

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

Road No./County:	State Road (SR) 158/Lawrence
Designation Number(s):	1800133
Project Description/Termini:	The project involves the replacement of bridge (158)58-47-03027, National Bridge Inventory (NBI) 28000, carrying SR 158 over Silverville Branch, approximately 7.94 miles west of SR 458. The project extends approximately 239 west and 286 feet east from the center point of the bridge for a total of 525 feet (0.099 mile) which includes 50 feet of incidental work at each project end.

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

Approval

_____	_____
INDOT DE Signature and Date	INDOT ESD Signature and Date

FHWA Signature and Date	

Release for Public Involvement

	RF	6/9/2023
_____	_____	_____
INDOT DE Initials and Date	INDOT DE Initials and Date	INDOT ESD Initials and Date

Certification of Public Involvement

INDOT Consultant Services Signature and Date

INDOT DE/ESD Reviewer Signature and Date: _____

Name and Organization of CE/EA Preparer: Brittney Layton, M.A./Butler, Fairman, & Seufert, Inc.

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

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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*?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If No, then:		
Opportunity for a Public Hearing Required?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

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

Notice of Entry letters were mailed to potentially affected property owners near the project area on May 26, 2021 and June 20, 2022, notifying them about the project and that individuals responsible for land surveying and field activities may be seen in the area. Sample copies of the Notice of Entry letters are included in Appendix G, pages 1 and 2.

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

Public Controversy on Environmental Grounds

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

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

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

Sponsor of the Project: Indiana Department of Transportation (INDOT) INDOT District: Vincennes

Local Name of the Facility: SR 158

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

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

PURPOSE AND NEED:

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

Need:

Bridge (158) 58-47-03027 carrying SR 158 over Silverville Branch, located approximately 7.94 miles west of SR 458 in Lawrence County, is a concrete, reinforced girder bridge built in 1938 that is 27.0 feet long and 31.3 feet wide. The bridge deck material is concrete with a bituminous wearing surface. There is no history of rehabilitations for the structure. According to the August 9, 2022, Bridge Inspection Report for Structure (158) 58-47-03027, the bridge deck and superstructure exhibited significant map cracking and heavy efflorescence while the substructure showed vertical cracks and spalling with exposed reinforcing on the abutments and wingwalls. If not addressed, the structure will reach a point of deterioration at which it will have to be taken out of service and the adjacent State highway would be closed to traffic. INDOT Bridge Inspection Application System (BIAS) ratings range from 0 to 9, with a rating of 0 applied to failed structures and a rating of 9 applied to structures in excellent condition. The bridge deck, superstructure and substructure have been given ratings of 5 out of 9 (fair condition). The need for this project is due to the

This is page 2 of 23 Project name: Bridge (158)58-47-03027/SR 158 over Silverville Branch Date: June 8, 2023

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deterioration of the deck, superstructure, and substructure of Bridge (158)58-47-03027.

Purpose:

The purpose of this project is to provide a structurally sufficient and hydraulically adequate crossing at this section of SR 158 (in order to avoid the closure of Structure (158)58-47-03027); thereby by improving the bridge deck, superstructure, and substructure to ratings of 7 out of 9 (good condition) or higher.

PROJECT DESCRIPTION (PREFERRED ALTERNATIVE):

County: Lawrence Municipality: N/A

Limits of Proposed Work: The project termini extend approximately 239 feet west and 286 feet east from the center point of the bridge for a total of 525 feet (0.099 mile) which includes 50 feet of incidental work at each project end.

Total Work Length: 0.099 Mile(s) Total Work Area: 0.735 Acre(s)

Is an Interstate Access Document (IAD)¹ required?
 If yes, when did the FHWA provide a Determination of Engineering and Operational Acceptability?

Yes¹	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>
Date: <input style="width: 100%;" type="text"/>	

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

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

The Indiana Department of Transportation (INDOT)-Vincennes District and the Federal Highway Administration (FHWA) intend to proceed with the replacement of Bridge (158)58-47-03027 (NBI 28000) carrying SR 158 over Silverville Branch.

This project is located on SR 158, approximately 7.94 miles west of SR 458, in Lawrence County, Indiana. Silverville Creek is identified as Silverville Branch on Indiana Department of Environmental Management (IDEM) e303 tool and the United States Geological Survey (USGS) Quadrangle Map (Appendix B, page 2); therefore, for this document, it will be referenced as "Silverville Branch". It is also located in Section 19, Township 5 North, Range 2 West in Indian Creek Township on the USGS Williams, Indiana Quadrangle (Appendix B, page 2).

