

Indiana Department of Transportation

County Switzerland

Route State Road 156

Des. No. 1600616

**FHWA-Indiana Environmental Document
CATEGORICAL EXCLUSION / ENVIRONMENTAL ASSESSMENT FORM
GENERAL PROJECT INFORMATION**

Road No./County:	State Road (SR 156)/Switzerland County
Designation Number:	1600616
Project Description/Termini:	Slide Correction Project 1.5 miles west of the SR 56/SR 156 east junction

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

DGD _____ 2021.04.26 14:21:08 -04'00'
 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: Chris Kunkel/Lochmueller Group, Inc.

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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.

Does the project have a historic bridge processed under the Historic Bridges PA*? If No, then: Opportunity for a Public Hearing Required? Yes No 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 Survey letters were mailed to potentially affected property owners within the project area on February 1, 2018... Public Involvement: The project will meet the minimum requirements described in the current INDOT Public Involvement Manual...

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

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

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

Sponsor of the Project: Indiana Department of Transportation (INDOT) INDOT District: Seymour Local Name of the Facility: SR 156

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

*If other is selected, please identify the funding source: N/A

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)

Need: The need for this project stems from the deteriorated condition of the pavement and roadway embankment along SR 156 causing the pavement and roadside embankment to deteriorate and fail.

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and guardrail sags. The sagging pavement, scarp lines and sagging guardrail could also pose a safety hazard due to the uneven roadway and lack of a stable guardrail.

Purpose:

The purpose of the project is to correct the embankment failure and thereby provide a functional roadway that minimizes future pavement maintenance issues and preventing further land slide.

PROJECT DESCRIPTION (PREFERRED ALTERNATIVE):

County: Switzerland Municipality: N/A

Limits of Proposed Work: Along SR 156, beginning approximately 1.73 miles west of the east junction with SR 156 and ending approximately 1.5 miles west of the east junction with SR 156 for a total project length of 0.23 mile.

Total Work Length: 0.23 Mile(s) Total Work Area: 3.04 Acre(s)

Is an Interchange Modification Study / Interchange Justification Study (IMS/IJS) required?	Yes ¹	No
If yes, when did the FHWA grant a conditional approval for this project?	<input type="text"/>	<input checked="" type="checkbox"/>
	Date: <input style="width: 100%;" type="text"/>	

¹If 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.

The Federal Highway Administration (FHWA) and the INDOT Seymour District propose to proceed with a federal-aid slide correction project along SR 156 in Switzerland County, Indiana.

Location:

Specifically, the project is located in Section 27, Township 3 North, and Range 1 West in Posey Township as depicted on the Rising Sun U.S. Geological Survey (USGS) Quadrangle (Appendix B, page B2).

Existing Conditions:

Within the project area, SR 156 is functionally classified as a Rural Minor Arterial. The existing roadway consists of two 11-foot wide travel lanes accompanied by 2-foot wide earthen shoulders. The existing slope varies due to the slide occurring. The roadside within the slide area ranges from approximately 2.5:1 to 1.5:1 along the eastbound lane and approximately 2.5:1 to 2:1 up the hillside along the westbound lane. Roadway distress is evident from pavement sags in the roadway profile, pavement cracking and distress observed in evident scarp lines, and missing downstream roadway shoulder. The existing pavement is composed of approximately 24-inches of hot mix asphalt (HMA) pavement. There are three existing residential driveways within the project limits located along the westbound travel lane. One is an existing concrete drive and the other two are gravel drives. One existing opening in the guardrail is along the eastbound lane that allows for access to a set of wooden stairs that go to the bank of the Ohio River. Within the project area there are three 24-inch diameter culverts that convey drainage under SR 156 and outlet into the Ohio River. There are also three culverts, with 15 to 24-inch diameters, that convey drainage underneath residential driveways. The posted speed limit is 55 miles per hour (mph).

Land use is primarily rural in nature with residences having uncontrolled driveway access spaced sporadically along the bluff side of the roadway. The river side of SR 156 is undeveloped, mostly green space with some presence of isolated riparian trees along the bank of the Ohio River (Appendix B, page B3).

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Preferred Alternative:

The preferred alternative will construct a drilled pier and lagging wall with tiebacks. The piers will be installed every 6 feet along the north side of SR 156. The piers will be installed to a maximum depth of 50 feet with 10 feet of the pier being drilled into the bedrock. Concrete lagging panels will be installed between the drilled piers to retain the soil. Ground anchor tiebacks will be installed at each pier to prevent further sliding forces. Existing guardrail will be replaced with approximately 1200 feet of new guardrail along the north side of the roadway.

The proposed roadway typical section will consist of two, 11-foot wide travel lanes, with 4-foot wide paved shoulders on the north side and a paved shoulder varying from 2 feet to 9 feet in width along the south side. The pavement for the entire length of the slide area, approximately 1,125 feet, will be replaced to full depth. The approach roadway at the west end of the project area, for an additional 76 feet, will be milled to a depth of 1.5 inches and a new HMA overlay will be applied. The total length of the project along SR 156 is 1,201 feet.

Six culverts within the project area will also be replaced. Three culverts, two with 24-inch diameters and one with a 15-inch diameter, that convey drainage under residential driveways will be replaced with new culverts that are 24 inches in diameter. New riprap will be placed at the outlet of each of these new culverts. Three 24-inch diameter culverts that convey drainage under SR 156 to the Ohio River will also be replaced with culverts that are 30-inches in diameter. The project will also involve the placement of new revetment along the length of the project between the new retaining wall and the banks of the Ohio River above the ordinary high water mark (OHWM) of the river. Please refer to Appendix B for maps depicting the project area (pages B1 to B4), photographs of the project area (pages B5 to B14), and the Preliminary Design Plans (pages B15 to B22).

The proposed maintenance of traffic (MOT) plan includes the closure of SR 156 within the project area (Appendix B, page B19). A detour utilizing SR 56 will be established. Please refer to the *Maintenance of Traffic* section of this document for full details.

The termini of the project provide the logical beginning and end point necessary to complete the slide correction. The project is independent of any other action and able to be constructed without relying on the completion of any other project.

The preferred alternative meets the purpose and need of the project by correcting the existing deficiencies in the roadway pavement and stabilizing the roadway sideslope which will prevent any further landslides.

OTHER ALTERNATIVES CONSIDERED:

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

Light Weight Fill: This alternative would involve the removal of pavement, roadway subgrade, and natural soils and replacing with light weight fill to improve the long-term Factor of Safety by reducing the weight on the driving edge of the slide. Although this would likely correct the existing landslide in a minor way, it was anticipated that this alternative would not be adequate in stabilizing the slope in the long term. Therefore, this alternative was removed from further consideration.

Roadway Realignment Upslope: This alternative would involve the horizontal and vertical realignment of the existing SR 156 upslope away from the Ohio River. This option would require the largest impact to the adjacent residences and utilities along the westbound (south) lane and would likely require reconstruction of a much longer length along SR 156 than the preferred alternative. Therefore, this alternative was removed from further consideration.

Soil Nailed Wall: This alternative involves the construction of a soil nailed wall with soil nails on the order of 50 to 60 feet in length extending a minimum of 10 feet beyond the critical slip surface. Soil nails would also need to be robustly sized to take both shear and axial forces from the slide and have adequate corrosion protection. Soil nailing is only feasible above the water level, and the results of the hydraulic analysis show a sliding mass that extends to a depth of approximately 15 feet below the OHWM on the Ohio River. This alternative would involve increased environmental impacts to the Ohio River; therefore, this alternative was removed from further consideration.

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Tangent Pile Wall: This alternative involves the construction of a tangent pile wall by installing drilled piers directly adjacent to each other to form a wall. The drilled vertical shafts would include cast-in-place concrete and a steel piles or W sections to reinforce the piers. The tangent pile wall would fulfill the purpose and need but is anticipated to have a high construction cost due to the depth and number of piers. Therefore, this alternative was removed from further consideration.

Do Nothing Alternative: This alternative involved not addressing the land slide along SR 156 at this location. While this alternative eliminates costs and any environmental impacts, the continued slide would result in potential road closure and require continued frequent maintenance. This alternative would not fulfill the project purpose and need. Therefore, this alternative was removed from further consideration.

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

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

X
X

ROADWAY CHARACTER:

SR 156

Functional Classification:	<u>Minor Arterial</u>		
Current ADT:	<u>2,410</u> VPD (2019)	Design Year ADT:	<u>2,680</u> VPD (2039)
Design Hour Volume (DHV):	<u>268</u>	Truck Percentage (%)	<u>59.2</u>
Designed Speed (mph):	<u>55</u>	Legal Speed (mph):	<u>55</u>

Existing Proposed

	Existing	Proposed
Number of Lanes:	2	2
Type of Lanes:	Through travel lanes	Through travel lanes
Pavement Width:	22 ft.	28-35 ft.
Shoulder Width:	2-6 ft.	2-9 ft.
Median Width:	N/A ft.	N/A ft.
Sidewalk Width:	N/A ft.	N/A ft.

Setting:	<input type="checkbox"/> Urban	<input type="checkbox"/> Suburban	<input checked="" type="checkbox"/> Rural
Topography:	<input checked="" type="checkbox"/> Level	<input type="checkbox"/> Rolling	<input type="checkbox"/> Hilly

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

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DESIGN CRITERIA FOR BRIDGES:

 Structure/NBI Number(s): N/A Sufficiency Rating: N/A
 (Rating, Source of Information)

	Existing		Proposed
Bridge Type:	N/A		N/A
Number of Spans:	N/A		N/A
Weight Restrictions:	N/A	ton	N/A
Height Restrictions:	N/A	ft.	N/A
Curb to Curb Width:	N/A	ft.	N/A
Outside to Outside Width:	N/A	ft.	N/A
Shoulder Width:	N/A	ft.	N/A
Length of Channel Work:	N/A		N/A

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

Remarks:

This project does not include involvement of any bridges. However, the project includes the replacement of six culverts within the project area. The three culverts under residential drives, ranging from 15-inch to 24-inch diameters, will be replaced with new 24-inch diameter pipes. The three 24-inch diameter culverts under SR 156 that outlet into the Ohio River will be replaced with new 30-inch diameter pipes (Appendix B, pages B20 to B22). The details of the replacement pipes are in the table below.

Structure No.	Type	Proposed Size (length by diameter)	Size of Pipe to be replaced (length by diameter)	Location
11	Pipe under residential driveway	64 feet by 24 inches	39 feet by 15 inches	Sta. 1345+20
12	Pipe under SR 156	88 feet by 30 inches	90 feet by 24 inches	Sta. 1346+72
13	Pipe under residential driveway	68 feet by 24 inches	24 feet by 24 inches	Sta. 1349+10
14	Pipe under SR 156	66 feet by 30 inches	100 feet by 24 inches	Sta. 1349+86
15	Pipe under residential driveway	62 feet by 24 inches	27 feet by 24 inches	Sta. 1353+21
16	Pipe under SR 156	65 feet by 30 inches	81 feet by 24 inches	Sta. 1354+54

Yes
No
N/A

Will the structure be rehabilitated or replaced as part of the project?

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

MAINTENANCE OF TRAFFIC (MOT) DURING CONSTRUCTION:

	Yes	No
Is a temporary bridge proposed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is a temporary roadway proposed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Will the project involve the use of a detour or require a ramp closure? (describe in remarks)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Provisions will be made for access by local traffic and so posted.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Provisions will be made for through-traffic dependent businesses.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Provisions will be made to accommodate any local special events or festivals.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Will the proposed MOT substantially change the environmental consequences of the action?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is there substantial controversy associated with the proposed method for MOT?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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Remarks: This project will require the closure of SR 156 throughout construction (Appendix B, page B19). The marked detour route will include SR 56 and will begin at the west junction of SR 56 and SR 156, within the town of Vevay, and follow SR 56 to the east junction with SR 156, east of the project area. The detour will be approximately 20.5 miles, for an added travel length of approximately 47.5 miles. Access to all residential drives within the closure area will be maintained during construction. The detour is expected to last approximately 15 months.

The closure 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 will occur during construction but will cease upon project completion.

ESTIMATED PROJECT COST AND SCHEDULE:

Engineering: \$ N/A (2019) Right-of-Way: \$ *530,000 (2020) Construction: \$ *13,817,151 (2022)
 *Includes funds for the other projects in the contract

Anticipated Start Date of Construction: Fall 2022

Date project incorporated into STIP July 2, 2019

Is the project in an MPO Area? Yes No

If yes,

Name of MPO N/A

Location of Project in TIP N/A

Date of incorporation by reference into the STIP N/A

RIGHT OF WAY:

Land Use Impacts	Amount (acres)	
	Permanent	Temporary
Residential	0.06	0.00
Commercial	0.00	0.00
Agricultural	0.00	0.00
Forest	0.59	0.00
Wetlands	0.00	0.00
Other:	0.00	0.00
TOTAL	0.65	0.00

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: Within the project area, the existing right-of-way (ROW) is located approximately 70 to 75 feet wide north and approximately 67 to 72 feet wide south of the roadway centerline. The land use of the existing ROW consists of residential lawns, forested areas, and existing roadway.

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The project requires approximately 0.65 acre of permanent right-of-way from the north side of SR 156 for the stabilization of the bank of the Ohio River. The right-of-way to be acquired is mainly forested (0.59 acre) with some residential maintained lawn (0.06 acre). The ROW width south of the centerline of SR 156 will remain unchanged but will be widened from 70 feet to 105 feet wide north of the centerline of SR 156. The project will not require any temporary ROW (Appendix B, page B3).

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

	<u>Presence</u>	<u>Impacts</u>	
		<u>Yes</u>	<u>No</u>
Streams, Rivers, Watercourses & Jurisdictional Ditches	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Federal Wild and Scenic Rivers			
State Natural, Scenic or Recreational Rivers			
Nationwide Rivers Inventory (NRI) listed			
Outstanding Rivers List for Indiana			
Navigable Waterways	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>

Remarks: Based on a desktop review, site visits on April 21 and June 22, 2020 by Lochmueller Group, the aerial map of the project area (Appendix B, page B3), the USGS topographic map (Appendix B, page B2), and the water resources map of the RFI (Appendix E, page E8) there are 13 streams, rivers, watercourses, and/or jurisdictional ditches located within the 0.5 mile search radius. There is one river present within or adjacent to the project area.

A *Waters of the U.S. Determination Report* was approved by the INDOT Ecology and Waterway Permitting Office (EWPO) on December 14, 2020. Please refer to Appendix F, pages F1 to F38 for the *Waters of the U.S. Determination Report*. It was determined that one river, the Ohio River, is located within the survey area. The Ohio River is a traditional navigable waterway (TNW) for the entirety of its length along the border of Indiana. The OHWM is 1,600 feet wide by 24 feet deep. Due to its classification as a TNW, the Ohio River would likely be classified as a Water of the U.S. The U.S. Army Corp of Engineers (USACE) makes all final determinations regarding jurisdiction.

The project does involve the stabilization of the bank of the Ohio River. However, all project work will occur above the OHWM of the Ohio River. Therefore, no impacts are expected.

Early coordination information was sent on August 13, 2020 to the USACE, the U.S. Fish and Wildlife Service (USFWS), and the Indiana Department of Natural Resources Division of Fish and Wildlife (IDNR DFW). The USACE did not respond to the early coordination letter. The USFWS responded on September 10, 2020 with recommendations to avoid or minimize impacts to streams; however, since no stream impacts are anticipated, their recommendations are not applicable (Appendix C, pages C24 to C25). The IDNR DFW responded on September 11, 2020 with recommendations to avoid, or minimize impacts to streams; however, their recommendations are not applicable (Appendix C, pages C21 to C23).

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An automated letter was generated from the Indiana Department of Environmental Management (IDEM) website on August 13, 2020 (Appendix C, pages C9 to C18). Applicable recommendations from the Proposed Roadway Letter include coordinating with appropriate agencies with regards to waters impacts.

Other Surface Waters	Presence	Impacts	
		Yes	No
Reservoirs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lakes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Farm Ponds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Detention Basins	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Storm Water Management Facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Remarks: Based on a desktop review, site visits on April 21 and June 22, 2020 by Lochmueller Group, the aerial map of the project area (Appendix B, page B3), the USGS topographic map (Appendix B, page B2), and the water resource map in the RFI (Appendix E, E8), there are 3 other surface waters located within the 0.5 mile search radius. There are no other surface waters present within or adjacent to the project area.

A Waters of the U.S. Determination Report was approved by the INDOT EWPO on December 14, 2020. Please refer to Appendix F, pages F1 to F38 for the *Waters of the U.S. Determination Report*. It was determined that no other surface waters are located within the project area. Therefore, no impacts are expected.

Early coordination information was sent on August 13, 2020 to the USACE, the USFWS, and the IDNR DFW. The USACE did not respond to the early coordination letter. The USFWS responded on September 10, 2020 but had no recommendations regarding other surface waters (Appendix C, pages C24 to C25). The IDNR DFW responded on September 11, 2020 but had no recommendations regarding other surface waters (Appendix C, pages C21 to C23).

An automated letter was generated from the IDEM website on August 13, 2020 (Appendix C, pages C9 to C18). No recommendations regarding other surface water impacts are applicable since no other surface water impacts are expected.

Wetlands	Presence	Impacts	
		Yes	No
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Total wetland area: 0.08 acre(s) Total wetland area impacted: 0.035 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
A	PEM1E	0.02	0.02	Located within roadside drainage feature on the south side of the roadway draining to the Ohio River via culvert under SR 156
B	PEM1E	0.03	0.01	Located within roadside drainage feature on the south side of the roadway draining to the Ohio River via culvert under SR 156
C	PEM1E	0.03	0.005	Located within roadside drainage feature on the south side of the roadway draining to the Ohio River via culvert under SR 156

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Documentation

ES Approval Dates

Wetlands (Mark all that apply)

Wetland Determination
 Wetland Delineation
 USACE Isolated Waters Determination
 Mitigation Plan

X

December 14, 2020

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.

X
X

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

Remarks:

Based on a review of the NWI on-line mapper (<https://www.fws.gov/wetlands/data/Mapper.html>) (Appendix F, page F13), site visits on April 21 and June 22, 2020 by Lochmueller Group, the USGS topographic map (Appendix B, page B2), and the water resources map of the RFI report (Appendix E, page E8) there are 10 wetlands located within the 0.5 mile search radius. There is one wetland present within or adjacent to the project area.

A *Waters of the U.S. Determination Report* was approved by the INDOT EWPO on December 14, 2020. Please refer to Appendix F, pages F1 to F38 for the *Waters of the U.S. Determination Report*. It was determined that three wetlands are located within the project survey area.

Wetland A is a 0.02-acre wetland located within the roadside drainage feature along the south side of SR 156. As defined by Cowardin *et al.* (1979), this wetland would be classified as palustrine emergent, persistent, seasonally flooded/saturated (PEM1E). The wetland would be considered of a poor quality due to its size, function within the roadside, and quality of vegetation. Wetland A would likely be considered a Water of the U.S. based on the hydrologic connection to the Ohio River, a TNW. This project will impact 0.02 acre of Wetland A due to grading and culvert replacement activities.

Wetland B is a 0.03-acre wetland within the roadside drainage feature along the south side of SR 156. As defined by Cowardin *et al.* (1979), this wetland would be classified as palustrine emergent, persistent, seasonally flooded/saturated (PEM1E). The wetland would be considered of a poor quality due to its size, function within the roadside, and quality of vegetation. Wetland B would likely be considered a Water of the U.S. based on the hydrologic connection to the Ohio River, a TNW. This project will impact 0.01 acre of Wetland B due to grading and culvert replacement activities.

Wetland C is a 0.03-acre wetland within the roadside drainage feature along the south side of SR 156. As defined by Cowardin *et al.* (1979), this wetland would be classified as palustrine emergent, persistent, seasonally flooded/saturated (PEM1E). The wetland would be considered of a poor quality due to its size, function within the roadside, and quality of vegetation. Wetland C would likely be considered a Water of the U.S. based on the hydrologic connection to the Ohio River, a TNW. This project will impact 0.005 acre of Wetland C due to grading and culvert replacement activities.

The USACE makes all final determinations regarding jurisdiction.

Due to the 0.035 acre of impacts to likely Waters of the U.S. a USACE 404 Regional General Permit (RGP) and an IDEM Section 401 Water Quality Certification (WQC) will likely be required. Mitigation will not likely be required as impacts are below the 0.1-acre threshold to require mitigation. All wetland impacts will occur

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within the required construction limits of the project. Wetland avoidance alternatives would not be practicable because the purpose and need of the project would not be met.

Early coordination information was sent on August 13, 2020 to the USACE, the USFWS, and the IDNR DFW. The USACE did not respond to the early coordination letter The USFWS responded on September 10, 2020, but had no recommendations relating to wetland impacts (Appendix C, pages C24 to C25). The IDNR DFW responded on September 11, 2020 recommending coordination with IDEM and the USACE with regards to permit requirements (Appendix C, pages C21 to C23). All applicable IDNR DFW recommendations are included in the Environmental Commitments section of this CE document.

An automated letter was generated from the IDEM website on August 13, 2020 (Appendix C, pages C9 to C18). Applicable recommendations from the Proposed Roadway Letter coordinating with appropriate permitting agencies.

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

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 April 21 and June 22, 2020 by Lochmueller Group, and the aerial map of the project area (Appendix B, page B3), there is wetland, forested, maintained vegetated roadside, and maintained lawn habitat within the project area. Dominant vegetation includes deertongue (*Dichantelium clandestinum*), false baby’s breath (*Galium mollugo*), Kentucky bluegrass (*Poa pratensis*), Norway spruce (*Picea abies*), green ash (*Fraxinus pennsylvanica*), American sycamore (*Platanus occidentalis*), and eastern red cedar (*Juniperus virginiana*). The project will result in approximately 2.23 acres of ground disturbance. The project will disturb 0.98 acre of forested habitat within 100 feet of the roadway, 0.035 acre of wetland habitat, 1.0 acre of maintained lawn habitat, and 0.215 acre of maintained vegetated roadside habitat. Excavation will occur to replace the culverts and reconstruct the roadway and will not exceed 10 feet. Drilling to a maximum depth of 50 feet will occur to drill the piers for the retaining wall. The avoidance of terrestrial habitat is not feasible as the project limits are required for the correction of the slide, replacement of the culverts, and reconstruction of the roadway which meets the purpose and need for the project, as detailed in the *Purpose and Need* section of this document.

Due to ground disturbance exceeding the 1.0 acre threshold, an IDEM Rule 5 Notice of Intent will likely be required.

The USFWS responded on September 10, 2020 with recommendations to avoid or minimize impacts to any potential wildlife crossings and limiting tree clearing to be within the construction limits (Appendix C, pages C24 to C25). The IDNR DFW responded on September 11, 2020 with recommendations to avoid or minimize impacts to potential bat habitats, revegetate all bare and disturbed areas, and to avoid or minimize all tree and other vegetation clearing (Appendix C, pages C21 to C23). An automated letter was generated from the IDEM website on August 13, 2020 (Appendix C, pages C9 to C18). Applicable recommendations from the Proposed Roadway Letter include coordinating with appropriate permitting agencies. All applicable USFWS and IDNR DFW recommendations are included 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.

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Karst

Is the proposed project located within or adjacent to the potential Karst Area of Indiana?

Yes

No

Are karst features located within or adjacent to the footprint of the proposed project?

If yes, will the project impact any of these karst features?

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

Remarks:

Based on a desktop review, the project is located outside the designated karst region of Indiana, as outlined in the October 13, 1993 MOU. According to the topographic map of the project area (Appendix B, page B2), and the water resources map of the RFI report (Appendix E, page E8), there are no karst features identified within or adjacent to the project area. In the early coordination response, the IGS did not indicate that karst features exist in the project area (Appendix C, pages C6 to C8). The IGS did identify high potential for liquefaction, floodway, potential slope instability, and low bedrock resource potential within 0.5-mile of the project area. Response from IGS has been communicated with the designer on February 2, 2021. No impacts are expected.

Threatened or Endangered Species

Within the known range of any federal species

Any critical habitat identified within project area

Federal species found in project area (based upon informal consultation)

State species found in project area (based upon consultation with IDNR)

Presence

Impacts

Yes **No**

<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Is Section 7 formal consultation required for this action?

Yes

No

Remarks:

Based on a desktop review and the RFI report, completed by Lochmueller Group on January 3, 2019, the IDNR Switzerland County ETR Species List has been checked and is included in Appendix E, page E10. 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 dated September 11, 2020 (Appendix C, pages C21 to C23), the Natural Heritage Program's Database has 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.

Project information was submitted through the USFWS's IPaC portal, and an official species list was generated (Appendix C, pages C26 to C31). The project is within the range of the federally endangered Indiana bat (*Myotis sodalis*) and the federally threatened northern long-eared bat (NLEB) (*Myotis septentrionalis*). One other species was found to be present within or adjacent to the project along with the Indiana bat and NLEB.

The official species list generated from IPaC indicated one other species present within the project area. The project is also within the range of the sheepsnose mussel (*Plethobasus cyphus*). In their early coordination response, dated September 10, 2020, the USFWS indicated that they do not anticipate any impacts to this species as a result of the project (Appendix C, pages C24 to C25). The project qualifies for the USFWS Interim Policy.

The project qualifies for the *Range-wide Programmatic Informal Consultation* for the Indiana bat and NLEB, dated May 2016 (revised February 2018), between FHWA, Federal Railroad Administration (FRA), Federal Transit Administration (FTA), and USFWS. An effect determination key was completed on February 4, 2021, and based on the responses provided, the project was found to "May Affect – Not Likely to Adversely Affect" the Indiana bat and/or the NLEB. INDOT reviewed and verified the effect finding on February 5, 2021, and requested USFWS's review of the finding (Appendix C, pages 32 to C43). No response was received from USFWS within the 14-day review period; therefore, it was concluded that they concur with the finding.

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Avoidance and Mitigation Measures (AMMs) are included as firm commitments in the Environmental Commitments section 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	No
Wellhead Protection Area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public Water System(s)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Residential Well(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Source Water Protection Area(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sole Source Aquifer (SSA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If a SSA is present, answer the following:

	Yes	No
Is the Project in the St. Joseph Aquifer System?	<input type="checkbox"/>	<input type="checkbox"/>
Is the FHWA/EPA SSA MOU Applicable?	<input type="checkbox"/>	<input type="checkbox"/>
Initial Groundwater Assessment Required?	<input type="checkbox"/>	<input type="checkbox"/>
Detailed Groundwater Assessment Required?	<input type="checkbox"/>	<input type="checkbox"/>

Remarks: The project is located in Switzerland 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/USEPA Sole Source Aquifer MOU* is not applicable to this project. Therefore, a detailed groundwater assessment is not needed and no impacts are expected.

The IDEM Wellhead Proximity Determinator website (<http://www.in.gov/idem/cleanwater/pages/wellhead/>) was accessed on February 2, 2021 by Lochmueller Group. This project is not located within a Wellhead Protection Area or Source Water Area. No impacts are expected.

The IDNR Water Well Web Record Database website (<https://www.in.gov/dnr/water/3595.htm>) was accessed on February 2, 2021 by Lochmueller Group. No wells are located near this project area. Therefore, no impacts are anticipated.

Based on a desktop review of the INDOT MS4 website (<https://entapps.indot.in.gov/MS4/>) by Lochmueller Group on February 2, 2021 and the RFI report; this project is not located within an UAB location. No impacts are expected.

Based on a desktop review, site visits on April 21 and June 22, 2020 by Lochmueller Group, the aerial map of the project area (Appendix B, page B3), and the design plans (Appendix B, pages B20 to B22), this project is located where there is a public water system. There is a city water line along the south side of SR 156 within the construction limits of the project. Utility coordination has begun and will continue through project development to determine whether relocation is required and to ensure that impacts to the public waters system are minimal.

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

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

Remarks: Based on a desktop review of the IDNR Indiana Floodway Information Portal website (<http://dnrmmaps.dnr.in.gov/appsphp/fdms/>) by Lochmueller Group on February 2, 20221, and the waters resources map of the RFI report (Appendix E, page E8); this project is located in a regulatory floodplain as determined from approved FEMA floodplain maps (Appendix F, F15). An early coordination letter was sent on August 13, 2020 to the local Floodplain Administrator. The floodplain administrator did not respond within the 30-day time frame. In their early coordination response on September 11, 2020, the IDNR DFW stated that the project may require their formal approval pursuant to the Flood Control Act (IC 14-28-1) for any construction, excavation, or fill in or on the floodway of the Ohio River or Grants Creek (Appendix C, pages C21 to C23). This project qualifies as a Category 4 per the current *INDOT CE Manual*, which states:

No homes are located within the base floodplain within 1,000 feet upstream and two homes are located within the base floodplain within 1,000 feet downstream. The proposed structure will have an effective capacity such that backwater surface elevations are not expected to substantially increase. As a result, there will be no substantial adverse impacts on natural and beneficial floodplain values; there will be no substantial change in flood risks; and there will be no substantial increase in potential for interruption or termination of emergency service or emergency evacuation routes; therefore, it has been determined that this encroachment is not substantial. A hydraulic design study that addresses various structure size alternates will be completed during the preliminary design phase. A summary of this study will be included with the Field Check Plans.

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

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

**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, site visits on April 21 and June 22, 2020 by Lochmueller Group and the aerial map of the project area (Appendix B, page B3) there is no land that meets the definition of farmland under the Farmland Protection Policy Act (FPPA) within or adjacent to the project area. The requirements of FPPA do not apply to this project; therefore, no impacts are expected. An early coordination letter was sent on August 13, 2020 to the Natural Resources Conservation Service (NRCS). The NRCS responded on August 20, 2020 stating that the project will not cause a conversion of prime farmland (Appendix C, page C20).

SECTION C – CULTURAL RESOURCES

Minor Projects PA Clearance	Category	Type	INDOT Approval Dates	N/A
		A	3	November 23, 2020
	B	4		

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**Eligible and/or Listed
Resource Present**

Results of Research

Archaeology	<input type="checkbox"/>
NRHP Buildings/Site(s)	<input type="checkbox"/>
NRHP District(s)	<input type="checkbox"/>
NRHP Bridge(s)	<input type="checkbox"/>

Project Effect

No Historic Properties Affected No Adverse Effect Adverse Effect

**Documentation
Prepared**

Documentation (mark all that apply)

	ES/FHWA Approval Date(s)	SHPO Approval Date(s)
Historic Properties Short Report	<input type="checkbox"/>	<input type="checkbox"/>
Historic Property Report	<input type="checkbox"/>	<input type="checkbox"/>
Archaeological Records Check/ Review	X	N/A
Archaeological Phase Ia Survey Report	X	N/A
Archaeological Phase Ic Survey Report	<input type="checkbox"/>	<input type="checkbox"/>
Archaeological Phase II Investigation Report	<input type="checkbox"/>	<input type="checkbox"/>
Archaeological Phase III Data Recovery	<input type="checkbox"/>	<input type="checkbox"/>
APE, Eligibility and Effect Determination	<input type="checkbox"/>	<input type="checkbox"/>
800.11 Documentation	<input type="checkbox"/>	<input type="checkbox"/>

Memorandum of Agreement (MOA)

MOA Signature Dates (List all signatories)

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 November 23, 2020, the INDOT Cultural Resources Office (CRO) determined that this project falls within the guidelines of Category A, Type 3 and Category B, Type 4 under the Minor Projects Programmatic Agreement (MPPA) (Appendix D, pages D1 to D5). Category A-3 covers replacement of pipe culverts and Category B-4 covers installation of new safety appurtenances (guardrails).

Qualified professionals from Metric Environmental performed an archaeological records check and a field investigation of a 5.2 acre area as part of a Phase Ia Survey Report on November 12, 2020. No sites were identified, and no further work was recommended. No further consultation is required. This completes the Section 106 process and the responsibilities of the FHWA under Section 106 have been fulfilled.

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

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

Parks & Other Recreational Land

- Publicly owned park
- Publicly owned recreation area
- Other (school, state/national forest, bikeway, etc.)

Presence

Use

Yes	No

Evaluations Prepared

- Programmatic Section 4(f)*
- “De minimis” Impact*
- Individual Section 4(f)

FHWA Approval date

--

Wildlife & Waterfowl Refuges

- National Wildlife Refuge
- National Natural Landmark
- State Wildlife Area
- State Nature Preserve

Presence

Use

Yes	No

Evaluations Prepared

- Programmatic Section 4(f)*
- “De minimis” Impact*
- Individual Section 4(f)

FHWA Approval date

--

Historic Properties

- Sites eligible and/or listed on the NRHP

Presence

--

Use

Yes	No

Evaluations Prepared

- Programmatic Section 4(f)*
- “De minimis” Impact*
- Individual Section 4(f)

FHWA Approval date

--

**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, recreational areas, wildlife/waterfowl refuges, and NRHP eligible or listed historical properties regardless of ownership. Lands subject to this law are considered Section 4(f) resources.

Based on a desktop review, site visits on April 21 and June 22, 2020 by Lochmueller Group, the aerial map of the project area (Appendix B, page B3) and the RFI report (Appendix E, page E7) there are no Section 4(f)

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resources within the 0.5 miles search radius. There are no Section 4(f) resources within or adjacent to the project area. Therefore, no impacts are expected.

Section 6(f) Involvement

Presence

Use

Section 6(f) Property

Yes

No

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 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 the Section 6(f) property list on the INDOT Environmental Policy website (<https://www.in.gov/indot/2523.htm>) revealed a total of 2 properties in Switzerland County (Appendix J, J1). None of these properties are located within or adjacent to the project area. Therefore, there will be no impacts to Section 6(f) resources as a result of this project.

SECTION E – Air Quality

Air Quality

Conformity Status of the Project

Is the project in an air quality non-attainment or maintenance area?

Yes

No

If YES, then:

Is the project in the most current MPO TIP?

Is the project exempt from conformity?

If the project is NOT exempt from conformity, then:

Is the project in the Transportation Plan (TP)?

Is a hot spot analysis required (CO/PM)?

Level of MSAT Analysis required?

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

Remarks:

The Fiscal Year (FY) 2020-2024 Statewide Transportation Improvement Program (STIP) is listed based on the lead Des. No. in the contract. The lead Des. No. for this contract is 1600615. The FY 2020-2024 STIP includes Des. No. 1600616 by reference with the contract number R-39907.

This project is located within Switzerland County, which is currently in attainment for all criteria pollutants according to the IDEM Office of Air Quality 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.

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SECTION F – NOISE

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

	No	Yes/ Date
ES Review of Noise Analysis	<input type="checkbox"/>	<input type="checkbox"/>

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

SECTION G – COMMUNITY IMPACTS

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

Remarks: The project will ultimately be beneficial to local properties due to improvements of deteriorating roadway conditions and it will not substantially change access to properties within the area. Overall, the negative impacts to property owners within the project area will be minimal and will consist primarily of short-term construction impacts. No relocations are expected. Property owners will be provided access throughout the duration of the project to reduce impacts as much as possible. The project is not anticipated to result in substantial impacts to community cohesion, because it will not change access to properties within the area. The proposed project is not expected to impact the surrounding community or cause economic impacts to the surrounding area. Therefore, this project will have minimal or no negative impacts to the community or local economy.

According to the Indiana Festivals website (www.indianafestivals.org) accessed on February 3, 2021 by Lochmueller Group there are no fairs and festivals scheduled within 10 miles of the project.

The MOT may pose delays and temporary inconveniences to traveling motorists (including school buses and emergency services); however, all inconveniences will cease upon project completion. The MOT for the project is not anticipated to impact access to community events. The project sponsor will be responsible for contacting school districts and emergency services at least two weeks prior to any construction activities that would limit access, this is included as a commitment in the Environmental Commitments section of this CE document.

Coordination with Switzerland County did not identify an approved transition plan and the status of the plan is unknown; however, no existing pedestrian facilities will be modified or removed, and no new pedestrian facilities are proposed as part of this project. Therefore, this project will not create and additional barriers to access.

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Indirect and Cumulative Impacts

Will the proposed action result in substantial indirect or cumulative impacts?

Yes	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>

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 other actions.

This project will not add substantial capacity to the existing roadway network or provide additional access to any currently undeveloped area. Therefore, the project is not expected to increase development in the area or result in substantial indirect or cumulative 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
<input type="checkbox"/>	<input checked="" type="checkbox"/>

Remarks:

Based on a desktop review, site visits on April 21 and June 22, 2020 by Lochmueller Group, the aerial map of the project area (Appendix B, page B3), and the RFI report (Appendix E, page E7) 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 information was sent to Switzerland County School Corporation, Switzerland County Sheriff's Department, Switzerland County Board of Commissioners, Switzerland County Council, Switzerland County Highway Department, Switzerland County Surveyor, Switzerland County EMS, and Posey Township Volunteer Fire Department on August 13, 2020 (Appendix C, pages C1 to C5). None of the agencies responded to the early coordination letter.

