live # dead # [ ] Guano [ ] Staining [ ] Audible [ ] Odor [ ] Photos [ ] Species
[ ] Weep holes, scupper drains, and inlets/pipes	[ ] Not present	[ ] Visual - live # dead # [ ] Guano [ ] Staining [ ] Audible [ ] Odor [ ] Photos [ ] Species
[X] All guiderails	[X] Not present	[ ] Visual - live # dead # [ ] Guano [ ] Staining [ ] Audible [ ] Odor [ ] Photos [ ] Species
[X] All expansion joints	[X] Not present	[ ] Visual - live # dead # [ ] Guano [ ] Staining [ ] Audible [ ] Odor [ ] Photos [ ] Species

Name: Harlan Ford

Signature:

Appendix D

Section 106 Consultation

Minor Projects PA Project Assessment Form– Category B Projects with Archaeology Work

Date: 10/19/20

Project Designation Number: 1700141

Route Number: SR 157

Project Description: Bridge Project, 2.35 miles north of SR 67

The Indiana Department of Transportation (INDOT) and Federal Highway Administration (FHWA) intend to proceed with a bridge replacement project located on SR 157 approximately 2.35 miles north of SR 67. Specifically, this project is located in Section 8, Township 8 North, Range 5 West, as shown on the Arney USGS 7.5 Minute Topographic Map. Bridge No. 157-28-06075B; NBI No. 27940 is a 48-foot long, single span prestressed concrete box beam (PCBB) bridge that crosses over a Branch of Lemon Creek. This project would involve the replacement of the existing bridge with a new I-Beam bridge. In addition to the bridge replacement, this project will also involve widening the roadway embankments and shoulders to provide 4-foot wide paved shoulders (compared to the existing 2.6-foot wide unpaved shoulder), milling and overlaying the roadway pavement, removing and replacing the existing guardrail to upgrade to current standards, clearing and realigning the stream channel, replacing a pipe in the northeast quadrant, placing riprap along the banks as a scour countermeasure, constructing riprap drainage turnouts, reconstructing the existing embankment slopes, and providing side slope stabilization measures. This project is expected to require approximately 0.88 acre of permanent right-of-way (ROW) and will extend approximately 280 ft. to the north and 238 ft. to the south from the center of the structure. The purpose of this project is to provide a structurally and hydraulically sufficient structure conveying SR 157 over Branch of Lemon Creek.

Feature crossed (if applicable): Branch of Lemon Creek

Township: Jefferson Township **City/County:** Greene County

Information reviewed (please check all that apply):

- ☑ General project location map
- ☑ USGS map
- ☑ Aerial photograph
- ☑ Interim Report
- ☐ Written description of project area
- ☑ General project area photos
- ☑ Soil survey data
- ☐ Previously completed historic property reports
- ☑ Previously completed archaeology reports
- ☑ Bridge Inspection Information
- ☑ SHAARD
- ☑ SHAARD GIS
- ☑ Streetview Imagery

Other (please specify): Indiana Historic Building, Bridges, and Cemeteries Map (IHBBCM); Bridge Inspection Application System (BIAS); INDOT-sponsored *Historic Bridge Inventory* (HBI); 2010 County GIS data (accessed via https://greenein.wthgis.com/); project information provided by GAI Consultants, Inc., dated 1/8/2020 and 9/29/2020 and on file at INDOT-CRO;

Bennett, Stacy N. and Jeffrey A. Plunkett
2020 Phase Ia Archaeological Field Reconnaissance for a Bridge Replacement on State Road (SR) 157 over a Branch of Lemon Creek, approximately 2.35 miles north of SR 67, Jefferson Civil Township, Greene County, Indiana (Des. No. 1700141). Report on file, Indian Department of Transportation, Cultural Resources Office, Indianapolis, In.

Please specify all applicable categories and condition(s) (applicable conditions are highlighted):

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 https://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.

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-Cultural Resources Office (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 Greene County. No listed resources are present within 0.25 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 *Greene County Interim Report* (2000; Jefferson Township) 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 sites are recorded within 0.25 mile of the project.

Land surrounding the project area is rural with agricultural fields encompassing the bridge. Two above-ground properties are within 0.25 mile of the project area; both properties date to the early-twentieth century. One of these properties, consisting of a house and multiple farming-related outbuildings, is located southwest of the project area approximately 1,250 feet away from the project area. Additionally, a rise in the topography between the property and the bridge completely blocks any view from the property to the project area. For the purposes of this determination, this property is not considered adjacent to the project. The other property, consisting of a house and three (3) associated outbuildings, is located south of the project area along SR 157. The house has experienced many alterations, including new roofing materials, replacement doors and windows, and the addition of vinyl siding. This property is not considered potentially eligible to the National Register since it does not retain the necessary material integrity.

The subject bridge (#157-28-06075B; NBI #27940) is a prestressed concrete box beam bridge built in 1965 and reconstructed in 1980. The bridge length is 50 feet and the deck width, out-to-out, is 30.3 feet. The INDOT *Historic Bridge Inventory* determined that this bridge is not eligible for listing in the National Register (Volume 2, Section 2, page 509).

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 Cultural Resources Office (CRO) archaeologist who meets the Secretary of the Interior's Professional Qualification Standards as per 36 CFR Part 61 reviewed the archaeology report prepared by NS Services (Bennett and Plunkett 2020). The records check determined that the northeast, southeast, and southwest portions of the proposed project area been previously surveyed and contained no archaeological sites. A site is recorded in the northeast quadrant but is mapped in the wrong location and is not actually in the current project area. A 1.1-acre survey area was investigated through pedestrian survey of the northwest quadrant and visual inspection of disturbed areas. No archaeological sites were identified, and no further work was recommended. It is our opinion that the report is acceptable, and we concur with the evaluations and recommendations made by NS Services (Bennett and Plunkett 2020). Therefore, there are no archaeological concerns as long as the project scope remains unchanged.

Accidental Discovery: If any archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, construction within 100 feet of the discovery will be

stopped and the INDOT Cultural Resources Office and the Division of Historic Preservation and Archaeology will be notified immediately.

INDOT Cultural Resources staff reviewer(s): Kelyn Alexander and Shaun Miller

****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.*

Raquel Walker

From: Miller, Shaun (INDOT) <smiller@indot.IN.gov>
Sent: Monday, October 19, 2020 11:59 AM
To: Raquel Walker
Cc: David Bourff; Alexander, Kelyn; Davis, Alan; Falls, Ryan G; Jeff Plunkett
Subject: RE: MPPA Submittal for Des No. 1700141
Attachments: Minor Projects PA determination form_B-12_1700141.pdf

Raquel,

Thank you for submitting the archaeological report and project related materials for our review under the MPPA. We have determined that this project falls under several category A work types and B-12 of the Minor Projects PA, thus concluding the Section 106 process. The determination form is attached for your use in the CE document.

Please submit both electronic and paper copies of the approved archaeology report to DHPA, indicating in the cover letter that the project qualified as a Minor Project and therefore the report is for their records only and no formal review is required under Section 106. In addition, we ask that a copy of the DHPA submittal letter be sent to INDOT CRO c/o Shaun Miller during the time of submission and that the archaeological report be posted to IN SCOPE (please ensure that the uploaded file follows the IN SCOPE naming conventions).

Please keep in mind that if the scope of the project or project limits should change, our office will need to re-examine the information to determine whether the MPPA still applies. Please don't hesitate to contact us should you have any questions or need additional information.

Thanks again,

Shaun Miller
INDOT, Cultural Resources Office
Archaeology Team Lead
(317)233-6795

From: Raquel Walker <R.Walker@gaiconsultants.com>
Sent: Tuesday, September 29, 2020 2:03 PM
To: Branigin, Susan <SBranigin@indot.IN.gov>
Cc: Kumar, Anuradha <akumar@indot.IN.gov>; Miller, Shaun (INDOT) <smiller@indot.IN.gov>; David Bourff <d.bourff@gaiconsultants.com>
Subject: MPPA Submittal for Des No. 1700141

Good Morning Susan,

I am submitting a request to have the above mentioned project reviewed under Category B: Type 12 and Category A: Types 4, 6 & 9. I have attached a shapefile for the project location, as well as some maps and photos for your convenience. As this project will take place in undisturbed soils, I have also attached the archeological short report that was prepared for this project.

Please let me know if you need anything else!

INDIANA ARCHAEOLOGICAL SHORT REPORT

State Form 54566 (1-11)

INDIANA DEPARTMENT OF NATURAL RESOURCES
DIVISION OF HISTORIC PRESERVATION
AND ARCHAEOLOGY
402 West Washington Street, Room W274
Indianapolis, Indiana 46204-2739
Telephone Number: (317) 232-1646
Fax Number: (317) 232-0693
E-mail: dhpa@dnr.IN.gov

Where applicable, the use of this form is recommended but not required by the Division of Historic Preservation and Archaeology.

Author: Stacy N. Bennett and Jeffrey A. Plunkett

Date (*month, day, year*): September 22, 2020

Project Title: Phase Ia Archaeological Field Reconnaissance for a Bridge Replacement on State Road (SR) 157 over a Branch of Lemon Creek, approximately 2.35 miles north of SR 67, Jefferson Civil Township, Greene County, Indiana (Des. No. 1700141)

PROJECT OVERVIEW

Project Description: The Indiana Department of Transportation (INDOT) and Federal Highway Administration (FHWA) intend to proceed with a bridge replacement project located on SR 157 approximately 2.35 miles north of SR 67. Specifically, this project is located in Section 8, Township 8 North, Range 5 West, as shown on the Arney USGS 7.5 Minute Topographic Map. Bridge No. 157-28-06075B is a 48 ft. long, single span prestressed concrete box beam (PCBB) bridge that crosses over a Branch of Lemon Creek. This project would involve the replacement of the existing bridge with a new I-Beam bridge. In addition to the bridge replacement, this project will also involve widening the roadway embankments and shoulders to provide 4 ft. wide paved shoulders compared to the existing 2.6 ft. wide unpaved shoulder, milling and overlaying the roadway pavement, removing and replacing the existing guardrail to upgrade to current standards, clearing and realigning the stream channel, replacing a pipe in the northeast quadrant, placing riprap along the banks as a scour countermeasure, constructing riprap drainage turnouts, reconstructing the existing embankment slopes and, and providing side slope stabilization measures. This project is expected to require approximately 0.88 acre of permanent right-of-way and will extend approximately 280 ft. to the north and 238 ft. to the south from the center of the structure. The purpose of this project is to provide a structurally and hydraulically sufficient structure conveying SR 157 over Branch of Lemon Creek.

INDOT Designation Number/ Contract Number: Des. No. 1700141 Project Number: 19352

DHPA Number: Approved DHPA Plan Number:

Prepared For: GAI Consultants

Contact Person: David Bourff

Address: 201 N. Illinois Street, Suite 1700

City: Indianapolis State: IN ZIP Code: 46204

Telephone Number: (317) 436-4841 Email Address: D.Bourff@gaiconsultants.com

☐ Archaeological records check has determined that the project area has the potential to contain archaeological resources.

☒ Phase Ia reconnaissance has located no archaeological resources in the project area.

☐ Phase Ia reconnaissance has identified landforms conducive to buried archaeological deposits.

Actual Area Surveyed hectares: 00.5 acres: 01.1

Comments:

RECOMMENDATION

☐ The archaeological records check has determined that the project area has the potential to contain archaeological resources and a Phase Ia archaeological reconnaissance is recommended.

☐ The archaeological records check has determined that the project area does not have the potential to contain archaeological resources and no further work is recommended before the project is allowed to proceed.

☒ The Phase Ia archaeological reconnaissance has located no archaeological sites within the project area and it is recommended that the project be allowed to proceed as planned.

☐ The Phase Ia archaeological reconnaissance has determined that the project area includes landforms which have the potential to contain buried archaeological deposits. It is recommended that Phase Ic archaeological subsurface reconnaissance be conducted before the project is allowed to proceed.

☐ The Phase Ia archaeological reconnaissance has determined that the project area is within 100 feet of a cemetery and a Cemetery Development Plan is required per IC-14-21-1-26.5.

Cemetery Name:

Other Recommendations/Commitments:

Pursuant to IC-14-21-1, if any archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, state law (Indiana Code 14-21-1-27 and 29) requires that the discovery must be reported to the Department of Natural Resources within two (2) business days. In that event, please call (317) 232-1646.

ATTACHMENTS

☒ Figure showing project location within Indiana.

☒ USGS topographic map showing the project area *(1:24,000 scale)*.

☒ Aerial photograph showing the project area, land use, and survey methods.

☒ Photographs of the project area.

☐ Project plans *(if available)*

Other Attachments:

Table 1. Previously reported sites within one mile of the project.
Table 2. Previous archaeological studies within one mile of the project.

Baltz, Christopher J. and Cheryl Ann Munson
1989 Archaeological Site Data Base Enhancement III, Coalfields of Southwestern Indiana: Clay, Daviess, Dubois, Gibson, Greene, Knox, Martin, Pike, Spencer, Sullivan and Warrick Counties, Also Crawford, Lawrence, Posey and Vanderburgh Counties. Reports of Investigations 89-3. Glenn A. Black Laboratory of Archaeology, Indiana University, Bloomington, Indiana.

Appendix E

Red Flag and Hazardous Materials

INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N642
Indianapolis, Indiana 46204

PHONE: (317) 232-5113
FAX: (317) 233-4929

Eric Holcomb, Governor
Joe McGuinness, Commissioner

Date: June 28, 2019

To: Site Assessment & Management
Environmental Policy Office - Environmental Services Division
Indiana Department of Transportation
100 N Senate Avenue, Room N642
Indianapolis, IN 46204

From: Harlan Ford
GAI Consultants Inc.
201 N. Illinois Street
Indianapolis, IN
H.Ford@gaiconsultants.com

Re: RED FLAG INVESTIGATION
1700141, State Project
Bridge Replacement
SR-157
Greene County, Indiana

PROJECT DESCRIPTION

Brief Description of Project: INDOT is proposing to replace the existing bridge structure (Bridge # 157-28-06075B) located on SR-157 in Greene County. This project is located approximately 2.35 miles north of SR-67, in Section 8, Township 8 North, Range 5 West, as shown on the Arney USGS 7.5 Minute Topographic Map. The existing bridge is a prestressed concrete box beam (PCBB) structure that is showing signs of advanced deterioration. The proposed project plans to replace the existing structure with a widened, PCCB structure meeting current minimum design standards. Since the new structure will be wider than its predecessor, the roadway embankments and shoulders will also need to be widened to transition into the new structure. Approximately 0.08 acre of tree clearing is anticipated to complete the project. Riprap will also need to be placed along the slope walls as a scour countermeasure.

Bridge and/or Culvert Project: Yes ☒ No ☐ Structure # 157-28-06075B
If this is a bridge project, is the bridge Historical? Yes ☐ No ☒ , Select ☐ Non-Select ☐
(Note: If the project involves a historical bridge, please include the bridge information in the Recommendations Section of the report).
Proposed right of way: Temporary ☒ # Acres 0.26 Permanent ☒ # Acres 0.1, Not Applicable ☐
Type of excavation: Excavation at this location will not extend deeper than previous construction limits.
Maintenance of traffic: At this time, a road closure with a detour route is the preferred method to maintain traffic. An official detour route has not been selected at this time. The designer will be responsible for examining other options and providing recommendations as this project moves forward.
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	**2**
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 airports within 3.8 miles (20,000 feet) is required.