The existing Bridge (158)58-47-03027 was built in 1938 and is a single span concrete stringer/multi-beam bridge. The bridge was determined not to be eligible for the National Register in the IHBI. The existing structure is approximately 27 feet in length and has an out-to-out coping width of 31.3 feet and is on a 45-degree right skew. The bridge consists of two 12-foot-wide through lanes bordered by 1.5-foot-wide shoulders. The bridge has a concrete bridge rail, which has been superseded by steel W-beam guardrail and approach guardrail. There are no curbs, sidewalks, or gutters present.

According to the most recent INDOT Bridge Inspection Report, the deck and superstructure exhibit significant map cracking and heavy efflorescence while the substructure showed vertical cracks and spalling with exposed reinforcing on the abutments and wingwalls. The bridge deck, superstructure, and substructure were all given condition ratings of 5 (out of 9), indicated fair condition (minor section loss).

This section of SR 158 is classified as a Rural Major Collector and consists of two 12-foot-wide through lanes bordered by 1.5-foot-wide gravel shoulders. There is a connection to a private driveway adjacent to the north side of the bridge and an intersection with Graded Road, approximately 168 feet west of the bridge. The project area is primarily forested and agricultural.

There is one private drive located in the northeast quadrant. An existing 48-inch in diameter Corrugated Metal Pipe (CMP) is located under the drive and is approximately 42-feet in length. A 30-inch in diameter CMP is located in the northwest quadrant under Graded Lane.

The preferred alternative consists of the replacement of Bridge (158)58-47-03027 on the same alignment. The preferred alternative consists of replacing the bridge with a three-sided culvert. The three-sided culvert will have a maximum span of 32 feet with a rise of

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11-feet-3-inches. The structure will be approximately 52-feet-4-inches long and will carry two 11-foot-wide lanes of traffic with 3-foot-wide outer shoulders. It will have a 2-foot sump. There are two options being considered: a three-sided, flat-topped box culvert and a three-sided, arch-topped culvert. The difference between the two are primarily in the manufacturer. By allowing either option, the contractor has the ability to utilize the best manufacturer for the project. Riprap will be installed (approximately 6-feet-wide, 43-feet-long, 4-feet-deep) in front of both vertical walls for scour prevention. Additional guardrail and shoulder work will be performed along SR 158, approximately 189 feet east and 226 feet west of the bridge.

The 48-inch in diameter CMP will be removed and replaced with a new, 52-foot-long CMP (Appendix B, page 12). The mailbox located at the driveway will be relocated outside of the construction limits (Appendix B, page 10). Mail service will not be disrupted to this property.

In the northwest quadrant underneath Graded Lane, approximately 78-feet of 30-inch in diameter CMP will be removed and replaced.

Approximately 0.54 acre of tree clearing is anticipated. No permanent or temporary lighting will be utilized with this project. The proposed maintenance of traffic (MOT) plan will require a road closure and a detour (see MOT section for additional details). The project is anticipated to begin construction in Spring 2024.

The project termini extend approximately 239 feet west and 286 feet east from the center point of the bridge for a total of 525 feet (0.099 mile). The termini are logical as they encompass only the area necessary to replace the bridge and tie into the roadway. This project has independent utility because it will provide an improved crossing of SR 158 over Silverville Branch without additional work.

This project will meet the project purpose and need by improving the existing condition ratings for the bridge to at least a 7 (out of 9), indicating good condition, for the crossing of SR 158 over Silverville Branch.

OTHER ALTERNATIVES CONSIDERED:

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

Alternative One: Do-Nothing Alternative

This alternative proposes no work take place, leaving all elements of Bridge (158)58-47-03027 in their current state. No federal funds would be expended, and no environmental impacts would occur. However, this alternative does not meet the project's stated purpose and need. This alternative would allow the condition of the bridge to continue to deteriorate. If no action is taken, further weight restrictions and ultimately bridge closure will be necessary. Therefore, the Do-Nothing Alternative was not considered prudent and was dismissed from further consideration.

Alternative Two: True-Arch Structure

A true-arch structure was considered as an alternative for this project. It would meet the purpose and need of the project. However, since a true-arch structure would likely have a greater perpendicular span requirement than a flat-topped or arch-topped structure, the true-arch alternative was excluded from the list.