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)

During the development of the project were EJ issues identified?

Does the project require an EJ analysis?

If YES, then:

Are any EJ populations located within the project area?

Will the project result in adversely high or disproportionate impacts to EJ populations?

Yes	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>

Remarks:

Under FHWA Order 6640.23A, FHWA and the project sponsor, as 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 ROW. This project will require 0.65 acre of permanent ROW. 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

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community of comparison (COC). In this project, the COC is Switzerland County, Indiana. The community that overlaps the project limits is called the affected community (AC). In this project, the AC is Census Tract 9657. 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 2019 American Community Survey 5-year estimate was obtained from the U.S. Census Bureau website (<https://factfinder.census.gov/>) on January 28, 2021 by Lochmueller Group. The data collected for minority and low-income populations within the AC are summarized in the table below.

Table: Minority and Low-Income Data (ACS, 2019)		
	COC	AC
	Switzerland County	Census Tract 9657, Switzerland County, Indiana
MINORITY		
Percent Minority	4.6%	4.8%
125% of COC	5.8%	AC < 125% COC
EJ Population of Concern?		No
LOW-INCOME		
Percent low-income	19.0%	20.5%
125% of COC	23.7%	AC < 125% COC
EJ Population of Concern?		No

The AC, Census Tract 9657, has a percent minority of 4.8% which is below 50% and is below the 125% COC threshold. Therefore, the AC does not contain minority populations of EJ concern.

The AC, Census Tract 9657, has a percent low-income of 20.5% which is below 50% and is below the 125% COC threshold. Therefore, the AC does not contain low-income populations of EJ concern.

The census data sheets, map, and calculations can be found in Appendix I, pages I1 to I8. No further EJ analysis is warranted.

Relocation of People, Businesses or Farms

Will the proposed action result in the relocation of people, businesses or farms?

Is a Business Information Survey (BIS) required?

Is a Conceptual Stage Relocation Study (CSRS) required?

Has utility relocation coordination been initiated for this project?

Yes	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>

Number of relocations:

Residences: N/A Businesses: N/A Farms: N/A Other: N/A

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.

There is a water line along the south side of SR 156 that may need to be relocated. Utility coordination has begun for this project and will continue through project development to ensure impacts to utilities are minimal.

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SECTION H – HAZARDOUS MATERIALS & REGULATED SUBSTANCES

Hazardous Materials & Regulated Substances (Mark all that apply)

Red Flag Investigation	<input checked="" type="checkbox"/>
Phase I Environmental Site Assessment (Phase I ESA)	<input type="checkbox"/>
Phase II Environmental Site Assessment (Phase II ESA)	<input type="checkbox"/>
Design/Specifications for Remediation required?	<input type="checkbox"/>

Documentation

	No	Yes/ Date
ES Review of Investigations		January 4, 2019

Include a summary of findings for each investigation.

Remarks: Based on a review of GIS and available public records, an RFI was completed on January 3, 2019 by Lochmueller Group and approved by INDOT SAM on January 4, 2019 (Appendix E, pages E1 to E10). One National Pollutant Discharge Elimination System (NPDES) Facility is mapped within 0.5 mile of the project.

Due to the length of time that has passed since the approval of the RFI, a subsequent review of the 0.5 mile search radius was undertaken by Lochmueller Group on February 3, 2021. No additional hazardous material sites of concern were identified. No impacts are expected. Further investigation for hazardous material concerns is not required at this time.

SECTION I – PERMITS CHECKLIST

Permits (mark all that apply)

Likely Required

Army Corps of Engineers (404/Section10 Permit)

Individual Permit (IP)	<input type="checkbox"/>
Nationwide Permit (NWP)	<input type="checkbox"/>
Regional General Permit (RGP)	<input checked="" type="checkbox"/>
Pre-Construction Notification (PCN)	<input type="checkbox"/>
Other	<input type="checkbox"/>
Wetland Mitigation required	<input type="checkbox"/>
Stream Mitigation required	<input type="checkbox"/>

IDEM

Section 401 WQC	<input checked="" type="checkbox"/>
Isolated Wetlands determination	<input type="checkbox"/>
Rule 5	<input checked="" type="checkbox"/>
Other	<input type="checkbox"/>
Wetland Mitigation required	<input type="checkbox"/>
Stream Mitigation required	<input type="checkbox"/>

IDNR

Construction in a Floodway	<input checked="" type="checkbox"/>
Navigable Waterway Permit	<input type="checkbox"/>
Lake Preservation Permit	<input type="checkbox"/>
Other	<input type="checkbox"/>
Mitigation Required	<input checked="" type="checkbox"/>

US Coast Guard Section 9 Bridge Permit

Others (Please discuss in the remarks box below)

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Remarks: A total of 0.035 acre of impacts to Wetlands A, B, and C will be impacted by the project. Impacts will be limited to the portion of the wetlands within the construction limits of the project. A USACE Section 404 RGP and IDEM Section 401 WQC will be required due to these impacts. A formal jurisdictional determination has not yet been made by the USACE, which will be required during the permitting phase. Because impacts are below the 0.1 acre threshold to require mitigation, no mitigation for wetland impacts will likely be required.

Due to construction occurring within the floodway of the Ohio River, a Construction in a Floodway permit will likely be required from the IDNR DFW. Mitigation will also likely be required with this permit.

The project may disturb up to 2.23 acres of land. Therefore, the project is expect to exceed the minimal guidelines of soil disturbance and an IDEM Rule 5 Notice of Intent will be required.

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

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

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 Seymour District)
2. It is the responsibility of the project sponsor to notify school corporations and emergency services at least two weeks prior to any construction that would block or limit access. (INDOT ESD)
3. Any work in a wetland area within right-of-way or in borrow/waste areas is prohibited unless specifically allowed in the U.S. Army Corps of Engineers permit. (INDOT ESD)
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 22, 2022, an inspection of the structures by a qualified individual, must be performed. Inspection of the structures 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 Seymour District)
5. **General AMM 1:** Ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable AMMs. (USFWS)
6. **Lighting AMM 1:** Direct temporary lighting away from suitable habitat during the active season. (USFWS)
7. **Tree Removal AMM 1:** Modify all phases/aspects of the project (e.g., temporary work areas, alignments) to avoid tree removal. (USFWS)
8. **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 (no tree clearing from April 1 to September 30). (USFWS)
9. **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)

This is page 22 of 24 Project name: SR 156 Slide Correction Project Date: March 25, 2021

Indiana Department of Transportation

County Switzerland

Route State Road 156

Des. No. 1600616

10. **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 Further Consideration:**
11. 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.) (USFWS)
 12. 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" dbh or greater (5:1 mitigation based on the number of large trees) or by using the 1:1 replacement ratio based on area depending on the type of habitat impacted (individual canopy tree removal in an urban streetscape or park-like environment versus removal of habitat supporting a tree canopy, woody understory, and herbaceous layer). Impacts under 0.10 acre in an urban area may still involve the replacement of large diameter trees but typically do not require any additional mitigation or additional plantings beyond seeding and stabilizing disturbed areas. There are exceptions for high quality habitat sites however. (IDNR DFW)
 13. Do not cut any trees suitable for Indiana bat or Northern Long-eared bat roosting (greater than 5 inches dbh, living or dead, with loose hanging bark, or with cracks, crevices, or cavities) from April 1 through September 30. (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:

Early coordination with the regulatory agencies was completed on August 13, 2020 (Appendix C, pages C1 to C5). If no response was received, it was assumed the agency did not feel the project will result in substantial impacts. The following agencies/individuals were contacted during the coordination phase.

	Agency	Date of Response(s)
1.	USACE, Louisville District	No Response Received
2.	USFWS, Bloomington Field Office	September 10, 2020
3.	USDA, NRCS	August 21, 2020
4.	National Park Service, Midwest Regional Office	No Response Received
5.	U.S. Department of Housing and Urban Development	No Response Received
6.	FHWA, Indiana Division	No Response Received
7.	IDNR, Division of Fish and Wildlife	September 11, 2020
8.	Indiana Geological Survey	August 13, 2020
9.	INDOT, Office of Public Involvement	No Response Received
10.	INDOT, Seymour District Environmental Scoping Manager	No Response Received
11.	INDOT, Environment Services Division	August 20, 2020
12.	IDEM (electronic submission)	August 13, 2020
13.	Posey Township Trustee	No Response Received
14.	Posey Township Volunteer Fire Department	No Response Received
15.	Switzerland County Board of Commissioners	No Response Received
16.	Switzerland County Sheriff's Department	No Response Received
17.	Switzerland County Highway Department	No Response Received
18.	Switzerland County Surveyor's Office	No Response Received
19.	Switzerland County Emergency Management Agency	No Response Received

Indiana Department of Transportation

County Switzerland

Route State Road 156

Des. No. 1600616

20.	Switzerland County School Corporation	No Response Received
21.	Switzerland County Planning and Zoning (Floodplain Administrator)	No Response Received

Appendix A: INDOT Supporting Documentation

Threshold Chart.....A1

Appendix B: Graphics

General Location Map.....B1
 USGS Rising Sun, Indiana Quadrangle Topographic Map.....B2
 Aerial Map (2017).....B3
 Photo Location Map (2017).....B4
 Site Photographs.....B5-B14
 Preliminary Plan Sheets.....B15-B22

Appendix C: Early Coordination

Sample Early Coordination Letter (August 13, 2020).....C1-C5
 Indiana Geological Survey
 Electronic Response (August 13, 2020).....C6-C8
 Indiana Department of Environmental Management
 Electronic Response (August 13, 2020).....C9-C18
 INDOT, Environmental Services
 Response Letter (August 20, 2020).....C19
 Natural Resources Conservation Service
 Response Letter (August 20, 2020).....C20
 Indiana Department of Natural Resources (IDNR), Division of Fish and Wildlife
 Response Letter (September 11, 2020).....C21-C23
 United States Fish and Wildlife Service
 Response Email (September 10, 2020).....C24-C25
 IPaC Official Species List (February 4, 2021).....C26-C31
 IPaC Concurrence Verification Letter (February 5, 2021).....C32-C43
 Bridge/Structure Assessment Forms (June 22, 2020).....C44-C55

Appendix D: Section 106 of the National Historic Preservation Act (NHPA)

MPPA Project Assessment Form.....D1-D5

Appendix E: Red Flag Investigation

Red Flag Investigation.....E1-E10

Appendix F: Water Resources

Waters of the U.S. Determination Report.....F1-F10
 Soil Survey.....F11-F12
 NWI Wetlands Map.....F13
 USGS StreamStats Map.....F14
 FEMA Floodplain Map.....F15
 Water Resources Map.....F16
 Wetland Data Sheets.....F17-F34
 Preliminary Jurisdictional Determination.....F35-F38

Appendix G: Public Involvement

Notice of Survey.....G1
 INDOT Notice of Survey Attachment.....G2

Appendix H: Air Quality

Relevant pages from the INDOT 2020-2024 STIP.....H1

Appendix I: Environmental Justice (EJ) Analysis

EJ Analysis.....I1-I8

Appendix J: Additional Information

Land and Water Conservation Fund Grants: Switzerland County, Indiana..... J1

Categorical Exclusion

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-way³	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	Concurrence by INDOT District Environmental or Environmental Services	Yes	Yes	Yes	Yes
<ul style="list-style-type: none"> • District Env. Supervisor • Env. Services Division • FHWA 				Yes	Yes

¹Coordinate with INDOT Environmental Services. INDOT will then coordinate with the appropriate FHWA Environmental Specialist.

²Any involvement with a bridge processed under the Historic Bridge Programmatic Agreement.

³Permanent and/or temporary right-of-way.

⁴AMMs = Avoidance and Mitigation Measures.

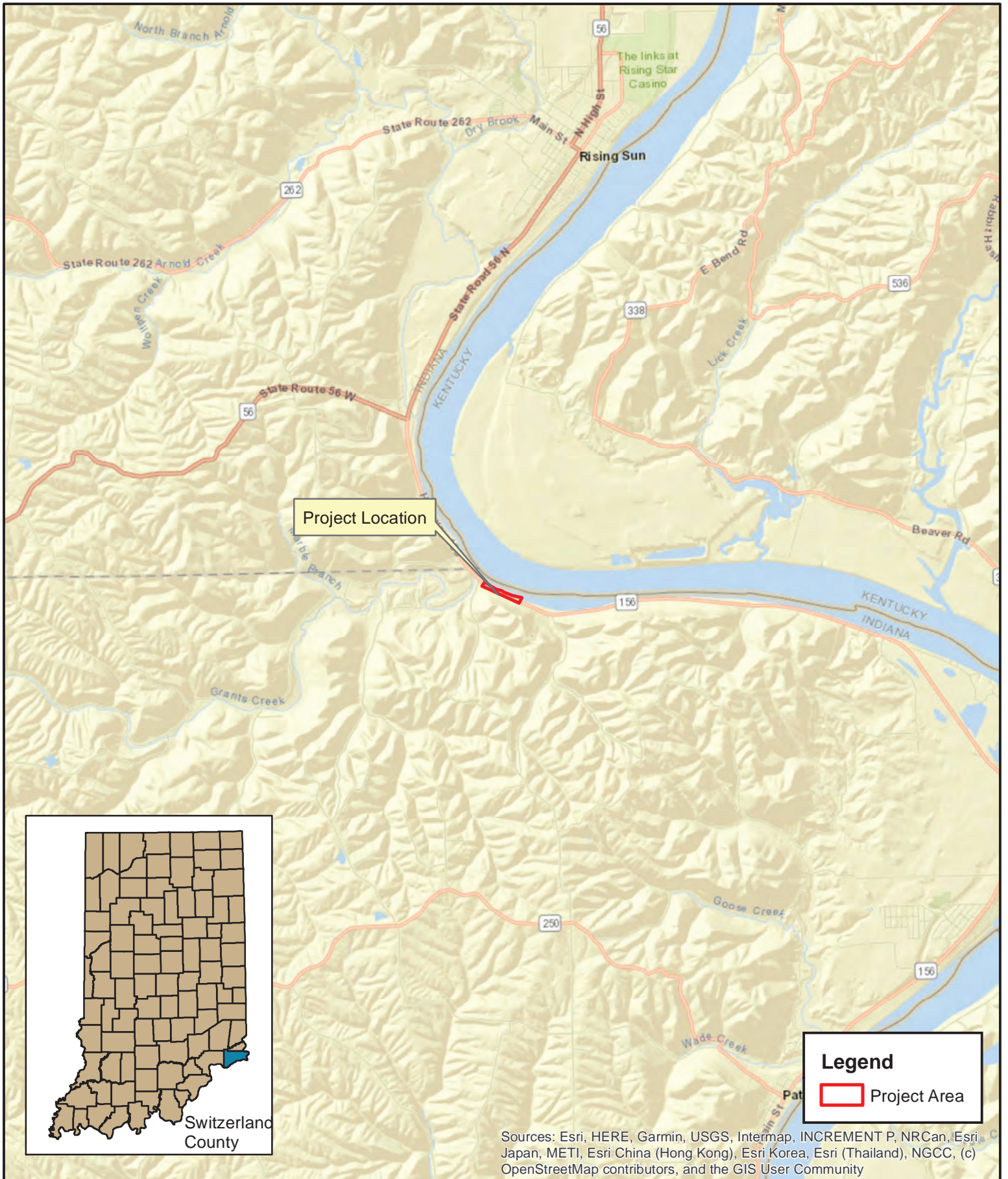
⁵AMMs determined by the IPAC decision key to be needed that are listed in the USFWS *User’s Guide for the Range-wide Programmatic Consultation for Indiana bat and Northern long-eared bat* as “required for all projects”.

⁶Potential for causing a disproportionately high and adverse impact.

⁷Hot Spot Analysis and/or MSAT Quantitative Emission Analysis.

*Substantial public or agency controversy may require a higher-level NEPA document.

Categorical Exclusion
Appendix B
Graphics

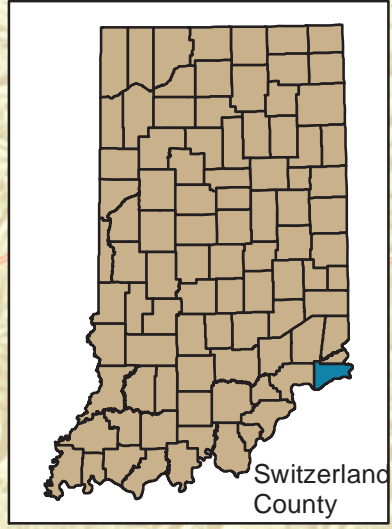


Project Location

Legend

Project Area

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



3502 Woodview Trace, Suite 150
 Indianapolis, IN 46268
 Phone: (317) 222-3880
 Fax: (317) 222-3881

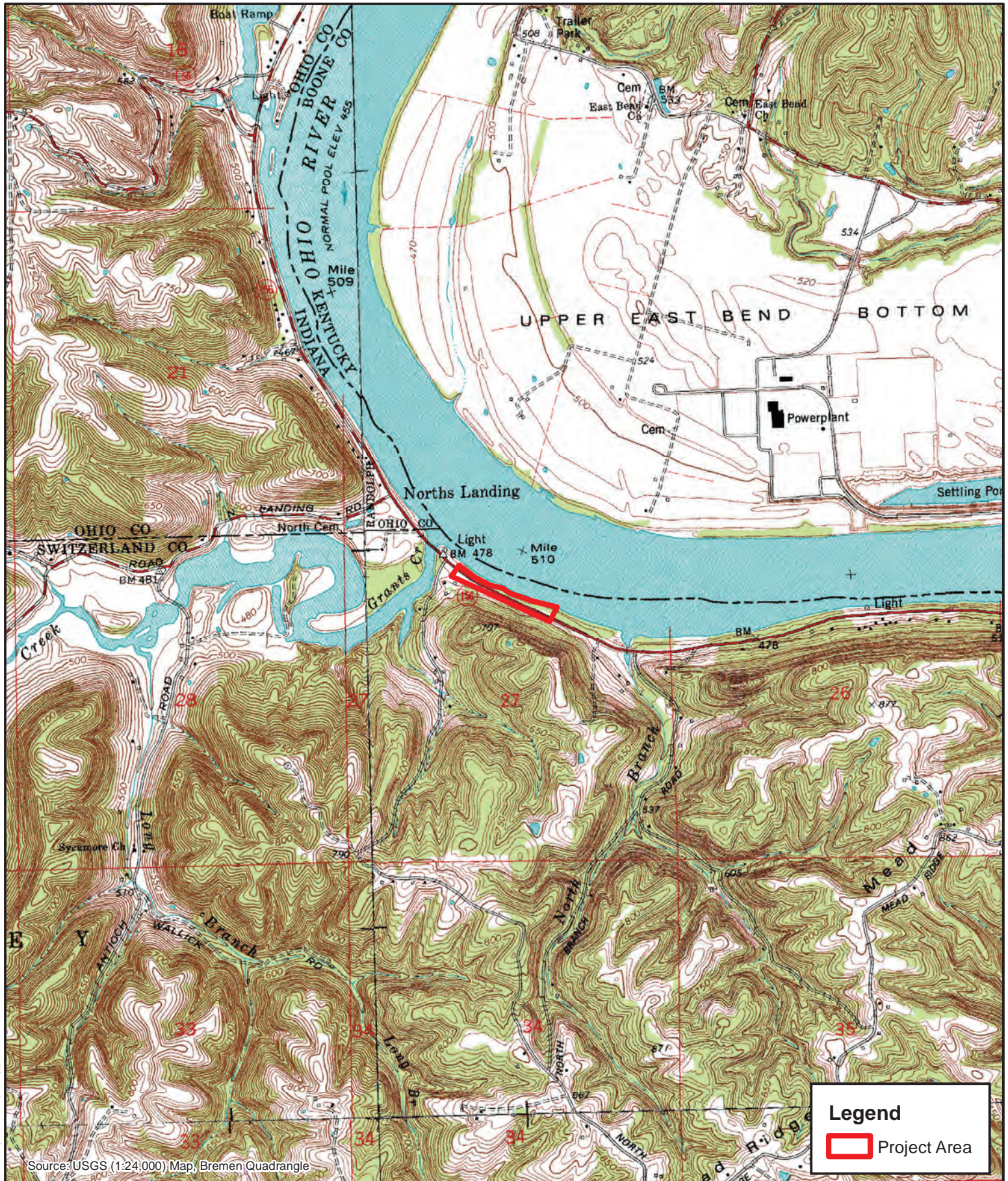
General Location Map
 Des. No. 1600616

0 0.5 1
 Miles

County: Switzerland
 Township: Posey
 State: Indiana

SR 156 Slide Correction Project
 from 1.5 to 1.7 mi W of E Jct. with SR 56
 Created: 1/25/2021, C Kunkel

S:\2017\117-0075\BHY-1600616\Enviro\Maps\XD\General\Location Map_CE.mxd



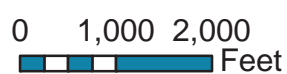
Legend

Project Area

Source: USGS (1:24,000) Map, Bremen Quadrangle

3502 Woodview Trace, Suite 150
 Indianapolis, IN 46268
 Phone: (317) 222-3880
 Fax: (317) 222-3881

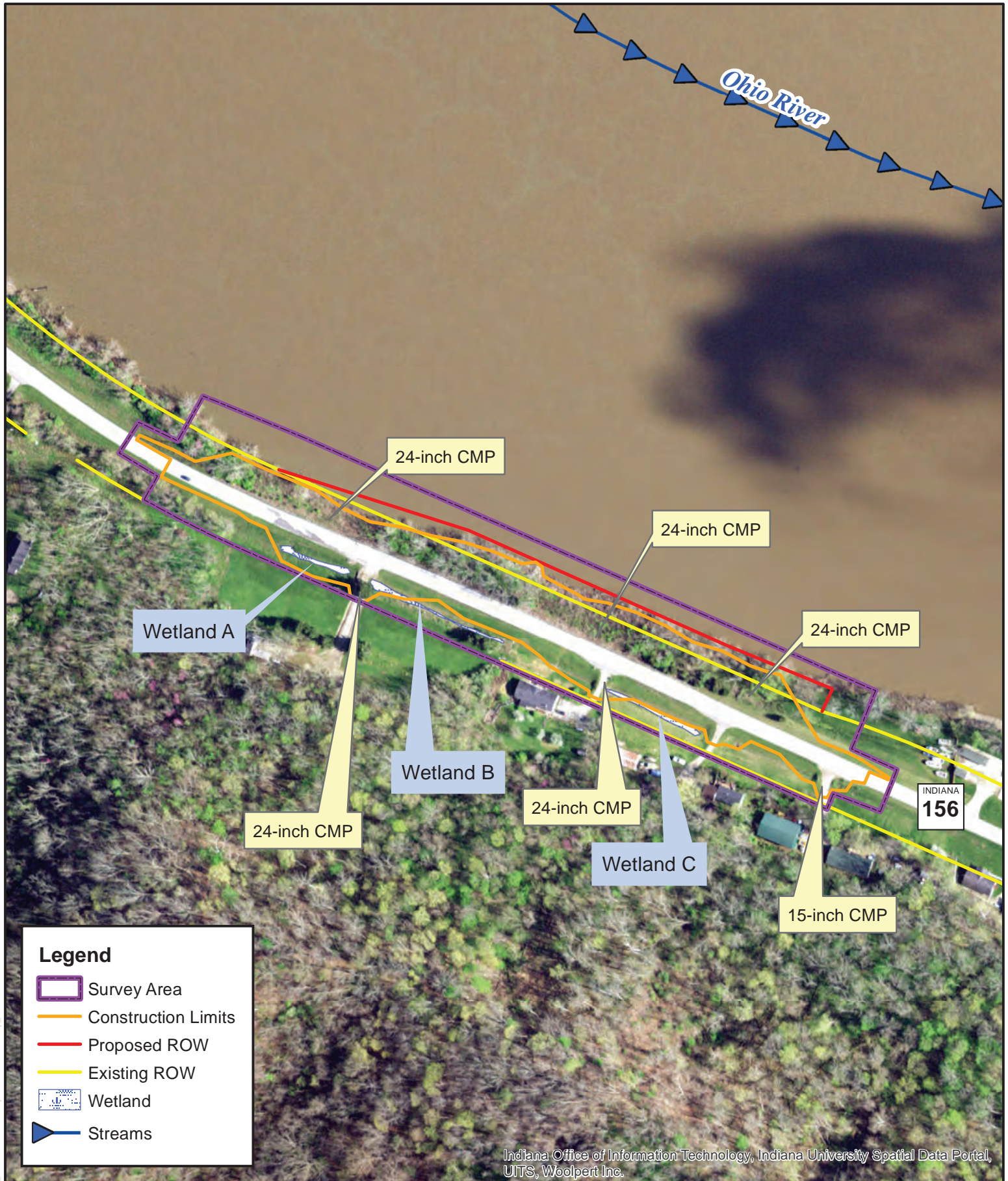
USGS Topographic Map
 Rising Sun Quadrangle
 Des. No. 1600616



County: Switzerland
 Township: Posey
 State: Indiana

SR 156 Slide Correction Project
 from 1.5 to 1.7 mi W of E Jct. with SR 96
 Created: 1/25/2021, C Kunkel

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Legend

- Survey Area
- Construction Limits
- Proposed ROW
- Existing ROW
- Wetland
- Streams

Indiana Office of Information Technology, Indiana University Spatial Data Portal, UITS, Woolpert Inc.

LOCHMUELLER GROUP

3502 Woodview Trace, Suite 150
 Indianapolis, IN 46268
 Phone: (317) 222-3880
 Fax: (317) 222-3881

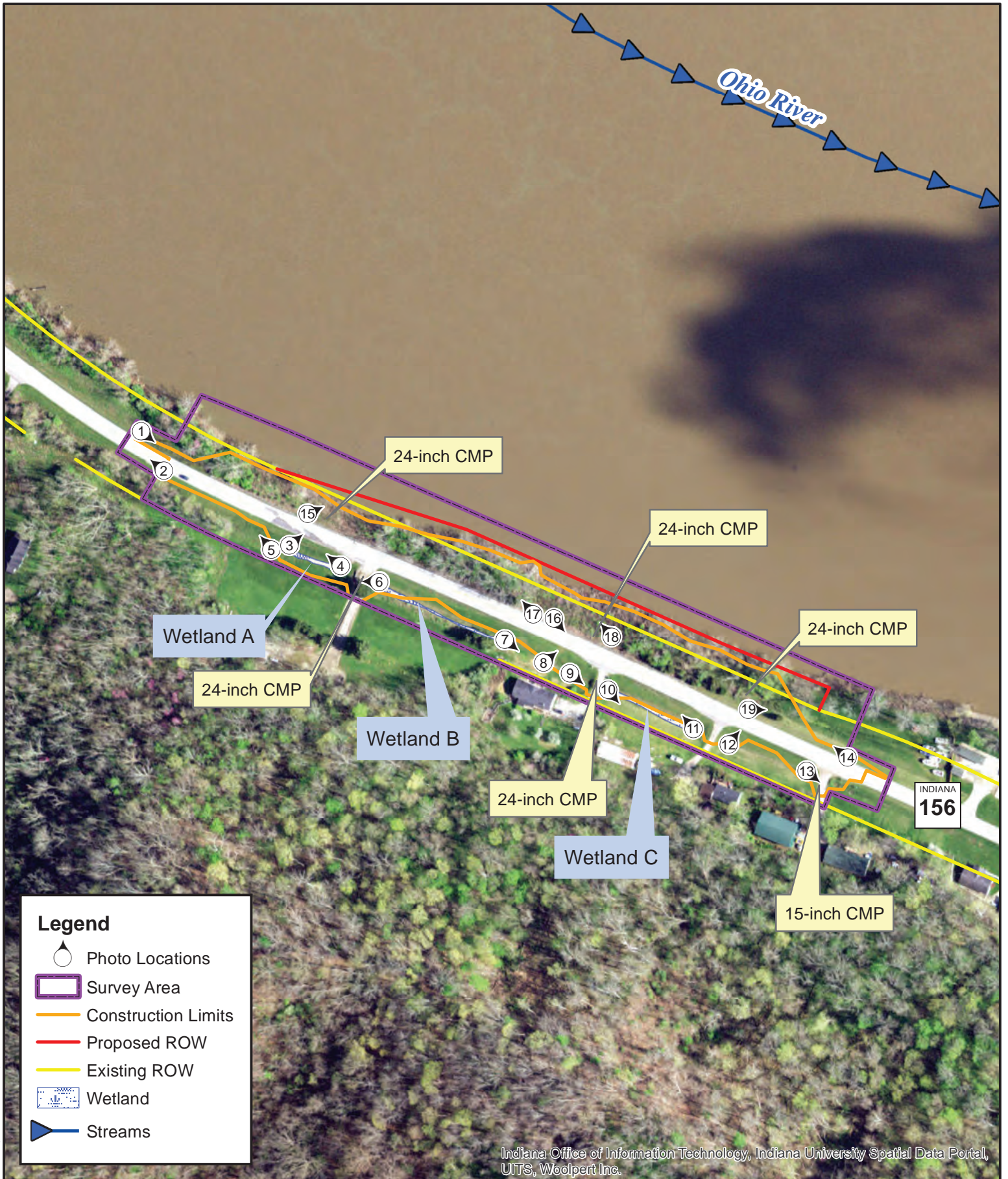
Aerial Map (2017)
 Des. No. 1600616

0 150 300
 Feet

County: Switzerland
 Township: Posey
 State: Indiana

SR 156 Slide Correction Project
 1.5 to 1.7 mi W of E Jct. of SR 56/SR 156
 Created: 2/9/2021, C. Kunkel

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Legend

- Photo Locations
- Survey Area
- Construction Limits
- Proposed ROW
- Existing ROW
- Wetland
- Streams

Indiana Office of Information Technology, Indiana University Spatial Data Portal, UITS, Woolpert Inc.

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 Phone: (317) 222-3880
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Photo Location Map (2017)
 Des. No. 1600616

County: Switzerland
 Township: Posey
 State: Indiana



SR 156 Slide Correction Project
 1.5 to 1.7 mi W of E Jct. of SR 56/SR 156
 Created: 2/9/2021, C. Kunkel

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1. Looking southeast along State Road 156 – 4/21/2020



2. Looking northwest along State Road 156 – 4/21/2020



3. Looking northeast at culvert below State Road 156 – 4/21/2020



4. Looking northwest at Wetland A – 4/21/2020



5. Looking south at culvert below residential drive – 4/21/2020



6. Looking west at culvert conveying drainage between Wetland A and Wetland B – 4/21/2020



7. Looking southeast at metal pipe culverts and concrete lined drainage area – 4/21/2020



8. Looking northeast at culvert below State Road 156 – 4/21/2020



9. Looking southeast at culvert below residential driveway – 4/21/2020



10. Looking southeast at culvert below residential driveway – 4/21/2020



11. Looking northwest at Wetland C – 4/21/2020



12. Looking northeast at culvert below State Road 156 – 4/21/2020



13. Looking southeast at culvert below residential driveway – 4/21/2020



14. Looking northwest along State Road 156 – 4/21/2020



15. Looking northeast at culvert outlet below State Road 156 – 6/22/2020



16. Looking southeast along State Road 156 – 4/22/2020



17. Looking northwest along State Road 156 – 4/21/2020



18. Looking northwest at culvert below State Road 156 – 6/22/2020



19. Looking east toward Ohio River – 4/21/2020

PROJECT	DESIGNATION
1600616	1600616
CONTRACT	BRIDGE FILE
R-39907	-----

INDIANA DEPARTMENT OF TRANSPORTATION

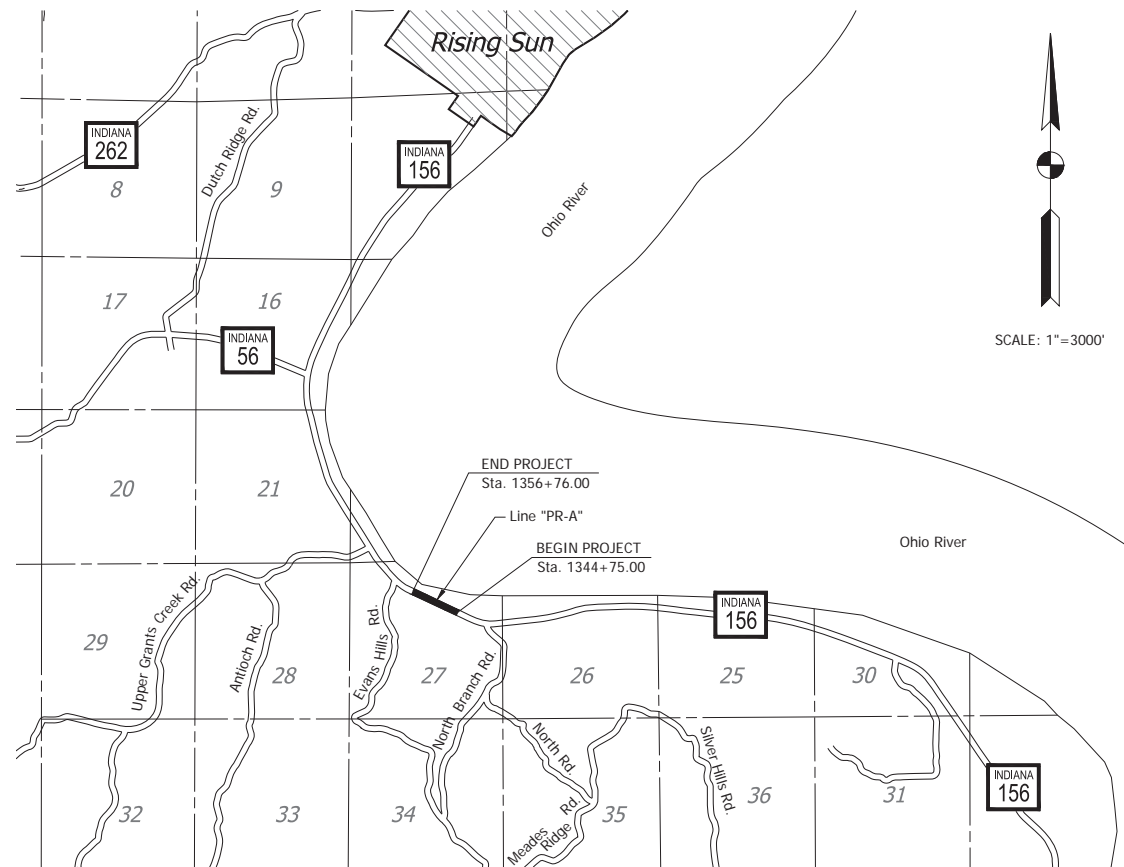


ROAD PLANS

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 PROJECT NO. R/W
 PROJECT NO. CONST.

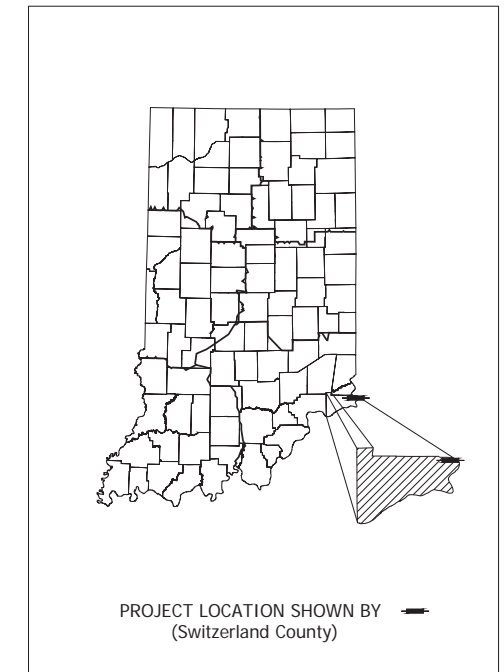
ROUTE: S.R. 156 FROM: RP 25+39.98 TO: RP 25+59.87

Slide Correction Located Along S.R. 156, Approximately 1.5 to 1.7 Miles West of The East Junction of the S.R.56 & S.R.156 Intersection. in Sections 27, T3N, R1W in Posey TWP, Switzerland County, Indiana.