Explanation:

Pipelines: Two pipelines were identified within a 0.5 mile search radius of the project area. The nearest pipeline is a 12" natural gas pipeline, owned by Citizens Gas and Coke Utility company. This pipeline is located approximately 0.14 miles due west of the project area. 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	**1**	Canal Routes - Historic	**N/A**
Karst Springs	**N/A**	NWI - Wetlands	**14**
Canal Structures – Historic	**N/A**	Lakes	**5**
NPS NRI Listed	**N/A**	Floodplain - DFIRM	**1**
NWI-Lines	**1**	Cave Entrance Density	**N/A**
IDEM 303d Listed Streams and Lakes (Impaired)	**1**	Sinkhole Areas	**N/A**
Rivers and Streams	**6**	Sinking-Stream Basins	**N/A**

Explanation:

NWI Points: One NWI point was identified within 0.5 miles of the project area. This NWI point is located approximately 0.44 miles southeast of the project area. No impact is expected.

NWI Lines: One NWI line was identified within 0.5 miles of the project area. This NWI line is located approximately 0.23 miles due south of the project area. No impact is expected.

IDEM 303d Listed Stream: One 303d listed stream was identified within 0.5 miles of the project area. This is a UNT to Eel river and it is listed as impaired for E. coli and nutrients. This stream is located approximately 0.48 miles northeast of the project area. No impact is expected.

Rivers and Streams: A total of six stream segments were identified within 0.5 miles of the project area. The nearest stream, UNT to Lemon Creek, flows through the project area. A Waters of the U.S. Report will be prepared and coordination with INDOT ES Ecology and Waterway Permitting will occur.

NWI Wetlands: A total of fourteen NWI wetlands was identified within 0.5 miles of the project area. The nearest mapped NWI wetland is located approximately 0.29 miles northwest of the project area. No impact is expected.

Lakes: A total of five lakes were identified within 0.5 miles of the project area. The nearest mapped lake is located approximately 0.46 miles northeast of the project area. No impact is expected.

Floodplains: One floodplain polygon was identified within the 0.5 mile search radius. The project area is located within this floodplain polygon. Coordination with INDOT ES Ecology and Waterway Permitting will occur.

URBANIZED AREA BOUNDARY SUMMARY

Explanation: N/A

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	**1**	Mineral Resources	**N/A**
Mines – Surface	**1**	Mines – Underground	**N/A**

Explanation:

Petroleum wells: One petroleum well is located within the 0.5 mile search radius. This well is located approximately 0.43 miles northeast of the project area. No impact is expected.

Surface mines: One surface mine is located within the 0.5 mile search radius. This surface mine is located approximately 0.44 miles northwest of the project area. No impact is 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	**N/A**
Infectious/Medical Waste Sites	**N/A**	NPDES Pipe Locations	**N/A**
Leaking Underground Storage (LUST) Sites	**N/A**	Notice of Contamination Sites	**N/A**

Explanation: There are no hazardous concerns identified within the 0.5 mile search radius.

ECOLOGICAL INFORMATION SUMMARY

The Greene County listing of the Indiana Natural Heritage Data Center information on endangered, threatened, or rare (ETR) species and high quality natural communities is attached with ETR species highlighted. A preliminary review of the Indiana Natural Heritage Database by INDOT Environmental services did not indicate the presence of endangered or threatened species in or within 0.5 miles. Coordination with the USFWS and IDNR will occur.

Bats: A review of the USFWS database did not indicate the presence of endangered bat species in or within 0.5 miles of the project area. The project area is located in a rural area surrounded primarily by farm fields. The May 8, 2019 inspection report for Bridge # 157-28-06075B states that no evidence of bats was seen or heard under the bridge. The range-wide programmatic consultation for the Indiana Bat and Northern Long-eared Bat will be completed according to "Using the USFWS's IPaC System Listed Bat Consultation for INDOT Projects."

Rusty Patched Bumble Bee: An inquiry using the USFWS Information for Planning and Consulting (IPaC) website did not indicate the presence of the federally endangered species, the Rusty Patched Bumble Bee, in or within 0.5 miles of the project area. No impact is expected.

RECOMMENDATIONS SECTION

Include recommendations from each section. If there are no recommendations, please indicate N/A:

INFRASTRUCTURE: N/A

WATER RESOURCES: The presence of the following water resources will require the preparation of a Waters of the U.S. Report and coordination with INDOT ES Ecology and Waterway Permitting:

- The project area is located within a floodplain (coordination only).
- One stream segment, UNT to Lemon Creek, flows through the project area.

URBANIZED AREA BOUNDARY: N/A

MINING/MINERAL EXPLORATION: N/A

HAZMAT CONCERNS: N/A

ECOLOGICAL INFORMATION: Coordination with the USFWS and IDNR will occur. The range-wide programmatic consultation for the Indiana Bat and Northern Long-eared Bat will be completed according to "Using the USFWS's IPaC System Listed Bat Consultation for INDOT Projects."

INDOT Environmental Services concurrence: Ronald E. Bales Digitally signed by Ronald Bales Date: 2019.06.28 08:10:39 -04'00' (Signature)

Prepared by:
Harlan M. Ford
Senior Environmental Specialist
GAI Consultants Inc.

Graphics:

A map for each report section with a 0.5 mile search radius buffer around all project area(s) showing all items identified as possible items of concern is attached. If there is not a section map included, please change the YES to N/A:

SITE LOCATION: YES

INFRASTRUCTURE: YES

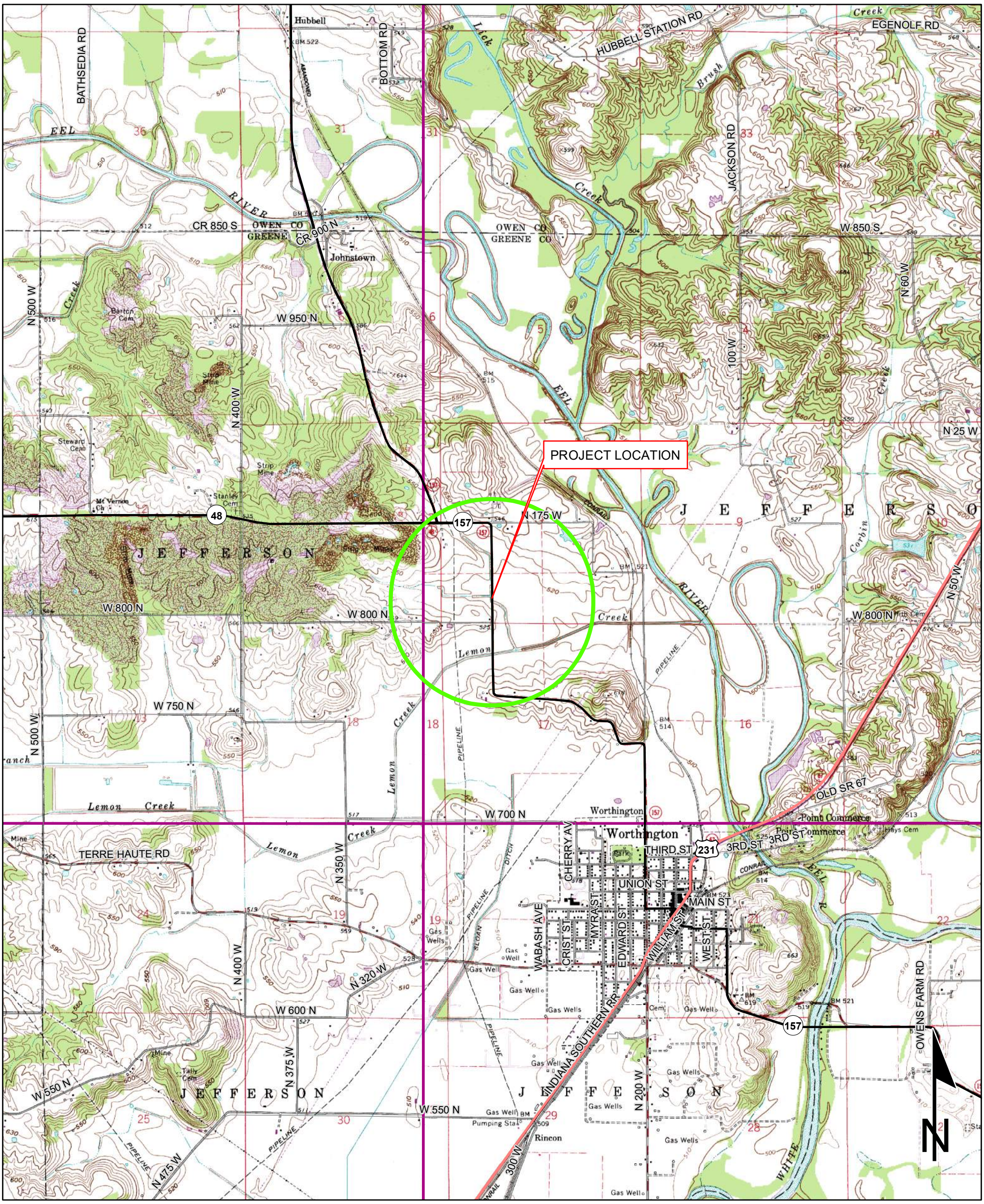
WATER RESOURCES: YES

URBANIZED AREA BOUNDARY: N/A

MINING/MINERAL EXPLORATION: YES

HAZMAT CONCERNS: YES

Red Flag Investigation - Site Location Map
SR 157 over Br. Lemon Creek, 2.35 miles N of SR 67
Des. No. 1700141, Bridge Replacement
Greene County, Indiana



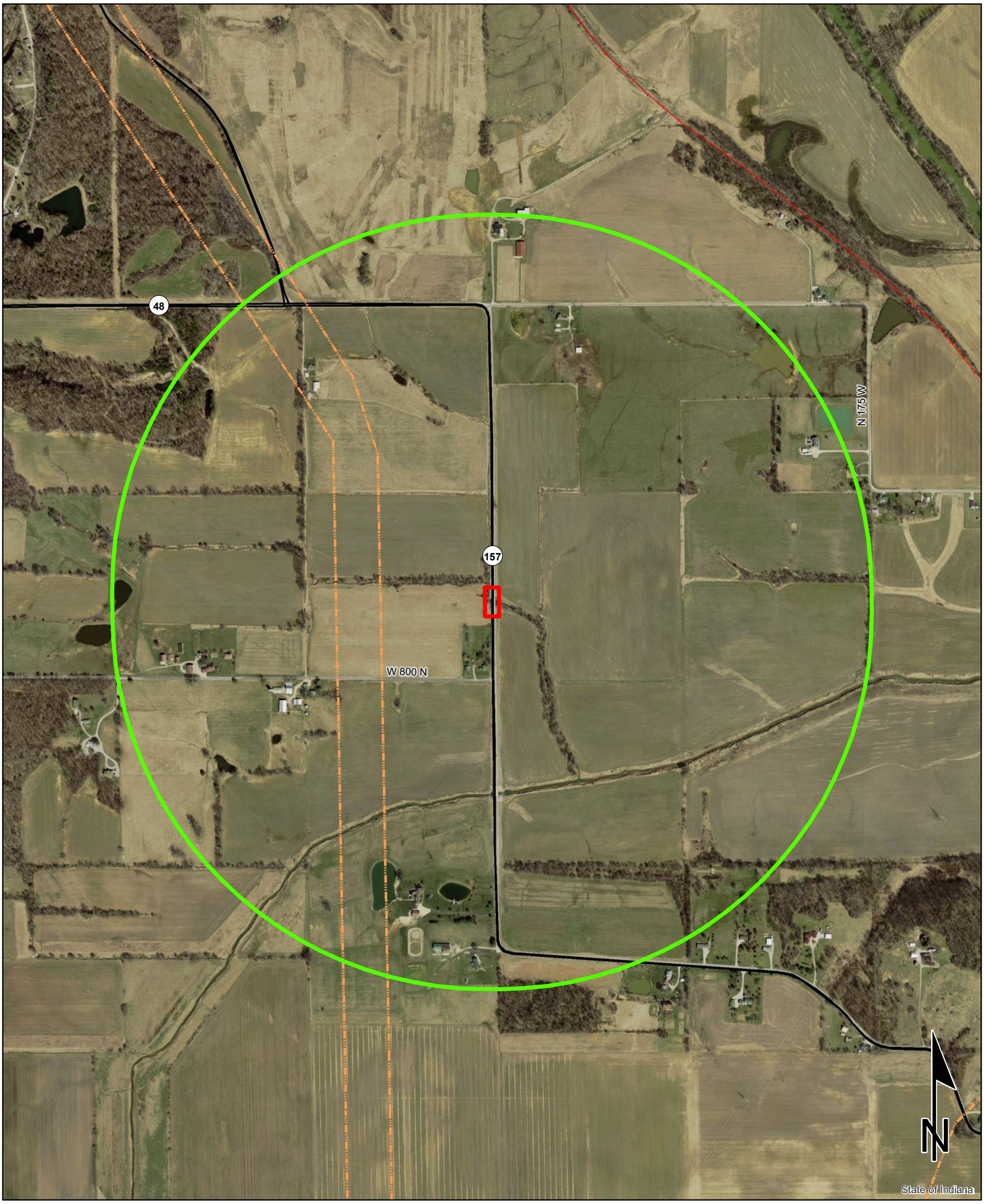
0.6 0.3 0 0.6 Miles

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.