Alternative Three: Spill-Through Bridge

The spill-through bridge alternative was considered due to the span length increasing to greater than 30 feet. It would have required a span length of 60 feet with a clear span width of approximately 40 feet (perpendicular to Silverville Branch). Due to the greater economic cost to build a bridge over a culvert, this alternative was dismissed from further consideration.

The No Build Alternative is not feasible, prudent or practicable because *(Mark all that apply)*

- It would not correct existing capacity deficiencies;
 - It would not correct existing safety hazards;
 - It would not correct the existing roadway geometric deficiencies;
 - 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

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ROADWAY CHARACTER:

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

Name of Roadway SR 158
 Functional Classification: Rural major collector
 Current ADT: 1,158 VPD (2023) Design Year ADT: 1,158 VPD (2043)
 Design Hour Volume (DHV): 121 Truck Percentage (%): 2.84
 Designed Speed (mph): 45 Legal Speed (mph): 40

	Existing	Proposed
Number of Lanes:	2 @ 12 ft.	2 @ 12 ft.
Type of Lanes:	Travel	Travel
Pavement Width:	24 ft.	24 ft.
Shoulder Width:	1.5 ft.	1.5 ft.
Median Width:	N/A ft.	N/A ft.
Sidewalk Width:	N/A ft.	N/A ft.

Setting: Urban Suburban Rural
 Topography: Level Rolling Hilly

BRIDGES AND/OR SMALL STRUCTURE(S):

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

Structure/NBI Number(s): (158)58-47-03027/28000 Sufficiency Rating: 81.7 (2022 Bridge Inspection)
 (Rating, Source of Information)

	Existing	Proposed
Bridge/Structure Type:	Concrete stringer/multi-beam	Three-sided box culvert
Number of Spans:	1	N/A
Weight Restrictions:	20 ton	36 ton
Height Restrictions:	N/A ft.	N/A ft.
Curb to Curb Width:	25 ft.	28 ft.
Outside to Outside Width:	31.3 ft.	37 ft.
Shoulder Width:	1.5 ft.	3 ft.

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

	Existing	Proposed
Bridge/Structure Type:	Corrugated Metal Pipe	Corrugated Metal Pipe
Number of Spans:	N/A	N/A
Weight Restrictions:	36 ton	36 ton
Length of Pipe:	42 ft.	52 ft.
Height Restrictions:	48 in.	48 in.

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

	Existing	Proposed	
Bridge/Structure Type:	Corrugated Metal Pipe		Corrugated Metal Pipe
Number of Spans:	N/A		N/A
Weight Restrictions:	36	ton	36 ton
Length of Pipe:	78	ft.	78 ft.
Height Restrictions:	30	in.	30 in.

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

The project will remove and replace Bridge (158)58-47-03027 carrying SR 158 over Silverville Branch. The new structure will be a three-sided culvert. The three-sided culvert will be approximately 52-feet 3-inches-long and will carry two 11-foot lanes of traffic with 3-foot-wide shoulders. It will have an out-to-out coping width of approximately 37 feet. It will have a 2-foot sump. Riprap will be installed (approximately 6-feet wide, 43-feet long, 4-feet deep) in front of both vertical walls for scour prevention. Additional guardrail and shoulder work will be performed along SR 158, extending approximately 189 feet east and 226 feet west of the bridge.

Approximately 150 linear feet (LFT) of permanent impacts will occur to Silverville Branch below the OHWM due to riprap placement around the spill slopes and banks. A temporary pumparound will be utilized to dewater Silverville Branch, resulting in 10 LFT of temporary impacts. Water will be pumped to filtration bags located downstream of the work areas before being released directly back into Silverville Branch. No stream mitigation is anticipated.

In the northeast quadrant, an existing 48-inch in diameter CMP located under a private drive adjacent to SR 158 and approximately 42-feet in length will be removed and replaced with a 52-foot-length CMP of equal diameter (Appendix B, page 12). A bat inspection was performed on December 21, 2022 and no evidence of bats nor birds was identified (Appendix C, page 37). A total of 62 LFT of permanent impacts are anticipated due to the removal of the existing 42-foot-long pipe, backfill of the pipe alignment, and backfill of 20 LFT of stream channel upstream of the existing stream in order to accommodate the replacement CMP on an altered alignment. The new pipe outlet will closely match the existing pipe outlet. There will be approximately 10 LFT of temporary impacts due to the utilization of a pumparound. No mitigation is anticipated.