LOCATION MAP

TRAFFIC DATA		
A.A.D.T.	(2019)	2,410 V.P.D.
A.A.D.T.	(2039)	2,680 V.P.D.
D.H.V.	(2039)	268 V.P.H.
DIRECTIONAL DISTRIBUTION		59.2 %
TRUCKS		3.64% A.A.D.T. 2.59% D.H.V.
DESIGN DATA		
DESIGN SPEED	55 M.P.H.	
PROJECT DESIGN CRITERIA	3R (Non-Freeway)	
FUNCTIONAL CLASSIFICATION	Minor Arterial	
RURAL/URBAN	Rural	
TERRAIN	Level	
ACCESS CONTROL	None	



LATITUDE: 38°53'48" N LONGITUDE: 84°52'05" W

GROSS LENGTH: 0.230 MI.
 NET LENGTH: 0.230 MI.
 MAX. GRADE: 1.984 %
 H.U.C.: 05090203130040

Preliminary Field Check
 Date: 09/23/20

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

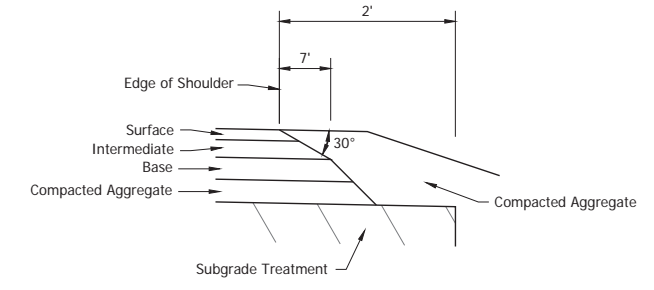
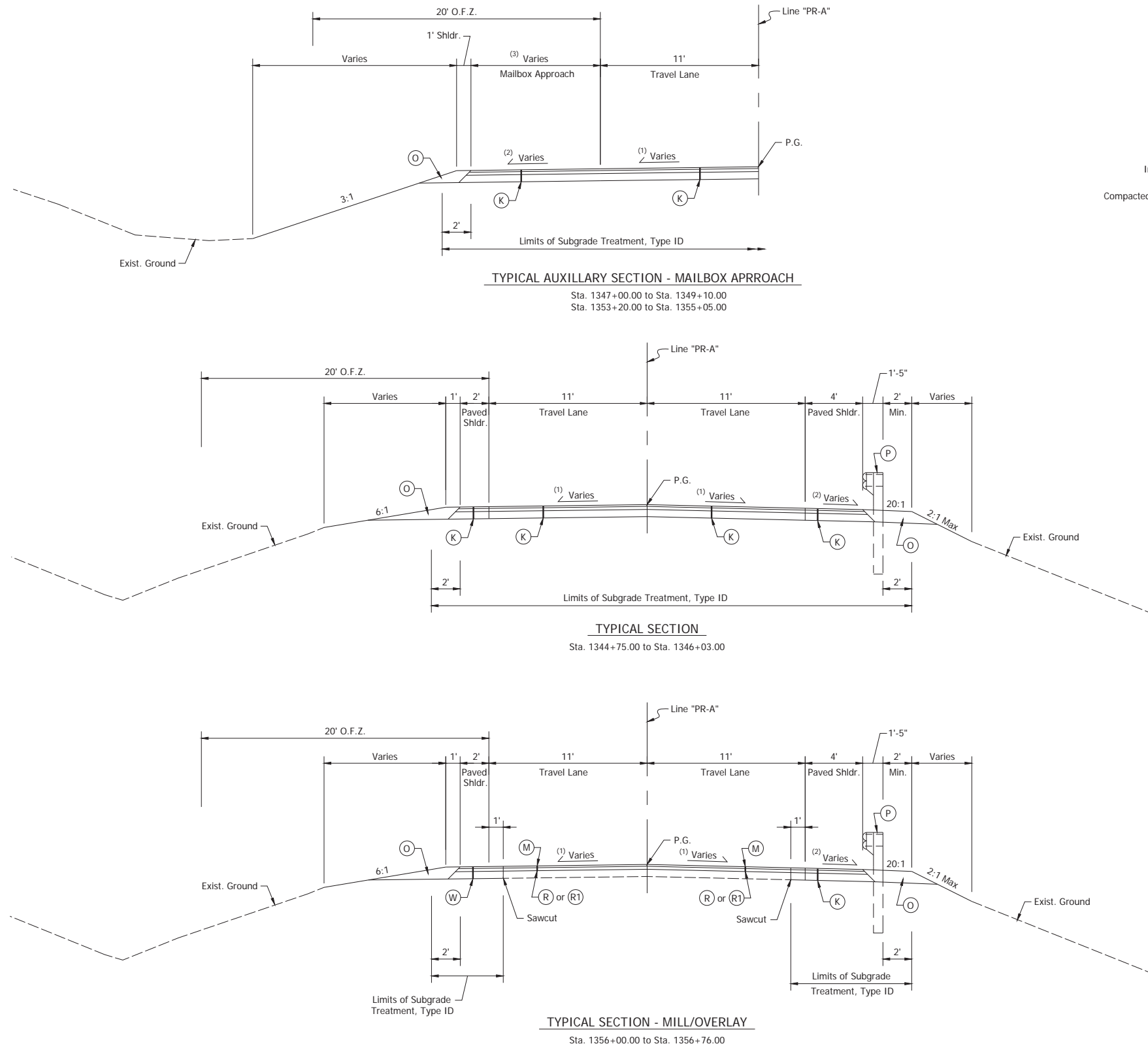
Date: Dec 07, 2020, 6:50am User Name: chris File: S:\2017\17-16075\B\1_1600616\Road\CAD\Misc\DWG\Title.dwg

Plans Prepared By:

LOCHMUELLER GROUP
 6200 Vogel Road
 Evansville, Indiana 47715
 Phone: 812.479.6200
 Toll Free: 800.423.7411

PLANS PREPARED BY: -----	(---) ----- PHONE NUMBER
CERTIFIED BY: _____	---/---/--- DATE
APPROVED FOR LETTING: _____	INDIANA DEPARTMENT OF TRANSPORTATION DATE

BRIDGE FILE	
DESIGNATION	1600616
SURVEY BOOK	SHEETS
CONTRACT	PROJECT
R-39907	1600616



- NOTES:**
- (1) See Cross Slope Transition Detail For Additional Cross Slope Information.
 - (2) Match Travel Lane Cross Slope.
 - (3) Varies - 9'-0" to 0'-0" Sta. 1347+00.00 to Sta. 1349+17.00
 Sta. 1353+13.00 to Sta. 1355+05.00

- LEGEND**
- (K) Full Depth HMA
 165#/SYS - OC/QA-HMA, 3, 64, Surface, 9.5mm on
 275#/SYS - OC/QA-HMA, 2, 64, Intermediate, 19.0mm on
 660#/SYS - OC/QA-HMA, 2, 64, Base, 19.0mm on
 Subgrade Treatment, Type ID
 - (M) Milling, 1.5" to 4"
 - (R) 165#/SYS - OC/QA-HMA, 3, 64, Surface, 9.5mm on
 275#/SYS - OC/QA-HMA, 2, 64, Intermediate, 19.0mm on
 - (R1) 165#/SYS - OC/QA-HMA, 3, 64, Surface, 9.5mm on
 - (RR) Class 2 Riprap, on Type 3 Geotextile 918.02(a)
 - (O) Compacted Aggregate No.53
 - (P) Guardrail, MGS, W-Beam
 - (W) Widening
 165#/SYS - OC/QA-HMA, 3, 64, Surface, 9.5mm on
 275#/SYS - HMA, Intermediate, Type B, on
 660#/SYS - HMA, Base, Type B, on
 Subgrade Treatment, Type ID
 - O.F.Z. Obstruction Free Zone

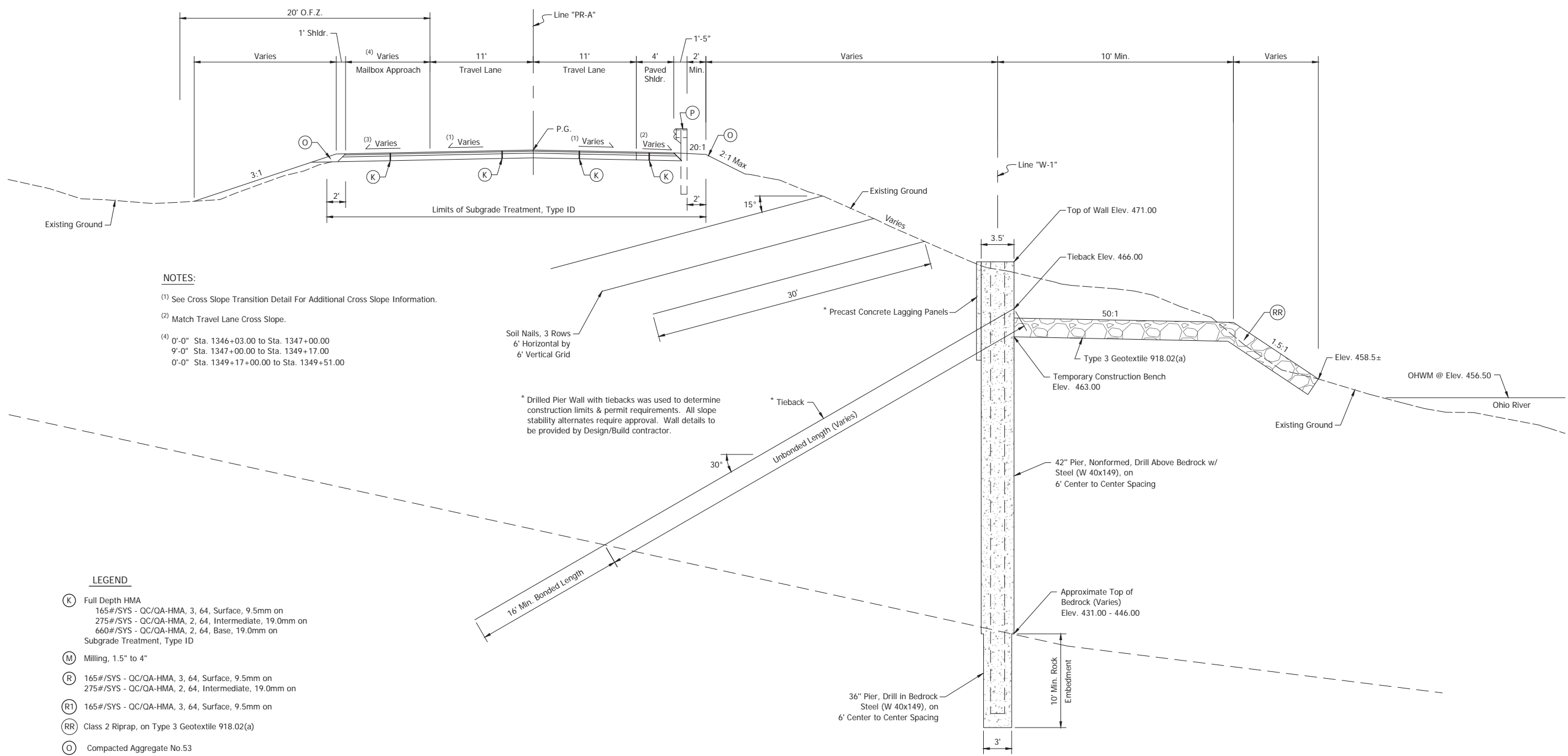
Date: Dec 07, 2020, 6:50am User Name: chris File: S:_2017117-1025\BHL_1600616\Road\CAD\Misc\DWG\Typical Sections.dwg

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: NAW	DRAWN: CCW	
CHECKED: JAW	CHECKED: NAW	

INDIANA DEPARTMENT OF TRANSPORTATION

TYPICAL CROSS SECTION LINE "PR-A"

HORIZONTAL SCALE	BRIDGE FILE
1/4"=1'-0"	-
VERTICAL SCALE	DESIGNATION
---	1600616
SURVEY BOOK	SHEETS
	3 of --
CONTRACT	PROJECT
R-39907	1600616



NOTES:

(1) See Cross Slope Transition Detail For Additional Cross Slope Information.

(2) Match Travel Lane Cross Slope.

(4) 0'-0" Sta. 1346+03.00 to Sta. 1347+00.00
 9'-0" Sta. 1347+00.00 to Sta. 1349+17.00
 0'-0" Sta. 1349+17+00.00 to Sta. 1349+51.00

- LEGEND**
- (K) Full Depth HMA
 165#/SYS - QC/QA-HMA, 3, 64, Surface, 9.5mm on
 275#/SYS - QC/QA-HMA, 2, 64, Intermediate, 19.0mm on
 660#/SYS - QC/QA-HMA, 2, 64, Base, 19.0mm on
 Subgrade Treatment, Type ID
 - (M) Milling, 1.5" to 4"
 - (R) 165#/SYS - QC/QA-HMA, 3, 64, Surface, 9.5mm on
 275#/SYS - QC/QA-HMA, 2, 64, Intermediate, 19.0mm on
 - (R1) 165#/SYS - QC/QA-HMA, 3, 64, Surface, 9.5mm on
 - (RR) Class 2 Riprap, on Type 3 Geotextile 918.02(a)
 - (O) Compacted Aggregate No.53
 - (P) Guardrail, MGS, W-Beam
 - (W) Widening
 165#/SYS - QC/QA-HMA, 3, 64, Surface, 9.5mm on
 275#/SYS - HMA, Intermediate, Type B, on
 660#/SYS - HMA, Base, Type B, on
 Subgrade Treatment, Type ID
- O.F.Z. Obstruction Free Zone

TYPICAL SECTION
 Sta. 1346+03.00 to Sta. 1349+51.00

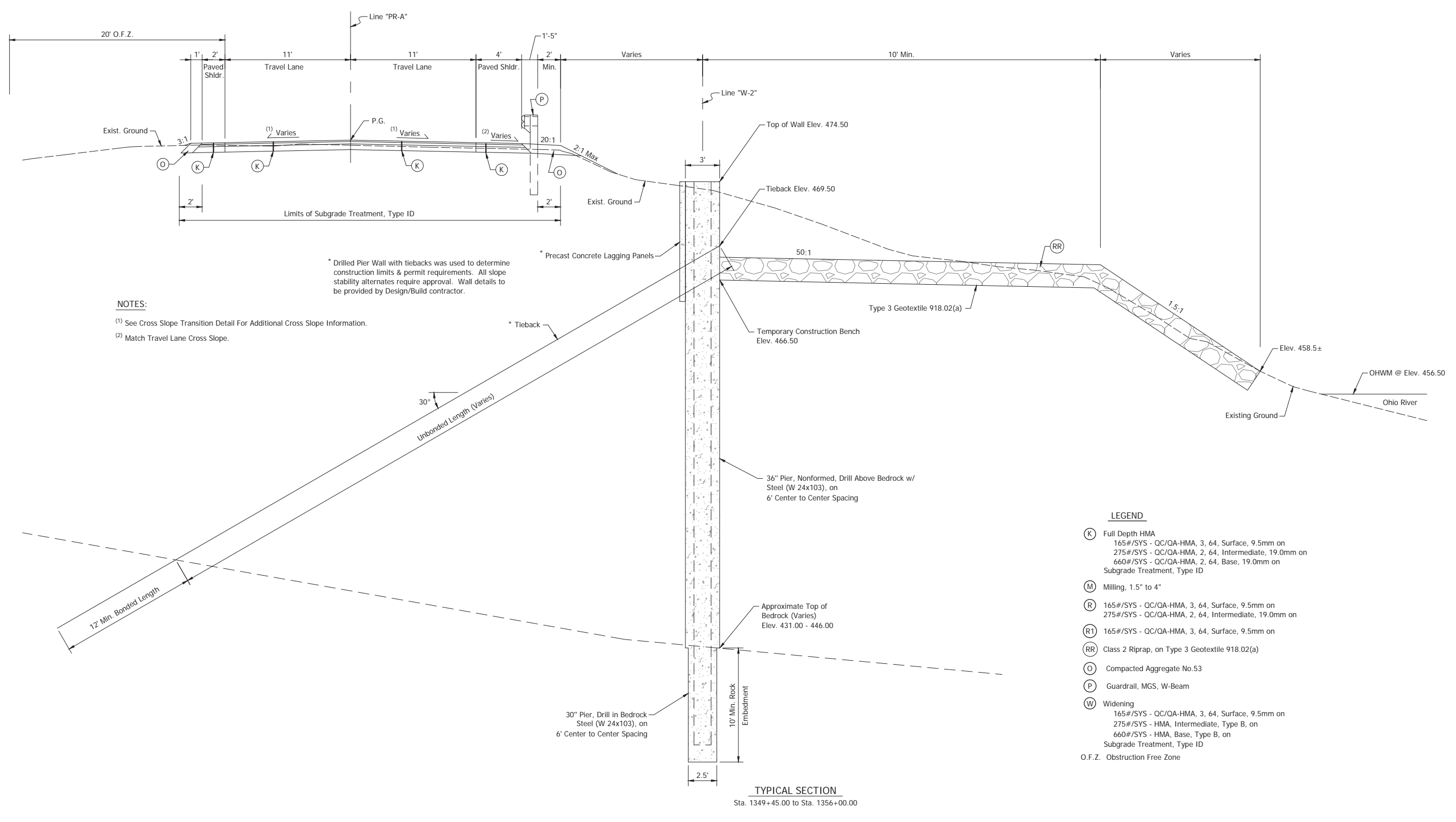
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RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: NAW	DRAWN: CCW	
CHECKED: JAW	CHECKED: NAW	

**INDIANA
 DEPARTMENT OF TRANSPORTATION**

**TYPICAL CROSS SECTION
 LINE "PR-A"**

HORIZONTAL SCALE	BRIDGE FILE
3/16" = 1'-0"	-
VERTICAL SCALE	DESIGNATION
---	1600616
SURVEY BOOK	SHEETS
	4 of --
CONTRACT	PROJECT
R-39907	1600616



NOTES:

- (1) See Cross Slope Transition Detail For Additional Cross Slope Information.
- (2) Match Travel Lane Cross Slope.

* Drilled Pier Wall with tiebacks was used to determine construction limits & permit requirements. All slope stability alternatives require approval. Wall details to be provided by Design/Build contractor.

* Precast Concrete Lagging Panels

* Tieback

LEGEND

- (K) Full Depth HMA
165#/SYS - QC/QA-HMA, 3, 64, Surface, 9.5mm on
275#/SYS - QC/QA-HMA, 2, 64, Intermediate, 19.0mm on
660#/SYS - QC/QA-HMA, 2, 64, Base, 19.0mm on
Subgrade Treatment, Type ID
 - (M) Milling, 1.5" to 4"
 - (R) 165#/SYS - QC/QA-HMA, 3, 64, Surface, 9.5mm on
275#/SYS - QC/QA-HMA, 2, 64, Intermediate, 19.0mm on
 - (R1) 165#/SYS - QC/QA-HMA, 3, 64, Surface, 9.5mm on
 - (RR) Class 2 Riprap, on Type 3 Geotextile 918.02(a)
 - (O) Compacted Aggregate No.53
 - (P) Guardrail, MGS, W-Beam
 - (W) Widening
165#/SYS - QC/QA-HMA, 3, 64, Surface, 9.5mm on
275#/SYS - HMA, Intermediate, Type B, on
660#/SYS - HMA, Base, Type B, on
Subgrade Treatment, Type ID
- O.F.Z. Obstruction Free Zone

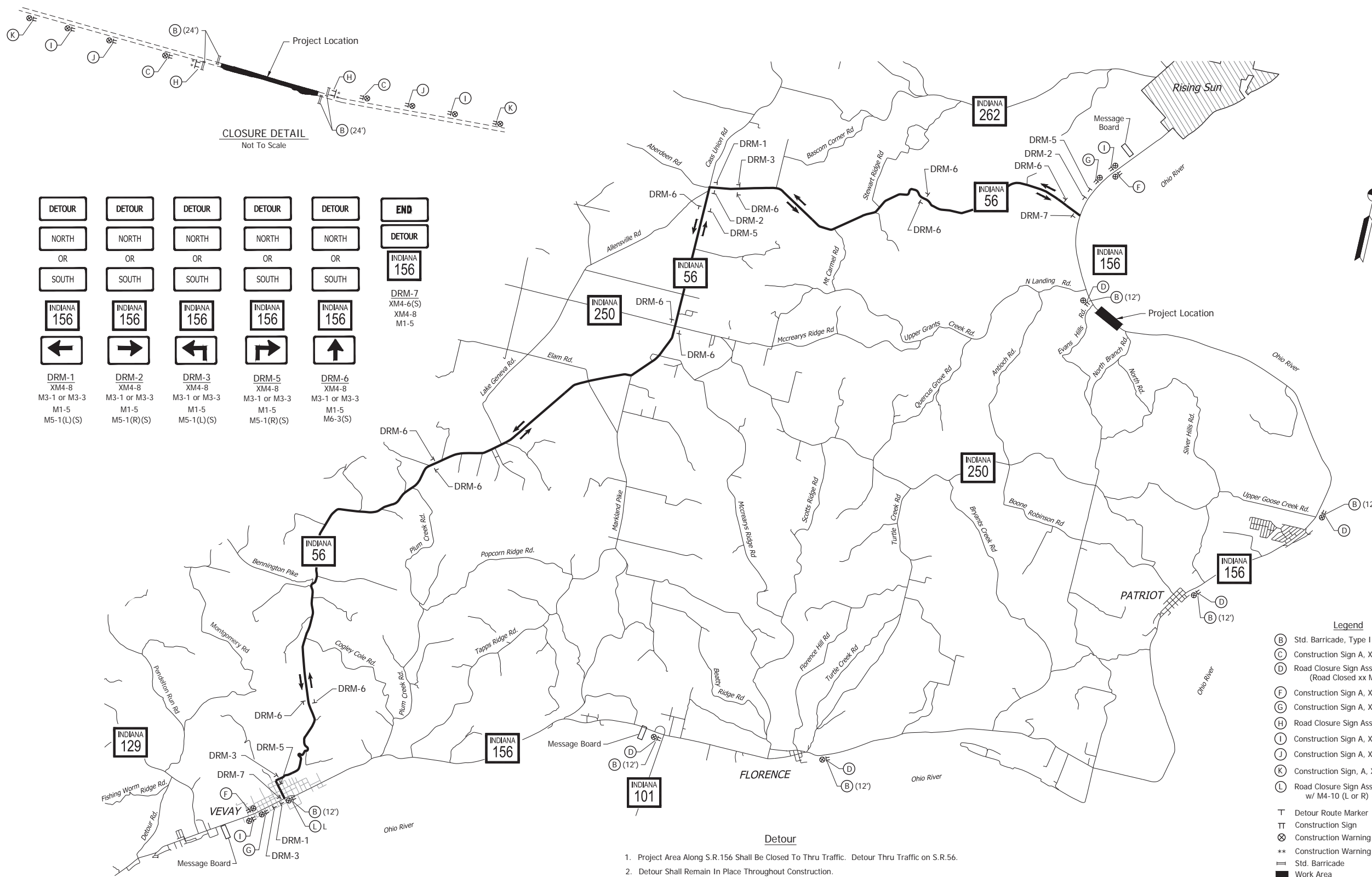
TYPICAL SECTION
Sta. 1349+45.00 to Sta. 1356+00.00

Date: Dec 07, 2020, 6:50am User Name: chris
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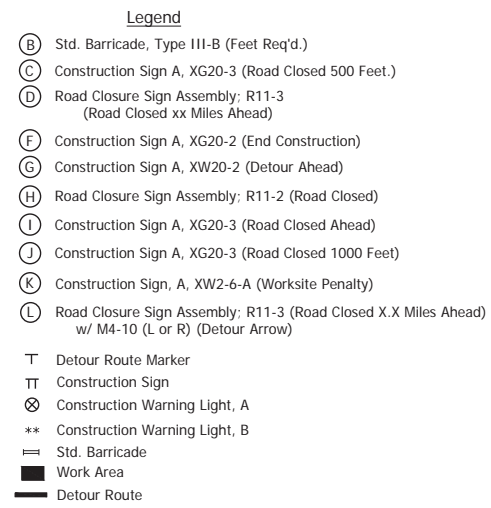
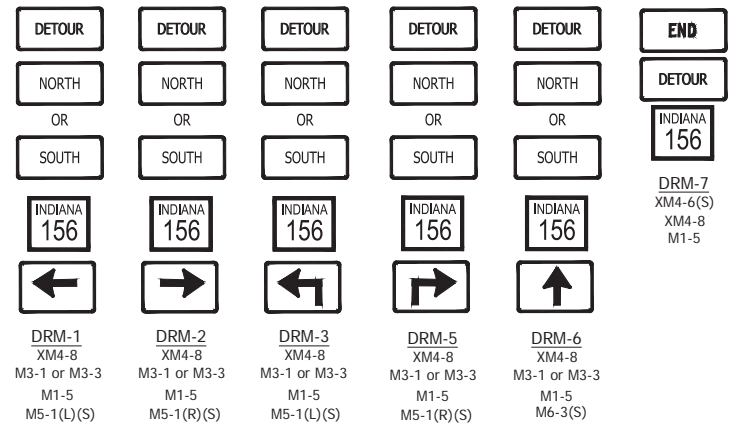
RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: NAW	DRAWN: CCW	
CHECKED: JAW	CHECKED: NAW	

INDIANA DEPARTMENT OF TRANSPORTATION	
TYPICAL CROSS SECTION LINE "PR-A"	

HORIZONTAL SCALE	BRIDGE FILE
1/4"=1'-0"	-
VERTICAL SCALE	DESIGNATION
---	1600616
SURVEY BOOK	SHEETS
	5 of --
CONTRACT	PROJECT
R-39907	1600616



CLOSURE DETAIL
Not To Scale



- Detour**
1. Project Area Along S.R.156 Shall Be Closed To Thru Traffic. Detour Thru Traffic on S.R.56.
 2. Detour Shall Remain In Place Throughout Construction.
 3. Contractor Shall Maintain Temporary Access To All Properties During Construction.

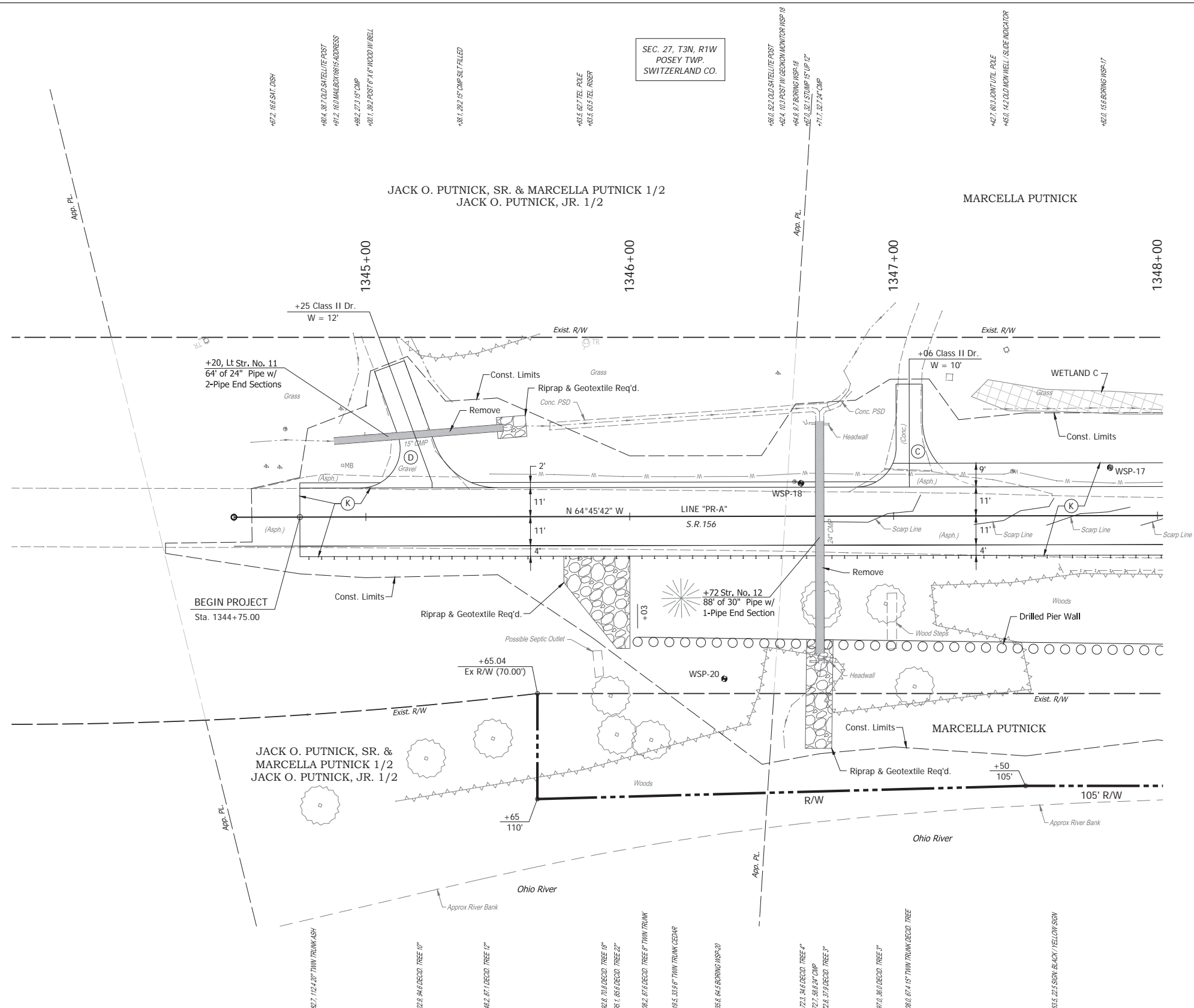
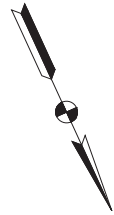
Date: Dec 07, 2020, 6:51am User Name: chris File: S:_2017\17-0075\BPH_260616\Road\101\DOT\Detour.dwg

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: NAW	DRAWN: CCW	
CHECKED: JAW	CHECKED: NAW	

INDIANA
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC

HORIZONTAL SCALE	BRIDGE FILE
1" = 400'	-
VERTICAL SCALE	DESIGNATION
---	1600616
SURVEY BOOK	SHEETS
	9 of --
CONTRACT	PROJECT
R-39907	1600616



LEGEND

- (C) PCCP For Approaches 6', on Dense Graded Subbase, on Subgrade Treatment, Type II
- (D) HMA For Approaches 165#/SYS - HMA Surface Type B, on 275#/SYS - HMA Intermediate Type B, on 6" Compacted Aggregate No. 53, on Subgrade Treatment, Type II
- (K) Full Depth HMA 165#/SYS - QC/QA-HMA, 3, 64, Surface, 9.5mm on 275#/SYS - QC/QA-HMA, 2, 64, Intermediate, 19.0mm on 660#/SYS - QC/QA-HMA, 2, 64, Base, 19.0mm on Subgrade Treatment, Type ID

Notes:

- 1) Station/Offset Topnotes, Benchmarks, & Right-of-Way Described from Line "A-D-PR".
- 2) See Geometric Tie-Up Sheet for Line "A-D-PR" Alignment Information.
- 3) All Stationing off of Line "PR-A" Unless Otherwise Noted.

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: NAW	DRAWN: CCW	
CHECKED: JAW	CHECKED: NAW	

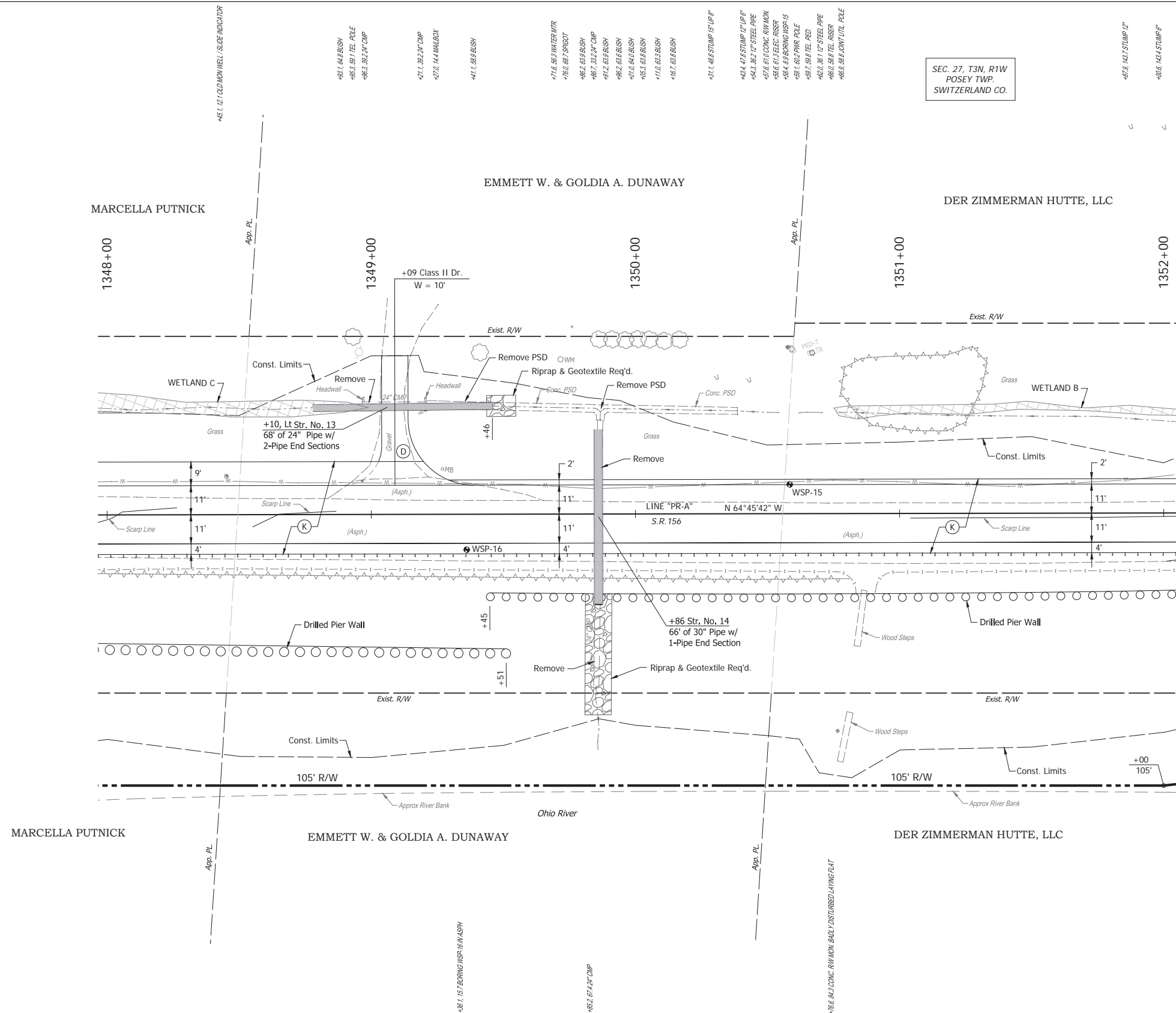
INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN LINE "PR-A"

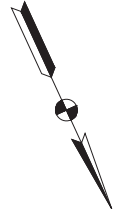
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1"=20'	-
VERTICAL SCALE	DESIGNATION
---	1600616
SURVEY BOOK	SHEETS
	10 of --
CONTRACT	PROJECT
R-39907	1600616

Date: Dec 07, 2020, 6:51am User Name: chris
File: S:_20171117-0075\BHL_1600616\Road\CAD\PR\Plan & Profile PR-A.dwg

Date: Dec 07, 2020, 6:51am User Name: chris
 File: S:_2017\17-0075\BHL_1600616\Road\CAD\Plan & Profile\PR-A.dwg



SEC. 27, T3N, R1W
 POSEY TWP.
 SWITZERLAND CO.