ARNEY QUADRANGLE
INDIANA
7.5 MINUTE SERIES
(TOPOGRAPHIC)

Red Flag Investigation - Infrastructure
SR 157 over Br. Lemon Creek, 2.35 miles N of SR 67
Des. No. 1700141, Bridge Replacement
Greene County, Indiana



0.15 0.075 0 0.15 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

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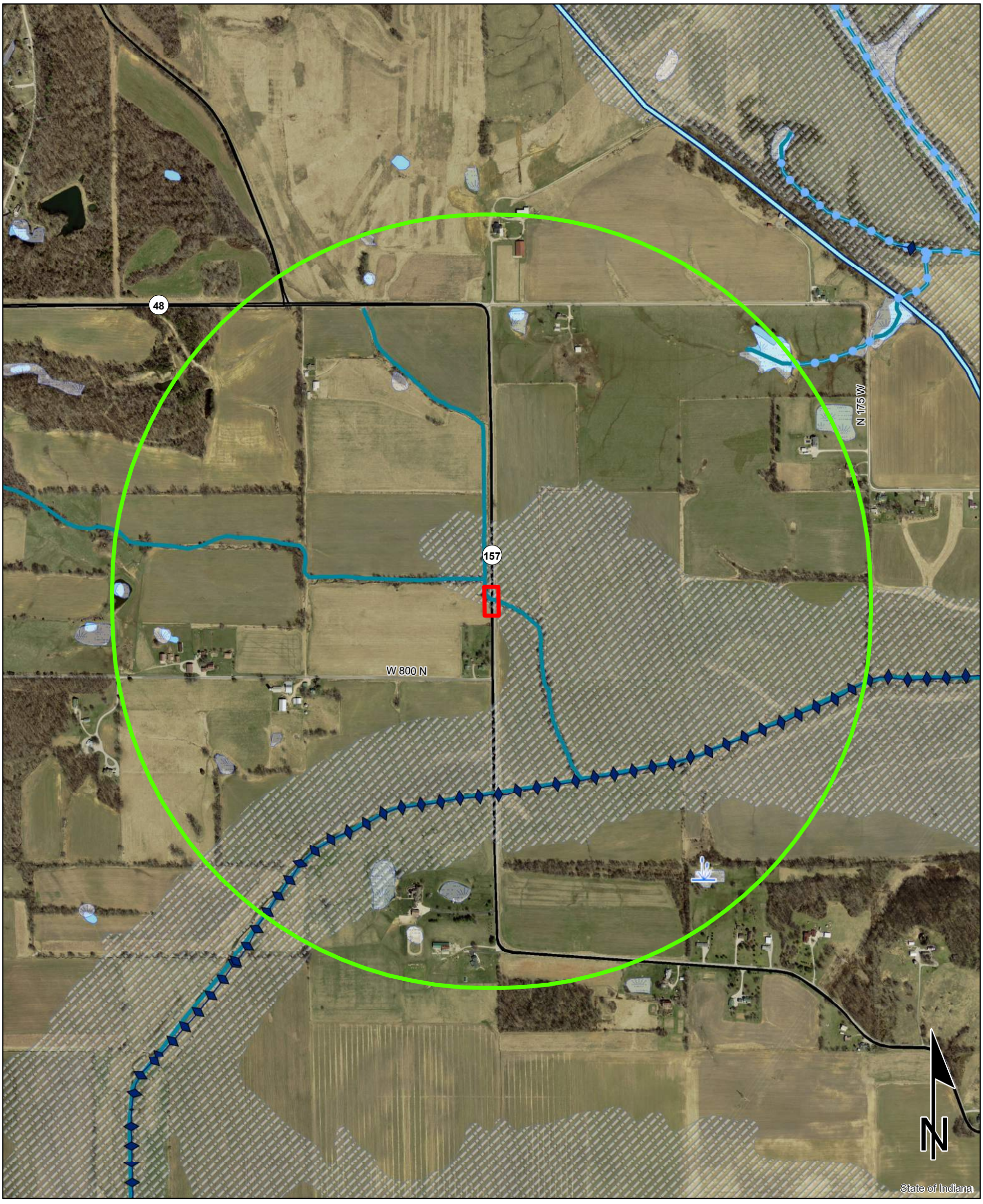
- Religious Facility
- Airport
- Cemeteries
- Hospital
- School
- Recreation Facility
- Pipeline
- Railroad
- Trails
- Managed Lands
- County Boundary
- Project Area
- Half Mile Radius
- Toll
- Interstate
- State Route
- US Route
- Local Road

Red Flag Investigation - Water Resources
SR 157 over Br. Lemon Creek, 2.35 miles N of SR 67
Des. No. 1700141, Bridge Replacement
Greene County, Indiana



0.15 0.075 0 0.15 Miles

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Orthophotography - Obtained from Indiana Map Framework Data (www.indianamap.org)
Map Projection: UTM Zone 16 N **Map Datum:** NAD83

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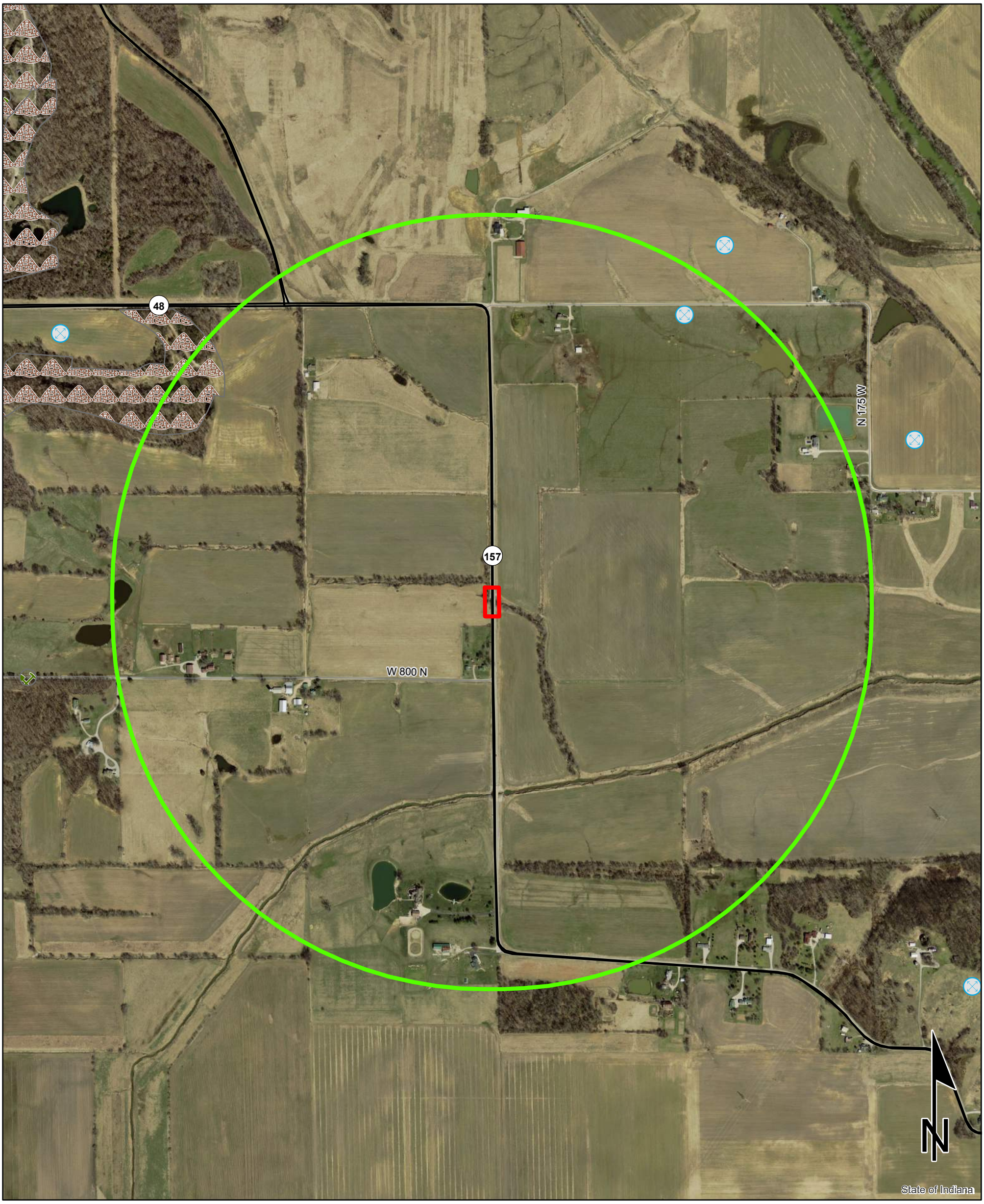
- NWI - Point
- Karst Spring
- NWI- Line
- Impaired_Stream_Lake
- NPS NRI listed
- River
- Canal Structure - Historic
- Canal Route - Historic
- Wetlands
- Lake
- Floodplain - DFIRM
- Cave Entrance Density
- Sinkhole Area
- Sinking-Stream Basin
- County Boundary
- Project Area
- Half Mile Radius
- Toll
- Interstate
- State Route
- US Route
- Local Road

Red Flag Investigation - Mining and Mineral Exploration
SR 157 over Br. Lemon Creek, 2.35 miles N of SR 67
Des. No. 1700141, Bridge Replacement
Greene County, Indiana



0.15 0.075 0 0.15 Miles

Sources:

Non Orthophotography

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

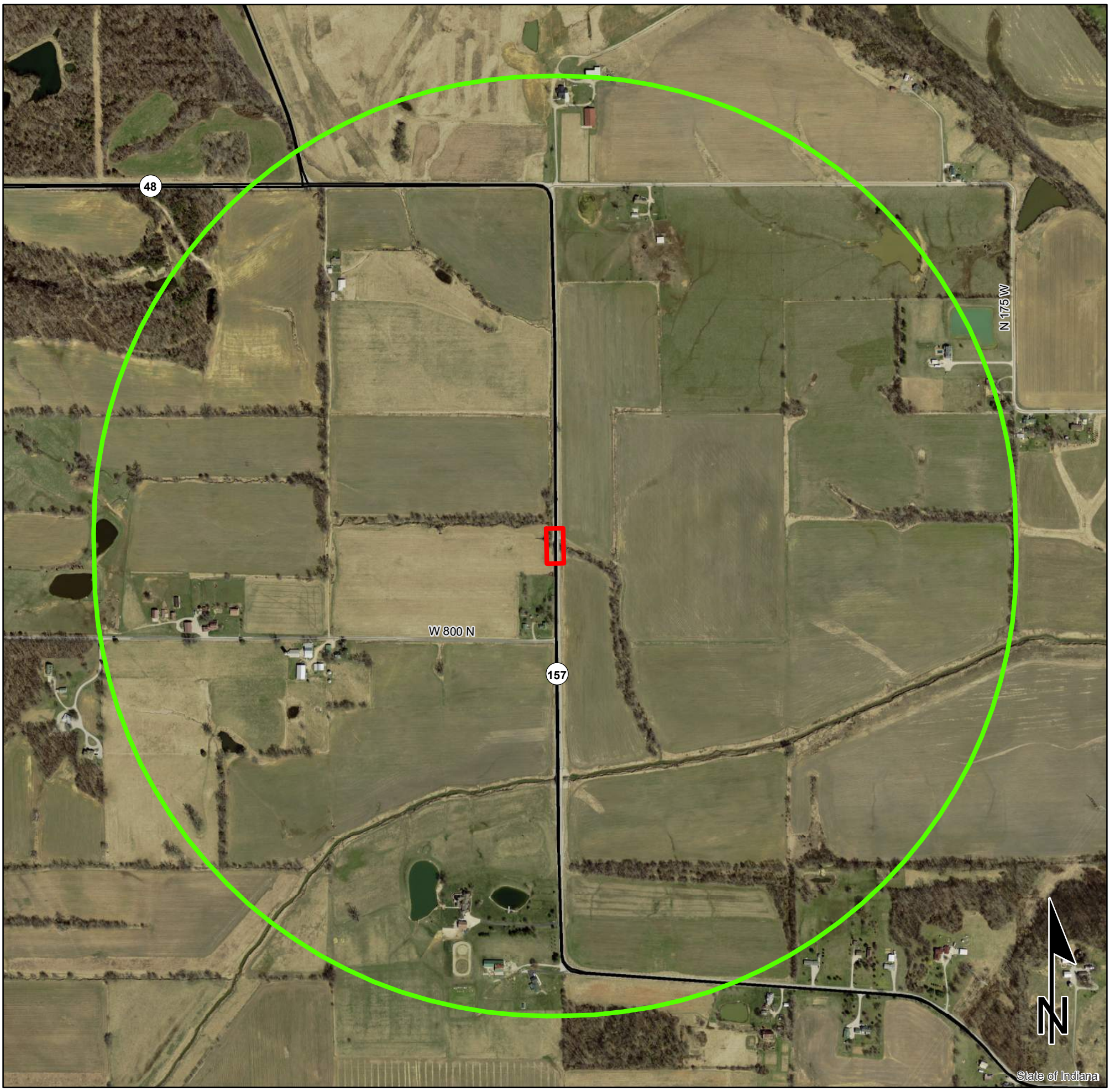
Orthophotography - Obtained from Indiana Map Framework Data (www.indianamap.org)

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.

- Oil and Gas Wells
- Mineral Resources
- Mine - Surface
- Mine - Underground
- County Boundary
- Project Area
- Half Mile Radius
- Toll
- Interstate
- State Route
- US Route
- Local Road

Red Flag Investigation - HAZMAT
SR 157 over Br. Lemon Creek, 2.35 miles N of SR 67
Des. No. 1700141, Bridge Replacement
Greene County, Indiana



- Brownfield
- RCRA Corrective Action Sites
- Confined Feeding Operation
- Notice_Of_Contamination
- Construction/Demolition Site
- Infectious/Medical Waste Site
- Leaking Underground Storage Tank
- Manufactured Gas Plant
- NPDES Facilites
- NPDES Pipe Locations
- Open Dump Waste Site
- RCRA Generator/TSD
- Restricted Waste Site
- Septage Waste Site
- Solid Waste Landfill
- State Cleanup Site
- Superfund
- Tire Waste Site
- Underground Storage Tank
- Voluntary Remediation Program
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0.15 0.075 0 0.15 Miles

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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

Indiana County Endangered, Threatened and Rare Species List

County: Greene

Species Name	Common Name	FED	STATE	GRANK	SRANK
Crustacean: Malacostraca					
Orconectes inermis testii	Troglobitic Crayfish		SR	G5T3	S3
Crustacean: Ostracoda					
Sagittocythere barri	Barr's Commensal Cave Ostracod		WL	G5	S3S4
Mollusk: Bivalvia (Mussels)					
Cyprogenia stegaria	Eastern Fanshell Pearlymussel	LE	SE	G1Q	S1
Epioblasma propinqua	Tennessee Riffleshell		SX	GX	SX
Epioblasma torulosa rangiana	Northern Riffleshell	LE	SE	G2T2	S1
Epioblasma torulosa torulosa	Tubercled Blossom	LE	SE	G2TX	SX
Epioblasma triquetra	Snuffbox	LE	SE	G3	S1
Fusconaia subrotunda	Longsolid	C	SE	G3	SX
Obovaria retusa	Ring Pink	LE	SX	G1	SX
Obovaria subrotunda	Round Hickorynut	C	SE	G4	S1
Pleurobema clava	Clubshell	LE	SE	G1G2	S1
Pleurobema cordatum	Ohio Pigtoe		SSC	G4	S2
Pleurobema plenum	Rough Pigtoe	LE	SE	G1	S1
Pleurobema pyramidatum	Pyramid Pigtoe		SE	G2G3	SX
Ptychobranchus fasciolaris	Kidneyshell		SSC	G4G5	S2
Quadrula cylindrica cylindrica	Rabbitsfoot	LT	SE	G3G4T3	S1
Villosa fabalis	Rayed Bean	LE	SE	G2	S1
Villosa lienosa	Little Spectaclecase		SSC	G5	S3
Insect: Lepidoptera (Butterflies & Moths)					
Cycnia inopinatus	The Unexpected Milkweed Moth		SR	G4	S2S3
Lesmone detrahens	A Moth		SR	G5	S2
Lethe anthedon	Northern Pearly-eye		SR	G5	S2S3
Insect: Odonata (Dragonflies & Damselflies)					
Enallagma divagans	Turquoise Bluet		SR	G5	S3
Hagenius brevistylus	Dragonhunter		SR	G5	S2S3
Insect: Tricoptera (Caddisflies)					
Diplectrona metaqui	A Diplectronan Caddisfly		ST	G4G5	S2
Fish					
Lepomis symmetricus	Bantam Sunfish		SE	G5	S1
Amphibian					
Acris blanchardi	Northern Cricket Frog		SSC	G5	S4
Lithobates areolatus circulosus	Northern Crawfish Frog		SE	G4T4	S2
Necturus maculosus	Common mudpuppy		SSC	G5	S2
Reptile					
Opheodrys aestivus	Rough Green Snake		SSC	G5	S3
Terrapene carolina carolina	Eastern Box Turtle		SSC	G5T5	S3

Indiana Natural Heritage Data Center
Division of Nature Preserves
Indiana Department of Natural Resources
This data is not the result of comprehensive county surveys.