In the northwest quadrant underneath Graded Lane, approximately 78-feet of 30-inch in diameter CMP will be removed and replaced. A bat inspection was performed on December 21, 2022 and no evidence of bats nor birds was identified (Appendix C, page 38).

No additional bridges or small structures are present within or adjacent to the project area.

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 below)	<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 type="checkbox"/>	<input checked="" type="checkbox"/>
Provisions will be made to accommodate any local special events or festivals.	<input type="checkbox"/>	<input checked="" 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"/>
Will the project require a sidewalk, curb ramp, and/or bicycle lane closure? (describe below)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Provisions will be made for access by pedestrians and/or bicyclist and so posted (describe below).	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

The MOT for this project will require a bridge closure and institution of a detour, utilizing Graded Road, Keith Road, and Williams Silverville Road. The detour will be approximately 6.58 miles long and add 6.09 miles to a through trip. Construction is expected to

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begin in the spring of 2024 and will last approximately four months. There are no through traffic-dependent business present and no local events take place in the area.

The road closure is planned to last for approximately four (4) months. The Lawrence County Website's Event Calendar was reviewed on December 16, 2022 by BF&S (<https://lawrencecounty.in.gov/home/calendar>) and no community events will be disrupted by the proposed project. The area is primarily rural with access to residences near the project area. It is not anticipated that any businesses will be adversely impacted by the road closure. No properties will become inaccessible during the implementation of the MOT. No trails, sidewalks, or bicycle lanes are located here; therefore, none will be closed as a result of this project.

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

ESTIMATED PROJECT COST AND SCHEDULE:

Engineering: \$ Not Listed (2020) Right-of-Way: \$ 29,000 (2023) Construction: \$ 2,931,962 (2024)

*Project is bundled under lead Des 1800133.

Anticipated Start Date of Construction: Spring 2024

RIGHT OF WAY:

Land Use Impacts	Amount (acres)	
	Permanent	Temporary
Residential/Mowed Lawn	0.032	0.000
Commercial	0.000	0.000
Agricultural/Fallow Field	0.002	0.002
Forest	0.495	0.035
Wetlands	0.000	0.000
Other:	0.000	0.000
Other:	0.000	0.000
TOTAL	0.529	0.037

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

This project will require approximately 0.529 acre of permanent ROW. The ROW will consist of approximately 0.032 acre of residential/mowed lawn land use impacts, approximately 0.495 acre of forested land use impacts, and approximately 0.002 acre of agricultural/fallow field land use impacts. The project will also require approximately 0.037 acre of temporary ROW with approximately 0.002 acre coming from agriculture/fallow field land use impacts, and approximately 0.035 acre from forested land use impacts. The project will also require approximately 0.64 acre of reacquisition of existing apparent ROW. Impacts are the same with both alternatives.

The apparent existing ROW on SR 158 is approximately 10 feet wide on either side of the SR 158 centerline. At the bridge, the existing right-of-way is 24 feet either side of the bridge centerline. The proposed ROW is approximately 30 feet north and 25 feet south of the centerline of SR 158 with a bumpout of approximately 50 feet north around the private drive in the northwest quadrant and a second bumpout of approximately 35 feet south of SR 158 at Bridge (158)58-47-03027.

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.

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

SECTION A - EARLY COORDINATION:

List the date(s) coordination was sent and all resource agencies that were contacted as a part of the development of this Environmental Study. Also, include the date of their response or indicate that no response was received.

Early coordination letters were sent on May 25, 2022, July 21, 2022, November 15, 2022, and January 31, 2023 (Appendix C, pages 1 to 4).