- LEGEND**
- (D) HMA For Approaches
 165#/SYS - HMA Surface Type B, on
 275#/SYS - HMA Intermediate Type B, on
 6" Compacted Aggregate No. 53, on
 Subgrade Treatment, Type II
 - (K) Full Depth HMA
 165#/SYS - QC/QA-HMA, 3, 64, Surface, 9.5mm on
 275#/SYS - QC/QA-HMA, 2, 64, Intermediate, 19.0mm on
 660#/SYS - QC/QA-HMA, 2, 64, Base, 19.0mm on
 Subgrade Treatment, Type ID

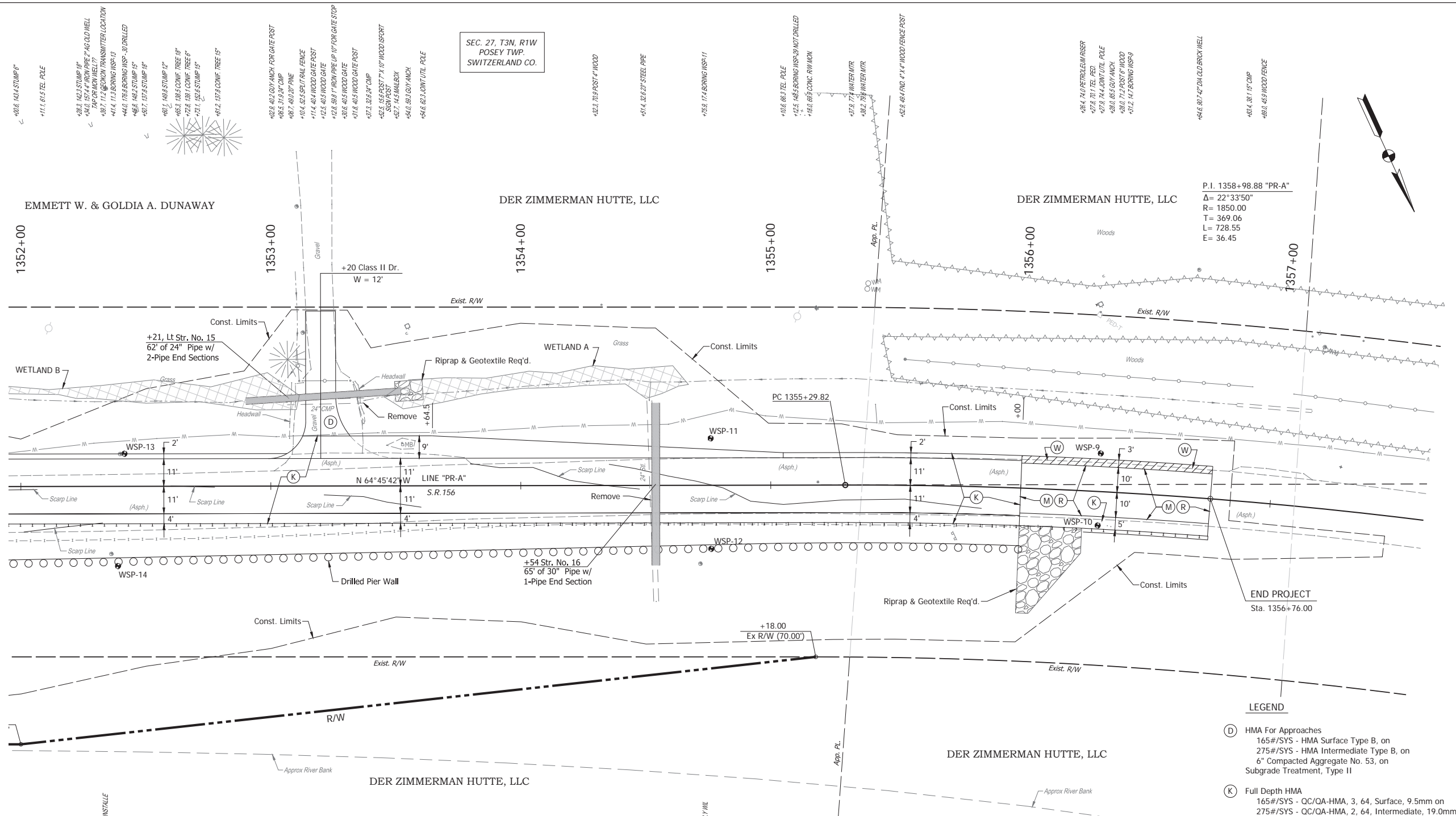
- Notes:**
- 1) Station/Offset Topnotes, Benchmarks, & Right-of-Way Described from Line "A-D-PR".
 - 2) See Geometric Tie-Up Sheet for Line "A-D-PR" Alignment Information.
 - 3) All Stationing off of Line "PR-A" Unless Otherwise Noted.

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: NAW	DRAWN: CCW	
CHECKED: JAW	CHECKED: NAW	

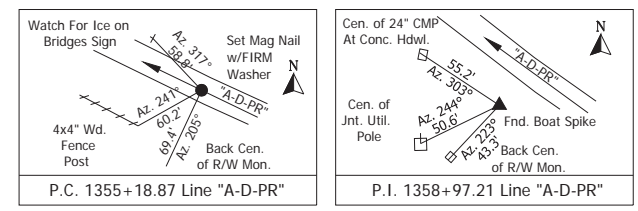
**INDIANA
 DEPARTMENT OF TRANSPORTATION**

PLAN LINE "PR-A"

HORIZONTAL SCALE	BRIDGE FILE
1"=20'	-
VERTICAL SCALE	DESIGNATION
---	1600616
SURVEY BOOK	SHEETS
	12 of --
CONTRACT	PROJECT
R-39907	1600616



- LEGEND**
- (D) HMA For Approaches
165#/SYS - HMA Surface Type B, on
275#/SYS - HMA Intermediate Type B, on
6" Compacted Aggregate No. 53, on
Subgrade Treatment, Type II
 - (K) Full Depth HMA
165#/SYS - QC/QA-HMA, 3, 64, Surface, 9.5mm on
275#/SYS - QC/QA-HMA, 2, 64, Intermediate, 19.0mm on
660#/SYS - QC/QA-HMA, 2, 64, Base, 19.0mm on
Subgrade Treatment, Type ID
 - (M) Milling, 1.5" to 4"
 - (R) 165#/SYS - QC/QA-HMA, 3, 64, Surface, 9.5mm on
275#/SYS - QC/QA-HMA, 2, 64, Intermediate, 19.0mm on
 - (W) Widening
165#/SYS - QC/QA-HMA, 3, 64, Surface, 9.5mm on
275#/SYS - HMA, Intermediate, Type B, on
660#/SYS - HMA, Base, Type B, on
Subgrade Treatment, Type ID



- Notes:**
- Station/Offset Topnotes, Benchmarks, & Right-of-Way Described from Line "A-D-PR".
 - See Geometric Tie-Up Sheet for Line "A-D-PR" Alignment Information.
 - All Stationing off of Line "PR-A" Unless Otherwise Noted.

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: NAW	DRAWN: CCW	
CHECKED: JAW	CHECKED: NAW	

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN LINE "PR-A"

HORIZONTAL SCALE	BRIDGE FILE
1"=20'	-
VERTICAL SCALE	DESIGNATION
---	1600616
SURVEY BOOK	SHEETS
	14 of --
CONTRACT	PROJECT
R-39907	1600616

Date: Dec 07, 2020, 6:51am User Name: chris
File: S:_201711-2025\BHL_1600616\Road\CD\PR\Plan & Profile\PR-A.dwg

Categorical Exclusion
Appendix C
Early Coordination



August 13, 2020

SAMPLE EARLY COORDINATION LETTER

Re: Des. No.: 1600616
State Road (SR) 156 - Slide Correction Project
State Project
1.5 to 1.7 miles west of the east junction of the SR 56/156 Intersection
Switzerland County, Indiana

Dear :

The Federal Highway Administration (FHWA) and the Indiana Department of Transportation (INDOT), Seymour District propose to proceed with a slide correction project along SR 156, 1.5 to 1.7 miles west of the east junction of the SR 56/156 intersection in Switzerland County, Indiana (Des. No. 160616). This letter is part of the early coordination phase of the environmental review. At this time, we are requesting comments from your area of expertise regarding any possible environmental effects (social and natural) associated with this project. **Please use the above Des. No. and project description in your reply.** Your comments will be incorporated into the formal environmental study. Your cooperation in this endeavor is appreciated.

Project Location and Existing Conditions

The proposed project is located along SR 156 in Switzerland County, Indiana, approximately 1.5 to 1.7 miles west of the east junction of the SR 56/156 intersection. Specifically, the project is located in Section 27, Township 3 North, and Range 1 West in Posey Township as depicted on the Rising Sun U.S. Geological Survey (USGS) Quadrangle. Land use is primarily rural in nature with residences having uncontrolled driveway access are spaced sporadically along the bluff side of the roadway. The river side of SR 156 is undeveloped, mostly green space with some presence of isolated riparian trees along the bank of the Ohio River. Please see attachments for maps and photographs of the proposed project area.

Within the project area, SR 156 is functionally classified as a Rural Minor Arterial within the project area. The existing roadway consists of two 11-foot wide travel lanes accompanied by 2-foot wide earthen shoulders. The existing slope varies due to the slide occurring. The roadside within the slide area ranges from approximately 2.5:1 to 1.5:1 along the eastbound lane and approximately 2.5:1 to 2:1 up the hillside along the westbound lane. The entire project is within a tangent section. Roadway distress is evident from pavement sags in the roadway profile, pavement cracking and distress observed in evident scarp lines, missing downstream roadway shoulder, and guardrail sags. The existing pavement is composed of approximately 24-inches of

3502 Woodview Trace, Suite 150
Indianapolis, Indiana 46268
PHONE: 317.222.3878 • TOLL FREE: 800.423.7422

hot mix asphalt pavement. There are 3 existing residential driveways within the project limits located along the westbound travel lane. One is an existing concrete drive and the other two are gravel drives. One existing opening in the guardrail is along the eastbound lane. The posted speed limit is 55 mph.

Two small structures are also located within the project limits, two 24-inch corrugated metal pipe (CMP) cross culvers that convey roadside drainage to the Ohio River. Please reference the attached aerial map for an illustration of where these two structures are located within the project area.

Purpose and Need

The need for this project is due to the land slide occurring along the eastbound lane of SR 156 adjacent to the Ohio River, causing the pavement and roadside embankment to deteriorate and fail. The pavement distress is prominent in both lanes with scarp lines extending out past the centerline of the road.

The purpose of the project is to correct the embankment failure and thereby providing a functional roadway that minimizes future pavement maintenance issues.

Proposed Project

The proposed project will evaluate alternatives to construct a slide correction along approximately 846 feet of SR 156. This project is being proposed for completion under a design/build process rather than a design/bid/build process. The difference between these two is that with design/bid/build the engineering is finalized prior to the award of construction contract while a design/build project allows a contractor to bid on a project with the responsibility to complete the engineering design themselves.

The focus of the project at this stage is to define an acceptable range of activities from which the contractor may choose and advance to final design and construction. The most likely alternative for this slide is installing drilled piers and lagging walls with tiebacks; however, additional alternatives include a tangent pile, soil nailed wall, or riprap embankment. Additional work will include guardrail construction, culvert replacement, roadside ditch grading, and pavement construction to correct profile deficiencies due to the slide.

No bridges are associated with the project; however, the two existing 24-inch CMPs are anticipated to be replaced by 36-inch circular pipes. The proposed typical section of SR 156 will consist of two 11-foot travel lanes accompanied by a 2-foot earth shoulder along the westbound lane and a 4-foot paved shoulder along the eastbound shoulder with guardrail. The proposed guardrail will be the length of the slide and connect to existing guardrail at the end of the wall. The elevation and lengths of tiebacks, walls, etc. will vary based on the final plans.

The maintenance of traffic (MOT) is anticipated to require a full road closure and will include a detour route on SR 56 from the west junction of SR 56/SR 156, in the town of Vevay, to the east

junction of SR 56/SR 156. The detour route is approximately 20 miles long. Various local roadways are available for use as unofficial detour routes. Access will be maintained for property owners.

Construction is anticipated to begin in Fiscal Year (FY) 2023.

Right-of-Way (ROW)

It is anticipated that approximately 0.8 acres of permanent ROW will be needed for the project. Access to the Ohio River will be limited for property owners due to the wall construction. A limited amount of tree clearing is necessary, mostly isolated trees growing out of the riverbank.

Environmental Resources

A Red Flag Investigation (RFI) was performed for a 0.5-mile radius for the project area. Several "Red Flags" were identified within the 0.5-mile search radius; however, not all will impact the proposed project.

The project does not contain any known sink holes and is outside the Karst Memorandum of Understanding Potential Karst Features Region. The Ohio River is a Traditional Navigable Waterway (TNW); the roadway is located within the floodplain of the river based on the flood insurance mapping. This segment of the Ohio River is a 303d listed (impaired) waterway for PCBs found within fish tissue and dioxin from water samples. Several wetlands, lakes, and streams were noted within the half mile search radius. Coordination with the Ecology and Waterway Permitting Office at INDOT will occur. No special waste sites, mines, or parks were present in the study area.

Lochmueller Group conducted a field investigation of the project area on April 21 and June 22, 2020. The field investigation identified three wetland features, Wetlands A, B, and C, and one stream feature, the Ohio River, within the project area. a Waters of the U.S. Determination Report has been prepared for this project.

Section 106

The National Register of Historic Places (National Register) and the Indiana Register of Historic Sites and Structures (State Register) were reviewed using the State Historic Architectural and Archaeological Research Database (SHAARD) and SHAARD Geographic Information System (GIS) data published online. No above-ground historical resources on either list are within the project area. The 1979 *Switzerland County Interim Report: Indiana Historic Sites and Structures Inventory* (IHSSI) data was also examined, as well as the updated 2006 survey in the *Indiana Historic Buildings, Bridges, and Cemeteries Map* (IHBCM). One surveyed resource from this inventory was located 530 feet northwest of the project area, IHSSI #155-540-00003, Contributing, Bridge over Grants Creek. The *Indiana Historic Bridge Inventory Volume 2: Listing of Historic and Non-Historic Bridges* by Mead & Hunt (2009) was reviewed. No bridges eligible for listing in the National Register are within the project area. No cemeteries were noted within the vicinity of the project area. It is anticipated that the project will qualify for the Minor Project Programmatic Agreement under Categories B-9 and B-10.

Range-wide Informal Programmatic Consultation

Ohio County is within the range of the federally endangered Indiana bat (*Myotis sodalis*) and the federally threatened northern long-eared bat (*Myotis septentrionalis*). The U.S. Fish and Wildlife Service (USFWS) Range-wide Programmatic Informal Consultation for the Indiana bat and northern long-eared bat (NLEB) will be completed for this project.

Land uses in the vicinity of the project include rural residential and undeveloped. Completion of the appropriate determination key through the USFWS Information for Planning and Consultation (IPaC) portal will occur. If a likely determination of “Not Likely to Adversely Affect,” or “Likely to Adversely Affect” is reached then additional consultation with the USFWS will occur through INDOT.

Early Coordination

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

If you have any questions regarding this project, please feel free to contact me at (317) 334-6812 or at rmmarshall@lochgroup.com. Additionally, should you want to contact the sponsor for this project, INDOT-Seymour District, please contact the Project Manager, Travis Mankin at (812) 524-3957 or tmankin@indot.in.gov.

Thank you in advance for your input.

Sincerely,



Riley Marshall
Environmental Specialist
Lochmueller Group, Inc.

Attachments:

- General Location Map
- USGS Topographic Map
- Aerial Map
- Red Flag Investigation Maps
- Photo Location Map
- Photographs

Removed to avoid duplication;
see Appendix B and Appendix E

Distribution List:

- USFWS, Bloomington Field Office
- Natural Resources Conservation Service, Indianapolis Office
- U.S. Army Corps of Engineers, Louisville District
- U.S. Housing and Urban Development
- National Park Service
- FHWA – Indiana Division
- IDNR, Division of Fish and Wildlife
- IDEM (electronic submission)
- INDOT, Office of Public Involvement
- INDOT, Environmental Services
- INDOT, Seymour District
- Indiana Geological Survey (electronic submission)
- Switzerland County Board of Commissioners
- Switzerland County Council
- Switzerland County Highway Department
- Switzerland County Surveyor's Office
- Switzerland County Emergency Management Agency
- Switzerland County Emergency Management Service
- Switzerland County Sheriff's Department
- Posey Township Trustee
- Switzerland County Community School Corporation
- Posey Township Volunteer Fire Department
- Switzerland County Zoning and Planning (Floodplain Administrator)

Organization and Project Information

Project ID:
Des. ID: 1600616
Project Title: SR 156 Slide Correction Project
Name of Organization: Lochmueller Group, Inc.
Requested by: Riley Marshall

Environmental Assessment Report

1. Geological Hazards:
 - High liquefaction potential
 - Floodway
 - Potential Slope Instability
2. Mineral Resources:
 - Bedrock Resource: Low Potential
 - Sand and Gravel Resource: None documented in the area
3. Active or abandoned mineral resources extraction sites:
 - None documented in the area

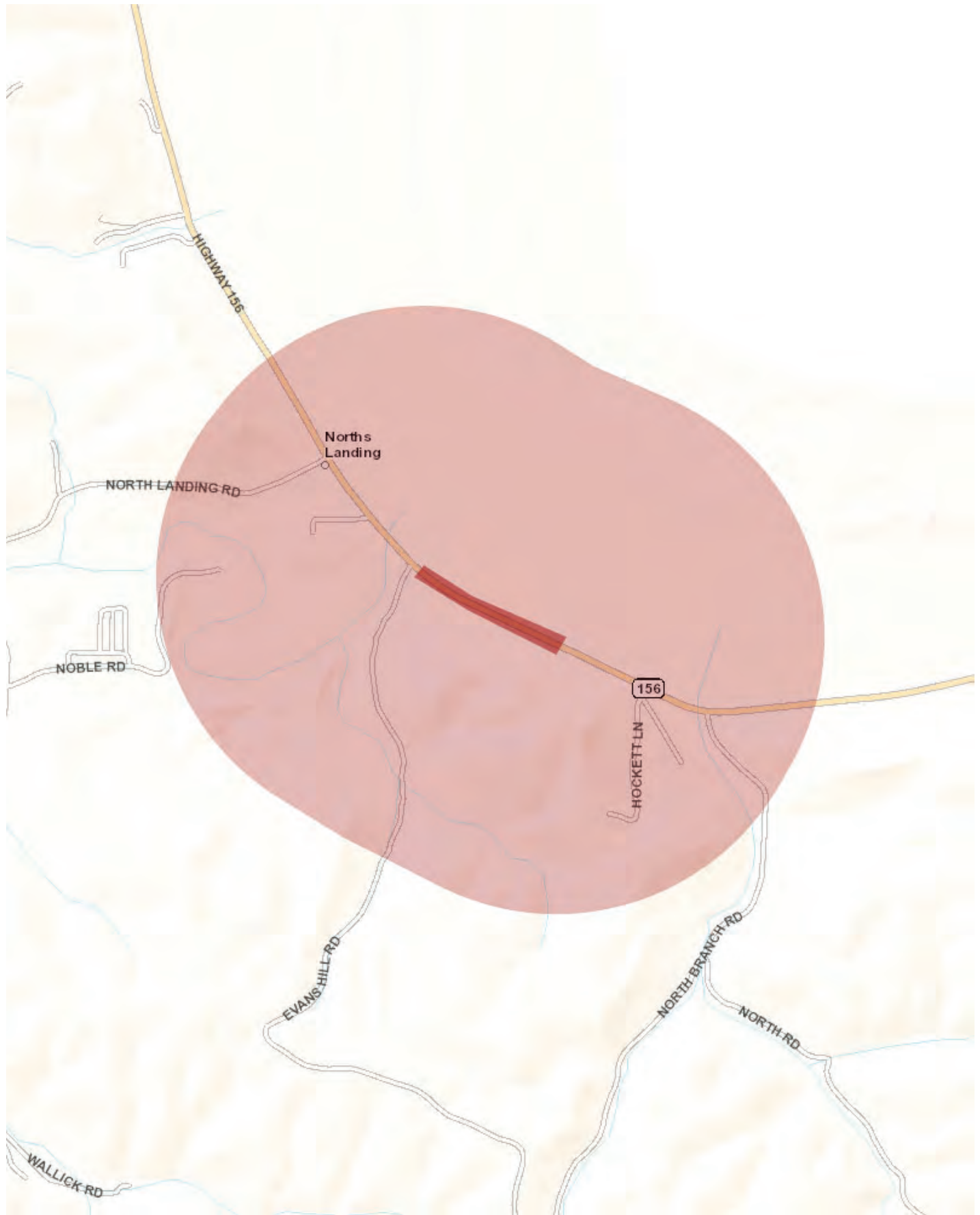
*All map layers from Indiana Map (maps.indiana.edu)

DISCLAIMER:

This document was compiled by Indiana University, Indiana Geological Survey, using data believed to be accurate; however, a degree of error is inherent in all data. This product is distributed "AS-IS" without warranties of any kind, either expressed or implied, including but not limited to warranties of suitability to a particular purpose or use. No attempt has been made in either the design or production of these data and document to define the limits or jurisdiction of any federal, state, or local government. The data used to assemble this document are intended for use only at the published scale of the source data or smaller (see the metadata links below) and are for reference purposes only. They are not to be construed as a legal document or survey instrument. A detailed on-the-ground survey and historical analysis of a single site may differ from these data and this document.

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

Date: August 13, 2020



Metadata:

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



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 Seymour
Travis Mankin
185 Agrico Lane
Seymour , IN 47274

Lochmueller Group, Inc.
Riley Marshall
3502 Woodview Trace
Suite 150
Indianapolis , IN 46268

Date

Dear Grant Administrator or Other Finance Approval Authority:

RE: The Federal Highway Administration (FHWA) and the Indiana Department of Transportation (INDOT), Seymour District propose to proceed with a slide correction project along SR 156, 1.5 to 1.7 miles west of the east junction of the SR 56/156 intersection in Switzerland County, Indiana (Des. No. 160616). This letter is part of the early coordination phase of the environmental review. At this time, we are requesting comments from your area of expertise regarding any possible environmental effects (social and natural) associated with this project. Please use the above Des. No. and project description in your reply. Your comments will be incorporated into the formal environmental study. Your cooperation in this endeavor is appreciated. The proposed project is located along SR 156 in Switzerland County, Indiana, approximately 1.5 to 1.7 miles west of the east junction of the SR 56/156 intersection. Specifically, the project is located in Section 27, Township 3 North, and Range 1 West in Posey Township as depicted on the Rising Sun U.S. Geological Survey (USGS) Quadrangle. Land use is primarily rural in nature with residences having uncontrolled driveway access are spaced sporadically along the bluff side of the roadway. The river side of SR 156 is undeveloped, mostly green space with some presence of isolated riparian trees along the bank of the Ohio River. Please see attachments for maps and photographs of the proposed project area. Within the project area, SR 156 is functionally classified as a Rural Minor Arterial within the project area. The existing roadway consists of two 11-foot wide travel lanes accompanied by 2-foot wide earthen shoulders. The existing slope varies due to the slide occurring. The roadside within the slide area ranges from approximately 2.5:1 to 1.5:1 along the eastbound lane and approximately 2.5:1 to 2:1 up the hillside along the westbound lane. The entire project is within a tangent section. Roadway distress is evident from pavement sags in the roadway profile, pavement cracking and distress observed in evident scarp lines, missing downstream roadway shoulder, and guardrail sags. The existing pavement is composed of approximately 24-inches of hot mix asphalt pavement. There are 3 existing residential driveways within the project limits located along the westbound travel lane. One is an existing concrete drive and the other two are gravel drives. One existing opening in the guardrail is along the eastbound lane. The posted speed limit is 55 mph. Two small structures are also located within the project limits, two 24-inch corrugated metal pipe (CMP) cross culvers that convey roadside drainage to the Ohio River. Please reference the attached aerial map for an illustration of where these two structures are located within the project area. The need for this project is due to the land slide occurring along the eastbound lane of SR 156 adjacent to the Ohio River, causing the pavement and roadside embankment to deteriorate and fail. The pavement distress is prominent in both lanes with scarp lines extending out past the centerline of the road. The purpose of the project is to correct the embankment failure and thereby providing a functional

roadway that minimizes future pavement maintenance issues. The proposed project will evaluate alternatives to construct a slide correction along approximately 846 feet of SR 156. This project is being proposed for completion under a design/build process rather than a design/bid/build process. The difference between these two is that with design/bid/build the engineering is finalized prior to the award of construction contract while a design/build project allows a contractor to bid on a project with the responsibility to complete the engineering design themselves. The focus of the project at this stage is to define an acceptable range of activities from which the contractor may choose and advance to final design and construction. The most likely alternative for this slide is installing drilled piers and lagging walls with tiebacks; however, additional alternatives include a tangent pile, soil nailed wall, or riprap embankment. Additional work will include guardrail construction, culvert replacement, roadside ditch grading, and pavement construction to correct profile deficiencies due to the slide. No bridges are associated with the project; however, the two existing 24-inch CMPs are anticipated to be replaced by 36-inch circular pipes. The proposed typical section of SR 156 will consist of two 11-foot travel lanes accompanied by a 2-foot earth shoulder along the westbound lane and a 4-foot paved shoulder along the eastbound shoulder with guardrail. The proposed guardrail will be the length of the slide and connect to existing guardrail at the end of the wall. The elevation and lengths of tiebacks, walls, etc. will vary based on the final plans. The maintenance of traffic (MOT) is anticipated to require a full road closure and will include a detour route on SR 56 from the west junction of SR 56/SR 156, in the town of Vevay, to the east junction of SR 56/SR 156. The detour route is approximately 20 miles long. Various local roadways are available for use as unofficial detour routes. Access will be maintained for property owners. Construction is anticipated to begin in Fiscal Year (FY) 2023. It is anticipated that approximately 0.8 acres of permanent ROW will be needed for the project. Access to the Ohio River will be limited for property owners due to the wall construction. A limited amount of tree clearing is necessary, mostly isolated trees growing out of the riverbank. A Red Flag Investigation (RFI) was performed for a 0.5-mile radius for the project area. Several "Red Flags" were identified within the 0.5-mile search radius; however, not all will impact the proposed project. The project does not contain any known sink holes and is outside the Karst Memorandum of Understanding Potential Karst Features Region. The Ohio River is a Traditional Navigable Waterway (TNW); the roadway is located within the floodplain of the river based on the flood insurance mapping. This segment of the Ohio River is a 303d listed (impaired) waterway for PCBs found within fish tissue and dioxin from water samples. Several wetlands, lakes, and streams were noted within the half mile search radius. Coordination with the Ecology and Waterway Permitting Office at INDOT will occur. No special waste sites, mines, or parks were present in the study area. Lochmueller Group conducted a field investigation of the project area on April 21 and June 22, 2020. The field investigation identified three wetland features, Wetlands A, B, and C, and one stream feature, the Ohio River, within the project area. a Waters of the U.S. Determination Report has been prepared for this project. The National Register of Historic Places (National Register) and the Indiana Register of Historic Sites and Structures (State Register) were reviewed using the State Historic Architectural and Archaeological Research Database (SHAARD) and SHAARD Geographic Information System (GIS) data published online. No above-ground historical resources on either list are within the project area. The 1979 Switzerland County Interim Report: Indiana Historic Sites and Structures Inventory (IHSSI) data was also examined, as well as the updated 2006 survey in the Indiana Historic Buildings, Bridges, and Cemeteries Map (IHBBCM). One surveyed resource from this inventory was located 530 feet northwest of the project area, IHSSI #155-540-00003, Contributing, Bridge over Grants Creek. The Indiana Historic Bridge Inventory Volume 2: Listing of Historic and Non-Historic Bridges by Mead & Hunt (2009) was reviewed. No bridges eligible for listing in the National Register are within the project area. No cemeteries were noted within the vicinity of the project area. It is anticipated that the project will qualify for the Minor Project Programmatic Agreement under Categories B-9 and B-10. Ohio County is within the range of the federally endangered Indiana bat (*Myotis sodalis*) and the federally threatened northern long-eared bat (*Myotis septentrionalis*). The U.S. Fish and Wildlife Service (USFWS) Range-wide Programmatic Informal Consultation for the Indiana bat and northern long-eared bat (NLEB) will be completed for this project. Land uses in the vicinity of the project include rural residential and undeveloped. Completion of the appropriate determination key through the USFWS Information for Planning

and Consultation (IPaC) portal will occur. If a likely determination of "Not Likely to Adversely Affect," or "Likely to Adversely Affect" is reached then additional consultation with the USFWS will occur through INDOT. The Indiana Department of Environmental Management (IDEM) is aware that many local government or not-for-profit entities are seeking grant monies, a bond issuance, or another public funding mechanism to cover some portion of the cost of a public works, infrastructure, or community development project. IDEM also is aware that in order to be eligible for such funding assistance, applicants are required to first evaluate the potential impacts that their particular project may have on the environment. In order to assist applicants seeking such financial assistance and to ensure that such projects do not have an adverse impact on the environment, IDEM has prepared the following list of environmental issues that each applicant must consider in order to minimize environmental impacts in compliance with all relevant state laws.

IDEM recommends that each applicant consider the following issues when moving forward with their project. IDEM also requests that, in addition to submitting the information requested above, each applicant also sign the attached certification, attesting to the fact that they have read the letter in its entirety, agree to abide by the recommendations of the letter, and to apply for any permits required from IDEM for the completion of their project.

IDEM recommends that any person(s) intending to complete a public works, infrastructure, or community development project using any public funding consider each of the following applicable recommendations and requirements:

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>) 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, Kosciusko, 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. To learn more about the water quality certification 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 body of water 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 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 Office of Water Quality at 317-233-8488.
4. If your project will impact more than 0.5 acres of wetland, stream relocation, or other large-scale alterations to bodies of water such as the creation of a dam or a water diversion, you should seek additional input from the Office of Water Quality, Wetlands staff at 317-233-8488.
5. Work within the one-hundred year floodway of a given body of water is regulated by the Department of Natural Resources, Division of Water. Contact this agency at 317-232-4160 for further information.
6. 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.
7. 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
 - o <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.

8. For projects involving impacts to fish and botanical resources, contact the Department of Natural Resources - Division of Fish and Wildlife (317-232-4080) for additional project input.
9. 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.
10. 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.
11. 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 (see page 1) 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 under specific conditions (<http://www.in.gov/idem/4148.htm> (<http://www.in.gov/idem/4148.htm>)). You also can seek an open burning variance from IDEM.

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) on-site, although burying large quantities of such material can lead to subsidence problems.

2. 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.

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 three to five 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 three to five 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.

3. The U.S. EPA and the U.S. 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/4267.htm> (<http://www.in.gov/idem/4267.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, then U.S. EPA recommends a follow-up test. If the second test confirms that radon levels are 4 pCi/L or higher, then U.S. 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). Also, it 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>).

4. With respect to asbestos removal, all facilities slated for renovation or demolition (except residential buildings that have four (4) 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.

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 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. Billings will occur 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>).

5. 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/idem/permits/guide/waste/leadabatement.html>
(<http://www.in.gov/idem/permits/guide/waste/leadabatement.html>).
6. 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 of 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>)).
7. 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 (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.
8. 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@idem.in.gov.

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 Polychlorinated Biphenyls (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(<http://www.in.gov/idem/4999.htm> (<http://www.in.gov/idem/4999.htm>)).

FINAL REMARKS

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

Please note that this letter does not constitute a permit, license, endorsement, or any other form of approval on the part of either the Indiana Department of Environmental Management or any other Indiana state agency.

Should you have any questions relating to the content or recommendations of this letter, or if you have additional questions about whether a more complete environmental review of your project should be conducted, please feel free to contact Steve Howell at (317) 232-8587, snhowell@idem.in.gov.

Signature(s) of the Applicant

I acknowledge that I am seeking grant monies, a bond issuance, or other public funding mechanism to cover some portion of the cost of the public works, infrastructure, or community development project as described herein, which I am working (possibly with others) to complete.

Project Description

The Federal Highway Administration (FHWA) and the Indiana Department of Transportation (INDOT), Seymour District propose to proceed with a slide correction project along SR 156, 1.5 to 1.7 miles west of the east junction of the SR 56/156 intersection in Switzerland County, Indiana (Des. No. 160616). This letter is part of the early coordination phase of the environmental review. At this time, we are requesting comments from your area of expertise regarding any possible environmental effects (social and natural) associated with this project. Please use the above Des. No. and project description in your reply. Your comments will be incorporated into the formal environmental study. Your cooperation in this endeavor is appreciated. The proposed project is located along SR 156 in Switzerland County, Indiana, approximately 1.5 to 1.7 miles west of the east junction of the SR 56/156 intersection. Specifically, the project is located in Section 27, Township 3 North, and Range 1 West in Posey Township as depicted on the Rising Sun U.S. Geological Survey (USGS) Quadrangle. Land use is primarily rural in nature with residences having uncontrolled driveway access are spaced sporadically along the bluff side of the roadway. The river side of SR 156 is undeveloped, mostly green space with some presence of isolated riparian trees along the bank of the Ohio River. Please see attachments for maps and photographs of the proposed project area. Within the project area, SR 156 is functionally classified as a Rural Minor Arterial within the project area. The existing roadway consists of two 11-foot wide travel lanes accompanied by 2-foot wide earthen shoulders. The existing slope varies due to the slide occurring. The roadside within the slide area ranges from approximately 2.5:1 to 1.5:1 along the eastbound lane and approximately 2.5:1 to 2:1 up the hillside along the westbound lane. The entire project is within a tangent section. Roadway distress is evident from pavement sags in the roadway profile,

pavement cracking and distress observed in evident scarp lines, missing downstream roadway shoulder, and guardrail sags. The existing pavement is composed of approximately 24-inches of hot mix asphalt pavement. There are 3 existing residential driveways within the project limits located along the westbound travel lane. One is an existing concrete drive and the other two are gravel drives. One existing opening in the guardrail is along the eastbound lane. The posted speed limit is 55 mph. Two small structures are also located within the project limits, two 24-inch corrugated metal pipe (CMP) cross culvers that convey roadside drainage to the Ohio River. Please reference the attached aerial map for an illustration of where these two structures are located within the project area. The need for this project is due to the land slide occurring along the eastbound lane of SR 156 adjacent to the Ohio River, causing the pavement and roadside embankment to deteriorate and fail. The pavement distress is prominent in both lanes with scarp lines extending out past the centerline of the road. The purpose of the project is to correct the embankment failure and thereby providing a functional roadway that minimizes future pavement maintenance issues. The proposed project will evaluate alternatives to construct a slide correction along approximately 846 feet of SR 156. This project is being proposed for completion under a design/build process rather than a design/bid/build process. The difference between these two is that with design/bid/build the engineering is finalized prior to the award of construction contract while a design/build project allows a contractor to bid on a project with the responsibility to complete the engineering design themselves. The focus of the project at this stage is to define an acceptable range of activities from which the contractor may choose and advance to final design and construction. The most likely alternative for this slide is installing drilled piers and lagging walls with tiebacks; however, additional alternatives include a tangent pile, soil nailed wall, or riprap embankment. Additional work will include guardrail construction, culvert replacement, roadside ditch grading, and pavement construction to correct profile deficiencies due to the slide. No bridges are associated with the project; however, the two existing 24-inch CMPs are anticipated to be replaced by 36-inch circular pipes. The proposed typical section of SR 156 will consist of two 11-foot travel lanes accompanied by a 2-foot earth shoulder along the westbound lane and a 4-foot paved shoulder along the eastbound shoulder with guardrail. The proposed guardrail will be the length of the slide and connect to existing guardrail at the end of the wall. The elevation and lengths of tiebacks, walls, etc. will vary based on the final plans. The maintenance of traffic (MOT) is anticipated to require a full road closure and will include a detour route on SR 56 from the west junction of SR 56/SR 156, in the town of Vevay, to the east junction of SR 56/SR 156. The detour route is approximately 20 miles long. Various local roadways are available for use as unofficial detour routes. Access will be maintained for property owners. Construction is anticipated to begin in Fiscal Year (FY) 2023. It is anticipated that approximately 0.8 acres of permanent ROW will be needed for the project. Access to the Ohio River will be limited for property owners due to the wall construction. A limited amount of tree clearing is necessary, mostly isolated trees growing out of the riverbank. A Red Flag Investigation (RFI) was performed for a 0.5-mile radius for the project area. Several "Red Flags" were identified within the 0.5-mile search radius; however, not all will impact the proposed project. The project does not contain any known sink holes and is outside the Karst Memorandum of Understanding Potential Karst Features Region. The Ohio River is a Traditional Navigable Waterway (TNW); the roadway is located within the floodplain of the river based on the flood insurance mapping. This segment of the Ohio River is a 303d listed (impaired) waterway for PCBs found within fish tissue and dioxin from water samples. Several wetlands, lakes, and streams were noted within the half mile search radius. Coordination with the Ecology and Waterway Permitting Office at INDOT will occur. No special waste sites, mines, or parks were present in the study area. Lochmueller Group conducted a field investigation of the project area on April 21 and June 22, 2020. The field investigation identified three wetland features, Wetlands A, B, and C, and one stream feature, the Ohio River, within the project area. A Waters of the U.S. Determination Report has been prepared for this project. The National Register of Historic Places (National Register) and the Indiana Register of Historic Sites and Structures (State Register) were reviewed using the State Historic Architectural and Archaeological Research Database (SHAARD) and SHAARD Geographic Information System (GIS) data published online. No above-ground historical resources on either list are within the project area. The 1979 Switzerland County Interim Report: Indiana Historic Sites and Structures Inventory (IHSSI) data was also examined, as well as the updated 2006 survey in the Indiana Historic Buildings, Bridges, and Cemeteries Map (IHBBM). One surveyed resource from this inventory was located 530 feet

northwest of the project area, IHSSI #155-540-00003, Contributing, Bridge over Grants Creek. The Indiana Historic Bridge Inventory Volume 2: Listing of Historic and Non-Historic Bridges by Mead & Hunt (2009) was reviewed. No bridges eligible for listing in the National Register are within the project area. No cemeteries were noted within the vicinity of the project area. It is anticipated that the project will qualify for the Minor Project Programmatic Agreement under Categories B-9 and B-10. Ohio County is within the range of the federally endangered Indiana bat (*Myotis sodalis*) and the federally threatened northern long-eared bat (*Myotis septentrionalis*). The U.S. Fish and Wildlife Service (USFWS) Range-wide Programmatic Informal Consultation for the Indiana bat and northern long-eared bat (NLEB) will be completed for this project. Land uses in the vicinity of the project include rural residential and undeveloped. Completion of the appropriate determination key through the USFWS Information for Planning and Consultation (IPaC) portal will occur. If a likely determination of "Not Likely to Adversely Affect," or "Likely to Adversely Affect" is reached then additional consultation with the USFWS will occur through INDOT.