Fed: LE = Endangered; LT = Threatened; C = candidate; PDL = proposed for delisting

State: SE = state endangered; ST = state threatened; SR = state rare; SSC = state species of special concern; SX = state extirpated; SG = state significant; WL = watch list

GRANK: Global Heritage Rank: G1 = critically imperiled globally; G2 = imperiled globally; G3 = rare or uncommon globally; G4 = widespread and abundant globally but with long term concerns; G5 = widespread and abundant globally; G? = unranked; GX = extinct; Q = uncertain rank; T = taxonomic subunit rank

SRANK: State Heritage Rank: S1 = critically imperiled in state; S2 = imperiled in state; S3 = rare or uncommon in state; G4 = widespread and abundant in state but with long term concern; SG = state significant; SH = historical in state; SX = state extirpated; B = breeding status; S? = unranked; SNR = unranked; SNA = nonbreeding status unranked

Indiana County Endangered, Threatened and Rare Species List

County: Greene

Species Name	Common Name	FED	STATE	GRANK	SRANK
Terrapene ornata ornata	Ornate Box Turtle		SE	G5T5	S1
Bird					
Ammodramus henslowii	Henslow's Sparrow		SE	G4	S3B
Ardea alba	Great Egret		SSC	G5	S1B
Asio flammeus	Short-eared Owl		SE	G5	S2
Botaurus lentiginosus	American Bittern		SE	G5	S2B
Buteo lineatus	Red-shouldered Hawk		SSC	G5	S3
Buteo platypterus	Broad-winged Hawk		SSC	G5	S3B
Chlidonias niger	Black Tern		SE	G4G5	S1B
Chordeiles minor	Common Nighthawk		SSC	G5	S4B
Circus hudsonius	Northern Harrier		SE	G5	S2
Cistothorus palustris	Marsh Wren		SE	G5	S3B
Cistothorus platensis	Sedge Wren		SE	G5	S3B
Gallinago delicata	Wilson's Snipe			G5	S1S2B
Gallinula galeata	Common gallinule		SE	G5	S3B
Grus americana	Whooping Crane	LE,XN	SE	G1	SNA
Haliaeetus leucocephalus	Bald Eagle		SSC	G5	S2
Ixobrychus exilis	Least Bittern		SE	G5	S3B
Lanius ludovicianus	Loggerhead Shrike		SE	G4	S3B
Limnodromus griseus	Short-billed Dowitcher		SSC	G5	S3M
Nyctanassa violacea	Yellow-crowned Night-heron		SE	G5	S2B
Nycticorax nycticorax	Black-crowned Night-heron		SE	G5	S1B
Pandion haliaetus	Osprey		SE	G5	S1B
Rallus elegans	King Rail		SE	G4	S1B
Sternula antillarum athalassos	Interior Least Tern	LE	SE	G4T2Q	S1B
Tringa melanoleuca	Greater Yellowlegs		SSC	G5	S3M
Tringa solitaria	Solitary Sandpiper		SSC	G5	S3M
Tyto alba	Barn Owl		SE	G5	S2
Wilsonia citrina	Hooded Warbler		SSC	G5	S3B
Mammal					
Lasiurus borealis	Eastern Red Bat		SSC	G3G4	S4
Lasiurus cinereus	Hoary Bat		SSC	G3G4	S4
Myotis austroriparius	Southeastern Bat		SSC	G4	SH
Myotis lucifugus	Little Brown Bat	C	SSC	G3	S2
Myotis septentrionalis	Northern Long Eared Bat	LT	SSC	G1G2	S2S3
Myotis sodalis	Indiana Bat or Social Myotis	LE	SE	G2	S1
Nycticeius humeralis	Evening Bat		SE	G5	S1
Perimyotis subflavus	Tricolored Bat		SSC	G2G3	S2S3
Taxidea taxus	American Badger		SSC	G5	S2
Vascular Plant					

Indiana Natural Heritage Data Center
Division of Nature Preserves
Indiana Department of Natural Resources
This data is not the result of comprehensive county surveys.

Fed: LE = Endangered; LT = Threatened; C = candidate; PDL = proposed for delisting

State: SE = state endangered; ST = state threatened; SR = state rare; SSC = state species of special concern; SX = state extirpated; SG = state significant; WL = watch list

GRANK: Global Heritage Rank: G1 = critically imperiled globally; G2 = imperiled globally; G3 = rare or uncommon globally; G4 = widespread and abundant globally but with long term concerns; G5 = widespread and abundant globally; G? = unranked; GX = extinct; Q = uncertain rank; T = taxonomic subunit rank

SRANK: State Heritage Rank: S1 = critically imperiled in state; S2 = imperiled in state; S3 = rare or uncommon in state; G4 = widespread and abundant in state but with long term concern; SG = state significant; SH = historical in state; SX = state extirpated; B = breeding status; S? = unranked; SNR = unranked; SNA = nonbreeding status unranked

Indiana County Endangered, Threatened and Rare Species List

County: Greene

Species Name	Common Name	FED	STATE	GRANK	SRANK
Agalinis skinneriana	Pale False Foxglove		ST	G3G4	S1
Bacopa rotundifolia	Roundleaf Water-hyssop		ST	G5	S1
Carex bushii	Bush's Sedge		ST	G4	S1
Catalpa speciosa	Northern Catalpa		SR	G4?	S2
Chelone obliqua var. speciosa	Rose Turtlehead		WL	G4T3	S3
Clematis pitcheri	Pitcher Leather-flower		SR	G4G5	S2
Cyperus acuminatus	Short-point Flatsedge		WL	G5	S3
Cyperus pseudovegetus	Green Flatsedge		SR	G5	S2
Euphorbia obtusata	Bluntleaf Spurge		SE	G5	S1
Juglans cinerea	Butternut		WL	G4	S3
Liatris pycnostachya	Cattail Gay-feather		ST	G5	S2
Nothoscordum bivalve	Crow-poison		SR	G4	S2
Panax quinquefolius	American Ginseng		WL	G3G4	S3
Pinus strobus	Eastern White Pine		SR	G5	S2
Pinus virginiana	Virginia Pine		WL	G5	S3
Platanthera peramoena	Purple Fringeless Orchis		WL	G5	S3
Rudbeckia fulgida var. umbrosa	Coneflower		SE	G5T4T5	S1
Silene regia	Royal Catchfly		ST	G3	S2
Strophostyles leiosperma	Slick-seed Wild-bean		ST	G5	S2
Waldsteinia fragarioides	Barren Strawberry		SR	G5	S2
High Quality Natural Community					
Forest - upland dry Shawnee Hills	Shawnee Hills Dry Upland Forest			GNR	S2
Forest - upland dry-mesic Shawnee Hills	Shawnee Hills Dry-mesic Upland Forest			GNR	S3
Forest - upland mesic Shawnee Hills	Shawnee Hills Mesic Upland Forest			GNR	S3
Prairie - mesic	Mesic Prairie		SG	G2	S2
Other Significant Feature					
Geomorphic - Nonglacial Erosional Feature - Water Fall and Cascade	Water Fall and Cascade			GNR	SNR

Indiana Natural Heritage Data Center
Division of Nature Preserves
Indiana Department of Natural Resources
This data is not the result of comprehensive county surveys.

Fed: LE = Endangered; LT = Threatened; C = candidate; PDL = proposed for delisting

State: SE = state endangered; ST = state threatened; SR = state rare; SSC = state species of special concern; SX = state extirpated; SG = state significant; WL = watch list

GRANK: Global Heritage Rank: G1 = critically imperiled globally; G2 = imperiled globally; G3 = rare or uncommon globally; G4 = widespread and abundant globally but with long term concerns; G5 = widespread and abundant globally; G? = unranked; GX = extinct; Q = uncertain rank; T = taxonomic subunit rank

SRANK: State Heritage Rank: S1 = critically imperiled in state; S2 = imperiled in state; S3 = rare or uncommon in state; G4 = widespread and abundant in state but with long term concern; SG = state significant; SH = historical in state; SX = state extirpated; B = breeding status; S? = unranked; SNR = unranked; SNA = nonbreeding status unranked

Raquel Walker

From: Mathas, Marlene <MMathas@indot.IN.gov>
Sent: Thursday, November 12, 2020 1:07 PM
To: Raquel Walker
Subject: RE: RFI Report over 1 year old - Des No. 1700141

Raquel –

Explaining in the CE sounds good for the way forward.

Thank you for checking with us!
Marlene

Marlene Mathas, CHMM
Site Assessment & Management (SAM) Team Lead
Environmental Policy Office
INDOT Environmental Services Division
NEW PHONE # (317) 694-8284

The Site Assessment and Management (SAM) Manual can be found at http://www.in.gov/indot/2523.htm
Be sure to refer to the updated information in the SAM Manual for document preparation and submission.

From: Raquel Walker <R.Walker@gaiconsultants.com>
Sent: Thursday, November 12, 2020 1:05 PM
To: Mathas, Marlene <MMathas@indot.IN.gov>
Subject: RFI Report over 1 year old - Des No. 1700141

Hi Marlene,

We have a bridge replacement project in Greene County, Indiana that has an RFI that is over a year old now. The Des No. is 1700141 and it was signed on 6.28.2019.

There have been no significant changes to the scope of work and upon review of GIS there are no new resources within the 0.5 mile search radius that would impact the project. This is a rural project and there are no hazmat concerns. Like we have for previous projects, I just wanted to verify that we will not need to prepare an addendum report since there are no substantive changes to the scope of work and no new resources with the 0.5 mile search radius are present. As long as an addendum is not needed, I plan on explaining in the CE document that the RFI resources were reviewed again and no substantive changes were found.

If you need any additional information on this project just let me know!

Thank you,

Raquel Walker
Environmental Specialist

GAI Consultants, 9921 DuPont Circle Drive West, Suite 100, Fort Wayne, Indiana 46825

Appendix F

Water Resources

Waters of the U.S. Determination

SR 157 over Branch of Lemon Creek
Bridge Replacement Project
Des. No.: 1700141
Greene County, Indiana
Asset ID #: 157-28-06075B

Prepared for:
Indiana Department of Transportation (INDOT)
Vincennes District
3650 South U.S. Highway 41
Vincennes, IN 47591

Prepared by:
GAI Consultants, Inc.
Indianapolis Office
201 N. Illinois Street, Suite 1700
Indianapolis, Indiana 46204

Author:

Harlan M. Ford
Senior Environmental Specialist

Report Completed:
March 27, 2019

INDOT EWPO Approval Date:

Table of Contents

1.0 Introduction

The Indiana Department of Transportation (INDOT) is proposing a bridge replacement project for the structure carrying SR 157 over Branch of Lemon Creek (Bridge Number 157-28-06075B), located in Greene County, Indiana (Figure 1). Specifically, the project is located approximately 2.35 miles north of SR-67, in Section 8 of Township 8 North, Range 5 West, as shown on the Arney USGS 7.5 Minute Topographic Map. The proposed project involves replacing the existing structure with a new prestressed concrete box beam structure (PCBB) that is wider and meets current design standards. Since the new structure will be wider than its predecessor, the roadway embankments and shoulders will need to be widened to transition into the new structure. Riprap will also need to be placed along the slope walls as a scour countermeasure.

GAI Consultants, Inc. (GAI), on behalf of INDOT, conducted wetland delineations and waterbody investigations of the project study area on October 18, 2018. GAI identified approximate boundaries of waterbodies and wetlands located within the project study area. This study area was determined in the field by GAI based upon likely work areas and impacts to regulated Waters of the U.S. as a result of construction activities. This report describes the methods and results of the environmental field survey.

2.0 Methods

Wetland delineations were conducted in accordance with the 1987 United States Army Corps of Engineers (USACE) *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* (USACE, 2012). Wetlands were classified using the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al., 1979). Classification of the indicator status of vegetation is based on *The National Wetland Plant List:* 2016 wetland ratings (Lichvar et al. 2016).

The USACE will assert jurisdiction over traditionally navigable waters (TNW), adjacent wetlands, and non-navigable tributaries of TNW that have "relatively permanent" flow, and wetlands that border these waters, regardless of whether or not they are separated by roads, berms, and similar barriers. The USACE will use a case-by-case "significant nexus" analysis to determine whether waters and their adjacent wetlands are jurisdictional. A "significant nexus" can be found where waters, including adjacent wetlands, alter the physical, biological, or chemical integrity of the TNW based on consideration of several factors.

Each wetland and waterbody feature was given a unique map designation and each boundary flag location was recorded using a SX Blue II^{+} GNSS model global positioning system mapping grade unit with the capability of sub-meter accuracy. Judgmental upland and wetland soil test pits were taken within the study corridor at the discretion of the delineator to confirm the presence or absence of wetlands in areas with exhibiting wetland indicators. Wetland boundaries and other waterbody centerlines and/or perimeters were mapped including ordinary high water mark (OHWM) and top-of-bank (TOB). Waterbody data collected included general morphological characteristics, flow regime, substrate, jurisdictional connection, and significant nexus determination.

All likely jurisdictional streams, waterbodies, and wetlands were evaluated for quality using the 2018 *INDOT Waters of the United States Documentation* three tier classification system (i.e., poor, average, or excellent). Determinations of quality for streams were based on the substrate, riffle and pools, overhead cover, presence of aquatic organisms or potential habitat value, opacity, sinuosity, and riparian width. In instances where mitigation is likely to be required, federal or state aquatic endangered or threatened species are present, or the stream has a designation as a state wild or scenic river, a Headwaters Habitat Evaluation Index (HHEI) or Qualitative Habitat Evaluation Index (QHEI) is used. Wetland quality was derived from metrics in the Indiana Wetland Rapid Assessment Protocol (In-WRAP

2005) and the wetland quality descriptions on the basis of disturbance, native plant diversity and cover, and content of exotic or invasive species.

3.0 Background Information

Prior to the fieldwork, background information and existing mapping was reviewed to establish the probability and potential location of wetlands on the site. Available information from government agency documents and private sources were collected and reviewed in order to characterize the project area, as well as identify potential wetlands and other regulated features located within the project study area.

The growing season in the project area is generally between April and October in Greene County, Indiana [United States Department of Agriculture, Natural Resource Conservation Service (USDA-NRCS)] (USDA-NRCS, 2016). Field observations were supplemented with an intensive review of United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping, USDA soils mapping, historical aerial photography (ArcGIS and Google Earth), and local landscape topography/morphology.

The project study area topography is mostly flat, with elevations ranging from 520 to 525 ft. Drainage patterns were identified via topographic elevation contours to drain towards Branch of Lemon Creek. The project study area is within the Wabash Lowland physiographic region of the Southern Hills and Lowlands Region (Gray, 2000). Land use in the vicinity of the project is primarily rural residential, agriculture.

3.1 National Wetland Inventory

The USFWS' NWI Wetlands Mapper was reviewed for potential wetland locations. The NWI data of the area (Figure 4) identified a total of 18 mapped NWI wetlands within a half mile of the project area. The nearest NWI wetland intersects the project area along Branch of Lemon Creek. This wetland (R4SBC) is confined to the channel of Branch of Lemon Creek.

3.2 Watersheds

The project study area is in the Eel sub-basin, Patoka-White Basin, and Wabash sub-region, of the Ohio region, 12 digit hydrologic unit code (HUC12) 051202030811.

3.3 NRCS Soil Survey

The NRCS Soil Survey of Greene County identified two soil series within the project study area (Figure 5, Table 1). One of the soils were identified as hydric.

Table 1. NRCS Soil Survey Area of Interest Results

Map Unit Name (Map Symbol)	Drainage Properties	Hydrology	Hydric Status
Evansville silt loam (Ev)	Poorly Drained	Frequent Ponding, Rarely Flooded	Yes (100%)
Cincinnati silt loam, Wabash lowland (CfC3)	Well Drained	Very High Runoff Potential	No

4.0 Results

One likely jurisdictional stream and one likely jurisdictional wetland were identified within the study area (Figure 8).

4.1 Waterbodies

Detailed descriptions of the delineated streams and other waterbodies are discussed below. Stream features and other waterbodies are described by morphological characteristics, flow regime, substrate, jurisdictional connection and significant nexus determination. Waterbodies identified within the project study area are represented in Table 2.

The identified stream features are not State Waters Designated for Special Protection in Indiana (Designated Salmonid Waters, Outstanding State Resource Waters, or Exceptional Use Streams). The identified stream features are not on the Indiana Department of Natural Resources Listing of State Natural and Scenic Rivers. The identified streams are not listed on Indiana Department of Natural Resources for Outstanding Rivers in Indiana. The streams are not a USACE Section 10 Waters listed as navigable.

Branch of Lemon Creek (approximately 168 feet onsite)

Branch of Lemon Creek is an intermittent, USGS Blue Line Stream that should be considered a Waters of the U.S. Branch of Lemon Creek flows west to east through the project area and has an upstream drainage area of .805 square miles. Branch of Lemon Creek is a channelized stream with a substrate comprised primarily of silt, sand, and artificial (Rip Rap). Branch of Lemon Creek has a defined bed, bank, and ordinary high water mark (OHWM). The average OHWM is 4.5 ft. wide and 6 in. deep but varies by an additional plus or minus 1 ft. wide and 2 in deep. The riparian zone is mostly agricultural fields in all 4 quadrants with some shrubs and small diameter trees that parallel the top of bank. The quality of the stream would be considered average due to the amount of instream cover, the composition of the substrate, narrow forested riparian zone, and the presence of riffle and pool complexes. Sinuosity was low and channelized within the study area sampling reach. Branch of Lemon Creek would likely receive a QHEI score of 45 to 55 due to the above mentioned factors. Branch of Lemon Creek discharges to Lemon Creek and the Eel River (RPW and TNW). Due to the connection with a TNW, Branch of Lemon Creek would be considered a Waters of the U.S.

4.2 Wetlands

One wetland feature that appeared to meet all three USACE wetland criteria was observed within the project boundary. A detailed description of the delineated features are discussed below. Completed wetland and upland determination forms from the site investigation are located in the Attachments and represent data points taken to characterize the boundary interfaces of the wetland feature. The wetland acreage includes the entire boundary as delineated in the project study area (Figure 8). Wetlands identified within the project study area are represented in Table 3. Data Points 1, 2, and 4 were taken as proof of absence points, as there were one or more indicators observed in the field that required further investigation.

Upland Data Point (DP-1):

DP-1 was collected as an upland data point in the southeast quadrant of the project area. Dominant vegetation was mostly comprised of giant foxtail grass (*Setaria faberi*, FACU), which is indicative of the roadside upland vegetation. DP-1 failed to meet the hydrophytic vegetation criterion. Soils were a sandy clay loam with a color of 10 YR 4/2 (100%) from 0 to 5 inches and 10 YR 4/2 (99%) 7.5 YR 5/6 (1%) redox that was concentrated in the pore linings from 5 inches to 18 inches. Even though miniscule redoximorphic features were present in the soil profile, they were neither distinct nor prominent and did not exhibit any hydric soils indicators. DP-1 failed to meet the hydric soils criterion. DP-1 met the hydrology secondary indicator of geomorphic position (D2), however, DP-1 failed to meet the wetland hydrology criterion without a second indicator. In not meeting any of the three USACE criteria for wetlands, DP-1 was determined not to be within a wetland.

Upland Data Point (DP-2):

DP-2 was collected as an upland data point on the edge of an agricultural field in the southwest quadrant of the project area. Dominant vegetation at DP-2 included soybean (*Glycine max*, UPL), Dandelion (*Taraxacum officinale*, FACU) black clover (*Medicago lupulina*, FACU), box elder (*Acer negundo*, FAC), silky dogwood (*Cornus amomum*, FACW), and green ash (*Fraxinus pennsylvanica*, FACW). DP-2 failed to meet the hydrophytic vegetation criterion with a prevalence index of 4.06. Soils were a sandy loam with a color of 10 YR 5/2 (100%) from 0 to 6 inches and 10 YR 5/4 (99%) 7.5 YR 5/6 (1%) redox that was concentrated in the pore linings from 6 inches to 20 inches. Even though miniscule redoximorphic features were present in the soil profile, they were neither distinct nor prominent and did not exhibit any hydric soils indicators. DP-2 failed to meet the hydric soils criterion. DP-2 met the hydrology secondary indicator of geomorphic position (D2), however, DP-2 failed to meet the wetland hydrology criterion without a second indicator. In not meeting any of the three USACE criteria for wetlands, DP-2 was deemed to be upland.

Wetland A (0.01 acre within study area, PEMf)

Wetland A is a palustrine emergent farmed wetland that is located on the edge of a farm field (extends into the farm field) in the northeast quadrant of the project area. Wetland A is a small wetland that appears to have formed as a result of poor drainage and ponding. Wetland A would likely be considered poor quality due to the constant disturbance of farm activities and as a result of being formed primarily by agricultural field runoff. Due to the location of Wetland A it is likely hydrologically connected to Branch of Lemon Creek and would likely be considered a jurisdictional wetland.

Wetland Data Point (DP-3):

Dominant vegetation included soybean (*Glycien max*, UPL), side flowering aster (*Symphyotrichum lateriflorum*, FACW) and yellow nutsedge (*Cyperus esculentes*, FACW). DP-3 passed the dominance test, therefore, meeting the hydrophytic vegetation criterion. The soil was a clay loam, with a soil color of 10 YR 4/2 (100%) from 0 to 5 inches and 10 YR 4/2 (80%) from 5 to 20 inches. Distinct redoximorphic features were found in the matrix with a color of 7.5 YR 5/6 (20%). Due to the clay loam composition, DP-3 had hydric soil indicators of depleted matrix (F3), meeting the hydric soils criterion. Hydrology indicators included: FAC-Neutral test (D5) and geomorphic position (D2), thus meeting the wetland hydrology criterion. DP-3 met all three USACE wetland criteria and was therefore considered to be wetland.

Upland Data Point (*DP-4*)*:*

DP-4 was collected in the northeast quadrant of the project area in an agricultural field. This point was taken as a proof of absence data point. Dominant vegetation included soybean (*Glycine max*, UPL), and wild onion (*Allium canadense*, FACU). DP-4 failed to meet the hydrophytic vegetation test. Soils were a sandy clay loam with a color of 10YR 4/3 (100%) from 0-20 inches. No redoximorphic features or other hydric soil indicators were present in the soil profile, and DP-4 failed to meet the hydric soils criterion. DP-4 met the hydrology secondary indicator of geomorphic position (D2), however, DP-2 failed to meet the wetland hydrology criterion without a second indicator. In not meeting any of the three USACE criteria for wetlands, DP-4 was not considered a wetland.

4.3 Roadside Ditches and Other Drainages

All roadside ditches and other surface drainages within the study area were also evaluated for consideration as jurisdictional Waters of the U.S. with respect to the Clean Water Act Rule [40 CFR 230.3(3)(iii)]. Jurisdictional ditches must meet the definition of tributary, have an OHWM, and flow directly or indirectly through another water to a TNW. Likely jurisdictional ditches include: ditches with perennial flow; ditches with intermittent flow that drain wetlands; or ditches, regardless of flow, that are excavated in or relocate a tributary. Jurisdictional wetlands may be present within, or connected to another jurisdictional Waters of the U.S. in regard to significant nexus analysis through, non-jurisdictional ditches or surface drainages.

Roadside ditches were observed within the study area in both southern quadrants and in the northeast quadrant of the study area. These roadside ditches drain into the Branch of Lemon Creek, however none of the observed roadside ditches would be considered jurisdictional or likely jurisdictional within the study area. These features were excavated in upland soils to convey upland drainage and had no defined bed and bank or flow regime to establish a Waters of the U.S. designation.

5.0 Conclusions

Wetland delineations and stream investigations for the SR 157 over Branch of Lemon Creek bridge replacement project were conducted on October 18, 2018. One likely jurisdictional stream was identified within the study area and one likely jurisdictional wetland (Wetland A) was delineated.

Branch of Lemon Creek and Wetland A are likely Waters of the U.S. Every effort should be taken to avoid and minimize impacts to the waterway and wetland. If impacts are necessary, then mitigation may be required. The INDOT Environmental Services Division should be contacted immediately if impacts will occur. The final determination of jurisdictional waters is ultimately made by the U.S. Army Corps of Engineers. This report is our best judgment based on the guidelines set forth by the Corps.

6.0 Acknowledgement

This waters determination has been prepared based on the best available information, interpreted in the light of the investigator's training, experience, and professional judgement in conformance with the 1987 *Corps of Engineers Wetland Delineation Manual*, the appropriate regional supplement, the USACE *Jurisdictional Determination Form Instructional Guidebook*, and other appropriate agency guidelines.

Harlan Ford

Senior Environmental Specialist

GAI Consultants Inc./INDOT Vincennes District

7.0 References

Cowardin, D.M., Carter, V., Golet, F.C., and La Roe, E.T. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. Publication No. FWS/OBS-79/31. United States Department of the Interior, Fish and Wildlife Service, Washington, D.C.

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United States Army Corps of Engineers (USACE). 2012. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region, Version 2.0.* August of 2010.

United States Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS). 2006. *Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific.* U.S. Department of Agriculture Handbook, 296.

Table 2

Waterbodies Identified within the Project Study Area

Feature Name	Photo No.	Latitude, Longitude	Type	OHWM Width (ft)	OHWM Depth (ft)	Length or Acres Within Study Area (ft)	USGS Blue-Line Stream	Riffles and Pools	Substrate	Quality	Waters of the U.S.
Branch of Lemon Creek	6, 8, 11, 18, 19, 24, 25	39.141159°, -86.993548°	Int.	4.5	0.5	168	Yes	Yes	Silt, Sand, Artificial	Average	Yes

Table 3

Wetlands Identified Within the Project Study Area

Feature Name	Photo Number	Latitude	Longitude	Wetland Size (acres)	Cowardin Classification	NWI Wetland Classification	Quality	Waters of the U.S.
Wetland A	4, 5, 10, 31, 32, 33	39.141383°	-86.993442°	0.01	PEMf	N/A	Poor	Yes

Table 4

Data Point Summary Table

Data Point	Vegetation	Soils	Hydrology	Wetland
1	No	No	No	No
2	No	No	No	No
3	Yes	Yes	Yes	Yes
4	No	No	No	No

Project Figures

Project figures have been removed to avoid duplication and can be found in Appendix B.

NWI Wetlands Map

SR 157 over Br. Lemon Creek
Bridge Replacement Project
Greene County, Indiana
Des 1700141

- Study Area
- Half Mile Radius
- NWI Wetland
- Interstate
- State Route
- US Route
- Local Road
- Railroad

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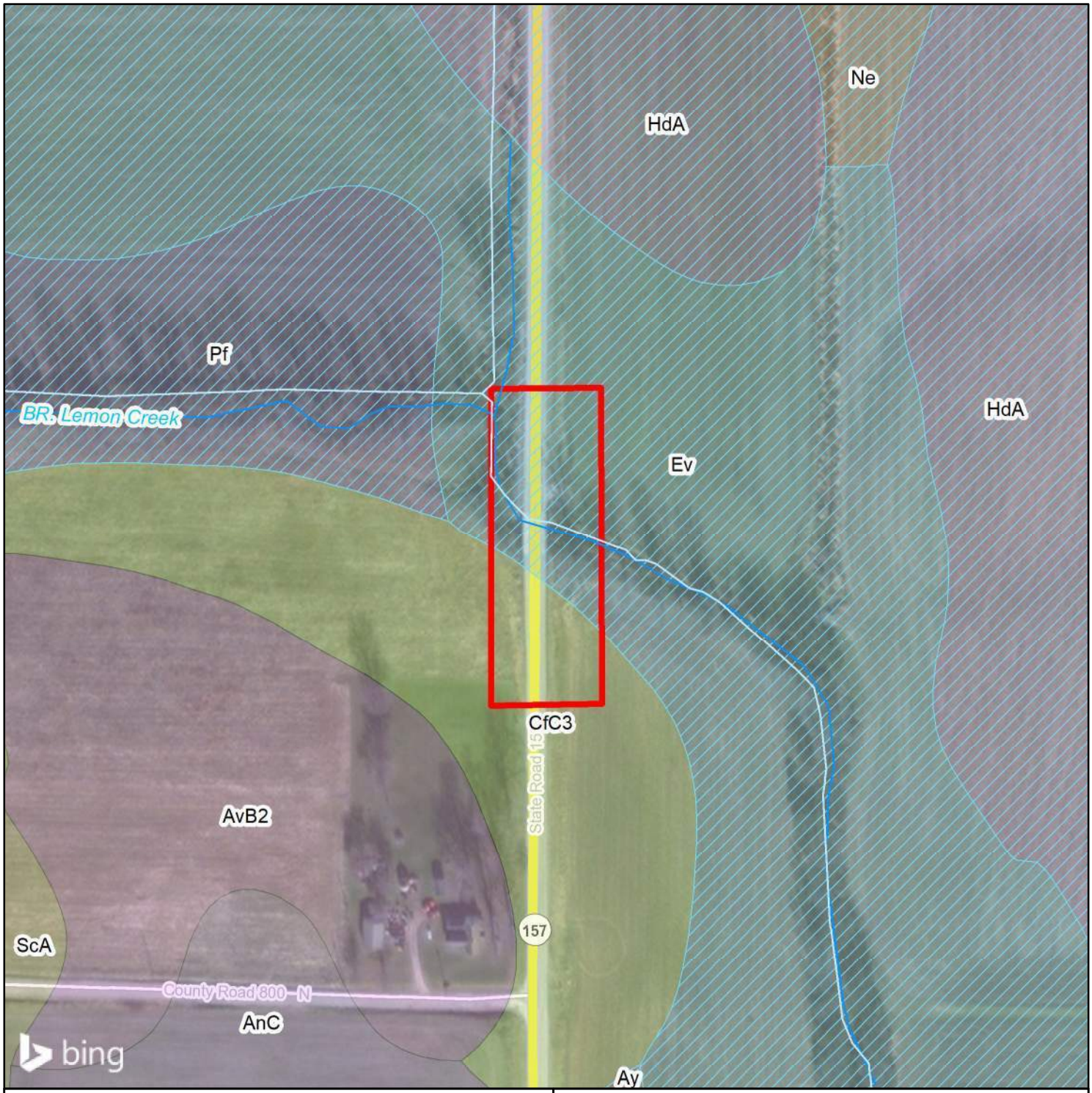
0 350 700 1,400 Feet