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

Dated Signature of the Public Owner Travis Mankin 2/4/21
Contact/Responsible Elected Official _____

Travis Mankin

Dated Signature of the Project Riley Marshall 1/25/2021
Planner/Consultant Contact Person _____

Riley Marshall



INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N642
Indianapolis, Indiana 46204

PHONE: (855) 463-6848

Eric Holcomb, Governor
Joe McGuinness, Commissioner

Riley Marshall
Lochmueller Group, Inc.
rmarshall@lochgroup.com

August 20, 2020

Re: Early Coordination Review, Des. 1600616
State Road 156 – Slide Correction, Switzerland County, Indiana

Dear Ms. Marshall:

The Indiana Department of Transportation (INDOT) Environmental Services Division (ESD) appreciates the opportunity to assist you on the project referenced above. Pursuant to your early coordination request for an environmental review, we have performed a preliminary search of the project area.

There appears to be at least **four** active project you should be aware of close to the project area. A summary of this project is provided below.

Project Sponsor: Indiana Department of Transportation; Project Manager: Travis Mankin, Email: tmankin@indot.IN.gov

- **DES: 1600615** – Slide Correction 0.7 mile west of State Road 56/State Road 156 Intersection; Timeline: Letting scheduled for 7/2022
- **DES: 1600617** – Slide Correction 1.7 miles west of State Road 56/State Road 156 Intersection; Timeline: Letting scheduled for 7/2022
- **DES: 1600618** – Slide Correction 2.1 miles west of State Road 56/State Road 156 Intersection; Timeline: Letting scheduled for 7/2022

Project Sponsor: Indiana Department of Transportation; Project Manager: Chase Schneider, Email: ChSchneider@indot.IN.gov

- **DES: 2000124** – State Road 156 Bridge Thin Deck Overlay over Grants Creek; Timeline: Letting scheduled for 8/2022

If your project will require the use of state right-of-way please contact the In-House Services Manager at the INDOT Seymour District Office.

As always, be sure to follow all applicable processes as well as federal and state laws and local requirements. Thank you for the opportunity to assist you with your project. If you have any questions, please contact a member of my staff, Meghan Hinkle: 317-232-1490 or MHinkle@indot.IN.gov.

Sincerely,

Ron Bales
Environmental Policy Manager,
Environmental Services Division

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August 20, 2020

Riley Marshall
Lochmueller Group, Inc.
3502 Woodview Trace, Suite 150
Indianapolis, Indiana 46268

Dear Ms. Marshall:

The proposed project to proceed with a slide correction project along State Road 156 in Switzerland County, Indiana, (Des No 1600616), as referred to in your letter received August 13, 2020, will not cause a conversion of prime farmland.

If you need additional information, please contact John Allen at 317-295-5859.

Sincerely,

RICHARD Digitally signed by
RICHARD NEILSON
NEILSON Date: 2020.08.21
11:34:17 -04'00'

RICK NEILSON
State Soil Scientist



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

DNR #: ER-22973

Request Received: August 13, 2020

Requestor: Lochmueller Group Inc
Riley Marshall
3502 Woodview Trace, Suite 150
Indianapolis, IN 46268

Project: SR 156 slide correction adjacent to the Ohio River, 1.5 to 1.7 miles west of the east junction of SR 56/156; Des #1600616

County/Site info: Switzerland

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

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

Regulatory Assessment: This proposal may require the formal approval of our agency pursuant to the Flood Control Act (IC 14-28-1) for any proposal to construct, excavate, or fill in or on the floodway of the Ohio River or Grants Creek.

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) Bank Stabilization:

Establishing vegetation along the banks is critical for stabilization and erosion control. In addition to vegetation, some other form of bank stabilization may be needed. 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. Information about bioengineering techniques can be found at <http://www.in.gov/legislative/iac/20120404-IR-312120154NRA.xml.pdf>. Also, the following is a USDA/NRCS document that outlines many different bioengineering techniques for streambank stabilization: <http://directives.sc.egov.usda.gov/17553.wba>.

2) Riparian Habitat:

We recommend a mitigation plan be developed (and submitted with the permit application, if required) for any unavoidable habitat impacts that will occur. The DNR's Habitat Mitigation guidelines (and plant lists) can be found online at: <http://iac.iga.in.gov/iac/20200527-IR-312200284NRA.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 non-wetland forest under one (1) acre in an urban setting should be mitigated by planting five trees, at least

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

2 inches in diameter-at-breast height (dbh), for each tree which is removed that is 10" dbh or greater (5:1 mitigation based on the number of large trees) or by using the 1:1 replacement ratio based on area depending on the type of habitat impacted (individual canopy tree removal in an urban streetscape or park-like environment versus removal of habitat supporting a tree canopy, woody understory, and herbaceous layer). Impacts under 0.10 acre in an urban area may still involve the replacement of large diameter trees but typically do not require any additional mitigation or additional plantings beyond seeding and stabilizing disturbed areas. There are exceptions for high quality habitat sites however.

3) Stream/Wetland Habitat:

For any stream and/or wetland impacts, you may need to contact the Indiana Department of Environmental Management (IDEM) 401 program and the US Army Corps of Engineers (USACE) 404 program.

The additional measures listed below should be implemented to avoid, minimize, or compensate for impacts to fish, wildlife, and botanical resources:

1. Revegetate all bare and disturbed areas that will not be mowed and maintained with a mixture of grasses, sedges, and wildflowers native to Central Indiana and specifically for stream bank/floodway stabilization purposes as soon as possible upon completion; turf-type grasses (including low-endophyte, friendly endophyte, and endophyte free tall fescue but excluding all other varieties of tall fescue) may be used in regularly mowed areas only.
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 5 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. Do not use broken concrete as riprap.
9. Underlay the riprap with a bedding layer of well graded aggregate or a geotextile to prevent piping of soil underneath the riprap.
10. Minimize the movement of resuspended bottom sediment from the immediate project area.
11. Appropriately designed measures for controlling erosion and sediment must be implemented to prevent sediment from entering the stream or leaving the construction site; maintain these measures until construction is complete and all disturbed areas are stabilized.
12. Seed and protect all disturbed streambanks and slopes not protected by other methods that are 3:1 or steeper with erosion control blankets that are heavy-duty, biodegradable, and net free or that use loose-woven / Leno-woven netting to minimize the entrapment and snaring of small-bodied wildlife such as snakes and turtles (follow manufacturer's recommendations for selection and installation); seed and apply mulch on all other disturbed areas.

THIS IS NOT A PERMIT

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

Contact Staff:

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

Christie L. Stanifer

Date: September 11, 2020

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

From: [McWilliams, Robin](#)
To: [Riley Marshall](#)
Subject: Re: [EXTERNAL] SR 156 Slide Correction Project (Des. No. 1600616) Early Coordination
Date: Thursday, September 10, 2020 12:49:47 PM

Dear Riley,

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 (16 U.S.C. 661 et. seq.) and are consistent with the intent of the National Environmental Policy Act of 1969, the Endangered Species Act of 1973, 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). The Service has 14 days after a "Not Likely to Adversely Affect" determination letter is generated to review the project and provide additional comments or request additional information; if you do not receive a response from us within 14 days, we have no additional comments.

The project is also within the range of the sheepsnose mussel (*Plethobasus cyphus*); however, we do not anticipate any impacts to this species as a result of the project.

Based on a review of the information you provided, the U.S. Fish and Wildlife Service has no other comments on 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 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-bottom 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 riprap 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
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
620 South Walker Street
Bloomington, IN 46142
812-334-4261

[Mon-Tues 8-3:30p](#)

[Wed-Thurs 8:30-3p Telework](#)

From: Riley Marshall <RMarshall@lochgroup.com>
Sent: Thursday, August 13, 2020 4:29 PM
To: McWilliams, Robin <robin_mcwilliams@fws.gov>
Subject: [EXTERNAL] SR 156 Slide Correction Project (Des. No. 1600616) Early Coordination

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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:

February 04, 2021

Consultation Code: 03E12000-2021-SLI-0566

Event Code: 03E12000-2021-E-03341

Project Name: State Road 156 Slide Correction - 1.5 to 1.7 mi W of E JCT of SR 56/SR 156
(Des. No. 1600616)

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

To Whom It May Concern:

The 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: 03E12000-2021-SLI-0566
Event Code: 03E12000-2021-E-03341
Project Name: State Road 156 Slide Correction - 1.5 to 1.7 mi W of E JCT of SR 56/SR 156 (Des. No. 1600616)
Project Type: TRANSPORTATION
Project Description: The Federal Highway Administration (FHWA) and the Indiana Department of Transportation (INDOT), Seymour District propose to proceed with a slide correction project along SR 156, 1.5 to 1.7 miles west of the east junction of the SR 56/156 intersection in Switzerland County, Indiana (Des. No. 1600616). Land use is primarily rural in nature with residences having uncontrolled driveway access spaced sporadically along the bluff side of the roadway. The preferred alternative for this slide is installing drilled piers and lagging walls with tiebacks. The three existing 24-inch CMPs under SR 156 that outlet to the Ohio River are anticipated to be replaced by 36-inch circular pipes. There are also three culverts under residential driveways of varying sizes that will be replaced. Additional work will include guardrail construction, culvert replacement, roadside ditch grading, and pavement construction to correct profile deficiencies due to the slide. The proposed guardrail will be the length of the slide and connect to existing guardrail at the end of the wall. The total length of construction will be 1201 feet. The project will require 0.65 acre of new permanent ROW.

Suitable summer habitat is present near the project area and the project will require the removal of approximately 0.98 acre of suitable habitat within 100 feet of the existing roadway. The dominant species to be removed are green ash (*Fraxinus pennsylvanica*), American sycamore (*Platanus occidentalis*), and eastern red cedar (*Juniperus virginiana*). Tree clearing will take place in the winter of 2021 or in the fall of 2022, but it will take place outside of the bat active season.

No permanent lighting will be installed as a part of the project. Temporary lighting, although not likely, may be used during construction.

Project construction will begin in fall of 2022.

INDOT Seymour district staff performed a review of the USFWS database for the presence of endangered bats or their hibernacula within 0.5 mile of the project area on June 17, 2020. None were found.

Lochmueller Group inspected the six culverts within the project project area on June 22, 2020. No evidence of the use of the culverts by bats was found.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@38.89794985,-84.86707075073421,14z>



Counties: Switzerland County, Indiana

Endangered Species Act Species

There is a total of 3 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 Fisheries¹, 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 <i>Myotis sodalis</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> ▪ 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

Clams

NAME	STATUS
Sheepnose Mussel <i>Plethobasus cyphus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6903	Endangered

Critical habitats

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



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:

February 05, 2021

Consultation code: 03E12000-2021-I-0566

Event Code: 03E12000-2021-E-03360

Project Name: State Road 156 Slide Correction - 1.5 to 1.7 mi W of E JCT of SR 56/SR 156
(Des. No. 1600616)

Subject: Concurrence verification letter for the 'State Road 156 Slide Correction - 1.5 to 1.7 mi W of E JCT of SR 56/SR 156 (Des. No. 1600616)' 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 **State Road 156 Slide Correction - 1.5 to 1.7 mi W of E JCT of SR 56/SR 156 (Des. No. 1600616)** (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.

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

- Sheepnose Mussel *Plethobasus cyphus* Endangered

Project Description

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

Name

State Road 156 Slide Correction - 1.5 to 1.7 mi W of E JCT of SR 56/SR 156 (Des. No. 1600616)

Description

The Federal Highway Administration (FHWA) and the Indiana Department of Transportation (INDOT), Seymour District propose to proceed with a slide correction project along SR 156, 1.5 to 1.7 miles west of the east junction of the SR 56/156 intersection in Switzerland County, Indiana (Des. No. 1600616). Land use is primarily rural in nature with residences having uncontrolled driveway access spaced sporadically along the bluff side of the roadway. The preferred alternative for this slide is installing drilled piers and lagging walls with tiebacks. The three existing 24-inch CMPs under SR 156 that outlet to the Ohio River are anticipated to be replaced by 36-inch circular pipes. There are also three culverts under residential driveways of varying sizes that will be replaced. Additional work will include guardrail construction, culvert replacement, roadside ditch grading, and pavement construction to correct profile deficiencies due to the slide. The proposed guardrail will be the length of the slide and connect to existing guardrail at the end of the wall. The total length of construction will be 1201 feet. The project will require 0.65 acre of new permanent ROW.

Suitable summer habitat is present near the project area and the project will require the removal of approximately 0.98 acre of suitable habitat within 100 feet of the existing roadway. The dominant species to be removed are green ash (*Fraxinus pennsylvanica*), American sycamore (*Platanus occidentalis*), and eastern red cedar (*Juniperus virginiana*). Tree clearing will take place in the winter of 2021 or in the fall of 2022, but it will take place outside of the bat active season.

No permanent lighting will be installed as a part of the project. Temporary lighting, although not likely, may be used during construction.

Project construction will begin in fall of 2022.

INDOT Seymour district staff performed a review of the USFWS database for the presence of endangered bats or their hibernacula within 0.5 mile of the project area on June 17, 2020. None were found.

Lochmueller Group inspected the six culverts within the project project area on June 22, 2020. No evidence of the use of the culverts by bats was found.

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?

No

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

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

[2] The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR Section 402.02). Further clarification is provided by the [national consultation FAQs](#).

Yes

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

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

Yes

10. Will the project clear more than 20 acres of suitable habitat per 5-mile section of road/rail?
No

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

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

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

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

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

No

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

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

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

No

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

Yes

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

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

B) During the inactive season

15. 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

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

Yes

17. 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

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

Yes

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

No

20. Are *all* trees that are being removed clearly demarcated?
Yes
21. Will the removal of habitat or the removal/trimming of trees include installing new or replacing existing **permanent** lighting?
No
22. Does the project include wetland or stream protection activities associated with compensatory wetland mitigation?
No
23. Does the project include slash pile burning?
No
24. Does the project include *any* bridge removal, replacement, and/or maintenance activities (e.g., any bridge repair, retrofit, maintenance, and/or rehabilitation work)?
Yes
25. 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

26. 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 - central culvert.pdf* <https://ecos.fws.gov/ipac/project/TECLP6FL3NESFMLGI3NZFJUPMI/projectDocuments/98849922>
- *Bridge Culvert Bat Assessment Form - eastern culvert.pdf* <https://ecos.fws.gov/ipac/project/TECLP6FL3NESFMLGI3NZFJUPMI/projectDocuments/98849923>
- *Bridge Culvert Bat Assessment Form - western culvert.pdf* <https://ecos.fws.gov/ipac/project/TECLP6FL3NESFMLGI3NZFJUPMI/projectDocuments/98849924>

27. 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

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

No

29. 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

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

Yes

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

Yes

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

No

33. 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?

No

34. 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

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

No

36. Are the 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 consistent with a No Effect determination in this key?

Automatically answered

Yes, other project activities are limited to actions that DO NOT cause any additional stressors to the bat species as described in the BA/BO

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

Automatically answered

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

38. Is the 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.

39. 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

40. **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

41. 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

42. 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

43. 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

44. 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?

Yes

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

No

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.

0.98

4. Please describe the proposed bridge work:

The six culverts will be replaced with culverts that are more hydraulically sufficient.

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

winter of 2021 or fall of 2022. construction will begin in the fall of 2022

6. Please enter the date of the bridge assessment:

6/22/2020

Avoidance And Minimization Measures (AMMs)

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

TREE REMOVAL AMM 1

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

LIGHTING AMM 1

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

TREE REMOVAL AMM 2

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

TREE REMOVAL AMM 3

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

TREE REMOVAL AMM 4

Do not remove **documented** Indiana bat or NLEB roosts that are still suitable for roosting, or trees within 0.25 miles of roosts, or

documented foraging habitat any time of year.

GENERAL AMM 1

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

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

This key was last updated in IPaC on December 29, 2020. 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.

APPENDIX D: Bridge/Structure Bat Assessment Form

Bridge/Structure Bat Assessment Form Instructions

- This form will be completed to document bat occupancy or bat use of bridges, culverts, and other structures. This form shall be submitted to the appropriate personnel within the DOT and USFWS for recordkeeping (or uploaded into the Information, Planning, and Consultation (IPaC) Determination Key for use of the Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat) prior to conducting: any activities below the deck surface either from the underside or from above the deck surface that bore down to the underside; any activities that could impact expansion joints; any activities involving deck removal on bridges; or any activities involving structure demolition for bridges, culverts, and/or other structures.
- Assessments must be completed within two (2) years of conducting any work (see the above bullet), regardless of whether assessments have been conducted in the past. Assessments must be completed in appropriate weather conditions, suitable for the assessor to observe common signs of bat use.
- Evidence of bat use may include visual observation (live and/or dead), presence of guano, presence of staining, audible observation, and/or odor observation. Presence of one or more indicators is sufficient evidence that bats may be using the bridge, culvert, and/or other structure.
- If bat use of a bridge, culvert, and/or other structure is noted, additional studies may be undertaken during bat active season to identify the specific bat species utilizing the structure, or protected bat species presence can be assumed, in order to comply with threatened and endangered species regulations. Bat active season dates, typically between April and November, vary regionally and by species, so assessors should consult with their local USFWS Field Office for more specific active season dates.
- For use of the Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat – If the bridge/structure is 1,000 feet or more from suitable bat habitat¹ (e.g., an urban or agricultural area without suitable foraging habitat or corridors linking the bridge to suitable foraging habitat), check the appropriate box and fill out the table below. **No further assessment is required.**

Date & Time of Assessment	DOT Project #	Route/Facility Carried	County
Federal Structure ID	Structure Coordinates (latitude and longitude)	<input type="checkbox"/> This bridge/structure is 1,000 feet or more from suitable bat habitat ² Name: _____ Signature: _____	

- Any questions pertaining to assessments or this form should be directed to the local USFWS Field Office.

¹ Refer to the USFWS's summer survey guidance for the definition of suitable habitat (<http://www.fws.gov/midwest/endangered/mammals/inba/inbasummersurveyguidance.html>).

² This condition is only for use of the Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat

Bridge/Structure Bat Assessment Form

Date & Time of Assessment 6/22/2020 11:00 AM	DOT Project Number 1600616	Route/Facility Carried SR 156	County Switzerland
Federal Structure ID No structure ID	Structure Coordinates (latitude and longitude) 38.898131, -84.86807	Structure Height (approximate) 2 feet	Structure Length 102 feet
Structure Type (check one)		Structure Material (check all that apply)	
<i>Bridge Construction Style</i>		<i>Deck Material</i>	<i>Beam Material</i> <i>End/Back Wall Material</i>
<input type="radio"/> Cast-in-place	<input type="radio"/> Pre-stressed Girder	<input type="checkbox"/> Metal	<input type="checkbox"/> None <input type="checkbox"/> Concrete
<input type="radio"/> Flat Slab/Box	<input type="radio"/> Steel I-beam	<input type="checkbox"/> Concrete	<input type="checkbox"/> Concrete <input type="checkbox"/> Timber
<input type="radio"/> Truss	<input type="radio"/> Covered	<input type="checkbox"/> Timber	<input type="checkbox"/> Steel <input type="checkbox"/> Stone/Masonry
<input type="radio"/> Parallel Box Beam	<input type="radio"/> Other:	<input type="checkbox"/> Open grid	<input type="checkbox"/> Timber <input type="checkbox"/> Other:
<i>Culvert Type</i>		<i>Culvert Material</i>	
<input type="radio"/> Box	<input type="radio"/> Other Structure	<input checked="" type="checkbox"/> Metal	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="radio"/> Pipe/Round		<input type="checkbox"/> Concrete	<input type="checkbox"/> Unknown
<input type="radio"/> Other:		<input type="checkbox"/> Plastic	<i>Notes:</i>
<input type="radio"/> Other:		<input type="checkbox"/> Stone/Masonry	
<input type="radio"/> Other:		<input type="checkbox"/> Other:	
Crossings Traversed (check all that apply)		Surrounding Habitat (check all that apply)	
<input type="checkbox"/> Bare ground	<input type="checkbox"/> Open vegetation	<input type="checkbox"/> Agricultural	<input type="checkbox"/> Grassland
<input type="checkbox"/> Rip-rap	<input type="checkbox"/> Closed vegetation	<input type="checkbox"/> Commercial	<input type="checkbox"/> Ranching
<input type="checkbox"/> Flowing water	<input type="checkbox"/> Railroad	<input type="checkbox"/> Residential-urban	<input checked="" type="checkbox"/> Riparian/wetland
<input type="checkbox"/> Standing water	<input type="checkbox"/> Road/trail - Type:	<input checked="" type="checkbox"/> Residential-rural	<input type="checkbox"/> Mixed use
<input checked="" type="checkbox"/> Seasonal water	<input type="checkbox"/> Other:	<input checked="" type="checkbox"/> Woodland/forested	<input type="checkbox"/> 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)	
<input checked="" type="checkbox"/> All crevices and cracks: Bridges/culverts: rough surfaces or imperfections in concrete Other structures: soffits, rafters, attic areas	<input type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Concrete surfaces (open roosting on concrete)	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Spaces between concrete end walls and the bridge deck	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Crack between concrete railings on top of the bridge deck 	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Vertical surfaces on concrete I-beams	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Spaces between walls, ceiling joists	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Weep holes, scupper drains, and inlets/pipes	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input checked="" type="checkbox"/> All guiderails	<input type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> All expansion joints	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
Name: Chris Kunkel		Signature: <i>Chris Kunkel</i>	

APPENDIX D: Bridge/Structure Bat Assessment Form

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- For use of the Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat – If the bridge/structure is 1,000 feet or more from suitable bat habitat¹ (e.g., an urban or agricultural area without suitable foraging habitat or corridors linking the bridge to suitable foraging habitat), check the appropriate box and fill out the table below. **No further assessment is required.**

Date & Time of Assessment	DOT Project #	Route/Facility Carried	County
Federal Structure ID	Structure Coordinates (latitude and longitude)	<input type="checkbox"/> This bridge/structure is 1,000 feet or more from suitable bat habitat ² Name: _____ Signature: _____	

- Any questions pertaining to assessments or this form should be directed to the local USFWS Field Office.

¹ Refer to the USFWS's summer survey guidance for the definition of suitable habitat (<http://www.fws.gov/midwest/endangered/mammals/inba/inbasummersurveyguidance.html>).

² This condition is only for use of the Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat

Bridge/Structure Bat Assessment Form

Date & Time of Assessment 6/22/2020 11:00 AM	DOT Project Number 1600616	Route/Facility Carried SR 156	County Switzerland
Federal Structure ID No structure ID	Structure Coordinates (latitude and longitude) 38.898131, -84.86807	Structure Height (approximate) 2 feet	Structure Length 102 feet
Structure Type (check one)		Structure Material (check all that apply)	
<i>Bridge Construction Style</i>		<i>Deck Material</i>	<i>Beam Material</i> <i>End/Back Wall Material</i>
<input type="radio"/> Cast-in-place	<input type="radio"/> Pre-stressed Girder	<input type="checkbox"/> Metal	<input type="checkbox"/> None <input type="checkbox"/> Concrete
<input type="radio"/> Flat Slab/Box	<input type="radio"/> Steel I-beam	<input type="checkbox"/> Concrete	<input type="checkbox"/> Concrete <input type="checkbox"/> Timber
<input type="radio"/> Truss	<input type="radio"/> Covered	<input type="checkbox"/> Timber	<input type="checkbox"/> Steel <input type="checkbox"/> Stone/Masonry
<input type="radio"/> Parallel Box Beam	<input type="radio"/> Other:	<input type="checkbox"/> Open grid	<input type="checkbox"/> Timber <input type="checkbox"/> Other:
<i>Culvert Type</i>		<i>Culvert Material</i>	
<input type="radio"/> Box	<input type="radio"/> Other Structure	<input checked="" type="checkbox"/> Metal	<input type="radio"/> Yes <input checked="" type="radio"/> No
<input type="radio"/> Pipe/Round		<input type="checkbox"/> Concrete	<input type="radio"/> Unknown
<input type="radio"/> Other:		<input type="checkbox"/> Plastic	<i>Notes:</i>
<input type="radio"/> Other:		<input type="checkbox"/> Stone/Masonry	
<input type="radio"/> Other:		<input type="checkbox"/> Other:	
Crossings Traversed (check all that apply)		Surrounding Habitat (check all that apply)	
<input type="checkbox"/> Bare ground	<input type="checkbox"/> Open vegetation	<input type="checkbox"/> Agricultural	<input type="checkbox"/> Grassland
<input type="checkbox"/> Rip-rap	<input type="checkbox"/> Closed vegetation	<input type="checkbox"/> Commercial	<input type="checkbox"/> Ranching
<input type="checkbox"/> Flowing water	<input type="checkbox"/> Railroad	<input type="checkbox"/> Residential-urban	<input checked="" type="checkbox"/> Riparian/wetland
<input type="checkbox"/> Standing water	<input type="checkbox"/> Road/trail - Type:	<input checked="" type="checkbox"/> Residential-rural	<input type="checkbox"/> Mixed use
<input checked="" type="checkbox"/> Seasonal water	<input type="checkbox"/> Other:	<input checked="" type="checkbox"/> Woodland/forested	<input type="checkbox"/> Other:
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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.			
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<input type="checkbox"/> Concrete surfaces (open roosting on concrete)	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species <input type="checkbox"/> Odor <input type="checkbox"/> Photos <input type="checkbox"/> Staining
<input type="checkbox"/> Spaces between concrete end walls and the bridge deck	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species <input type="checkbox"/> Odor <input type="checkbox"/> Photos <input type="checkbox"/> Staining
<input type="checkbox"/> Crack between concrete railings on top of the bridge deck 	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species <input type="checkbox"/> Odor <input type="checkbox"/> Photos <input type="checkbox"/> Staining
<input type="checkbox"/> Vertical surfaces on concrete I-beams	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species <input type="checkbox"/> Odor <input type="checkbox"/> Photos <input type="checkbox"/> Staining
<input type="checkbox"/> Spaces between walls, ceiling joists	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species <input type="checkbox"/> Odor <input type="checkbox"/> Photos <input type="checkbox"/> Staining
<input type="checkbox"/> Weep holes, scupper drains, and inlets/pipes	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species <input type="checkbox"/> Odor <input type="checkbox"/> Photos <input type="checkbox"/> Staining
<input checked="" type="checkbox"/> All guiderails	<input type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species <input type="checkbox"/> Odor <input type="checkbox"/> Photos <input type="checkbox"/> Staining
<input type="checkbox"/> All expansion joints	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species <input type="checkbox"/> Odor <input type="checkbox"/> Photos <input type="checkbox"/> Staining
Name: Chris Kunkel		Signature: <i>Chris Kunkel</i>	

APPENDIX D: Bridge/Structure Bat Assessment Form

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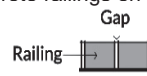
Date & Time of Assessment	DOT Project #	Route/Facility Carried	County
Federal Structure ID	Structure Coordinates (latitude and longitude)	<input type="checkbox"/> This bridge/structure is 1,000 feet or more from suitable bat habitat ² Name: _____ Signature: _____	

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¹ Refer to the USFWS's summer survey guidance for the definition of suitable habitat (<http://www.fws.gov/midwest/endangered/mammals/inba/inbasummersurveyguidance.html>).

² This condition is only for use of the Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat

Bridge/Structure Bat Assessment Form

Date & Time of Assessment 6/22/2020 11:00 AM	DOT Project Number 1600616	Route/Facility Carried SR 156	County Switzerland
Federal Structure ID No structure ID	Structure Coordinates (latitude and longitude) 38.898131, -84.86807	Structure Height (approximate) 2 feet	Structure Length 102 feet
Structure Type (check one)		Structure Material (check all that apply)	
<i>Bridge Construction Style</i>		<i>Deck Material</i>	<i>Beam Material</i> <i>End/Back Wall Material</i>
<input type="radio"/> Cast-in-place 	<input type="radio"/> Pre-stressed Girder 	<input type="checkbox"/> Metal	<input type="checkbox"/> None <input type="checkbox"/> Concrete
<input type="radio"/> Flat Slab/Box 	<input type="radio"/> Steel I-beam 	<input type="checkbox"/> Concrete	<input type="checkbox"/> Concrete <input type="checkbox"/> Timber
<input type="radio"/> Truss 	<input type="radio"/> Covered 	<input type="checkbox"/> Timber	<input type="checkbox"/> Steel <input type="checkbox"/> Stone/Masonry
<input type="radio"/> Parallel Box Beam 	<input type="radio"/> Other:	<input type="checkbox"/> Open grid	<input type="checkbox"/> Timber <input type="checkbox"/> Other:
		<input type="checkbox"/> Other:	Creosote Evidence
<i>Culvert Type</i>		<i>Culvert Material</i>	
<input type="radio"/> Box	<input type="radio"/> Other Structure	<input checked="" type="checkbox"/> Metal	<input type="radio"/> Yes <input type="radio"/> No
<input type="radio"/> Pipe/Round		<input type="checkbox"/> Concrete	<input type="radio"/> Unknown
<input type="radio"/> Other:		<input type="checkbox"/> Plastic	Notes:
		<input type="checkbox"/> Stone/Masonry	
		<input type="checkbox"/> Other:	
Crossings Traversed (check all that apply)		Surrounding Habitat (check all that apply)	
<input type="checkbox"/> Bare ground	<input type="checkbox"/> Open vegetation	<input type="checkbox"/> Agricultural	<input type="checkbox"/> Grassland
<input type="checkbox"/> Rip-rap	<input type="checkbox"/> Closed vegetation	<input type="checkbox"/> Commercial	<input type="checkbox"/> Ranching
<input type="checkbox"/> Flowing water	<input type="checkbox"/> Railroad	<input type="checkbox"/> Residential-urban	<input checked="" type="checkbox"/> Riparian/wetland
<input type="checkbox"/> Standing water	<input type="checkbox"/> Road/trail - Type:	<input checked="" type="checkbox"/> Residential-rural	<input type="checkbox"/> Mixed use
<input checked="" type="checkbox"/> Seasonal water	<input type="checkbox"/> Other:	<input checked="" type="checkbox"/> Woodland/forested	<input type="checkbox"/> 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)	
<input checked="" type="checkbox"/> All crevices and cracks: Bridges/culverts: rough surfaces or imperfections in concrete Other structures: soffits, rafters, attic areas	<input type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Concrete surfaces (open roosting on concrete)	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Spaces between concrete end walls and the bridge deck	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Crack between concrete railings on top of the bridge deck 	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Vertical surfaces on concrete I-beams	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Spaces between walls, ceiling joists	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Weep holes, scupper drains, and inlets/pipes	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input checked="" type="checkbox"/> All guiderails	<input type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> All expansion joints	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
Name: Chris Kunkel		Signature: <i>Chris Kunkel</i>	

APPENDIX D: Bridge/Structure Bat Assessment Form

Bridge/Structure Bat Assessment Form Instructions

- This form will be completed to document bat occupancy or bat use of bridges, culverts, and other structures. This form shall be submitted to the appropriate personnel within the DOT and USFWS for recordkeeping (or uploaded into the Information, Planning, and Consultation (IPaC) Determination Key for use of the Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat) prior to conducting: any activities below the deck surface either from the underside or from above the deck surface that bore down to the underside; any activities that could impact expansion joints; any activities involving deck removal on bridges; or any activities involving structure demolition for bridges, culverts, and/or other structures.
- Assessments must be completed within two (2) years of conducting any work (see the above bullet), regardless of whether assessments have been conducted in the past. Assessments must be completed in appropriate weather conditions, suitable for the assessor to observe common signs of bat use.
- Evidence of bat use may include visual observation (live and/or dead), presence of guano, presence of staining, audible observation, and/or odor observation. Presence of one or more indicators is sufficient evidence that bats may be using the bridge, culvert, and/or other structure.
- If bat use of a bridge, culvert, and/or other structure is noted, additional studies may be undertaken during bat active season to identify the specific bat species utilizing the structure, or protected bat species presence can be assumed, in order to comply with threatened and endangered species regulations. Bat active season dates, typically between April and November, vary regionally and by species, so assessors should consult with their local USFWS Field Office for more specific active season dates.
- For use of the Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat – If the bridge/structure is 1,000 feet or more from suitable bat habitat¹ (e.g., an urban or agricultural area without suitable foraging habitat or corridors linking the bridge to suitable foraging habitat), check the appropriate box and fill out the table below. **No further assessment is required.**

Date & Time of Assessment	DOT Project #	Route/Facility Carried	County
Federal Structure ID	Structure Coordinates (latitude and longitude)	<input type="checkbox"/> This bridge/structure is 1,000 feet or more from suitable bat habitat ² Name: _____ Signature: _____	

- Any questions pertaining to assessments or this form should be directed to the local USFWS Field Office.

¹ Refer to the USFWS's summer survey guidance for the definition of suitable habitat (<http://www.fws.gov/midwest/endangered/mammals/inba/inbasummersurveyguidance.html>).

² This condition is only for use of the Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat

Bridge/Structure Bat Assessment Form

Date & Time of Assessment 6/22/2020 11:00 AM	DOT Project Number 1600616	Route/Facility Carried SR 156	County Switzerland
Federal Structure ID No structure ID	Structure Coordinates (latitude and longitude) 38.898131, -84.86807	Structure Height (approximate) 2 feet	Structure Length 102 feet
Structure Type (check one)		Structure Material (check all that apply)	
<i>Bridge Construction Style</i>		<i>Deck Material</i>	<i>Beam Material</i> <i>End/Back Wall Material</i>
<input type="radio"/> Cast-in-place	<input type="radio"/> Pre-stressed Girder	<input type="checkbox"/> Metal	<input type="checkbox"/> None <input type="checkbox"/> Concrete
<input type="radio"/> Flat Slab/Box	<input type="radio"/> Steel I-beam	<input type="checkbox"/> Concrete	<input type="checkbox"/> Concrete
<input type="radio"/> Truss	<input type="radio"/> Covered	<input type="checkbox"/> Timber	<input type="checkbox"/> Steel
<input type="radio"/> Parallel Box Beam	<input type="radio"/> Other:	<input type="checkbox"/> Open grid	<input type="checkbox"/> Timber
		<input type="checkbox"/> Other:	<input type="checkbox"/> Other:
<i>Culvert Type</i>		<i>Culvert Material</i>	<i>Creosote Evidence</i>
<input type="radio"/> Box	<input type="radio"/> Other Structure	<input checked="" type="checkbox"/> Metal	<input type="radio"/> Yes <input type="radio"/> No
<input type="radio"/> Pipe/Round		<input type="checkbox"/> Concrete	<input type="radio"/> Unknown
<input type="radio"/> Other:		<input type="checkbox"/> Plastic	<i>Notes:</i>
		<input type="checkbox"/> Stone/Masonry	
		<input type="checkbox"/> Other:	
Crossings Traversed (check all that apply)		Surrounding Habitat (check all that apply)	
<input type="checkbox"/> Bare ground	<input type="checkbox"/> Open vegetation	<input type="checkbox"/> Agricultural	<input type="checkbox"/> Grassland
<input type="checkbox"/> Rip-rap	<input type="checkbox"/> Closed vegetation	<input type="checkbox"/> Commercial	<input type="checkbox"/> Ranching
<input type="checkbox"/> Flowing water	<input type="checkbox"/> Railroad	<input type="checkbox"/> Residential-urban	<input checked="" type="checkbox"/> Riparian/wetland
<input type="checkbox"/> Standing water	<input type="checkbox"/> Road/trail - Type:	<input checked="" type="checkbox"/> Residential-rural	<input type="checkbox"/> Mixed use
<input checked="" type="checkbox"/> Seasonal water	<input type="checkbox"/> Other:	<input checked="" type="checkbox"/> Woodland/forested	<input type="checkbox"/> 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)	
<input checked="" type="checkbox"/> All crevices and cracks: Bridges/culverts: rough surfaces or imperfections in concrete Other structures: soffits, rafters, attic areas	<input type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Concrete surfaces (open roosting on concrete)	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Spaces between concrete end walls and the bridge deck	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Crack between concrete railings on top of the bridge deck 	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Vertical surfaces on concrete I-beams	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Spaces between walls, ceiling joists	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Weep holes, scupper drains, and inlets/pipes	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input checked="" type="checkbox"/> All guiderails	<input type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> All expansion joints	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
Name: Chris Kunkel		Signature: <i>Chris Kunkel</i>	

APPENDIX D: Bridge/Structure Bat Assessment Form

Bridge/Structure Bat Assessment Form Instructions

- This form will be completed to document bat occupancy or bat use of bridges, culverts, and other structures. This form shall be submitted to the appropriate personnel within the DOT and USFWS for recordkeeping (or uploaded into the Information, Planning, and Consultation (IPaC) Determination Key for use of the Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat) prior to conducting: any activities below the deck surface either from the underside or from above the deck surface that bore down to the underside; any activities that could impact expansion joints; any activities involving deck removal on bridges; or any activities involving structure demolition for bridges, culverts, and/or other structures.
- Assessments must be completed within two (2) years of conducting any work (see the above bullet), regardless of whether assessments have been conducted in the past. Assessments must be completed in appropriate weather conditions, suitable for the assessor to observe common signs of bat use.
- Evidence of bat use may include visual observation (live and/or dead), presence of guano, presence of staining, audible observation, and/or odor observation. Presence of one or more indicators is sufficient evidence that bats may be using the bridge, culvert, and/or other structure.
- If bat use of a bridge, culvert, and/or other structure is noted, additional studies may be undertaken during bat active season to identify the specific bat species utilizing the structure, or protected bat species presence can be assumed, in order to comply with threatened and endangered species regulations. Bat active season dates, typically between April and November, vary regionally and by species, so assessors should consult with their local USFWS Field Office for more specific active season dates.
- For use of the Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat – If the bridge/structure is 1,000 feet or more from suitable bat habitat¹ (e.g., an urban or agricultural area without suitable foraging habitat or corridors linking the bridge to suitable foraging habitat), check the appropriate box and fill out the table below. **No further assessment is required.**

Date & Time of Assessment	DOT Project #	Route/Facility Carried	County
Federal Structure ID	Structure Coordinates (latitude and longitude)	<input type="checkbox"/> This bridge/structure is 1,000 feet or more from suitable bat habitat ² Name: _____ Signature: _____	

- Any questions pertaining to assessments or this form should be directed to the local USFWS Field Office.