N

Service Layer Credits: INDOT
© 2018 Microsoft Corporation © 2018 DigitalGlobe ©CNES (2018) Distribution Airbus DS , U.S. Fish and Wildlife Serivce, National Wetlands Inventory



NRCS Soils Map

SR 157 over Br. Lemon Creek
Bridge Replacement Project
Greene County, Indiana
Des 1700141

- Study Area
- Interstate
- State Route
- US Route
- Local Road
- Railroad
- Hydric
- AnC
- AvB2
- Ay
- CfC3
- Ev
- HdA
- Ne
- Pf
- ScA

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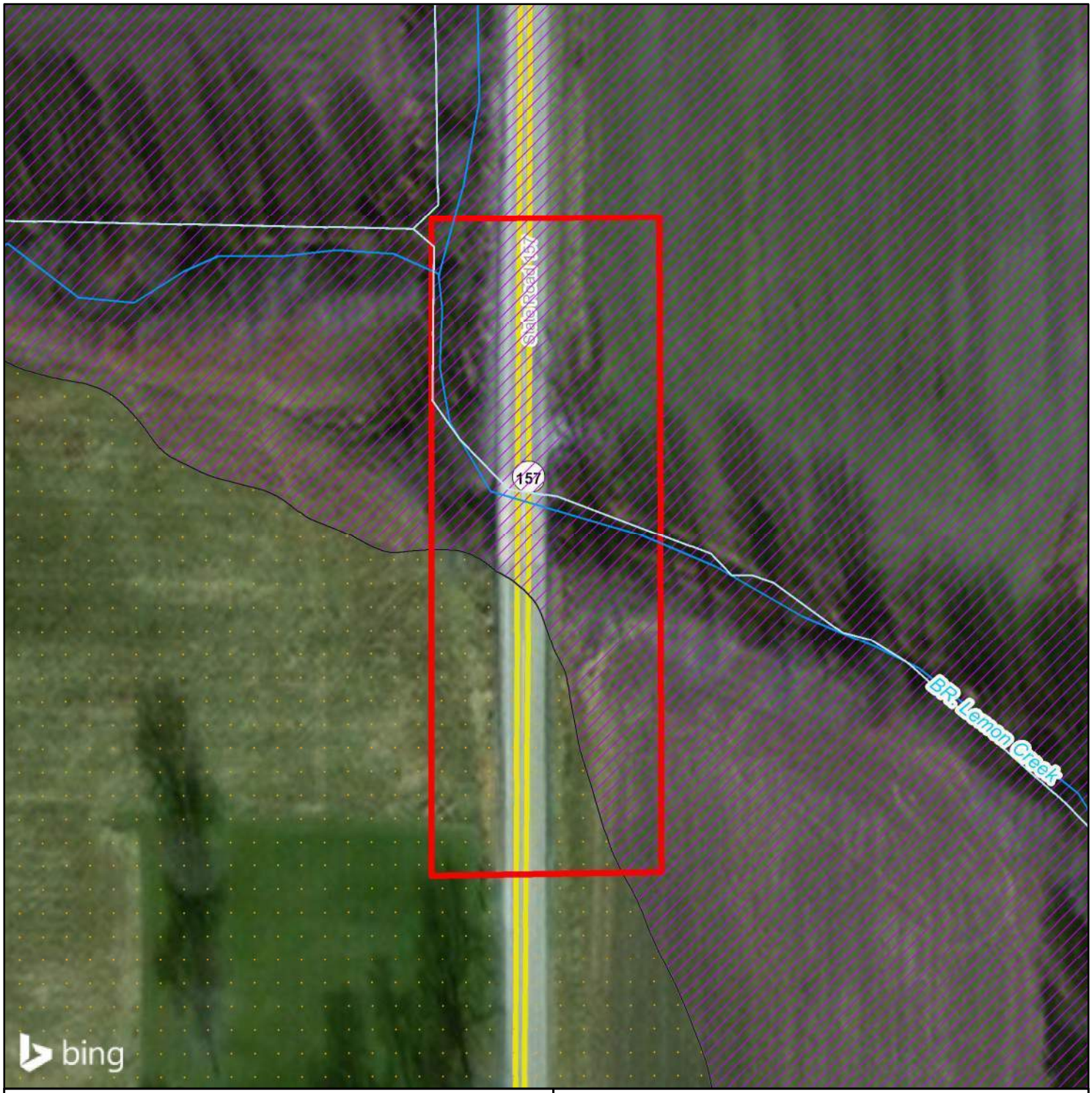
0 80 160 320 Feet

N

Service Layer Credits: INDOT
© 2018 Microsoft Corporation © 2018 DigitalGlobe ©CNES (2018) Distribution Airbus DS , U.S. Department of Agriculture, Natural Resources Conservation Service Soil Survey Geographic (SSURGO) database



FEMA Floodzone Map

SR 157 over Br. Lemon Creek
Bridge Replacement Project
Greene County, Indiana
Des 1700141

Study Area
Interstate
State Route
US Route
Local Road
Railroad

Flood Hazard
A
AE
X

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0 37.5 75 150 Feet

N

Service Layer Credits: INDOT
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Distribution Airbus DS , Indiana Department of Natural Resources FIRM
Floodplains and Flood Hazards of Indiana, FEMA NFHL

LiDAR Map

SR 157 over Br. Lemon Creek
Bridge Replacement Project
Greene County, Indiana
Des 1700141

Legend

Study Area

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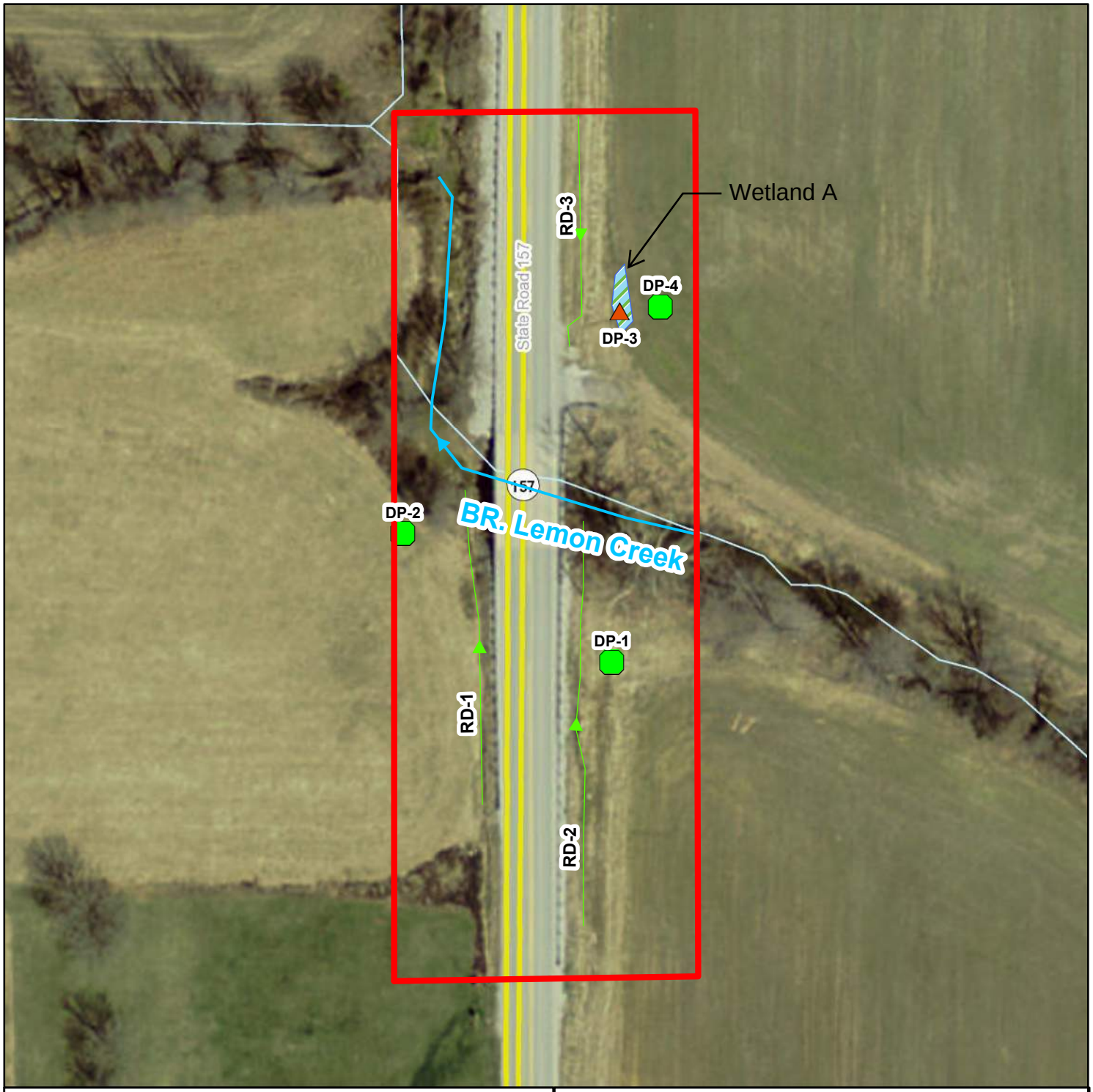
Service Layer Credits: INDOT
IGIC, IOT, UITS, IGS, Woolpert

N



Wetland Delineation Map

SR 157 over Br. Lemon Creek
Bridge Replacement Project
Greene County, Indiana
Des 1700141

- Study Area
- Upland Data Point
- Wetland Data Point
- Delineated Streams
- Roadside Ditches
- Delineated Wetland
- Interstate
- State Route
- US Route
- Local Road
- Railroad

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0 30 60 120 Feet

N

Service Layer Credits: INDOT
Indiana Office of Information Technology, Indiana University Spatial Data Portal, UITS, Woolpert Inc.,

Photographs

Project photos have been removed to avoid duplication and can be found in Appendix B.

Wetland Determination Data Form

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: SR 157 over Branch of Lemon Creek City/County: Greene County Sampling Date: 10/18/18

Applicant/Owner: INDOT State: IN Sampling Point: DP-3

Investigator(s): Paul Killian and Harlan Ford Section, Township, Range: 8, 8N, 5W

Landform (hillside, terrace, etc.): Footslope Local relief (concave, convex, none): Flat

Slope (%): 0% Lat: 39.141383° Long: -86.993442° Datum: NAD83

Soil Map Unit Name: Evansville Silt Loam (Ev) NWI classification: No

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation No , Soil No , or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
This data point met all three criteria established for wetlands according to the 1987 US Army Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	____	=Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____	=Total Cover	
Herb Stratum (Plot size: ____)			
1. *Glycine max*	30	Yes	UPL
2. *Symphyotrichum lateriflorum*	20	Yes	FACW
3. *Cyperus esculentus*	20	Yes	FACW
4. *Arctium lappa*	10	No	UPL
5. *Cynodon dactylon*	10	No	FACU
6. *Digitaria ischaemum*	5	No	FACU
7. *Solanum carolinense*	5	No	FACU
8.			
9.			
10.			
	100	=Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	0	x 3 =	0
FACU species	20	x 4 =	80
UPL species	40	x 5 =	200
Column Totals:	100 (A)		360 (B)

Prevalence Index = B/A = 3.60

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
Lichvar, R.W., et al. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17.

SOIL

Sampling Point: DP-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 4/2	100						Clay Loam
5-20	10YR 4/2	80	7.5YR 5/6	20	C	M		Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? Yes ___ No X Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Upland Determination Data Form

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: SR 157 over Branch of Lemon Creek | City/County: Greene County | Sampling Date: 10/18/18

Applicant/Owner: INDOT | State: IN | Sampling Point: DP-1

Investigator(s): Paul Killian and Harlan Ford | Section, Township, Range: 8, 8N, 5W

Landform (hillside, terrace, etc.): Footslope | Local relief (concave, convex, none): Flat

Slope (%): 0% | Lat: 39.140971° | Long: -86.993391° | Datum: NAD83

Soil Map Unit Name: Evansville Silt Loam | NWI classification: No

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation No , Soil No , or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
This data point did not meet all three criteria established for wetlands according to the 1987 US Army Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1. *Fraxinus pennsylvanica*	5	Yes	FACW
2.			
3.			
4.			
5.			
	5 =Total Cover		
Herb Stratum (Plot size: ____)			
1. *Setaria faberi*	80	Yes	FACU
2. *Avena fatua*	10	No	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	90 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ =Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	80	x 4 =	320
UPL species	10	x 5 =	50
Column Totals:	95 (A)		380 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

Lichvar, R.W., et al. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17.

SOIL

Sampling Point: DP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 4/2	100						Sandy Clay Loam
5-20	10YR 4/2	99	7.5YR 5/6	1	C	PL		Sandy Clay Loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? Yes ___ No X Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: SR 157 over Branch of Lemon Creek | City/County: Greene County | Sampling Date: 10/18/18

Applicant/Owner: INDOT | State: IN | Sampling Point: DP-2

Investigator(s): Paul Killian and Harlan Ford | Section, Township, Range: 8, 8N, 5W

Landform (hillside, terrace, etc.): Footslope | Local relief (concave, convex, none): Flat

Slope (%): 0% | Lat: 39.141119° | Long: -86.993711° | Datum: NAD83

Soil Map Unit Name: Cincinnati silt loam, Wabsh Lowland (CfC3) | NWI classification: No

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation No , Soil No , or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
This data point did not meet all three criteria established for wetlands according to the 1987 US Army Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	5	Yes	FAC
2.			
3.			
4.			
5.			
	5	=Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1. *Cornus amomum*	5	Yes	FACW
2. *Fraxinus pennsylvanica*	5	Yes	FACW
3.			
4.			
5.			
	10	=Total Cover	
Herb Stratum (Plot size: ____)			
1. *Glycine max*	20	Yes	UPL
2. *Taraxacum officinale*	15	Yes	FACU
3. *Medicago lupulina*	15	Yes	FACU
4. *Setaria viridis*	10	No	UPL
5. *Solanum carolinense*	5	No	FACU
6.			
7.			
8.			
9.			
10.			
	65	=Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	5	x 3 =	15
FACU species	35	x 4 =	140
UPL species	30	x 5 =	150
Column Totals:	80 (A)		325 (B)
Prevalence Index = B/A =			4.06

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

Lichvar, R.W., et al. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17.