¹ Refer to the USFWS's summer survey guidance for the definition of suitable habitat (<http://www.fws.gov/midwest/endangered/mammals/inba/inbasummersurveyguidance.html>).

² This condition is only for use of the Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat

Bridge/Structure Bat Assessment Form

Date & Time of Assessment 6/22/2020 11:00 AM	DOT Project Number 1600616	Route/Facility Carried SR 156	County Switzerland
Federal Structure ID No structure ID	Structure Coordinates (latitude and longitude) 38.898131, -84.86807	Structure Height (approximate) 2 feet	Structure Length 102 feet
Structure Type (check one)		Structure Material (check all that apply)	
<i>Bridge Construction Style</i>		<i>Deck Material</i>	<i>Beam Material</i> <i>End/Back Wall Material</i>
<input type="radio"/> Cast-in-place	<input type="radio"/> Pre-stressed Girder	<input type="checkbox"/> Metal	<input type="checkbox"/> None <input type="checkbox"/> Concrete
<input type="radio"/> Flat Slab/Box	<input type="radio"/> Steel I-beam	<input type="checkbox"/> Concrete	<input type="checkbox"/> Concrete
<input type="radio"/> Truss	<input type="radio"/> Covered	<input type="checkbox"/> Timber	<input type="checkbox"/> Steel
<input type="radio"/> Parallel Box Beam	<input type="radio"/> Other:	<input type="checkbox"/> Open grid	<input type="checkbox"/> Timber
		<input type="checkbox"/> Other:	<input type="checkbox"/> Other:
<i>Culvert Type</i>	<i>Other Structure</i>	<i>Culvert Material</i>	<i>Creosote Evidence</i>
<input type="radio"/> Box	<input type="radio"/>	<input checked="" type="checkbox"/> Metal	<input type="radio"/> Yes <input type="radio"/> No
<input type="radio"/> Pipe/Round	<input type="radio"/>	<input type="checkbox"/> Concrete	<input type="radio"/> Unknown
<input type="radio"/> Other:	<input type="radio"/>	<input type="checkbox"/> Plastic	<i>Notes:</i>
		<input type="checkbox"/> Stone/Masonry	
		<input type="checkbox"/> Other:	
Crossings Traversed (check all that apply)		Surrounding Habitat (check all that apply)	
<input type="checkbox"/> Bare ground	<input type="checkbox"/> Open vegetation	<input type="checkbox"/> Agricultural	<input type="checkbox"/> Grassland
<input type="checkbox"/> Rip-rap	<input type="checkbox"/> Closed vegetation	<input type="checkbox"/> Commercial	<input type="checkbox"/> Ranching
<input type="checkbox"/> Flowing water	<input type="checkbox"/> Railroad	<input type="checkbox"/> Residential-urban	<input checked="" type="checkbox"/> Riparian/wetland
<input type="checkbox"/> Standing water	<input type="checkbox"/> Road/trail - Type:	<input checked="" type="checkbox"/> Residential-rural	<input type="checkbox"/> Mixed use
<input checked="" type="checkbox"/> Seasonal water	<input type="checkbox"/> Other:	<input checked="" type="checkbox"/> Woodland/forested	<input type="checkbox"/> 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)	
<input checked="" type="checkbox"/> All crevices and cracks: Bridges/culverts: rough surfaces or imperfections in concrete Other structures: soffits, rafters, attic areas	<input type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Concrete surfaces (open roosting on concrete)	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Spaces between concrete end walls and the bridge deck	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Crack between concrete railings on top of the bridge deck 	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Vertical surfaces on concrete I-beams	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Spaces between walls, ceiling joists	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Weep holes, scupper drains, and inlets/pipes	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input checked="" type="checkbox"/> All guiderails	<input type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> All expansion joints	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
Name: Chris Kunkel		Signature: <i>Chris Kunkel</i>	

APPENDIX D: Bridge/Structure Bat Assessment Form

Bridge/Structure Bat Assessment Form Instructions

- This form will be completed to document bat occupancy or bat use of bridges, culverts, and other structures. This form shall be submitted to the appropriate personnel within the DOT and USFWS for recordkeeping (or uploaded into the Information, Planning, and Consultation (IPaC) Determination Key for use of the Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat) prior to conducting: any activities below the deck surface either from the underside or from above the deck surface that bore down to the underside; any activities that could impact expansion joints; any activities involving deck removal on bridges; or any activities involving structure demolition for bridges, culverts, and/or other structures.
- Assessments must be completed within two (2) years of conducting any work (see the above bullet), regardless of whether assessments have been conducted in the past. Assessments must be completed in appropriate weather conditions, suitable for the assessor to observe common signs of bat use.
- Evidence of bat use may include visual observation (live and/or dead), presence of guano, presence of staining, audible observation, and/or odor observation. Presence of one or more indicators is sufficient evidence that bats may be using the bridge, culvert, and/or other structure.
- If bat use of a bridge, culvert, and/or other structure is noted, additional studies may be undertaken during bat active season to identify the specific bat species utilizing the structure, or protected bat species presence can be assumed, in order to comply with threatened and endangered species regulations. Bat active season dates, typically between April and November, vary regionally and by species, so assessors should consult with their local USFWS Field Office for more specific active season dates.
- For use of the Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat – If the bridge/structure is 1,000 feet or more from suitable bat habitat¹ (e.g., an urban or agricultural area without suitable foraging habitat or corridors linking the bridge to suitable foraging habitat), check the appropriate box and fill out the table below. **No further assessment is required.**

Date & Time of Assessment	DOT Project #	Route/Facility Carried	County
Federal Structure ID	Structure Coordinates (latitude and longitude)	<input type="checkbox"/> This bridge/structure is 1,000 feet or more from suitable bat habitat ² Name: _____ Signature: _____	

- Any questions pertaining to assessments or this form should be directed to the local USFWS Field Office.

¹ Refer to the USFWS's summer survey guidance for the definition of suitable habitat (<http://www.fws.gov/midwest/endangered/mammals/inba/inbasummersurveyguidance.html>).

² This condition is only for use of the Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat

Bridge/Structure Bat Assessment Form

Date & Time of Assessment 6/22/2020 11:00 AM	DOT Project Number 1600616	Route/Facility Carried SR 156	County Switzerland
Federal Structure ID No structure ID	Structure Coordinates (latitude and longitude) 38.898131, -84.86807	Structure Height (approximate) 2 feet	Structure Length 102 feet
Structure Type (check one)		Structure Material (check all that apply)	
<i>Bridge Construction Style</i>		<i>Deck Material</i>	<i>Beam Material</i> <i>End/Back Wall Material</i>
<input type="radio"/> Cast-in-place	<input type="radio"/> Pre-stressed Girder	<input type="checkbox"/> Metal	<input type="checkbox"/> None <input type="checkbox"/> Concrete
<input type="radio"/> Flat Slab/Box	<input type="radio"/> Steel I-beam	<input type="checkbox"/> Concrete	<input type="checkbox"/> Concrete
<input type="radio"/> Truss	<input type="radio"/> Covered	<input type="checkbox"/> Timber	<input type="checkbox"/> Steel
<input type="radio"/> Parallel Box Beam	<input type="radio"/> Other:	<input type="checkbox"/> Open grid	<input type="checkbox"/> Timber
		<input type="checkbox"/> Other:	<input type="checkbox"/> Other:
<i>Culvert Type</i>		<i>Culvert Material</i>	<i>Creosote Evidence</i>
<input type="radio"/> Box	<input type="radio"/> Other Structure	<input checked="" type="checkbox"/> Metal	<input type="radio"/> Yes <input type="radio"/> No
<input type="radio"/> Pipe/Round		<input type="checkbox"/> Concrete	<input type="radio"/> Unknown
<input type="radio"/> Other:		<input type="checkbox"/> Plastic	<i>Notes:</i>
		<input type="checkbox"/> Stone/Masonry	
		<input type="checkbox"/> Other:	
Crossings Traversed (check all that apply)		Surrounding Habitat (check all that apply)	
<input type="checkbox"/> Bare ground	<input type="checkbox"/> Open vegetation	<input type="checkbox"/> Agricultural	<input type="checkbox"/> Grassland
<input type="checkbox"/> Rip-rap	<input type="checkbox"/> Closed vegetation	<input type="checkbox"/> Commercial	<input type="checkbox"/> Ranching
<input type="checkbox"/> Flowing water	<input type="checkbox"/> Railroad	<input type="checkbox"/> Residential-urban	<input checked="" type="checkbox"/> Riparian/wetland
<input type="checkbox"/> Standing water	<input type="checkbox"/> Road/trail - Type:	<input checked="" type="checkbox"/> Residential-rural	<input type="checkbox"/> Mixed use
<input checked="" type="checkbox"/> Seasonal water	<input type="checkbox"/> Other:	<input checked="" type="checkbox"/> Woodland/forested	<input type="checkbox"/> 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)	
<input checked="" type="checkbox"/> All crevices and cracks: Bridges/culverts: rough surfaces or imperfections in concrete Other structures: soffits, rafters, attic areas	<input type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Concrete surfaces (open roosting on concrete)	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Spaces between concrete end walls and the bridge deck	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Crack between concrete railings on top of the bridge deck 	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Vertical surfaces on concrete I-beams	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Spaces between walls, ceiling joists	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> Weep holes, scupper drains, and inlets/pipes	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input checked="" type="checkbox"/> All guiderails	<input type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
<input type="checkbox"/> All expansion joints	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species
		<input type="checkbox"/> Guano	<input type="checkbox"/> Odor
		<input type="checkbox"/> Staining	<input type="checkbox"/> Photos
Name: Chris Kunkel		Signature: <i>Chris Kunkel</i>	

Categorical Exclusion

Appendix D

**Section 106 of the National Historic
Preservation Act (NHPA)**

Minor Projects PA Project Assessment Form

Date: 11/23/2020

Project Designation Number: 1600616

Route Number: SR 156

Project Description: Slide Correction, 1.5 to 1.7 miles west of the east junction of the SR 56/156 intersection

The proposed project will evaluate alternatives to construct a slide correction along approximately 846 feet of SR 156. This project is being proposed for completion under a design/build process rather than a design/bid/build process. The difference between these two is that with design/bid/build the engineering is finalized prior to the award of construction contract while a design/build project allows a contractor to bid on a project with the responsibility to complete the engineering design themselves.

The focus of the project at this stage is to define an acceptable range of activities from which the contractor may choose and advance to final design and construction. The most likely alternative for this slide is installing drilled piers and lagging walls with tiebacks; however, additional alternatives include a tangent pile, soil nailed wall, or riprap embankment. Additional work will include guardrail construction, culvert replacement, roadside ditch grading, and pavement construction to correct profile deficiencies due to the slide.

No bridges are associated with the project. Per an Lochmueller Group email received by INDOT CRO on September 25, 2020, a total of six (6) CMPs will be replaced as part of the project. Two (2) are existing 24-inch CMPs that will be replaced by 36-inch circular pipes. The remaining four (4) CMPs include three (3) located under private driveways and one (1) CMP that runs beneath SR 156. The proposed typical section of SR 156 will consist of two (2) 11-foot travel lanes accompanied by a two-(2) foot earth shoulder along the westbound lane and a four- (4) foot paved shoulder along the eastbound shoulder with guardrail. The proposed guardrail will be the length of the slide and connect to existing guardrail at the end of the wall. The elevation and lengths of tiebacks, walls, etc. will vary based on the final plans.

It is anticipated that 0.8 acre of permanent right-of-way will be needed for this project.

Feature crossed (if applicable): N/A

City/Township: Posey Township

County: Switzerland 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

Minor Projects PA Project Assessment Form

Other (please specify): Switzerland County property records, accessed at <https://switzerlandin.wthgis.com/>;
Project information provided by Lochmueller Group, dated August 18, 2020 (on file at INDOT-CRO)/

Copenhaver, Megan and Sydney Heidenreich

2020 Phase Ia Archaeological Survey for the SR 156 Slide Correction Project, 0.5 mile south east of Evans Hill Road/SR 156 East Junction, Des. No. 1600616, Posey Township, Switzerland County, Indiana. Project 19-0154-2, Metric Environmental, Indianapolis.

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

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

B-4. Installation of new safety appurtenances, including but not limited to, guardrails, barriers, glare screens, and crash attenuators, 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)

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

B-10. Slide corrections, slope repairs, and other erosion control measures, in undisturbed soils under the conditions listed below [***BOTH Condition A, which pertains to Archaeological Resources, and Condition B, which pertains to Above-Ground Resources, must be satisfied***]:

Condition A (Archaeological Resources)

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 reports 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.

Minor Projects PA Project Assessment Form

Condition B (Above-Ground Resources)

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

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 met 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 Switzerland County. No listed resources are present within 0.15 mile of the project area, a distance that would serve as an adequate area of potential effects (APE) given the scope of the project and the surrounding terrain.

The *Switzerland County Interim Report* (1979/2006; Posey Township) of the Indiana Historic Sites and Structures Inventory (IHSSI) was 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 (IHBBC) map. The SHAARD information was checked against the interim report hard-copy maps. The following Switzerland County IHSSI resource was recorded within 0.15 mile of the project: **1) #155-540-00003** (SR 156 Bridge over Grant's Creek; c.-1950; rated 'contributing'). This is INDOT Bridge No. 156-78-03120B/NBI No. 27850. The western end of **#155-540-00003**/Bridge No. 156-78-03120B/NBI No. 27850 is located approximately 0.08 mile east of the project's eastern terminus. It is not included in the scope of work for Des. No. 1600616. No other surveyed resources were recorded within 0.15 mile of the project location.

According to the IHSSI rating system, generally properties rated "contributing" do not possess the level of historical or architectural significance necessary to be considered individually National Register eligible, although they would contribute to a historic district. If they retain material integrity, properties rated "notable" might possess the necessary level of significance after further research. Properties rated "outstanding" usually possess the necessary level of significance to be considered National Register eligible if they retain material integrity. Historic districts identified in the IHSSI are usually considered eligible for the National Register.

Land surrounding the project area is rural. Adjacent hillsides and the nearby banks of the Ohio River are heavily wooded; area topography is rolling. Based on Switzerland County property records, as well available online street-view imagery and aerial photography, one (1) above-ground resource near the project location is or will be 50 years of age by the time of the proposed 2022 project letting: **1) Bungalow; 16897 N. SR 156.** The Switzerland County property record for this resource notes that was constructed c.-1950; however, that date could be incorrect. A more likely date for the concrete-block building's construction would be c.-1925-1935. A modern pole barn also sits on the property. If surveyed in 2020, the resource would merit an IHSSI rating of 'contributing.' It is set back from the SR 156 roadway in dense woods atop a hill near the project's eastern terminus. Views from the property toward the project location are blocked by the surrounding dense woods. In consideration of this fact and for the purposes of this determination, the resource is not considered to be adjacent.

Other above-ground resources in and near the project location are comprised of manufactured housing dating from the late 20th century/early 21st century. None of these resources would receive an IHSSI rating of 'contributing' in 2020; there is no evidence that any of these properties possess the material integrity or cultural significance to be considered potentially eligible to the National Register.

Minor Projects PA Project Assessment Form

All six (6) of the previously referenced CMPs scheduled for replacement are functionally classified as pipes due to their respective small circumferences. As pipes, they are not included in BIAS and do not have structure numbers. The ages of the CMPs are also not known. The Lochmueller Group project engineer provided the identification numbers seen on the project plans for the CMPs: They are as follows: **1)** Structure No. 11 (24" pipe diameter; 64-feet in length); conveys ditch drainage; **2)** Structure No. 12 (30" pipe diameter; 88 feet in length; under SR 156; **3)** Structure 13 (34" pipe diameter; 69 feet in length); conveys drainage ditch; **4)** Structure 14 (30" pipe diameter; 66 feet in length; under SR 156; **5)** Structure 15 (24" pipe diameter; 62 feet in length); **6)** Structure No. 16 (30" (clay) pipe diameter; 65 feet in length; under SR 156).

Examination of photographs provided by Lochmueller Group show that five (5) of the six (6) CMP structures do not exhibit any wood, stone, or brick structures or parts therein, nor do they appear to possess any historical or engineering significance.

Structure No. 15 (24" pipe diameter; 62 feet in length) conveys ditch drainage beneath a private driveway (16765 SR 156); unlike the other five (5) CMPs, Structure No. 15 features dry-laid stone headwalls. As stated previously, the dates of construction for the six (6) CMPs are not known; therefore, it is not known whether (or when) the dry-laid stone headwalls were constructed by the homeowner, or were instead constructed as part of a previous INDOT/Indiana State Highway Commission (ISHC) roadway project.

Online property records show that the residence at 16765 SR 156 was constructed c.-1970; the provided image is of a modified manufactured home. This resource is one of the referenced examples in the project area of manufactured housing (noted in a previous paragraph) dating from the late 20th century/early 21st century. The resource at 16765 SR 156 would not receive an IHSSI survey rating of 'contributing' in 2020. In consideration of this fact, the dry-laid stone headwalls of CMP/Structure No. 15 would not be considered contributing elements to a property that meets the requisite age and or significance requirements for NR-eligibility assessment.

If the dry-laid stone headwalls were instead constructed by a previous INDOT/ISHC project, it should be noted that pipe culverts with stone headwalls are fairly common throughout Indiana.¹ In addition, the construction of stone headwalls for pipe culverts 15 inches in diameter or more was a standard practice for INDOT/ISHC culvert projects in the early-twentieth century.¹ Given this fact, the culvert does not appear to possess the necessary engineering significance to be considered eligible for the National Register.

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

Archaeological Resources

An INDOT-CRO archaeologist who meets the Secretary of the Interior's Professional Qualification Standards as per 36 CFR Part 61 reviewed and approved the archaeology report prepared for this small structure replacement by Metric Environmental (Copenhaver and Heidenreich 2020). The records check determined that the project area had not been previously examined for archaeological resources and that no sites were recorded within or adjacent to it. A 5.2-acre survey area was investigated through visual inspection of disturbed soils, soil coring to confirm disturbance, and the excavation of 12 shovel probes. No sites were identified and no further work was recommended. 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 earth moving 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.

¹ "Plan and Profile of Proposed State Highway Project No. 562 Sec. C (1936)-SR 119-," (Indiana State Highway Commission (ISHC) project plans, 1936; internal document), Sheet 1.

Minor Projects PA Project Assessment Form

INDOT Cultural Resources staff reviewer(s): Susan Branigin and Matt Coon

****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.*

Categorical Exclusion

Appendix E

**Red Flag Investigation
& Hazardous Materials**



INDIANA DEPARTMENT OF TRANSPORTATION

Driving Indiana's Economic Growth

100 North Senate Avenue
Room N642
Indianapolis, Indiana 46204-2216 (317) 232-5348 FAX: (317) 233-4929

Eric Holcomb, Governor
Joe McGuinness, Commissioner

Date: January 3, 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: Angela Kattmann
Lochmueller Group, Inc.
3502 Woodview Trace, Suite 150
Indianapolis, IN 46234
AKattmann@lochgroup.com

Re: RED FLAG INVESTIGATION
DES 1600616, State Project
Slide Correction Project
SR 156, 1.5 miles west of SR 56/SR 156 East Junction
Switzerland County, Indiana

PROJECT DESCRIPTION

Brief Description of Project: The Federal Highway Administration (FHWA) and the Indiana Department of Transportation (INDOT) plan to proceed with a slide correction project along SR 156, 1.5 miles west of SR 56/SR 156 East Junction. The project is located in Rising Sun Township in Switzerland County. Specifically, it is located in Section 27 in Township 3 North, Range 1 West as shown on the USGS 7.5' Rising Sun, Indiana Topographic Quadrangle.

Continuous landslides in this area over several years have caused the pavement to deteriorate and fail. The purpose of this project is to correct the slope failure and improve travel safety through the area. The proposed project will construct a slide correction along 900 feet of SR 156. Different alternatives are being reviewed for the proposed project: a drilled pier wall with tiebacks, a soil nailed wall, and riprap embankment construction. Additional work will include guardrail construction, culvert replacement, roadside ditch grading, and pavement construction to correct any profile deficiencies due to the slide.

Bridge and/or Culvert Project: Yes No Structure # Unnamed culvert will be replaced

If this is a bridge project, is the bridge Historical? Yes No , Select Non-Select

Proposed right of way: Temporary # Acres TBD Permanent # Acres

Existing right of way is anticipated to be adequate for construction. Temporary right of way may be needed for grading purposes. Additional details will be made available as project plans develop.

Type of excavation: Excavation will occur at a maximum of 20 feet deep for the drilled pier wall alternative. Minor excavation will also occur in association with the guardrail construction, culvert replacement, roadside ditch grading, and pavement construction.

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Maintenance of traffic: This project will require full road closure and a detour.

Work in waterway: Yes No Above ordinary high water mark: Yes No

State Project: LPA:

Any other factors influencing recommendations: N/A

INFRASTRUCTURE TABLE AND SUMMARY

Infrastructure			
Indicate the number of items of concern found within the 0.5 mile search radius. If there are no items, please indicate N/A:			
Religious Facilities	N/A	Recreational Facilities	N/A
Airports ¹	N/A	Pipelines	N/A
Cemeteries	2	Railroads	N/A
Hospitals	N/A	Trails	N/A
Schools	N/A	Managed Lands	N/A

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

Explanation:

Cemeteries: Two (2) cemeteries are located within the 0.5 mile search radius. The nearest cemetery, North Cemetery, is located 0.39 miles northwest 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	2	Canal Routes - Historic	N/A
Karst Springs	N/A	NWI - Wetlands	10
Canal Structures – Historic	N/A	Lakes	3
NPS NRI Listed	N/A	Floodplain - DFIRM	5
NWI-Lines	1	Cave Entrance Density	N/A
IDEM 303d Listed Streams and Lakes (Impaired)	2	Sinkhole Areas	N/A
Rivers and Streams	13	Sinking-Stream Basins	N/A

Explanation:

NWI-Points: Two (2) NWI-Points are located within the 0.5 mile search radius. The nearest NWI-Point is located 0.12 miles southwest of the project area. No impact is expected.

NWI-Lines: One (1) NWI-Line is located within the 0.5 mile search radius. The NWI-line is located 0.32 miles southeast of the project area. No impact is expected.

IDEM 303d Listed Streams and Lakes: Two (2) impaired stream segments are located within the 0.5 mile search radius. Both stream segments represent the Ohio River. The Ohio River is mapped 0.17 miles northeast of the project area, but the edge of the Ohio River is located 0.01 miles east of the project area. According to the IDEM e303d mapper, the

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Ohio River is listed for PCBs in fish tissue and PCBs and dioxin in water. This project will not require work below the ordinary high water mark of the Ohio River. Exposure to PCBs and dioxin in fish tissue is considered low, assuming workers are not eating biota surrounding or associated with the water body.

Rivers and Streams: Thirteen (13) river and stream segments are located within the 0.5 mile search radius. As previously stated, the Ohio River is located 0.01 miles east of the project area. A Waters of the US Report will be prepared and coordination with INDOT ES Ecology and Permitting will occur.

NWI – Wetlands: Ten (10) wetlands are located within the 0.5 mile search radius. The nearest wetland is located 0.02 miles east of the project area. A Waters of the US Report will be prepared and coordination with INDOT ES Ecology and Permitting will occur:

Lakes: Three (3) lakes (ponds) are located within the 0.5 mile search radius. The nearest pond is located 0.14 miles south of the project area. No impact is expected.

Floodplain – DFIRM: Five (5) floodplains are located within the 0.5 mile search radius. The project area is located within one floodplain. Coordination with INDOT ES Ecology and Permitting will occur.

URBANIZED AREA BOUNDARY SUMMARY

Explanation:

The proposed project is not located within an urbanized area boundary.

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

Explanation:

There are no mapped Mining and Mineral Exploration features mapped within the 0.5 mile search radius.

HAZARDOUS MATERIAL CONCERNS TABLE AND SUMMARY

Hazardous Material Concerns			
Indicate the number of items of concern found within the 0.5 mile search radius. If there are no items, please indicate N/A:			
Superfund	N/A	Manufactured Gas Plant Sites	N/A
RCRA Generator/ TSD	N/A	Open Dump Waste Sites	N/A
RCRA Corrective Action Sites	N/A	Restricted Waste Sites	N/A
State Cleanup Sites	N/A	Waste Transfer Stations	N/A
Septage Waste Sites	N/A	Tire Waste Sites	N/A
Underground Storage Tank (UST) Sites	N/A	Confined Feeding Operations (CFO)	N/A

Voluntary Remediation Program	N/A	Brownfields	N/A
Construction Demolition Waste	N/A	Institutional Controls	N/A
Solid Waste Landfill	N/A	NPDES Facilities	1
Infectious/Medical Waste Sites	N/A	NPDES Pipe Locations	N/A
Leaking Underground Storage (LUST) Sites	N/A	Notice of Contamination Sites	N/A

Explanation:

NPDES Facilities: One (1) NPDES Facility is located within the 0.5 mile radius. The NPDES facility is mapped 0.39 mile northwest of the project area, but is mapped in the incorrect location. The NPDES facility is located in Dearborn County and therefore will not impact this project.

ECOLOGICAL INFORMATION SUMMARY

The Switzerland 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 U.S. Fish and Wildlife Service (USFWS) database did indicate the presence of endangered species within the 0.5 mile search radius. Coordination with the Indiana Department of Natural Resources (IDNR), Division of Fish and Wildlife and USFWS will occur.

A review of the USFWS database did not indicate the presence of endangered bat species in or within 0.5 mile of the project area. The range-wide programmatic information consultation for the Indiana bat and Northern Long-Eared bat will be completed according to “Using the USFWS’s IPaC System for Listed Bat Consultation for INDOT Projects”.

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

RECOMMENDATIONS SECTION

INFRASTRUCTURE: N/A

WATER RESOURCES: One (1) impaired river, the Ohio River, is located 0.01 mile east of the project area and is listed as impaired for PCBs in fish tissue and PCBs and dioxin in water. Exposure to PCBs and dioxin in fish tissue is considered low, assuming workers are not eating biota surrounding or associated with the water body.

The presence of the following water resources will require the preparation of a Waters of the US Report and coordination with INDOT ES Ecology and Waterway Permitting Section:

- One (1) stream, the Ohio River, is located 0.01 mile east the project area.
- One (1) wetland is located 0.02 the project area.
- The project area is located within a floodplain (coordination only).

URBANIZED AREA BOUNDARY: N/A

MINING/MINERAL EXPLORATION: N/A

HAZMAT CONCERNS: N/A

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

INDOT Environmental Services concurrence:

Nicole Fohey-
Breting

Digitally signed by Nicole Fohey-Breting
DN: cn=Nicole Fohey-Breting, o=INDOT,
ou=Environmental Services, HazMat,
email=NFoheyBreting@indot.in.gov, c=US
Date: 2019.01.04 08:47:48 -05'00'

(Signature)

Prepared by:



Angela Kattmann
Environmental Geologist, LPG
Lochmueller Group, Inc.

Graphics:

SITE LOCATION: YES

INFRASTRUCTURE: YES

WATER RESOURCES: YES

URBANIZED AREA BOUNDARY: N/A

MINING/MINERAL EXPLORATION: N/A

HAZMAT CONCERNS: YES

Supplemental Graphics:

SWITZERLAND COUNTY ETR SPECIES LIST

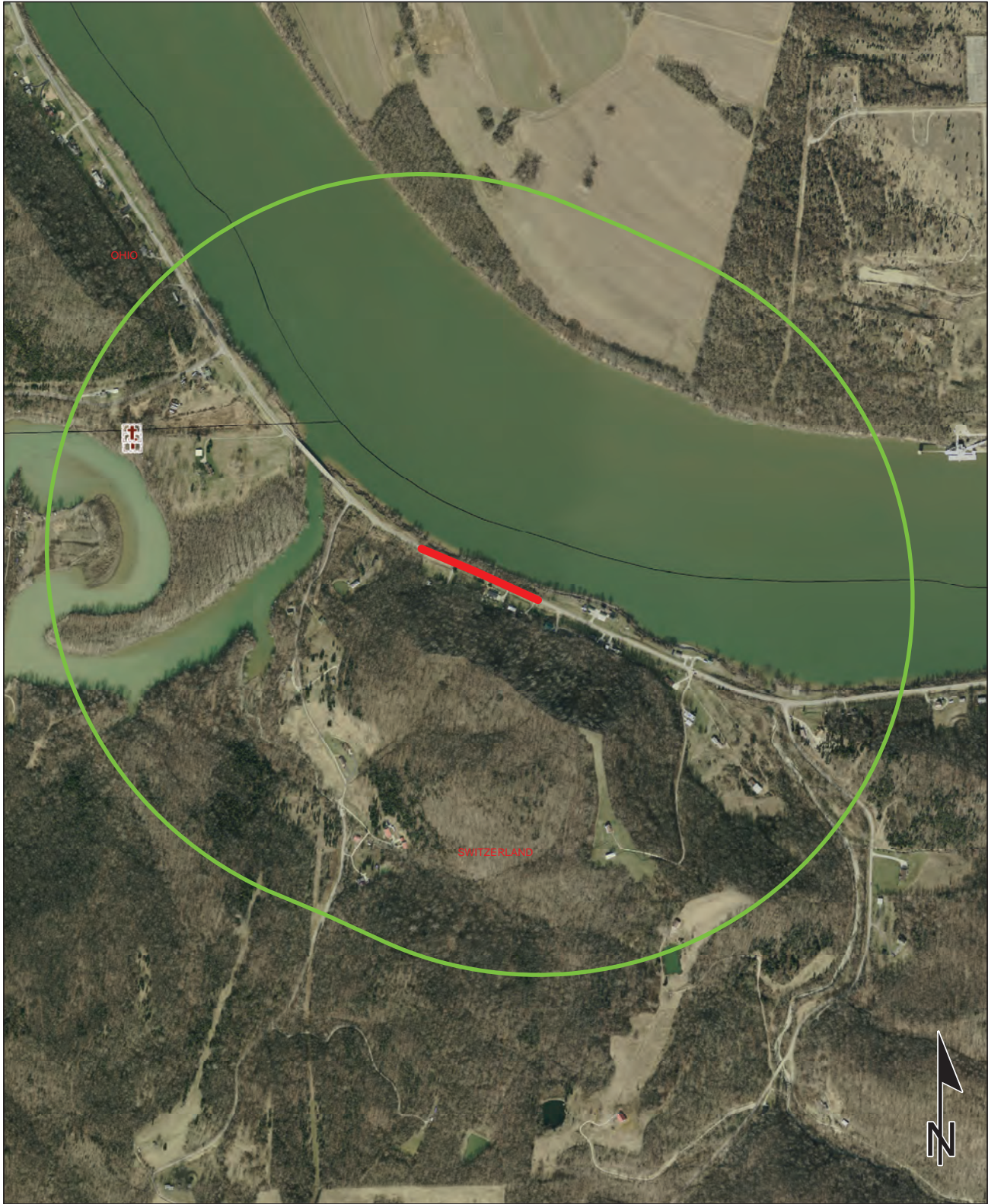
Red Flag Investigation - Site Location
 SR 156, 1.5 miles west of SR 56/SR 156 East Junction
 Des. No. 1600616, Slide Correction Project
 Switzerland County, Indiana



Sources: 0.5 0.25 0 0.5 Miles
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.