SOIL

Sampling Point: DP-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 5/2	100						Sandy loam
6-20	10YR 5/4	99	7.5YR 5/6	1	C	PL		Sandy loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: SR 157 over Branch of Lemon Creek | City/County: Greene County | Sampling Date: 10/18/18

Applicant/Owner: INDOT | State: IN | Sampling Point: DP-4

Investigator(s): Paul Killian and Harlan Ford | Section, Township, Range: 8, 8N, 5W

Landform (hillside, terrace, etc.): Footslope | Local relief (concave, convex, none): Flat

Slope (%): 0 | Lat: 39.141410° | Long: -86.993304° | Datum: NAD83

Soil Map Unit Name: Evansville Silt Loam (Ev) | NWI classification: No

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation No , Soil No , or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
This data point did not meet all three criteria established for wetlands according to the 1987 US Army Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Herb Stratum (Plot size: ____)			
1. *Glycine max*	40	Yes	UPL
2. *Allium canadense*	35	Yes	FACU
3. *Rumex crispus*	10	No	FAC
4. *Glechoma hederacea*	5	No	FACU
5. *Taraxacum officinale*	5	No	FACU
6.			
7.			
8.			
9.			
10.			
	95 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ =Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	45	x 4 =	180
UPL species	40	x 5 =	200
Column Totals:	95 (A)		410 (B)

Prevalence Index = B/A = 4.32

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

Lichvar, R.W., et al. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17.

SOIL

Sampling Point: DP-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 4/3	100						Sandy Clay Loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Approved Jurisdictional Determination Form

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, LOUISVILLE
CORPS OF ENGINEERS
INDIANAPOLIS REGULATORY OFFICE
8902 OTIS AVENUE, SUITE S106B
INDIANAPOLIS, INDIANA 46216-1055
FAX: 317-547-4526

March 8, 2019

Regulatory Division
North Branch
ID No. LRL-2019-84-scm

Ms. Crystal Rehder
Indiana Department of Transportation
100 N. Senate Avenue, Room N642
Indianapolis, Indiana 46204

Dear Ms. Rehder:

This is in regard to your letter dated February 8, 2019, requesting a jurisdictional determination for the 1.28 acre SR 157 Site (Des. No. 1700141) (see enclosed map). This project is located at Latitude: 39.141159°N, Longitude: -86.993548°W, Section 8, Township 8 North, Range 5 West, Worthington, Greene County, Indiana. We have reviewed the submitted data and completed a jurisdictional determination relative to Section 404 of the Clean Water Act (CWA).

The U.S. Army Corps of Engineers exercises regulatory authority under Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) and Section 404 of the CWA (33 USC 1344) for certain activities in "waters of the United States (U.S.)." These waters include all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce.

This determination is approved based upon the information provided by GAI Consultants and a site visit by USACE staff. We have verified and concur that **unnamed tributary (UNT) to Lemon Creek (168 linear feet)** and **Wetland A (0.01 acres)** are considered to be "waters of the U.S.". Wetland A is hydrologically connected to UNT to Lemon Creek, a relatively permanent water which ultimately flows to the White River, a traditional navigable waterway (TNW).

We have also determined that the reported **Roadside Ditches 1, 2, & 3 (total 214 linear feet)** are upland erosional features, and are not considered to be a "waters of the U.S."

This jurisdiction determination is valid for a 5-year period from the date of this letter unless new information warrants revision of the determination before the expiration date. Our comments on this project are limited to only those effects, which may fall within our area of jurisdiction, and thus does not obviate the need to obtain other permits from State or Local agencies. Lack of comments on other environmental aspects should not be construed as either concurrence or non-concurrence with stated environmental effects.

This letter contains an approved jurisdictional determination for your subject site. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and Request for Appeal (RFA) form. If you request to appeal this determination, you must submit a completed RFA form to the Lakes and Rivers Division Office at the following address.

U.S. Army Corps of Engineers
ATTN: Jacob Siegrist
Appeal Review Officer CELRD-PD-REG
550 Main Street, Room 10524
Cincinnati, OH 45202-3222

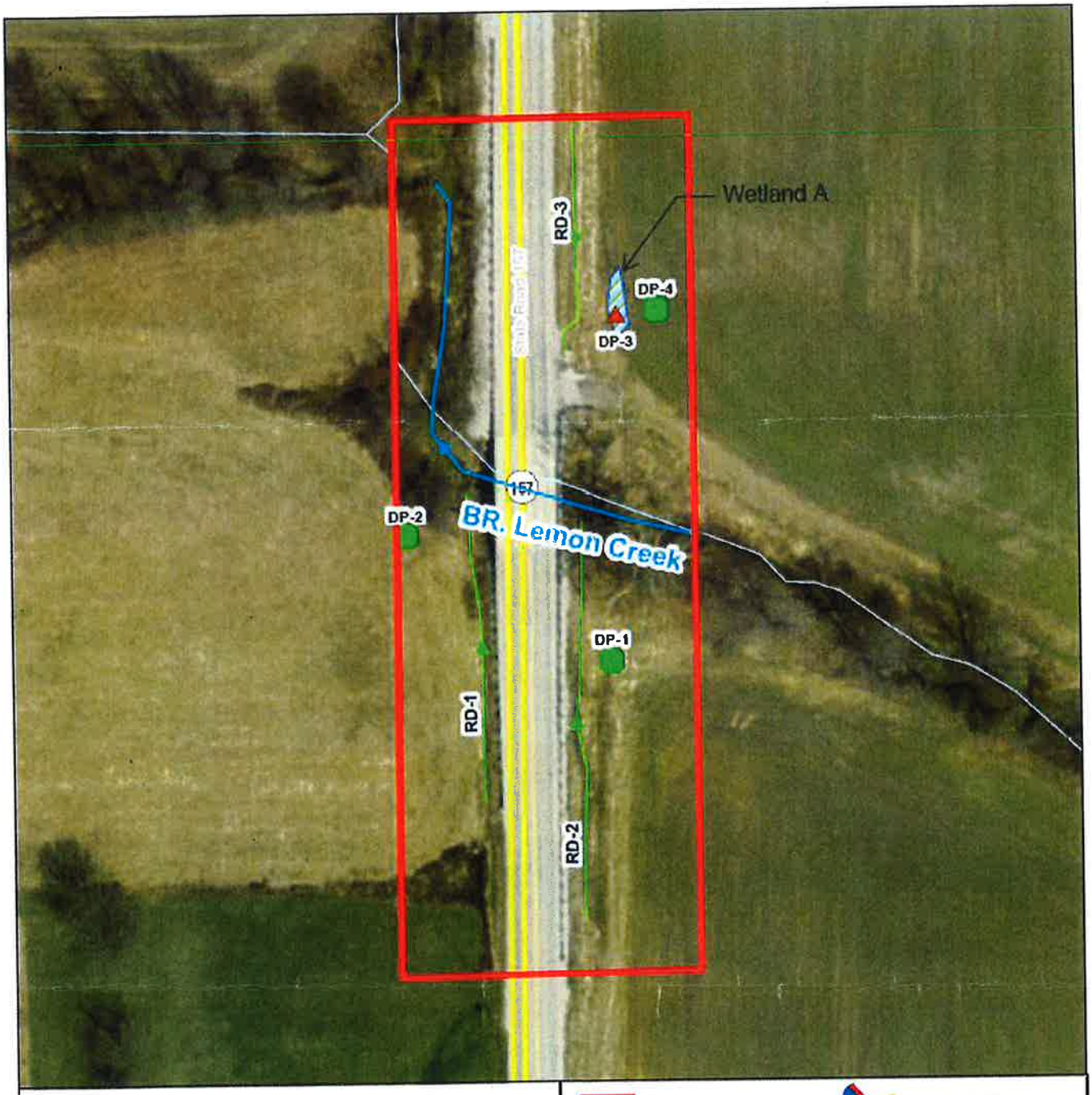
In order for a RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR Part 331.5, and that it has been received by the Division Office within **60 days** of the date of the NAP. Should you decide to submit a RFA form, it must be received at the above address by **May 6, 2019**. It is not necessary to submit an RFA form to the Division office if you do not object to the determination in this letter.

If we can be of any further assistance, please contact me by writing to the letterhead address, or by calling (317)-543-9424. Any correspondence on this matter should reference our Identification Number LRL-2019-84-scm.

Sincerely,

Sara C. Mundy
Project Manager
Indianapolis Regulatory Office

Enclosure
Copy Furnished: IDEM (Driscol)
GAI Consultants (Ford)



Wetland Delineation Map

SR 157 over Br. Lemon Creek
Bridge Replacement Project
Greene County, Indiana
Des 1700141

Study Area
Upland Data Point
Wetland Data Point
Delineated Streams
Roadside Ditches
Delineated Wetland
Interstate
State Route
US Route
Local Road
Railroad

gai consultants
transforming ideas into reality

0 30 60 120 Feet

Service Layer Credits: INDOT
Indiana Office of Information Technology, Indiana University Spatial Data Portal, UITS, Woolpert Inc..

N

Raquel Walker

From: Cooper, Nicholas <NCooper5@indot.IN.gov>
Sent: Monday, April 1, 2019 6:59 AM
To: Harlan Ford
Cc: Davis, Alan
Subject: RE: ENV WOTUS Report for Des No 1700141
Attachments: Des. No. 1700141 Waters Report - Final.pdf

EXTERNAL E-MAIL MESSAGE

Harlan,

I have attached the final approved waters report for this project. I made just one small correction to your last submitted version. You had the word isolated in the Wetland A paragraph and I removed that as that made it sound like a waters of the state vs. a waters of the US.

Thanks,

Nick Cooper
Ecology and Waterway Permitting Specialist
Indiana Department of Transportation
Ph. (317) 233-3698

From: Harlan Ford [mailto:H.Ford@gaiconsultants.com]
Sent: Wednesday, March 27, 2019 1:37 PM
To: Cooper, Nicholas <NCooper5@indot.IN.gov>
Subject: ENV WOTUS Report for Des No 1700141

**** This is an EXTERNAL email. Exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email. ****

Nick,

I have updated the WOTUS report for this project to include the approved JD signed by the USACE and updated all other applicable sections of the report that referred to Wetland A as an Class 1 SRW. Please add this to your review when you get the chance.

Please note that this WOTUS report was originally submitted before the new guidance came out and has already been revised per Emily's comments particularly concerning the NWI map and the 0.5 mile search radius.

Thank you!

Harlan M. Ford
D 317.436.9142 **M** 423.458.5979

GAI Consultants
ENGINEERING, PLANNING, AND ENVIRONMENTAL CONSULTING SINCE 1958

Appendix G

Public Involvement

gai consultants

Fishers Office
9998 Crosspoint Boulevard
Suite 110
Indianapolis, Indiana 46256

T 317.436.9150
F 317.436.8233

November 13, 2018

GAI Project No. D180014.01

Sample NOS Letter

Des. No. 1700141
SR 157 Over Branch Lemon Creek, 2.35 miles north of SR 67
Bridge Replacement (Structure 157-28-06075 B)
Greene County, Indiana

Notice of Entry for Survey
Beginning November 1, 2018

Dear Property Owner:

Our information indicates that you own or occupy property located near the above proposed transportation project. As representatives of the Indiana Department of Transportation (INDOT), GAI Consultants, Inc., or other consultants, will be conducting field and environmental surveys in the future. It may be necessary for them to enter onto your property to complete this work. This is permitted under Indiana Code § 8-23-7-26. Anyone performing this type of work has been instructed to identify himself or herself to you, if you are available, before they enter your property. If you no longer own this property or it is currently occupied by someone else, please provide us the name of the new owner or occupant and their contact information so we can contact regarding the survey.

Please read the attached notice to inform you of what the "Notice of Entry for Survey or Investigation" means. The field survey(s) may include but is/are not limited to topographic survey including the mapping of locations of features such as trees, buildings, fences and drives, and obtaining ground elevations and geotechnical investigation. The environmental survey(s) may include but is/are not limited to archaeological investigations (which may involve the survey, testing, or excavation of identified archaeological sites), identification and mapping of wetlands and waterways, taking photographs of the area (which may include infrastructure, roads, residential properties, and commercial properties), a historical review of the properties within the vicinity of the proposed project area, evaluation of land use for completion of environmental documentation and various other environmental studies. The information we obtain from such surveys and studies is necessary for the proper planning and design of this project.

It is our sincere desire to cause you as little inconvenience as possible during these surveys. If problems arise, please contact me at m.wenning@gaiconsultants.com or 317.436.4819. However, please keep in mind that ***no specific information regarding this project is available at this time.*** Thank you in advance for your cooperation.

Sincerely,

GAI Consultants, Inc.

Michael H. Wenning, PE
Project Manager

MHW/kam

Enc.: Indiana Department of Transportation Notice of Entry for Survey or Investigation

Appendix H

Air Quality

This project is part of Contract B-40558 under lead Des No. 1700174. Des No. 1700141 is included by reference.

Indiana Department of Transportation (INDOT)
State Preservation and Local Initiated Projects FY 2020 - 2024

SPONSOR	CONTRACT # / LEAD DES	STIP NAME	ROUTE	WORK TYPE	LOCATION	DISTRICT	MILES	FEDERAL CATEGORY	Estimated Cost left to Complete Project*	PROGRAM	PHASE	FEDERAL	MATCH	2020	2021	2022	2023	2024
Greene County	39838 / 1600888	Init.	IR 1026	Bridge Replacement, Other Construction	Bridge over Indiana Railroad on Miller Road >6 miles E of State Road 157	Vincennes	.21	STPBG		Local Funds	CN	$0.00	$307,420.00		$40,000.00	$267,420.00		
										Local Funds	RW	$0.00	$15,000.00		$15,000.00			
Linton	39849 / 1600759	Init.	VA VARI	Bike/Pedestrian Facilities	From Linton City Park to Greene County General Hospital	Vincennes	1.12	STPBG		Local Transportation Alternatives	CN	$857,600.00	$0.00			$857,600.00		
										Local Transportation Alternatives	RW	$326,400.00	$0.00	$326,400.00				
										Local Funds	CN	$0.00	$214,400.00			$214,400.00		
										Local Funds	RW	$0.00	$81,600.00	$81,600.00				
Indiana Department of Natural Resources	39854 / 1601177	Init.	IR 1028	Road Reconstruction (3R/4R Standards)	County Road 400S from 1.00 mi W of SR-59 to SR-59	Vincennes	0	STPBG		Access Roads - Construction	CN	$3,132,606.40	$783,151.60	$3,915,758.00				
Indiana Department of Transportation	39920 / 1601044	Init.	US 231	Slide Correction	Approximately 2.72 miles S of SR-54	Vincennes	0	NHPP		Road ROW	RW	$24,000.00	$6,000.00	$30,000.00				
										Road Construction	CN	$777,269.60	$194,317.40		$971,587.00			
Indiana Department of Transportation	40044 / 1592942	Init.	SR 54	HMA Overlay, Preventive Maintenance	From US-231 to 0.49 miles E of US-231 (Bloomfield) RP 37+84 to 38+29	Vincennes	.29	STPBG		Road Construction	CN	$306,716.80	$76,679.20	$383,396.00				
Indiana Department of Transportation	40556 / 1601053	Init.	SR 157	HMA Overlay, Preventive Maintenance	From US-231 to 1.1 miles N of US-231 in Bloomfield	Vincennes	1.103	STPBG		Road ROW	RW	$16,000.00	$4,000.00	$20,000.00				
										Road Construction	CN	$323,192.00	$80,798.00			$403,990.00		
Indiana Department of Transportation	40556 / 1601053	A 07	SR 157	HMA Overlay, Preventive Maintenance	From US-231 to 1.1 miles N of US-231 in Bloomfield	Vincennes	1.103	NHPP	$603,590.00	Road Consulting	PE	$143,680.00	$35,920.00	$179,600.00				
Comments:Amend 2020-2024 Adding FY20 PE $179,600.00. No MPO. Air Conformity Requirements completed per email dated 10/9/2019.																		
Indiana Department of Transportation	40558 / 1700174	Init.	SR 48	Small Structure Replacement with Bridge	1.16 miles E Jct SR-59	Vincennes	0	STPBG		Bridge ROW	RW	$65,600.00	$16,400.00	$82,000.00				
										Bridge Construction	CN	$2,300,450.40	$575,112.60			$2,875,563.00		
Indiana Department of Transportation	40565 / 1601051	Init.	SR 54	HMA Overlay, Preventive Maintenance	From E Jct SR-59 to 1.13 mi E of E Jct SR-59	Vincennes	1.185	STPBG		Road ROW	RW	$20,000.00	$5,000.00	$25,000.00				
										Road Construction	CN	$580,530.40	$145,132.60			$725,663.00		
Indiana Department of Transportation	41195 / 1801375	Init.	SR 54	Added Travel Lanes	From 1.7 mi E of US-231 E Jct. to SR-43	Vincennes	11.04	STPBG		Mobility ROW	RW	$240,000.00	$60,000.00	$300,000.00				

Report Created:2/14/2020 2:33:59PM

*Estimated Costs left to Complete Project column is for costs that may extend beyond the four years of a STIP. This column is not fiscally constrained and is for information purposes.