**RISING SUN QUADRANGLE
 INDIANA
 7.5 MINUTE SERIES
 (TOPOGRAPHIC)**

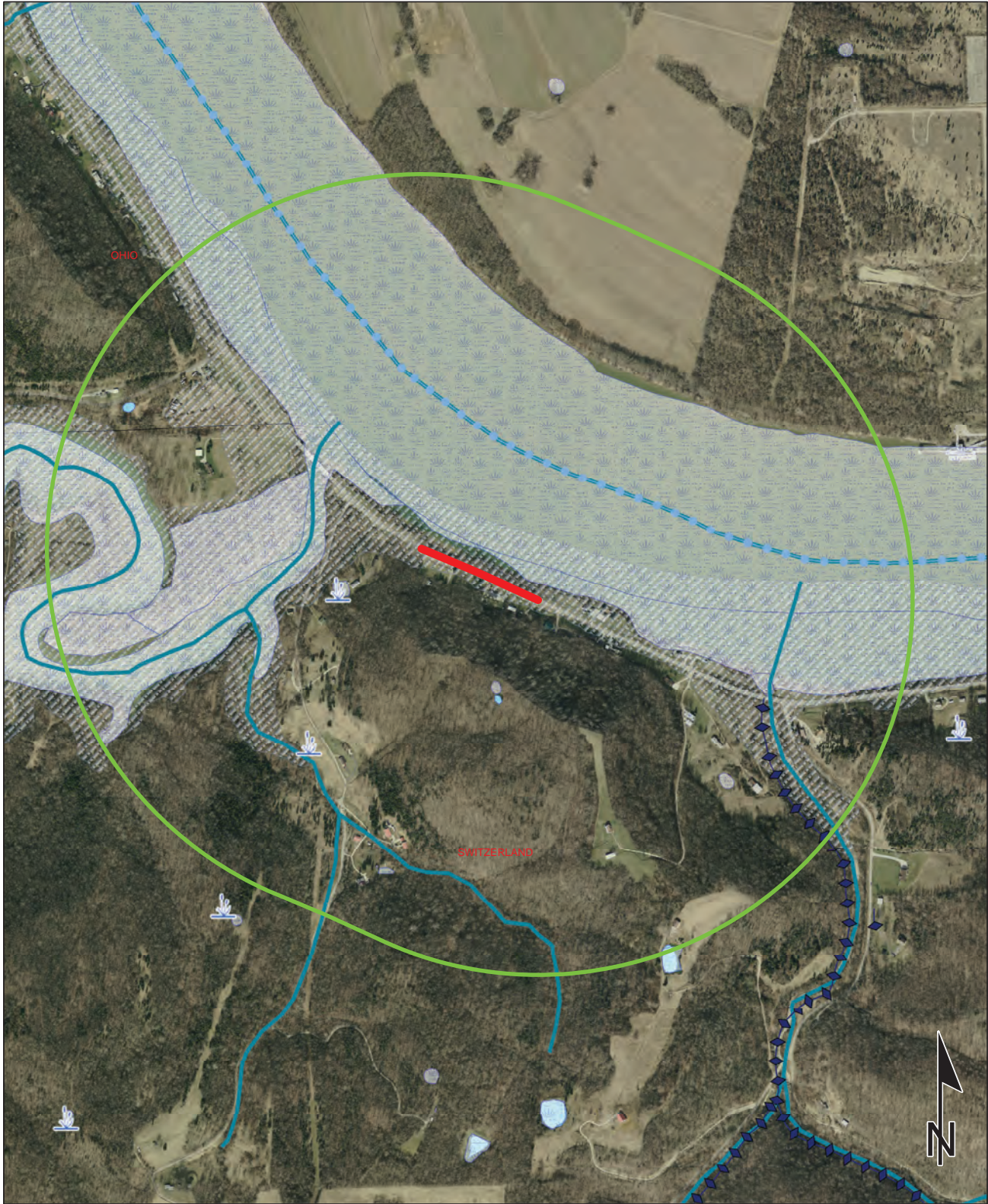
Red Flag Investigation - Infrastructure
 SR 156, 1.5 miles west of SR 56/SR 156 East Junction
 Des. No. 1600616, Slide Correction Project
 Switzerland County, Indiana



Sources: 0.15 0.075 0 0.15 Miles
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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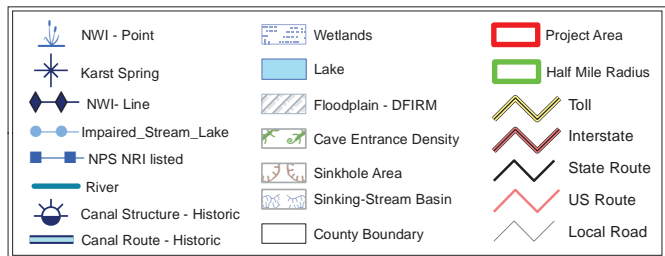
	Religious Facility		Recreation Facility		Project Area
	Airport		Pipeline		Half Mile Radius
	Cemeteries		Railroad		Toll
	Hospital		Trails		Interstate
	School		Managed Lands		State Route
			County Boundary		US Route
					Local Road

Red Flag Investigation - Water Resources
 SR 156, 1.5 miles west of SR 56/SR 156 East Junction
 Des. No. 1600616, Slide Correction Project
 Switzerland County, Indiana



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

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



Red Flag Investigation - Hazardous Material Concerns
 SR 156, 1.5 miles west of SR 56/SR 156 East Junction
 Des. No. 1600616, Slide Correction Project
 Switzerland County, Indiana



	Brownfield		RCRA Generator/TSD		Institutional Controls
	RCRA Corrective Action Sites		Restricted Waste Site		County Boundary
	Confined Feeding Operation		Septage Waste Site		Project Area
	Notice_of_Contamination		Solid Waste Landfill		Half Mile Radius
	Construction/Demolition Site		State Cleanup Site		Toll
	Infectious/Medical Waste Site		Superfund		Interstate
	Leaking Underground Storage Tank		Tire Waste Site		State Route
	Manufactured Gas Plant		Underground Storage Tank		US Route
	NPDES Facilities		Voluntary Remediation Program		Local Road
	NPDES Pipe Locations		Waste Transfer Station		
	Open Dump Waste Site				



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

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

Indiana County Endangered, Threatened and Rare Species List

County: Switzerland

Species Name	Common Name	FED	STATE	GRANK	SRANK
Mollusk: Bivalvia (Mussels)					
Ligumia recta	Black Sandshell			G4G5	S2
Plethobasus cyphus	Sheepnose	LE	SE	G3	S1
Pleurobema cordatum	Ohio Pigtoe		SSC	G4	S2
Insect: Odonata (Dragonflies & Damselflies)					
Stylurus notatus	Elusive Clubtail		SE	G3	S1
Amphibian					
Cryptobranchus alleganiensis alleganiensis	Eastern Hellbender	C	SE	G3G4T3T4	S1
Bird					
Ammodramus henslowii	Henslow's Sparrow		SE	G4	S3B
Buteo platypterus	Broad-winged Hawk		SSC	G5	S3B
Circus hudsonius	Northern Harrier		SE	G5	S2
Falco peregrinus	Peregrine Falcon		SSC	G4	S2B
Haliaeetus leucocephalus	Bald Eagle		SSC	G5	S2
Helmitheros vermivorus	Worm-eating Warbler		SSC	G5	S3B
Tyto alba	Barn Owl		SE	G5	S2
Vascular Plant					
Azolla caroliniana	Carolina Mosquito-fern		ST	G5	S2
Baptisia australis	Wild False Indigo		SR	G5	S2
Chaerophyllum procumbens var. shortii	Wild Chervil		ST	G5T3T4Q	S1
Euphorbia serpens	Matted Broomspurge		SE	G5	S1
Linum striatum	Ridged Yellow Flax		WL	G5	S3
Ludwigia decurrens	Primrose Willow		WL	G5	S2
Penstemon canescens	Gray Beardtongue		SE	G4	S2
Sida hermaphrodita	Virginia Mallow		SE	G3	S1
Valerianella chenopodiifolia	Goose-foot Corn-salad		SE	G4	S1
Other Significant Feature					
Freshwater Mussel Concentration Area	Mussel Bed		SG	G3	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

Categorical Exclusion
Appendix F
Water Resources

LiKang

12/14/2020

Waters Report
SR 156 Slide Correction Project
Switzerland County, Indiana
Des. No. 1600616



Prepared By:



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Prepared For:

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Seymour District
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December 14, 2020

**Waters Report Amendment
SR 156 Slide Correction Project
Switzerland County, Indiana
Des. No. 1600616**

Amendment:

The scope of the project changed to include extended construction limits along SR 156 in Switzerland County, Indiana. An amendment to the water's investigation was performed in order to update the survey area and ensure no additional water resources would be impacted by the change in scope. Construction limits were extended to the northwest and southeast. The updated project limits remain along the edge of pavement and roadside embankments. The survey area was extended and is represented in the attachments. No additional water resources were found (Photos 29 through 30). Wetland determination, investigation, and data collection maintained the same methodology as the initial field investigation.



**Waters of the U.S. Determination
SR 156 Slide Correction Project
Switzerland County, Indiana
Des. No. 1600616**

Date(s) of Field Reconnaissance

April 21, 2020 and June 22, 2020

Location

The project is located along SR 156, approximately 1.6 miles west of the east Junction of the SR 56/156 intersection in Patriot, Indiana. (Pages A1 through A3).

- Section 27, Township 3 North, Range 1 West
- Rising Sun 1:24,000 United States Geological Survey (USGS) Quadrangle
- Posey Township, Switzerland County, Indiana
- Latitude: 38.897968°N Longitude: -84.867118°W

Project Description

The project (Des. No. 1600616) involves correcting the embankment failures and slides occurring along SR 156.

Three wetlands (Wetlands A-C) and one stream (Ohio River) were identified within the survey area. The survey area is located approximately 3.25 miles south of the town of Rising Sun, IN along SR 156. Surrounding landscape consists of wooded corridors, major river floodplain, and residential homes. The project survey area is located within a floodplain.

Soils

According to the Soil Survey Geographic (SSURGO) Database for Switzerland County, Indiana, the survey area contains soil areas with national hydric soils (Page A4 and A5).

Soil Name	Map Abbreviation	Hydric Range
Huntington silt loam	Hu	Hydric (1-32%)
Pate silt loam	PaE2	Not Hydric (0%)
Wheeling loam	WhE	Not Hydric (0%)

National Wetlands Inventory Information

There is one National Wetland Inventory (NWI) wetland identified within the survey area (Page A6). The U.S. Fish and Wildlife NWI Mapper (<https://www.fws.gov/wetlands/data/mapper.html>) includes the following wetland within the SR 156 Slide Correction Project survey area. Wetland type is based on *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979).

Wetland Type	Description	Location: Lat/Long
R2UBH	Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded	38.898152°N -84.866994°W



12-Digit HUC

The SR 156 Slide Correction Project survey area is within the 050902030808 12-Digit HUC (Lick Creek – Ohio River). The USGS ScienceBase-Catalog (<https://www.sciencebase.gov/catalog/>) was used to generate the entire watershed of the Ohio River. The Watershed of the Ohio River upstream of the project area was estimated to be approximately 1,000 square miles (Page A7). The Federal Emergency Management Administration (FEMA) Flood Map Service Center (<https://msc.fema.gov/portal/advanceSearch>) indicates the survey area is within a mapped floodway and within an area with 1% annual chance of flooding. (Page A8). The base flood elevation of the Ohio River within the survey area is 481.3 feet.

Attached Documents

- Project Location Map
- USGS Topographic Map (1:24,000)
- USGS Topographic Map (1:12,000)
- Switzerland County SSURGO Hydric Soils Map
- USFWS NWI Map
- Floodplain Map
- USGS Watershed Map
- Water Resources Map
- Photo Location Map and Project Photos
- Wetland Determination Data Forms
- USACE Preliminary Jurisdictional Determination Form

Removed to avoid duplication

Removed to avoid duplication

Field Reconnaissance

The Waters of the U.S. (WOTUS) investigation survey area limits were established based on the scope of work expected for the SR 156 Slide Correction project. Wetland determinations were conducted in accordance with the *Corps of Engineers Wetland Delineation Manual* (U.S. Army Corps of Engineers 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region Version 2.0* (U.S. Army Corps of Engineers 2010). Wetland Data sheets from the U.S. Army Corps of Engineers Detroit District website (<https://www.lre.usace.army.mil/Missions/Regulatory-Program-and-Permits/Automated-Wetland-Determination-Data-Form/>) were used to make wetland determinations. Due to discrepancies within the data sheets for soil indicator (S7) and red parent material (F21) between the Midwest Region Version 2.0 manual and the Detroit District, all methods remained consistent with the Midwest Region Version 2.0 manual. Three wetlands and one stream were identified during the field reconnaissance.

Stream Feature(s)

The USGS Rising Sun 1:24,000 topographic quadrangle identified one perennial blue-line stream feature within the survey area for the SR 156 Slide Project (Pages A2 and A3). The NHD GIS dataset included one flow line features within the survey area. Field investigation concluded that the flow line feature was identified as the Ohio River which exhibited bed and bank and OHWM.

Ohio River

Ohio River is a perennial stream that flows from northwest to southeast across the survey area north-east of SR 156 (Page A9). According to the U.S. Fish and Wildlife NWI Mapper, The Ohio River is classified as Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded (R2UBH). Approximately



1,186 feet of the stream is within the survey area. The OHWM of the Ohio River is 1,600 feet wide and 24 feet deep. The survey area extends a maximum distance of 75 feet into the Ohio River. The drainage area is estimated to be 1,000 square miles. This reach of the Ohio River is sand (30%), gravel (30%), cobble (30%), and boulder (10%). This Ohio River is predominantly run (100%) due to dredging. The Ohio River is a natural channel with narrow wooded riparian areas and mowed vegetation. This stream reach is considered to exhibit average quality based on riparian cover and available habitat.

The Ohio River is a traditionally navigable water (TNW) and Section 10 navigable water for the entirety of its length along the border of Indiana. Therefore, the Ohio River is subject to USACE jurisdiction under section 404 of the Clean Water Act and Section 10 of the River and Harbors Act.

Stream Summary Table

Water Feature Name	Photos	Lat/Long	OHW Width (ft)	OHW Depth (ft)	USGS Blue-line? Type?	Riffles? Pools?	Quality	Substrate	Likely Waters of U.S.?
Ohio River	25	38.898152°N -84.866994°W	1,600	24	Yes Perennial	No No	Average	Sand, gravel, cobble, boulder	Yes

Wetlands

The April 21, 2020 and June 22, 2020 field investigation identified three wetland features within the SR 156 Slide Correction Project survey area.

Wetland A

This 0.02-acre emergent wetland is situated along the southwest side of SR 156. It is located along the roadside, conveying drainage through a culvert to the Ohio River (Page A9). The Ohio River is a TNW and Section 10 navigable water for the entirety of its length along the border of Indiana. Therefore, Wetland A is subject to Clean Water Act jurisdiction due to a direct hydrologic connection with the Ohio River, a TNW. As defined by Cowardin *et al.* (1979), this wetland would be classified as palustrine emergent, persistent, seasonally flooded/saturated (PEM1E). Wetland A has formed within excavated drainage features for transportation purposes. Based on a qualitative assessment of Wetland A, this wetland is of poor quality due to its size, function within the roadside, and quality of vegetation.

Data point AW1

This data point represents wetland conditions within Wetland A, an area southwest of SR 156. There are no tree, sapling/shrub, or woody vine strata identified within the plot area. The dominant species within the herb stratum consisted of deer-tongue rosette grass (*Dichanthelium clandestinum*, FACW). The plant community passes the rapid test for hydrophytic vegetation; therefore, hydrophytic vegetation is present and no further vegetation analysis is required. Primary indicators of hydrology included surface water at 1 inch (A1), high water table at 7 inches (A2), and saturation at 2 inches (A3). Secondary indicators of hydrology included drainage patterns (B10), crayfish burrows (C8), and FAC-neutral test (D5). Therefore, wetland hydrology is present. The USDA NRCS Web Soil Survey indicates that this data point is within the Pate silt loam unit. The Pate series is not considered to be a hydric soil. The soil profile from a pit excavated

to a depth of 20 inches consisted of a 10YR 5/1 (90%) loamy/clayey layer with 10YR 3/6 (10%) redox features from 0 to 20 inches. The soil profile examined at this location meets the depleted matrix (F3) indicator; therefore, hydric soil is present. This data point meets the requirements for hydrophytic vegetation, hydrology, and hydric soils; therefore, this data point is within a wetland.

Data Point AD1

This data point represents non-wetland conditions for Wetland A within an area southwest of SR 156. There are no tree or woody vine strata identified within the plot area. Species within the sapling/shrub stratum consisted of twinsisters (*Lonicera tatarica*, FACU) and ash-leaf maple (*Acer negundo*, FAC), however, these species are not dominant. The dominant species within the herb stratum consisted of tall white bedstraw (*Galium mollugo*, FACU) and purple deadnettle (*Lamium purpureum*, FACU). Hydrophytic vegetation is not present since 0 percent of the dominant species are FAC or wetter. No primary or secondary indicators of wetland hydrology were observed; therefore, wetland hydrology is not present. The USDA NRCS Web Soil Survey indicates that this data point is within the Pate silt loam unit. The Pate series is not considered to be a hydric soil. The soil profile from a pit excavated to a depth of 20 inches consisted of a 10YR 4/2 (100%) loamy/clayey layer from 0 to 20 inches. The soil profile examined at this location does not meet any hydric soil indicator; therefore, hydric soil is not present. None of the three required wetland criteria were present; therefore, this data point is not within a wetland.

Wetland B

This 0.03-acre emergent wetland is situated along the southwest side of SR 156. It is located along the roadside, conveying drainage through a culvert to the Ohio River (Page A9). The Ohio River is a TNW and Section 10 navigable water for the entirety of its length along the border of Indiana. Therefore, Wetland B is subject to Clean Water Act jurisdiction due to a direct hydrologic connection with the Ohio River, a TNW. As defined by Cowardin *et al.* (1979), this wetland would be classified as palustrine emergent, persistent, seasonally flooded/saturated (PEM1E). Wetland B has formed within excavated drainage features for transportation purposes. Based on a qualitative assessment of Wetland B, this wetland is of poor quality due to its size, function within the roadside, and quality of vegetation.

Data point BW1

This data point represents wetland conditions within Wetland B, an area southwest of SR 156. There are no tree or woody vine strata identified within the plot area. The only species within the sapling/shrub stratum consisted of green ash (*Fraxinus pennsylvanica*, FACW), however, this species is not dominant. The dominant species within the herb stratum consisted of Kentucky blue grass (*Poa pratensis*, FAC). The plant community passes the dominance test since 100% percent of the dominant species are FAC or wetter; therefore, hydrophytic vegetation is present and no further vegetation analysis is required. Primary indicators of hydrology included high water table at a depth of 3 inches (A2) and saturation at a depth of 1 inch (A3). Secondary indicators of hydrology included drainage patterns (B10), crayfish burrows (C8), and FAC-neutral test (D5). Therefore, wetland hydrology is present. The USDA NRCS Web Soil Survey indicates that this data point is within the Pate silt loam unit. The Pate series is not considered to be a hydric soil. The soil profile from a pit excavated to a depth of 19 inches consisted of a 10YR 4/2 (95%) loamy/clayey layer with 10YR 3/6 (5%) redox features to a depth of 7 inches and a 10YR 5/1 (80%) loamy/clayey layer with 10YR 3/6 (20%) redox features from 7 to 19 inches. The soil profile examined at this location meets the depleted matrix (F3) indicator; therefore, hydric soil is present. This data point



meets the requirements for hydrophytic vegetation, hydrology, and hydric soils; therefore, this data point is within a wetland.

Data Point BD1 This data point represents non-wetland conditions for Wetland B within an area southwest of SR 156. There is no woody vine stratum identified within the plot area. The dominant species within the tree stratum consisted of Norway spruce (*Picea abies*, UPL). The dominant species within the sapling/shrub stratum consisted of autumn olive (*Elaeagnus umbellata*, UPL) and twinsisters (*Lonicera tatarica*, FACU). The dominant species within the herb stratum consisted of saw-tooth blackberry (*Rubus argutus*, FAC), white bedstraw (*Galium mollugo*, FACU), and queen Anne's-lace (*Daucus carota*, UPL). Hydrophytic vegetation is not present since only 16.7% percent of the dominant species are FAC or wetter. No primary or secondary indicators of wetland hydrology were observed; therefore, wetland hydrology is not present. The USDA NRCS Web Soil Survey indicates that this data point is within the Pate silt loam unit. The Pate series is not considered to be a hydric soil. The soil profile from a pit excavated to a depth of 15 inches consisted of a 10YR 3/2 (100%) loamy/clayey layer from 0 to 15 inches. A restrictive rock layer was encountered at 15 inches. The soil profile examined at this location does not meet any hydric soil indicator; therefore, hydric soil is not present. None of the three required wetland criteria were present; therefore, this data point is not within a wetland.

Wetland C

This 0.03-acre emergent wetland is situated along the southwest side of SR 156. It is located along the roadside, conveying drainage through a culvert to the Ohio River (Page A9). The Ohio River is a TNW and Section 10 navigable water for the entirety of its length along the border of Indiana. Therefore, Wetland C is subject to Clean Water Act jurisdiction due to a direct hydrologic connection with the Ohio River, a TNW. As defined by Cowardin *et al.* (1979), this wetland would be classified as palustrine emergent, persistent, seasonally flooded/saturated (PEM1E). Wetland C has formed within excavated drainage features for transportation purposes. Based on a qualitative assessment of Wetland C, this wetland is of poor quality due to its size, function within the roadside, and quality of vegetation.

Data point CW1

This data point represents wetland conditions within Wetland C, an area southwest of SR 156. There are no tree, sapling/shrub, or woody vine strata identified within the plot area. The dominant species within the herb stratum consisted of Kentucky blue grass (*Poa pratensis*, FAC). The plant community passes the dominance test for hydrophytic vegetation; therefore, hydrophytic vegetation is present and no further vegetation analysis is required. Primary indicators of hydrology included surface water at a depth of 1 inch (A1), high water table at a depth of 8 inches (A2), and saturation at a depth of 1 inches (A3). Secondary indicators of hydrology included drainage patterns (B10), crayfish burrows (C9), and FAC-neutral test (D5). Therefore, wetland hydrology is present. The USDA NRCS Web Soil Survey indicates that this data point is within the Pate silt loam unit. The Pate series is not considered to be a hydric soil. The soil profile from a pit excavated to a depth of 20 inches consisted of a 10GY 4/1 (95%) loamy/clayey layer from 0 to 20 inches. The soil profile examined at this location meets the loamy gleyed matrix (F2) indicator; therefore, hydric soil is present. This data point meets the requirements for hydrophytic vegetation, hydrology, and hydric soils; therefore, this data point is within a wetland.



Data Point CD1

This data point represents non-wetland conditions for Wetland C within an area southwest SR 156. There are no tree, sapling/shrub, or woody vine strata identified within the plot area. The dominant species within the herb stratum consisted of tall false rye grass (*Schedonorus arundinaceus*, FACU). Hydrophytic vegetation is not present since 0 percent of the dominant species are FAC or wetter. No primary or secondary indicators of wetland hydrology were observed; therefore, wetland hydrology is not present. The USDA NRCS Web Soil Survey indicates that this data point is within the Pate silt loam unit. The Pate series is not considered to be a hydric soil. The soil profile from a pit excavated to a depth of 19 inches consisted of a 10YR 3/2 (100%) loamy/clayey layer to a depth of 5 inches, a 10YR 4/4 (100%) loamy/clayey layer from 5 to 14 inches, and a 10YR 5/1 (90%) with 10YR 5/6 (10%) redox features from 14 to 19 inches. The soil profile examined at this location does not meet any hydric soil indicator; therefore, hydric soil is not present. None of the three required wetland criteria were present; therefore, this data point is not within a wetland.

**Data Point Summary Table
SR 156 in Switzerland County, Indiana**

Data Point	Vegetation	Soils	Hydrology	Wetland
AW1	Yes	Yes	Yes	Yes
AD1	No	No	No	No
BW1	Yes	Yes	Yes	Yes
BD1	No	No	No	No
CW1	Yes	Yes	Yes	Yes
CD1	No	No	No	No

**Wetland Summary Table
SR 156 in Switzerland County, Indiana**

Wetland Name	Photos	Lat/Long	Type	Total Area (acres)	Quality	Likely Waters of U.S.?
Wetland A	6,9	38.898228°N -84.868413°W	PEM1E	0.02	Poor	Yes
Wetland B	9,10	38.897848°N -84.867361°W	PEM1E	0.03	Poor	Yes
Wetland C	21	38.897493°N -84.866398°W	PEM1E	0.03	Poor	Yes

Open Water

Open water features were not identified within the project survey area.



Roadside Ditch

Roadside ditch features were not identified within the project survey area.

Conclusions

The April 21, 2020 and June 22, 2020 field review for the SR 156 Slide Correction Project identified three wetland features (Wetlands A-C) and one stream feature (Ohio River) within the survey area. All wetlands (Wetland A-C) convey drainage through culverts to the Ohio River, a TNW. Wetlands A-C would be classified as palustrine emergent, persistent, seasonally flooded/saturated (PEM1E). The *U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook* (U.S. Army Corps of Engineers 2007) states “TNWs; all wetlands adjacent to TNWs; non-navigable tributaries of TNWs that are relatively permanent and wetlands that directly abut such tributaries” are subject to Clean Water Act (CWA) jurisdiction only if a significant nexus is demonstrated. Therefore, Wetlands A-C have a significant nexus with a TNW and are considered jurisdictional features. The Ohio River is also regulated under Section 10 of the River and Harbors Act.

Wetlands A-C and the Ohio River are likely Waters of the U.S. Every effort should be taken to avoid and minimize impacts to stream and wetland features. 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.

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 Wetlands Delineation Manual*, the appropriate regional supplement, the USACE *Jurisdictional Determination Form Instructional Guidebook*, and other appropriate agency guidelines.

Brenten Reust, PWS



Environmental Biologist
Lochmueller Group, Inc.



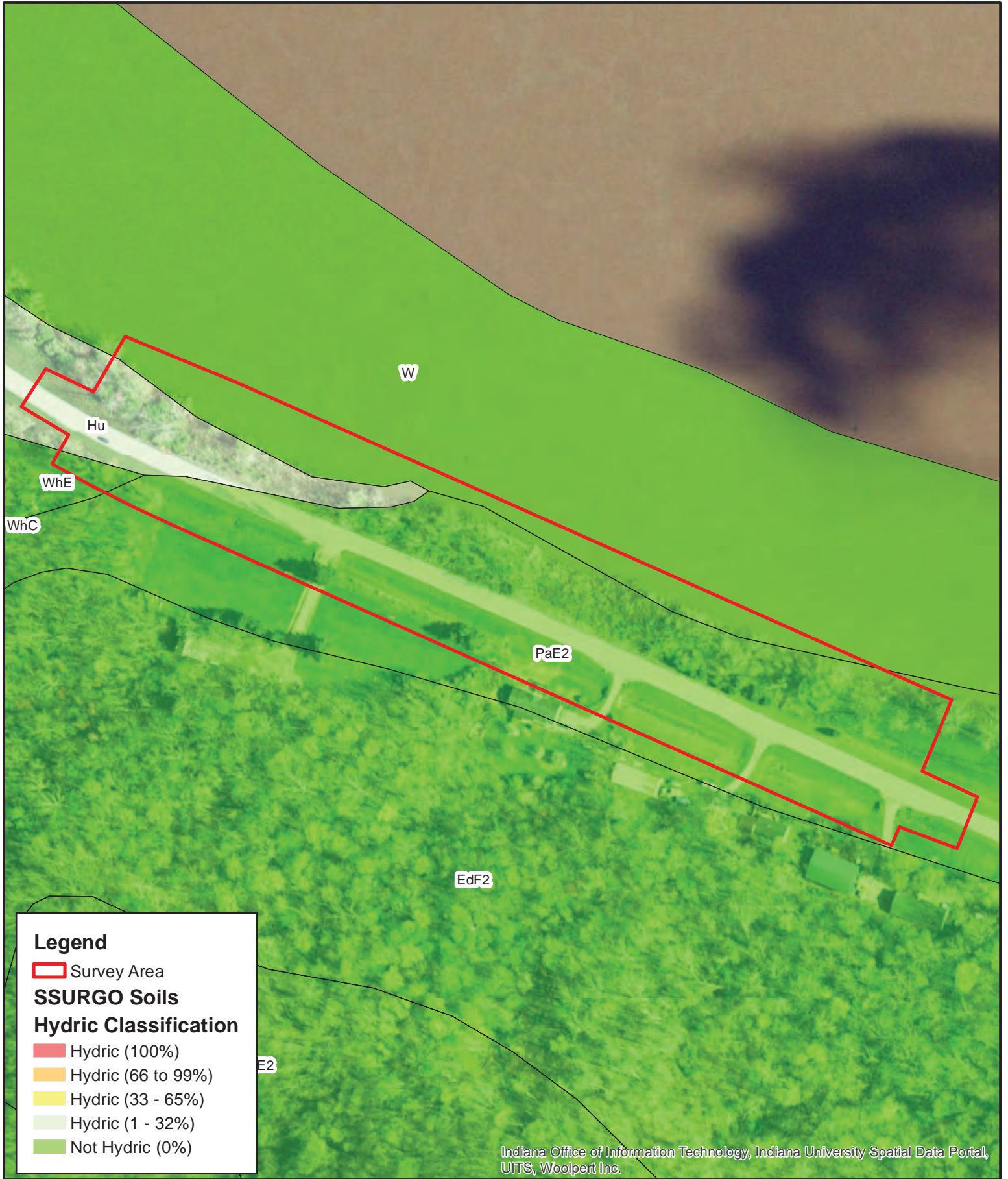
Preparers

Lochmueller Group, Inc. Staff	Position	Contributing Effort
Brenten Reust, PWS	Environmental Biologist	Field Data Collection Report Preparation
Chris Kunkel	Environmental Specialist	Field Data Collection









Attachments





Legend

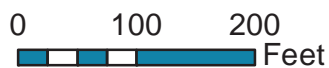
-  Survey Area
- SSURGO Soils**
- Hydric Classification**
-  Hydric (100%)
-  Hydric (66 to 99%)
-  Hydric (33 - 65%)
-  Hydric (1 - 32%)
-  Not Hydric (0%)

Indiana Office of Information Technology, Indiana University Spatial Data Portal, UITS, Woolpert Inc.



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 Phone: (317) 222-3880
 Toll Free: (888) 830-6977

SSURGO Soil Map
 Des. No. 1600616
 Waters of the U.S. Report



County: Switzerland
 Township: Posey
 State: Indiana

SR 156 Slide Correction Project
 Created: 12/8/2020, BReust

I:\F5011\Share\2017\17-0075\BHY-1600616\Enviro\Waters-Report\Attachments\mxd\BHY-Soil Map.mxd

Report—Hydric Soil List - All Components

Hydric Soil List - All Components--IN155-Switzerland County, Indiana					
Map symbol and map unit name	Component/Local Phase	Comp. pct.	Landform	Hydric status	Hydric criteria met (code)
Hu: Huntington silt loam, 0 to 2 percent slopes, occasionally flooded	Huntington-Occasionally flooded	85	Flood plains	No	—
	Nolin-Occasionally flooded	7	Flood plains	No	—
	Lindsay-Occasionally flooded	5	Flood plains	No	—
	Huntington-Frequently flooded	2	Flood plains	Yes	4
	Newark-Occasionally flooded	1	Flood plains	No	—
PaE2: Pate silt loam, 15 to 25 percent slopes, eroded	Pate	100	Hills	No	—
W: Water	Water	100-100	—	No	—
WhE: Wheeling loam, rarely flooded, 18 to 35 percent slopes	Wheeling	97	Stream terraces	No	—

Data Source Information



Soil Survey Area: Switzerland County, Indiana
 Survey Area Data: Version 23, Sep 16, 2019









U.S. Fish and Wildlife Service, National Standards and Support Team,
wetlands_team@fws.gov

May 19, 2020

Wetlands

-  Estuarine and Marine Deepwater
-  Estuarine and Marine Wetland

-  Freshwater Emergent Wetland
-  Freshwater Forested/Shrub Wetland
-  Freshwater Pond

-  Lake
-  Other
-  Riverine



This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



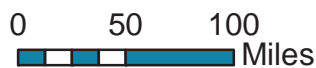
Legend

- Survey Area
- Ohio River Watershed

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

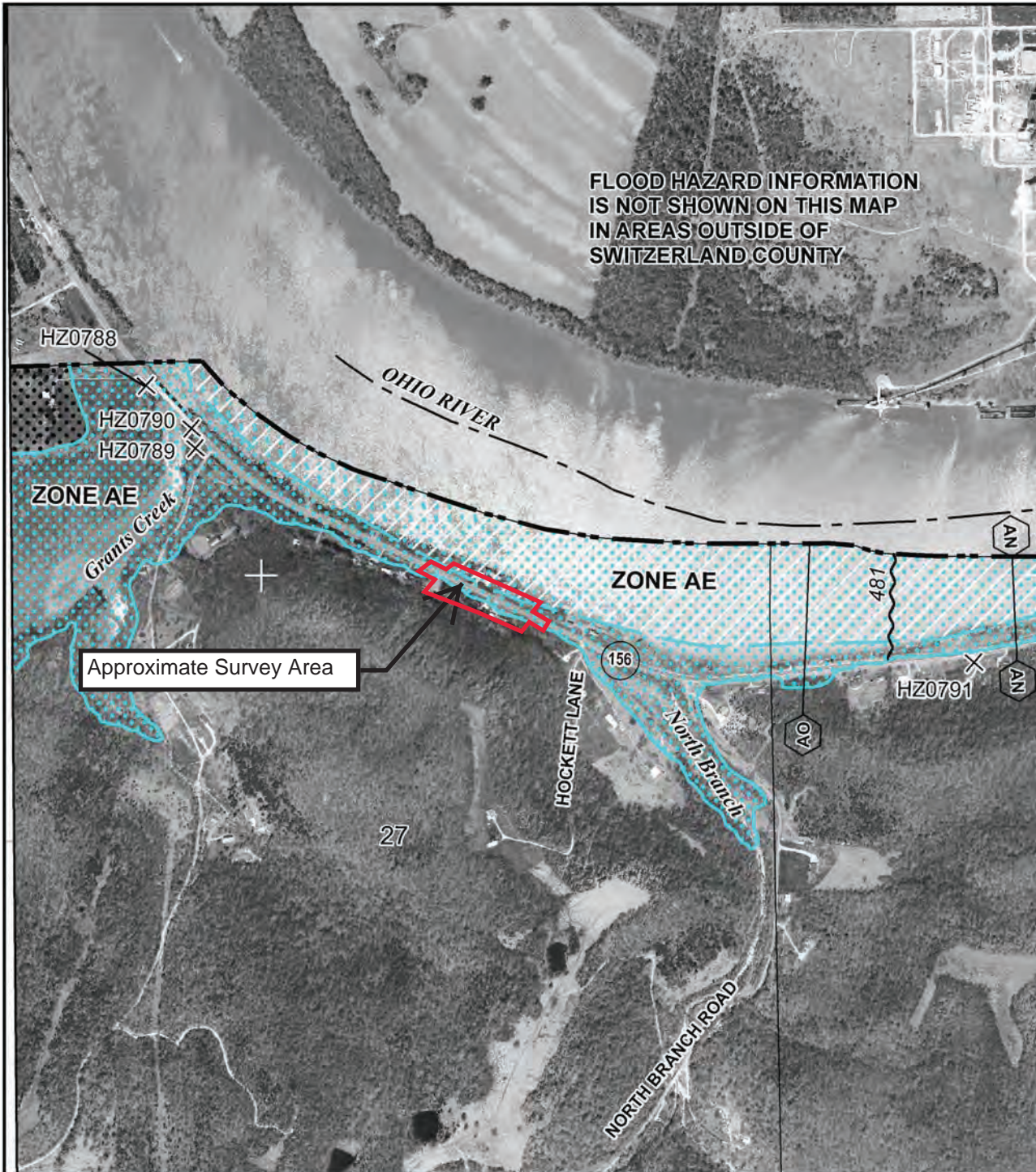
LOCHMUELLER GROUP
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 Indianapolis, IN 46268
 Phone: (317) 222-3880
 Fax: (317) 222-3881

USGS Watershed Map
 Des. No. 1600616
 Waters of the U.S. Report



County: Switzerland
 Township: Posey
 State: Indiana

SR 156 Slide Correction Project
 Created: 12/8/2020, BReust



FLOOD HAZARD INFORMATION IS NOT SHOWN ON THIS MAP IN AREAS OUTSIDE OF SWITZERLAND COUNTY

Approximate Survey Area



MAP SCALE 1" = 1000'



PANEL 0090C

FIRM
FLOOD INSURANCE RATE MAP
SWITZERLAND COUNTY,
INDIANA
AND INCORPORATED AREAS

PANEL 90 OF 250
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
SWITZERLAND COUNTY	180251	0090	C

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.









MAP NUMBER
18155C0090C
EFFECTIVE DATE
APRIL 16, 2014

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



Indiana Office of Information Technology, Indiana University Spatial Data Portal, UITS, Woolpert Inc.

 <p>LOCHMUELLER GROUP 3502 Woodview Trace, Suite 150 Indianapolis, IN 46268 Phone: (317) 222-3880 Fax: (317) 222-3881</p>	<p>Water Resources Map Des. No. 1600616</p> <p>0 75 150 Feet</p> 	<p>County: Switzerland Township: Posey State: Indiana</p> <p>SR 156 Slide Correction Project Created: 12/8/2020, BReust</p>	<p>Legend</p> <ul style="list-style-type: none">  Survey Area  Wetland  Data Point  Stream
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WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: SR 156 Slide Correction City/County: Patriot/Switzerland Sampling Date: 04/21/2020
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: AW1
 Investigator(s): B. Reust, C. Kunkel Section, Township, Range: Sec 27, Twp 3N, Rng 1W
 Landform (hillside, terrace, etc.): roadside drainage Local relief (concave, convex, none): concave
 Slope (%): 1 Lat: 38.898228 Long: -84.868415 Datum: NAD 1983 InGCS Switzerland
 Soil Map Unit Name: Pate silt loam NWI classification: non-wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This wetland has formed within an excavated roadside, which conveys drainage along SR 156 to the Ohio River.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>30ft radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
				=Total Cover	
Sapling/Shrub Stratum	(Plot size: <u>15ft radius</u>)				
1.	_____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
				=Total Cover	
Herb Stratum	(Plot size: <u>5ft radius</u>)				
1.	<u>Dichanthelium clandestinum</u>	70	Yes	FACW	Hydrophytic Vegetation Indicators: X 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.
2.	<u>Typha angustifolia</u>	15	No	OBL	
3.	<u>Cyperus strigosus</u>	5	No	FACW	
4.	<u>Ammannia coccinea</u>	5	No	OBL	
5.	<u>Acer negundo</u>	2	No	FAC	
6.	_____	_____	_____	_____	
7.	_____	_____	_____	_____	
8.	_____	_____	_____	_____	
9.	_____	_____	_____	_____	
10.	_____	_____	_____	_____	
				97 =Total Cover	
Woody Vine Stratum	(Plot size: <u>30ft radius</u>)				
1.	_____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
2.	_____	_____	_____	_____	
				=Total Cover	
Remarks: (Include photo numbers here or on a separate sheet.) Photos (6,9)					

SOIL

Sampling Point: AW1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-20	10YR 5/1	90	10YR 3/6	10	C	M	Loamy/Clayey	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:
 This area is mapped as Pate silt loam which is not listed as a hydric soil by USDA NRCS. A depleted matrix (F3) was observed.

HYDROLOGY

Wetland Hydrology Indicators:	Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>1</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>7</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>2</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 USGS 03277200 Ohio River at Markland Dam Near Warsaw KY, Flood Stage is 51 feet.

Remarks:
 This wetland data point contains three primary and three secondary wetland hydrology indicators.



AW1 soil pit



AW1 soil profile

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: SR 156 Slide Correction City/County: Patriot/Switzerland Sampling Date: 04/21/2020
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: AD1
 Investigator(s): B. Reust, C. Kunkel Section, Township, Range: Sec 27, Twp 3N, Rng 1W
 Landform (hillside, terrace, etc.): roadside embankment Local relief (concave, convex, none): convex
 Slope (%): 15 Lat: 38.898192 Long: -84.868413 Datum: NAD 1983 InGCS Switzerland
 Soil Map Unit Name: Pate silt loam NWI classification: non-wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology 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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: This data point was taken within a roadside embankment which bounds Wetland A on the southwest side.	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30ft radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
=Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15ft radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Lonicera tatarica</u>	2	No	FACU	
2. <u>Acer negundo</u>	2	No	FAC	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
=Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5ft radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Galium mollugo</u>	40	Yes	FACU	
2. <u>Lamium purpureum</u>	20	Yes	UPL	
3. <u>Stellaria media</u>	15	No	FACU	
4. <u>Securigera varia</u>	10	No	UPL	
5. <u>Rumex crispus</u>	5	No	FAC	
6. <u>Cardamine parviflora</u>	2	No	FAC	
7. <u>Eupatorium serotinum</u>	2	No	FAC	
8. <u>Glechoma hederacea</u>	2	No	FACU	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
=Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>30ft radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
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 <u> 0 </u>	x 1 = <u> 0 </u>
FACW species <u> 0 </u>	x 2 = <u> 0 </u>
FAC species <u> 11 </u>	x 3 = <u> 33 </u>
FACU species <u> 59 </u>	x 4 = <u> 236 </u>
UPL species <u> 30 </u>	x 5 = <u> 150 </u>
Column Totals: <u> 100 </u> (A)	<u> 419 </u> (B)
Prevalence Index = B/A = <u> 4.19 </u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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.)
 Photos (7)

SOIL

Sampling Point: AD1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-20	10YR 4/2	100					Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Dark Surface (S7)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils³:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12)</p> <p><input type="checkbox"/> Red Parent Material (F21)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (F22)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
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Remarks:
This area is mapped as Pate silt loam which is not listed as a hydric soil by USDA NRCS. Hydric soil indicators were not observed.

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p>	<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p> <p><input type="checkbox"/> Aquatic Fauna (B13)</p> <p><input type="checkbox"/> True Aquatic Plants (B14)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Gauge or Well Data (D9)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
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<p>Field Observations:</p> <p>Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)</p>	<p>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
USGS 03277200 Ohio River at Markland Dam Near Warsaw KY, Flood Stage is 51 feet.

Remarks:
Wetland hydrology indicators were not observed at this data point.



AD1 soil pit



AD1 soil profile

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: SR 156 Slide Correction City/County: Patriot/Switzerland Sampling Date: 04/21/2020
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: BW1
 Investigator(s): B. Reust, C. Kunkel Section, Township, Range: Sec 27, Twp 3N, Rng 1W
 Landform (hillside, terrace, etc.): roadside drainage Local relief (concave, convex, none): concave
 Slope (%): 1 Lat: 38.897848 Long: -84.867361 Datum: NAD 1983 InGCS Switzerland
 Soil Map Unit Name: Pate silt loam NWI classification: non-wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This wetland has formed within an excavated roadside, which conveys drainage along SR 156 to the Ohio River.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>30ft radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
=Total Cover					
Sapling/Shrub Stratum (Plot size: <u>15ft radius</u>)					
1.	<u>raxinus penns Ivanica</u>	<u>2</u>	<u>No</u>	<u>FACW</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
=Total Cover					
Herb Stratum (Plot size: <u>5ft radius</u>)					
1.	<u>oa pratensis</u>	<u>85</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.	<u>C perus strigosus</u>	<u>5</u>	<u>No</u>	<u>FACW</u>	
3.	<u>ichanthelium clandestinum</u>	<u>5</u>	<u>No</u>	<u>FACW</u>	
4.	<u>Solidago canadensis</u>	<u>2</u>	<u>No</u>	<u>FACU</u>	
5.	_____	_____	_____	_____	
6.	_____	_____	_____	_____	
7.	_____	_____	_____	_____	
8.	_____	_____	_____	_____	
9.	_____	_____	_____	_____	
10.	_____	_____	_____	_____	
=Total Cover					
Woody Vine Stratum (Plot size: <u>30ft radius</u>)					
1.	_____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
2.	_____	_____	_____	_____	
=Total Cover					
Remarks: (Include photo numbers here or on a separate sheet.) Photos (9-10)					

SOIL

Sampling Point: BW1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10YR 4/2	95	10YR 3/6	5	C	M	Loamy/Clayey	Prominent redox concentrations
7-19	10YR 5/1	80	10YR 3/6	20	C	M	Loamy/Clayey	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:
 This area is mapped as Pate silt loam which is not listed as a hydric soil by USDA NRCS. A depleted matrix (F3) was observed.

HYDROLOGY

Wetland Hydrology Indicators:	Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>3</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>1</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 USGS 03277200 Ohio River at Markland Dam Near Warsaw KY, Flood Stage is 51 feet.

Remarks:
 This wetland data point contains two primary and three secondary wetland hydrology indicators.



BW1 soil pit



BW1 soil profile

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: SR 156 Slide Correction City/County: Patriot/Switzerland Sampling Date: 04/21/2020
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: BD1
 Investigator(s): B. Reust, C. Kunkel Section, Township, Range: Sec 27, Twp 3N, Rng 1W
 Landform (hillside, terrace, etc.): roadside embankment Local relief (concave, convex, none): convex
 Slope (%): 15 Lat: 38.897802 Long: -84.867389 Datum: NAD 1983 InGCS Switzerland
 Soil Map Unit Name: Pate silt loam NWI classification: non-wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology 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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: This data point was taken within a roadside embankment which bounds Wetland B on the southwest side.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>30ft radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u><i>icea a ies</i></u>		35	Yes	UPL	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u> 1 </u> (A) Total Number of Dominant Species Across All Strata: <u> 6 </u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u> 16.7% </u> (A/B)
2. <u><i>inus resinosa</i></u>		5	No	FACU	
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		40 =Total Cover			
Sapling/Shrub Stratum	(Plot size: <u>15ft radius</u>)				
1. <u><i>Elaeagnus um ellata</i></u>		30	Yes	UPL	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u> 0 </u> x 1 = <u> 0 </u> FACW species <u> 5 </u> x 2 = <u> 10 </u> FAC species <u> 26 </u> x 3 = <u> 78 </u> FACU species <u> 29 </u> x 4 = <u> 116 </u> UPL species <u> 80 </u> x 5 = <u> 400 </u> Column Totals: <u> 140 </u> (A) <u> 604 </u> (B) Prevalence Index = B/A = <u> 4.31 </u>
2. <u><i>Lonicera tatarica</i></u>		10	Yes	FACU	
3. <u> </u>					
4. <u> </u>					
5. <u> </u>					
		40 =Total Cover			
Herb Stratum	(Plot size: <u>5ft radius</u>)				
1. <u><i>Ru us argutus</i></u>		20	Yes	FAC	Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u> </u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u><i>Galium mollugo</i></u>		10	Yes	FACU	
3. <u><i>aucus carota</i></u>		10	Yes	UPL	
4. <u><i>Ru us occidentalis</i></u>		5	No	UPL	
5. <u><i>El mus virginicus</i></u>		5	No	FACW	
6. <u><i>iola sororia</i></u>		2	No	FAC	
7. <u><i>Cornus drummondii</i></u>		2	No	FAC	
8. <u><i>Galium aparine</i></u>		2	No	FACU	
9. <u><i>Glechoma hederacea</i></u>		2	No	FACU	
10. <u><i>Cardamine parviflora</i></u>		2	No	FAC	
		60 =Total Cover			
Woody Vine Stratum	(Plot size: <u>30ft radius</u>)				
1. <u> </u>					Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>
2. <u> </u>					
		=Total Cover			
Remarks: (Include photo numbers here or on a separate sheet.) Photos (11)					

SOIL

Sampling Point: BD1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-15	10YR 3/2	100					Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ rock layer Depth (inches): _____ 15	Hydric Soil Present? Yes _____ No <u>X</u>
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Remarks:
 This area is mapped as Pate silt loam which is not listed as a hydric soil by USDA NRCS. Hydric soil indicators were not observed. A restrictive rock layer was encountered at 15 inches.

HYDROLOGY

Wetland Hydrology Indicators:
Primary Indicators (minimum of one is required; check all that apply)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Other (Explain in Remarks)
Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 USGS 03277200 Ohio River at Markland Dam Near Warsaw KY, Flood Stage is 51 feet.

Remarks:
 Wetland hydrology indicators were not observed at this data point.



BD1 soil pit



BD1 soil profile

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: SR 156 Slide Correction City/County: Patriot/Switzerland Sampling Date: 04/21/2020
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: CW1
 Investigator(s): B. Reust, C. Kunkel Section, Township, Range: Sec 27, Twp 3N, Rng 1W
 Landform (hillside, terrace, etc.): roadside drainage Local relief (concave, convex, none): concave
 Slope (%): 1 Lat: 38.897493 Long: -84.866398 Datum: NAD 1983 InGCS Switzerland
 Soil Map Unit Name: Pate silt loam NWI classification: non-wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: This wetland has formed within an excavated roadside, which conveys drainage along SR 156 to the Ohio River.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>30ft radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u> 1 </u> (A) Total Number of Dominant Species Across All Strata: <u> 1 </u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
				=Total Cover	
Sapling/Shrub Stratum	(Plot size: <u>15ft radius</u>)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
				=Total Cover	
Herb Stratum	(Plot size: <u>5ft radius</u>)				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u> X </u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1.	<u>oa pratensis</u>	40	Yes	FAC	
2.	<u>estuca ru ra</u>	10	No	FACU	
3.	<u>Carex vulpinoidea</u>	10	No	FACW	
4.	<u>C perus strigosus</u>	5	No	FACW	
5.	<u>uncus effusus</u>	2	No	OBL	
6.	_____	_____	_____	_____	
7.	_____	_____	_____	_____	
8.	_____	_____	_____	_____	
9.	_____	_____	_____	_____	
10.	_____	_____	_____	_____	
				67 =Total Cover	
Woody Vine Stratum	(Plot size: <u>30ft radius</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1.	_____	_____	_____	_____	
2.	_____	_____	_____	_____	
				=Total Cover	
Remarks: (Include photo numbers here or on a separate sheet.) Photos (21)					

SOIL

Sampling Point: CW1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-20	10GY 4/1	95	2.5Y 4/4	5	C	M	Loamy/Clayey	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: 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 Soils³:

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

³Indicators 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

Remarks:

This area is mapped as Pate silt loam which is not listed as a hydric soil by USDA NRCS. A loamy gleyed matrix (F2) was observed.

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)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No Depth (inches): 1
 Water Table Present? Yes No Depth (inches): 8
 Saturation Present? Yes No Depth (inches): 1
 (includes capillary fringe)

Wetland Hydrology Present? Yes No

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

USGS 03277200 Ohio River at Markland Dam Near Warsaw KY, Flood Stage is 51 feet.

Remarks:

This wetland data point contains three primary and three secondary wetland hydrology indicators.



CW1 soil pit



CW1 soil profile

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: SR 156 Slide Correction City/County: Patriot/Switzerland Sampling Date: 04/21/2020
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: CD1
 Investigator(s): B. Reust, C. Kunkel Section, Township, Range: Sec 27, Twp 3N, Rng 1W
 Landform (hillside, terrace, etc.): roadside embankment Local relief (concave, convex, none): convex
 Slope (%): 15 Lat: 38.897504 Long: -84.866359 Datum: NAD 1983 InGCS Switzerland
 Soil Map Unit Name: Pate silt loam NWI classification: non-wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology 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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: This data point was taken within a roadside embankment which bounds Wetland C on the southwest side.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>30ft radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1.	_____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u> 0 </u> (A) Total Number of Dominant Species Across All Strata: <u> 1 </u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u> 0.0% </u> (A/B)
2.	_____	_____	_____	_____	
3.	_____	_____	_____	_____	
4.	_____	_____	_____	_____	
5.	_____	_____	_____	_____	
=Total Cover					
Prevalence Index worksheet:					
		Total % Cover of:	Multiply by:		
		OBL species <u> 0 </u>	x 1 = <u> 0 </u>		
		FACW species <u> 0 </u>	x 2 = <u> 0 </u>		
		FAC species <u> 0 </u>	x 3 = <u> 0 </u>		
		FACU species <u> 96 </u>	x 4 = <u> 384 </u>		
		UPL species <u> 4 </u>	x 5 = <u> 20 </u>		
		Column Totals: <u> 100 </u> (A)	<u> 404 </u> (B)		
		Prevalence Index = B/A = <u> 4.04 </u>			
Hydrophytic Vegetation Indicators:					
<u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u> </u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.					
Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>					
Remarks: (Include photo numbers here or on a separate sheet.) Photos (22)					

SOIL

Sampling Point: CD1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR 3/2	100					Loamy/Clayey	
5-14	10YR 4/4	100					Loamy/Clayey	
14-19	10YR 5/1	90	10YR 5/6	10	C	M	Loamy/Clayey	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:
 This area is mapped as Pate silt loam which is not listed as a hydric soil by USDA NRCS. Hydric soil indicators were not observed.

HYDROLOGY

Wetland Hydrology Indicators:
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Other (Explain in Remarks)
Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>19</u> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 USGS 03277200 Ohio River at Markland Dam Near Warsaw KY, Flood Stage is 51 feet.

Remarks:
 A water table was present at 19 inches; however, was not within 12 inches required to meet the wetland hydrology indicator A2.



CD1 soil pit



CD1 soil profile

Appendix 2 - PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PJD: December 14, 2020

B. NAME AND ADDRESS OF PERSON REQUESTING PJD: Brenten Reust, Lochmueller Group, 3502 Woodview Trace #150., Indianapolis, IN 46268

C. DISTRICT OFFICE, FILE NAME, AND NUMBER:

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:

The project (Des. No. 1600616) involves correcting the embankment failures and slides occurring along SR 156. Three wetlands (A, B, and C) and the Ohio River were identified within the project survey area. The surrounding landscape of the survey area is narrow wooded riparian areas, residential homes, and vegetated roadside.

(USE THE TABLE BELOW TO DOCUMENT MULTIPLE AQUATIC RESOURCES AND/OR AQUATIC RESOURCES AT DIFFERENT SITES)

State: **Indiana** County/parish/borough: **Switzerland** City: **Patriot**

Center coordinates of site (lat/long in degree decimal format):

Lat.: **38.897968** Long.: **-84.867118**

Universal Transverse Mercator: **16S 684964 4307616**

Name of nearest waterbody: **Ohio River**

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

Office (Desk) Determination. Date:

Field Determination. Date(s):

TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH “MAY BE” SUBJECT TO REGULATORY JURISDICTION.

Site number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource “may be” subject (i.e., Section 404 or Section 10/404)
Wetland A	38.898228	-84.868413	0.02 acre	wetland	Section 404
Wetland B	38.897848	-84.867361	0.03 acre	wetland	Section 404
Wetland C	38.897493	-84.866398	0.03 acre	wetland	Section 404
Ohio River	38.898152	-84.866994	1,186 feet (2.0 acres)	non-wetland	Section 10/404

- 1) The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.
- 2) In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an AJD for the activity, the permit applicant is hereby made aware that: (1) the permit applicant has elected to seek a permit authorization based on a PJD, which does not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant's acceptance of the use of the PJD; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a PJD constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional, and waives any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an AJD or a PJD, the JD will be processed as soon as practicable. Further, an AJD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the Corps will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there *may be* waters of the U.S. and/or that there *may be* navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for PJD (check all that apply)

Checked items should be included in subject file. Appropriately reference sources below where indicated for all checked items:

- Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:
Map: Location maps, topographic map, aerial map, floodplain map, NWI map
- Data sheets prepared/submitted by or on behalf of the PJD requestor.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report. Rationale: _____
- Data sheets prepared by the Corps: _____
- Corps navigable waters' study: _____
- U.S. Geological Survey Hydrologic Atlas: _____
 - USGS NHD data.
 - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: Rising Sun 1:24,000
- Natural Resources Conservation Service Soil Survey. Citation: <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>
- National wetlands inventory map(s). Cite name: <https://www.fws.gov/wetlands/data/mapper.html>
- State/local wetland inventory map(s): _____
- FEMA/FIRM maps: <https://msc.fema.gov/portal/home>
- 100-year Floodplain Elevation is: 481.3 feet (National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): Orthophotography of Indiana 2017
or Other (Name & Date): Ground photos April 21, 2020
- Previous determination(s). File no. and date of response letter: _____
- Other information (please specify): _____

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Signature and date of
Regulatory staff member
completing PJD

Brenten Reust Digitally signed by Brenten Reust
Date: 2020.12.14 08:56:15 -05'00'

Signature and date of
person requesting PJD
(REQUIRED, unless obtaining
the signature is impracticable)¹

¹ Districts may establish timeframes for requestor to return signed PJD forms. If the requestor does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.

Categorical Exclusion
Appendix G
Public Involvement



6200 Vogel Road, Evansville, Indiana 47715 • 812.479.6200

February 1, 2018

SAMPLE NOTICE OF SURVEY LETTER

NOTICE OF SURVEY

RE: State Road 156 Slide Correction Project, 0.05 miles southeast of intersection of Evans Hill Road in Switzerland County, Indiana.
Lochmueller Project No.: 117-0075-BHY/CHY - Des. No. 1600616 and 1600617

State Road 156 Slide Correction Project, 0.6 miles southeast of intersection of Evans Hill Road in Switzerland County, Indiana.
Lochmueller Project No.: 117-0075-DHY - Des. No. 1600618

Dear Property Owner:

Research of county records indicates that you own or occupy property near a proposed Slide Correction Project. Our employees will be doing a survey of the project area in the near future. It may be necessary for them to come onto your property to complete this work. These procedures are allowed by Indiana Code IC 8-23-7-26. If you are available, our surveyors will show identification before coming onto your property. If you have sold this property, or it is occupied by someone else, please advise us of the name and address of the current owner/occupant so that we may contact them about the survey.

At this stage we do not know what effect, if any, our project may eventually have on your property. If we determine later that your property is involved, we will contact you with additional information.

The survey work will include mapping the location of features such as buildings, trees, fences and drives, as well as obtaining ground elevations. The survey work may include the identification and mapping of wetlands and streams, and various other environmental studies. This work is necessary for the proper planning and design of this proposed Slide correction Project.

Please be assured of our sincere desire to cause you as little inconvenience as possible during this survey. If any problems do occur, please contact our field crew or call me at **(812-479-6200)**, or write to me at the above address. Thank you in advance for your cooperation.

Sincerely yours,

LOCHMUELLER GROUP, INC.

A handwritten signature in black ink, appearing to read "Sean L. Suttles".

Sean L. Suttles, P.S.
Chief of Surveying



INDIANA DEPARTMENT OF TRANSPORTATION

Driving Indiana's Economic Growth

100 North Senate Avenue
Room N642
Indianapolis, Indiana 46204-2216

Eric J. Holcomb, Governor
Joe McGuinness, Commissioner

Indiana Department of Transportation Notice of Entry for Survey or Investigation Indiana Department of Transportation

If you have received a “Notice of Entry for Survey or Investigation” from INDOT or an INDOT representative, you may be wondering what it means. In the early stages of a project’s development, INDOT must collect as much information as possible to ensure that sound decisions are made in designing the proposed project. Before entering onto private property to collect that data, INDOT is required to notify landowners that personnel will be in the area and may need to enter onto their property. Indiana Code, Title 8, Article 23, Chapter 7, Section 26 deals with the department’s authority to enter onto any property within Indiana.

Receipt of a Notice of Entry for Survey or Investigation does not necessarily mean that INDOT will be buying property from you. It doesn’t even necessarily mean that the project will involve your property at all. Since the Notice of Entry for Survey or Investigation is sent out in the very early stages and since we want to collect data within AND surrounding the project’s limits more landowners are contacted than will actually fall within the eventual project limits. It may also be that your property falls within the project limits but we will not need to purchase property from you to make improvements to the roadway. Another thing to keep in mind is that when you receive a Notice of Entry for Survey or Investigation, very few specifics have been worked out and actual construction of the project may be several years in the future.

Before INDOT begins a project that requires them to purchase property from landowners, they must first offer the opportunity for a public hearing. If you were on the list of people who received a Notice of Entry for Survey or Investigation, you should also receive a notice informing you of your opportunity to request a public hearing. These notices will also be published in your local newspaper so interested individuals who are not adjacent to the project will also have the opportunity to request a public hearing. If a public hearing is to be held, INDOT will publicize the date, location, and time. INDOT will present detailed project information at the public hearing, comments will be taken from the public in spoken and written form, and question and answer sessions will be offered. Based on the feedback INDOT receives from the public, a project can be modified and improved to better serve the public.

So, if you have received a “Notice of Entry for Survey or Investigation”, remember:

1. You do not need to take any action at this time. It is merely letting you know that people in orange/lime vests are going to be in your neighborhood.
2. The project is still in its very early planning stages.
3. You will be notified of your opportunity to comment on the project at a later date.

*www.in.gov/dot/
An Equal Opportunity Employer*

Categorical Exclusion
Appendix H
Air Quality

Indiana Department of Transportation (INDOT)
 State Preservation and Local Initiated Projects FY 2020 - 2024

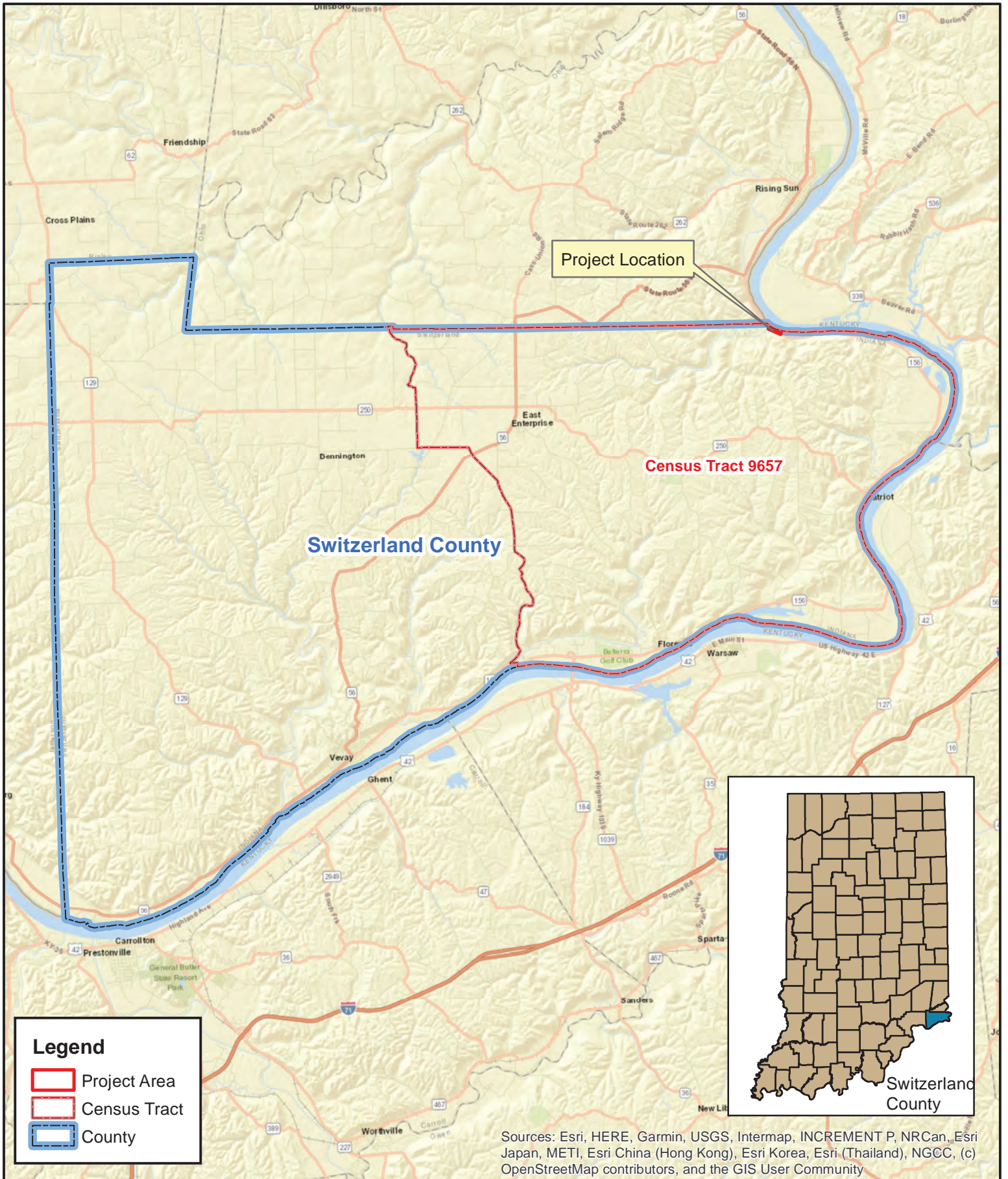
SPONSOR	CONTRACT # / LEAD DES	STIP NAME	ROUTE	WORK TYPE	LOCATION	DISTRICT	MILES	FEDERAL CATEGORY	Estimated Cost left to Complete Project*	PROGRAM	PHASE	FEDERAL	MATCH	2020	2021	2022	2023	2024	
Ohio County																			
Ohio County	38182 / 1500212	Init.	VA VARI	Bridge Inspections	Countywide Bridge Inspection and Inventory Program for Cycle Years 2019-2022	Seymour	0	STPBG		Local Funds	PE	\$0.00	\$9,455.20	\$1,753.40	\$5,878.80	\$1,823.00			
										Local Bridge Program	PE	\$37,820.80	\$0.00	\$7,013.60	\$23,515.20	\$7,292.00			
Indiana Department of Transportation	38625 / 1400155	Init.	SR 262	Slide Correction	4.2 miles N of SR 56	Seymour	.138	STPBG		Road Construction	CN	\$1,469,834.40	\$367,458.60	\$1,837,293.00					
* Indiana Department of Transportation	39907 / 1600615	Init.	SR 156	Slide Correction	0.7 miles W of SR 56/SR 156 W Junction	Seymour	.1	STPBG		Bridge Construction	CN	\$1,006,888.80	\$251,722.20		\$1,258,611.00				
										Road Construction	CN	\$2,161,117.60	\$540,279.40		\$2,701,397.00				
										Road ROW	RW	\$424,000.00	\$106,000.00	\$530,000.00					
Indiana Department of Transportation	39907 / 1600615	A 19	SR 156	Slide Correction	0.7 miles W of SR 56/SR 156 W Junction	Seymour	.1	STBG	\$14,365,151.00	Road Construction	CN	\$7,885,714.40	\$1,971,428.60		(\$3,960,008.00)		\$13,817,151.00		
Comments: No MPO. Move CN phase from 2021 to 2023. Increase CN from \$3,960,008 in 2021 to \$13,817,151 in 2023. (249% Phase cost change). AQC-NA																			
Indiana Department of Transportation	40071 / 1602187	Init.	SR 262	HMA Overlay, Preventive Maintenance	US 50 to 0.38 mile W of SR 56 (Bridge over Dry Brook)	Seymour	14.525	STPBG		Road Construction	CN	\$2,523,870.40	\$630,967.60	\$3,154,838.00					
Indiana Department of Transportation	40071 / 1602187	A 13	SR 262	HMA Overlay, Preventive Maintenance	US 50 to 0.38 mile W of SR 56 (Bridge over Dry Brook)	Seymour	14.525	NHPP	\$5,321,645.00	Road Construction	CN	\$1,733,445.60	\$433,361.40	\$2,166,807.00					
Comments: Increase in CN phase in 2020 of \$2,166,807 for total CN of \$5,321,645 per OKI Administrative Modification 5 dated 1/7/2020.																			
Indiana Department of Transportation	40424 / 1701515	Init.	SR 262	Replace Superstructure	02.48 mile W of SR 56 at Arnold Creek	Seymour	0	STPBG		Bridge Construction	CN	\$1,393,472.00	\$348,368.00			\$1,741,840.00			
										Bridge ROW	RW	\$20,000.00	\$5,000.00		\$25,000.00				
Indiana Department of Transportation	40424 / 1701515	A 31	SR 262	Bridge Deck Overlay	02.48 mile W of SR 56 at Arnold Creek	Seymour	0	STBG	\$1,483,713.00	Bridge Construction	CN	-\$356,273.60	-\$89,068.40			(\$445,342.00)			
Comments: No MPO. Change in scope from Replace Superstructure to Bridge Deck Overlay. Reduce current STIP funding from \$1,741,840 to \$1,296,498 (26%) in FY 2022. AQC-NA																			
Indiana Department of Transportation	40972 / 1800894	Init.	SR 262	Bridge Deck Overlay	04.83 miles E of SR 62 over S Fork Laughery Creek	Seymour	0	STPBG		Bridge Construction	CN	\$692,216.00	\$173,054.00		\$865,270.00				
Indiana Department of Transportation	41524 / 1801046	Init.	SR 56	Small Structure Replacement	3.90 miles East of SR 262	Seymour	0	STPBG		Bridge Construction	CN	\$279,980.80	\$69,995.20				\$349,976.00		
										Bridge Consulting	PE	\$140,560.00	\$35,140.00	\$165,000.00			\$10,700.00		
										Bridge ROW	RW	\$8,000.00	\$2,000.00		\$10,000.00				
Indiana Department of Transportation	42239 / 1802982	A 04	SR 56	Small Structure Replacement	2.35 miles E of SR 262	Seymour	0	STBG	\$981,074.00	Bridge Construction	CN	\$612,859.20	\$153,214.80						\$766,074.00

*Estimated Costs left to Complete Project column is for costs that may extend beyond the four years of a STIP. This column is not fiscally constrained and is for information purposes.

***Funds for Des. No. 1600616 are included in the listing for Des. No. 1600615 along with the other projects in the contract.**

Categorical Exclusion
Appendix I
Environmental Justice
Analysis

	COC Switzerland County, Indiana	AC 1 Census Tract 9657
LOW-INCOME POPULATION		
Total Population for Whom Poverty Status is Determined	10,567	4,774
Total Population Below Poverty Level	2,005	980
Percent Low-Income	19.0%	20.5%
125 Percent of COC	23.7%	
AC Percent Low-Income Greater Than 125 Percent of COC?		No
AC Percent Low-Income Greater Than 50 Percent?		No
Population of EJ Concern?		No
MINORITY POPULATION		
Total Population	10,685	4,786
Minority Population	494	229
Percent Minority	4.6%	4.8%
125 Percent of COC	5.8%	
AC Percent Minority Greater Than 125 Percent of COC?		No
AC Percent Minority Greater Than 50 Percent?		No
Population of EJ Concern?		No






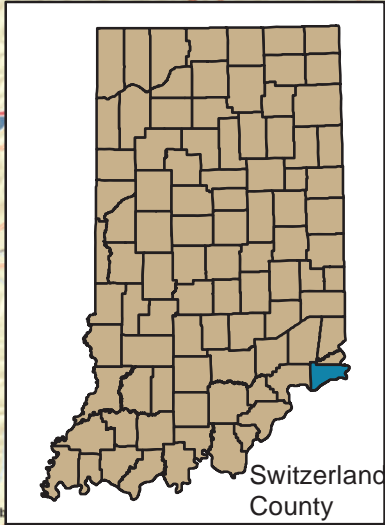
Project Location

Census Tract 9657

Switzerland County

Legend

-  Project Area
-  Census Tract
-  County




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



3502 Woodview Trace, Suite 150
 Indianapolis, IN 46268
 Phone: (317) 222-3880
 Fax: (317) 222-3881

EJ Analysis Map
 Des. No. 1600616

0 1.5 3
 Miles



County: Switzerland
 Township: Posey
 State: Indiana

SR 156 Slide Correction Project
 from 1.5 to 1.7 mi W of E Jct. with SR 56
 Created: 1/28/2021, C Kunkel



HISPANIC OR LATINO ORIGIN BY RACE

Note: This is a modified view of the original table produced by the U.S. Census Bureau. This download or printed version may have missing information from the original table.

	Switzerland County, Indiana	Census Tract 9657, Switzerland C
Label	Estimate	Estimate
▼ Total:	10,685	4,786
▼ Not Hispanic or Latino:	10,474	4,724
White alone	10,191	4,557
Black or African American alone	102	85
American Indian and Alaska Native alone	0	0
Asian alone	41	0
Native Hawaiian and Other Pacific Islander alone	0	0
Some other race alone	0	0
▼ Two or more races:	140	82
Two races including Some other race	0	0
Two races excluding Some other race, and three or more races	140	82
▼ Hispanic or Latino:	211	62
White alone	116	62
Black or African American alone	0	0
American Indian and Alaska Native alone	0	0
Asian alone	0	0
Native Hawaiian and Other Pacific Islander alone	75	0
Some other race alone	20	0
▼ Two or more races:	0	0
Two races including Some other race	0	0
Two races excluding Some other race, and three or more races	0	0

Table Notes

HISPANIC OR LATINO ORIGIN BY RACE

Survey/Program:

American Community Survey

Universe:

Total population

Year:

2019

Estimates:

5-Year

Table ID:

B03002

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see ACS Technical Documentation). The effect of nonsampling error is not represented in these tables.

The 2015-2019 American Community Survey (ACS) data generally reflect the September 2018 Office of Management and Budget (OMB) delineations of metropolitan and micropolitan statistical areas. In certain instances, the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB delineation lists due to differences in the effective dates of the geographic entities.

Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Explanation of Symbols:

An "***" entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.

An "-" entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution, or the margin of error associated with a median was larger than the median itself.

An "-" following a median estimate means the median falls in the lowest interval of an open-ended distribution.

An "+" following a median estimate means the median falls in the upper interval of an open-ended distribution.

An "***" entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.

An "*****" entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.

An "N" entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.

An "(X)" means that the estimate is not applicable or not available.

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the

American Community Survey website in the Methodology section.

POVERTY STATUS IN THE PAST 12 MONTHS BY SEX BY AGE



Note: This is a modified view of the original table produced by the U.S. Census Bureau. This download or printed version may have missing information from the original table.

	Switzerland County, Indiana	Census Tract 9657, Switzerland Cou
Label	Estimate	Estimate
▼ Total:	10,567	4,774
▼ Income in the past 12 months below poverty level:	2,005	980
▼ Male:	1,007	440
Under 5 years	92	19
5 years	84	79
6 to 11 years	111	63
12 to 14 years	53	32
15 years	24	11
16 and 17 years	86	62
18 to 24 years	132	17
25 to 34 years	60	25
35 to 44 years	89	62
45 to 54 years	56	2
55 to 64 years	91	45
65 to 74 years	57	0
75 years and over	72	23
▼ Female:	998	540
Under 5 years	79	53
5 years	14	0
6 to 11 years	95	58
12 to 14 years	81	52
15 years	21	21
16 and 17 years	14	14
18 to 24 years	121	32
25 to 34 years	230	152
35 to 44 years	44	22
45 to 54 years	102	76
55 to 64 years	42	3
65 to 74 years	47	28

Table Notes

POVERTY STATUS IN THE PAST 12 MONTHS BY SEX BY AGE

Survey/Program:

American Community Survey

Universe:

Population for whom poverty status is determined

Year:

2019

Estimates:

5-Year

Table ID:

B17001

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see ACS Technical Documentation). The effect of nonsampling error is not represented in these tables.

The 2015-2019 American Community Survey (ACS) data generally reflect the September 2018 Office of Management and Budget (OMB) delineations of metropolitan and micropolitan statistical areas. In certain instances, the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB delineation lists due to differences in the effective dates of the geographic entities.

Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

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An "-" following a median estimate means the median falls in the lowest interval of an open-ended distribution.

An "+" following a median estimate means the median falls in the upper interval of an open-ended distribution.

An "***" entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.

An "*****" entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.

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Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Categorical Exclusion
Appendix J
Other Information

Land and Water Conservation Fund (LWCF) County Property List for Indiana (Last Updated July 2020)

ProjectNumber	SubProjectCode	County	Property
1800451	1800451	Switzerland	Markland Dam Park
1800479	1800479	Switzerland	Paul Ogle Riverfront Park & Vevay Public Access Site

*Park names may have changed. If acquisition of publically owned land or impacts to publically owned land is anticipated, coordination with IDNR, Division of Outdoor Recreation, should occur.