Appendix I

Environmental Justice

Environmental Justice (EJ) Analysis

SR 157 over Branch of Lemon Creek
Greene County, Indiana
Des. No. 1700141

	Community of Concern (COC)	Affected Community (AC 1)
	Greene County, Indiana	Census Tract 9548
Income		
Total population for the purpose of surveying poverty income:	31,993	3,445
Population with income in the past 12 months below poverty level:	4,114	564
Percent Low Income	**12.86%**	**16.37%**
125% of COC	*16.07%*	
Potential Low-income EJ Concern?		**Yes**
Race		
Total Population for the purpose of surveying race:	32,431	3,511
Total population non-hispanic/latino; white alone:	31,399	3,398
Number of Minorities	**1,032**	**113**
Percent of Minorities	**3.18%**	**3.22%**
125% of COC	*3.98%*	
Potential Minority EJ Concern?		**No**

HISPANIC OR LATINO ORIGIN BY RACE

Survey/Program: American Community Survey
TableID: B03002

Product: 2017: ACS 5-Year Estimates Detailed Tables
Universe: Total population

CUSTOMIZE TABLE

	Greene County, Indiana		Census Tract 9548, Greene County, Indiana	
	Estimate	Margin of Error	Estimate	Margin of Error
Total:	32,431	*****	3,511	+/-275
Not Hispanic or Latino:	32,005	*****	3,412	+/-251
White alone	31,399	+/-24	3,398	+/-250
Black or African American alone	73	+/-48	0	+/-11
American Indian and Alaska Native alone	5	+/-9	0	+/-11
Asian alone	119	+/-41	3	+/-6
Native Hawaiian and Other Pacific Island…	14	+/-25	0	+/-11
Some other race alone	0	+/-24	0	+/-11
Two or more races:	395	+/-66	11	+/-16
Two races including Some other race	0	+/-24	0	+/-11
Two races excluding Some other race, a…	395	+/-66	11	+/-16
Hispanic or Latino:	426	*****	99	+/-101
White alone	338	+/-75	70	+/-90
Black or African American alone	34	+/-56	0	+/-11
American Indian and Alaska Native alone	4	+/-6	4	+/-6
Asian alone	0	+/-24	0	+/-11
Native Hawaiian and Other Pacific Island…	0	+/-24	0	+/-11
Some other race alone	41	+/-46	25	+/-40
Two or more races:	9	+/-16	0	+/-11
Two races including Some other race	0	+/-24	0	+/-11
Two races excluding Some other race, a…	9	+/-16	0	+/-11

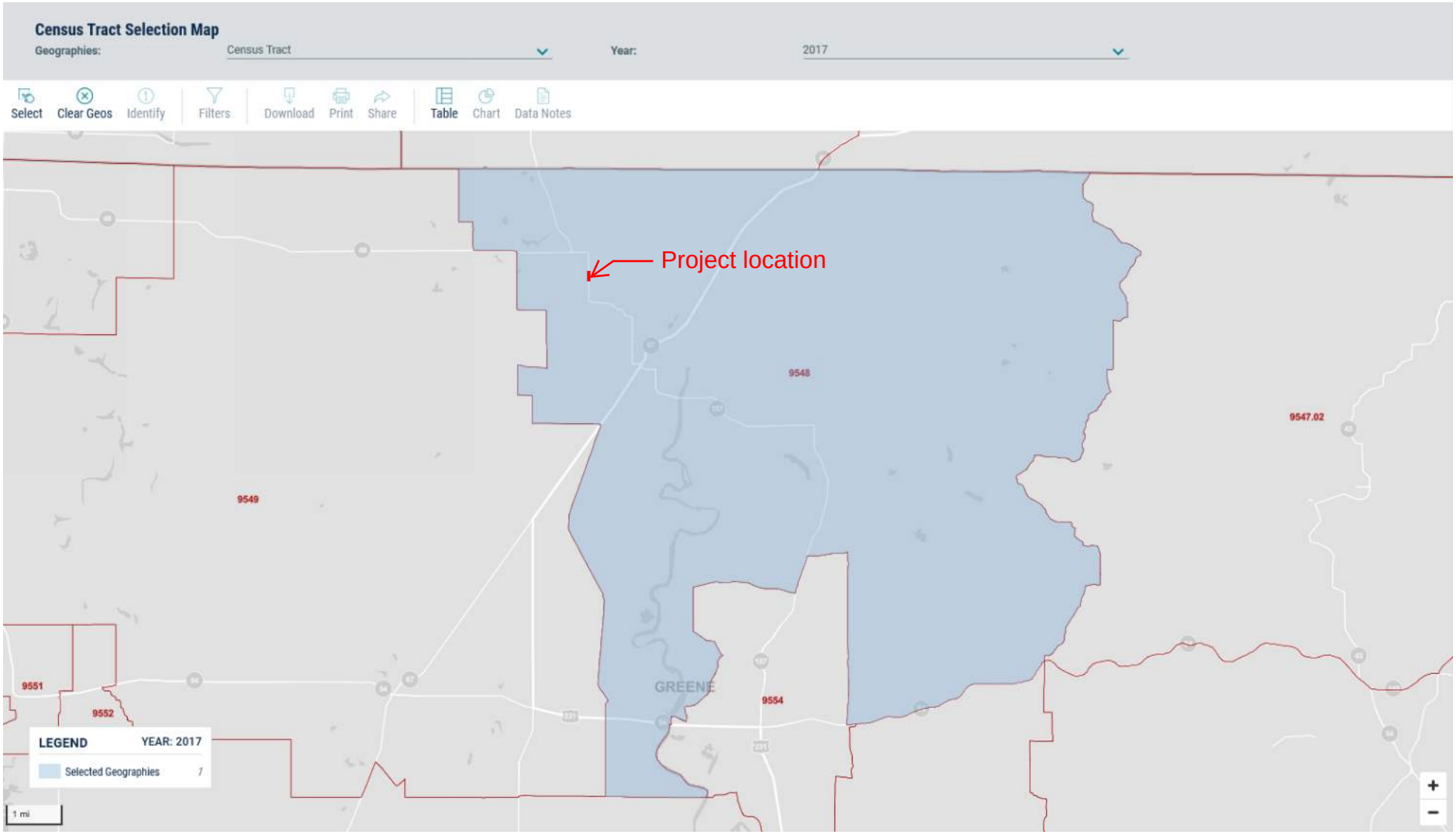
POVERTY STATUS IN THE PAST 12 MONTHS BY SEX BY AGE

Survey/Program: American Community Survey
TableID: B17001

Product: 2017: ACS 5-Year Estimates Detailed Tables
Universe: Population for whom poverty status is determined

CUSTOMIZE TABLE

	Greene County, Indiana		Census Tract 9548, Greene County, Indiana	
	Estimate	Margin of Error	Estimate	Margin of Error
Total:	31,993	+/-133	3,445	+/-291
Income in the past 12 months below pov...	4,114	+/-516	564	+/-200
Male:	1,633	+/-277	207	+/-90
Under 5 years	146	+/-63	28	+/-23
5 years	0	+/-24	0	+/-11
6 to 11 years	167	+/-66	42	+/-39
12 to 14 years	111	+/-53	9	+/-14
15 years	35	+/-21	13	+/-13
16 and 17 years	68	+/-46	4	+/-8
18 to 24 years	139	+/-61	0	+/-11
25 to 34 years	204	+/-76	24	+/-25
35 to 44 years	172	+/-63	24	+/-19
45 to 54 years	258	+/-81	23	+/-22
55 to 64 years	190	+/-68	15	+/-14
65 to 74 years	90	+/-43	9	+/-9
75 years and over	53	+/-41	16	+/-21
Female:	2,481	+/-346	357	+/-126
Under 5 years	207	+/-90	15	+/-17
5 years	10	+/-13	9	+/-13
6 to 11 years	202	+/-83	38	+/-33
12 to 14 years	76	+/-42	0	+/-11
15 years	11	+/-12	0	+/-11
16 and 17 years	95	+/-53	50	+/-47
18 to 24 years	325	+/-119	18	+/-17
25 to 34 years	293	+/-94	23	+/-26
35 to 44 years	369	+/-102	106	+/-68
45 to 54 years	316	+/-107	40	+/-22
55 to 64 years	334	+/-94	36	+/-26
65 to 74 years	101	+/-52	3	+/-4
75 years and over	142	+/-48	19	+/-13
Income in the past 12 months at or abov...	27,879	+/-521	2,881	+/-299
Male:	14,188	+/-285	1,414	+/-186
Under 5 years	652	+/-65	57	+/-34
5 years	190	+/-77	15	+/-16
6 to 11 years	1,040	+/-135	90	+/-50
12 to 14 years	543	+/-139	34	+/-34
15 years	198	+/-71	22	+/-18
16 and 17 years	395	+/-77	22	+/-20
18 to 24 years	1,145	+/-67	49	+/-30
25 to 34 years	1,535	+/-82	121	+/-52
35 to 44 years	1,701	+/-67	137	+/-45
45 to 54 years	2,161	+/-108	270	+/-77
55 to 64 years	2,112	+/-75	281	+/-75
65 to 74 years	1,553	+/-53	160	+/-75
75 years and over	963	+/-54	156	+/-64
Female:	13,691	+/-369	1,467	+/-173
Under 5 years	702	+/-95	40	+/-29
5 years	129	+/-46	10	+/-14
6 to 11 years	1,014	+/-142	76	+/-43
12 to 14 years	547	+/-112	55	+/-31
15 years	187	+/-80	0	+/-11
16 and 17 years	387	+/-96	62	+/-38
18 to 24 years	793	+/-107	29	+/-25
25 to 34 years	1,436	+/-104	182	+/-64
35 to 44 years	1,608	+/-142	130	+/-40
45 to 54 years	1,974	+/-120	243	+/-84
55 to 64 years	1,964	+/-98	334	+/-77
65 to 74 years	1,650	+/-61	217	+/-74
75 years and over	1,300	+/-85	89	+/-35


Census Tract Selection Map
Geographies:
Census Tract
Year:
2017
Select
Clear Geos
Identify
Filters
Download
Print
Share
Table
Chart
Data Notes
Project location
9548
9547.02
9549
9551
9552
9554
GREENE
LEGEND
YEAR: 2017
Selected Geographies
1
1 mi

Raquel Walker

From: Fair, Terri <TFair@indot.IN.gov>
Sent: Thursday, September 10, 2020 7:58 AM
To: Raquel Walker
Cc: Miller, Brandon; Bales, Ronald
Subject: FW: EJ Analysis for Des No. 1700141 - SR 157 over Branch of Lemon Creek
Attachments: EJ Analysis_1700141_Combined.pdf

INDOT-Environmental Services Division (ESD) has reviewed the project information along with the Environmental Justice (EJ) Analysis for the above referenced project. With the information provided, the project may require minimal right-of-way, require no relocations, and would not disrupt community cohesion or create a physical barrier. With the information provided, INDOT-ESD would not consider the impacts associated with this project as causing a disproportionately high and adverse effect on minority and/or low income populations of EJ concern relative to non EJ populations in accordance with the provisions of Executive Order 12898 and FHWA Order 6640.23a. No further EJ Analysis is required.

From: Raquel Walker <R.Walker@gaiconsultants.com>
Sent: Tuesday, September 08, 2020 8:08 AM
To: Fair, Terri <TFair@indot.IN.gov>
Cc: Miller, Brandon <BraMiller1@indot.IN.gov>
Subject: RE: EJ Analysis for Des No. 1700141 - SR 157 over Branch of Lemon Creek

---

Hi Terri,

Please see the EJ population text from INDOT's NEPA Standard Language below. I have also added the project location to the Census Tract Selection map. Please let me know if you need anything else!

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 approximately 0.88 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 exist 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 Greene County. The community that overlaps the project area is called the affected community (AC). In this project, the AC is Census Tract 9548. 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 Bureau, 2013-2017American Community Survey 5 Year Estimates was obtained from the US Census Bureau Website https://data.census.gov/cedsci/ on August 6, 2020 by GAI. The data collected for minority and low-income populations within the AC are summarized in the below table.

Table: Minority and Low-Income Data (U.S Census Bureau and 2013-2017)

	COC - (Greene County)	AC-1 – (Census Tract 9548 Greene County, Indiana)
Percent Minority	(3.18%)	(3.22%)
125% of COC	(3.98 %)	AC < 125% COC

Appendix J

Additional Studies

Land and Water Conservation Fund Grants: Indiana

The Park Service is finding out about more closures and conversions of federally protected parks than ever before. But no one knows just how many, so InvestigateWest compiled this database, which lists every LWCF grant between 1965 and 2011, as a starting point. Click a column header to re-sort the table. Click-shift to add a secondary sort.

RETURN TO THE PROJECT PAGE

FILTER THE LIST: greene

Grant ID & Element	Grant Name	Sponsor	County	State	Grant Amount	Year Approved	Year Completed	Type
21 - XXX	SHAKAMAK STATE PARK	DEPT. OF NATURAL RESOURCES	GREENE	IN	$5,700.00	1967	1968	Acquisition
131 - XXX	RENASCENTIS PARC - "72"	LYONS PARK BOARD	GREENE	IN	$3,677.71	1972	1975	Development
156 - XXX	SHAKAMAK STATE PARK CAMPGROUND	DEPT. OF NATURAL RESOURCES	GREENE	IN	$222,305.14	1973	1976	Development

AN INVESTIGATEWEST DATA PROJECT

Land and Water Conservation Fund (LWCF) County Property List for Indiana
(Last Updated December 2019)

ProjectNumber	SubProjectCode	County	Property
1800021	1800021	Greene	Shakamak State Park
1800131	1800131	Greene	Lyons Community Park
1800156	1800156	Greene	Shakamak State Park
1800363	1800363I	Greene	Green-Sullivan State Forest
1800593	1800593	Greene	Bloomfield Pool

Please note, some of the property names are cut off on the ends due to character limits
Also, park names may have changed and is not reflected on the list.
*Various - this may include multiple sites in multiple counties and should always be included in your searches by county.