<u>Agency</u>	<u>Date Sent</u>	<u>Date Response Received</u>	<u>Appendix</u>
Federal Highway Administration (FHWA)	May 25, 2022	No response	N/A
INDOT-Vincennes District	May 25, 2022	No response	N/A
Indiana Department of Natural Resources (IDNR)	May 25, 2022	June 24, 2022	C5-C7
U.S. Department of Housing and Urban Development (HUD)	May 25, 2022	No response	N/A
U.S. Fish and Wildlife Service (USFWS)	May 25, 2022	No response	N/A
Indiana Geological and Water Survey (IGWS)	July 21, 2022	July 21, 2022	C12-C13
Indiana Department of Environmental Management (IDEM)	May 25, 2022	No response	N/A
National Park Service (NPS)	May 25, 2022	No response	N/A
USDA-Natural Resources Conservation Service (NRCS)	May 25, 2022	May 26, 2022	C8-C9
U.S. Army Corps of Engineers (USACE)	May 25, 2022	No response	N/A
Lawrence County Council	May 25, 2022	No response	N/A
United States Coast Guard, Eighth District	May 25, 2022	May 31, 2022	C11
Hoosier National Forest	May 25, 2022	No response	N/A
Lawrence County Sheriff	May 25, 2022	No response	N/A
Lawrence County Highway Supervisor	May 25, 2022	No response	N/A
Lawrence County Surveyor	May 25, 2022	May 25, 2022	C10
Lawrence County Floodplain Administrator	May 25, 2022	No response	N/A
Lawrence County Commissioners	May 25, 2022	No response	N/A
North Lawrence County School District	May 25, 2022	No response	N/A
INDOT Ecology & Waterway Permitting Office (INDOT EWPO)	November 15, 2022	November 15, 2022	C35-C36
Naval Surface Warfare Center-Crane Division	March 7, 2023	No Response	N/A

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

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SECTION B – ECOLOGICAL RESOURCES:

Streams, Rivers, Watercourses & Other Jurisdictional Features

- Federal Wild and Scenic Rivers
- State Natural, Scenic or Recreational Rivers
- Nationwide Rivers Inventory (NRI) listed
- Outstanding Rivers List for Indiana
- Navigable Waterways

Presence

X

Impacts

Yes	No
X	

Total stream(s) in project area: 160 Linear feet Total impacted stream(s): 212 Linear feet

Stream Name	Classification	Total Size in Project Area (linear feet)	Impacted linear feet	Comments (i.e. location, flow direction, likely Water of the US, appendix reference)
Silverville Branch	R2UBH	100	160	Flows northeast; Likely Water of the US
UNT to Silverville Branch	R4UB	75	72	Flows south through a 48-inch CMP carrying a private drive in the northwest quadrant of Bridge (158)58-47-03027; Likely Water of the US

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

Based on the desktop review, the aerial map of the project area (Appendix B, page 3), and the RFI report (Appendix E, pages 1 to 8) there are five streams, rivers, watercourses, or other jurisdictional features within the 0.5-mile search radius. Two streams are present within the project area. That number was confirmed by the site visit on June 14, 2021 by Butler, Fairman, & Seufert, Inc. (BF&S).

There are no Federal, Wild and Scenic Rivers; State Natural, Scenic, and Recreational Rivers; Outstanding Rivers for Indiana; navigable waterways or National Rivers Inventory waterways present in the project area.

A *Waters of the U.S. Determination/Wetland Delineation Report* was approved by the INDOT Ecology and Waterway Permitting Office (EWPO) on July 1, 2022. Please refer to Appendix F for the *Waters of the U.S. Determination/Wetland Delineation Report*. It was determined that there are two likely Waters of the U.S. within the project area, Silverville Branch and an unnamed tributary (UNT) to Silverville Branch. There are also three roadside ditches within the project area, all of which are likely non-jurisdictional. The U.S. Army Corps of Engineers (USACE) makes all final determinations regarding jurisdiction.

The project will result in a total of approximately 212 linear feet of permanent stream impacts and a total of approximately 20 linear feet of temporary stream impacts, as described below, with both preferred alternatives.

Silverville Branch is a perennial stream flowing northeast through the project area. Its dimensions at the ordinary high-water mark (OHWM) are approximately 1.5-feet-deep and 28-feet-wide. It is of poor quality due to entrenchment with a high width/depth ratio, making it difficult to support aquatic organisms. The bridge carrying SR 158 over Silverville Branch will be replaced with a three-sided culvert. Riprap will be installed in the stream approximately 24 inches deep. The ability of Silverville Branch to flow under SR 158 will not be impeded. The work will require permit authorization from IDEM and USACE prior to construction.

Silverville Branch will have approximately 150 LFT of permanent impacts below the OHWM due to riprap placement around the spill slopes and banks. A temporary pumparound will be utilized to dewater Silverville Branch, resulting in 10 LFT of temporary impacts. Water will be pumped to filtration bags located downstream of the work areas before being released directly back into Silverville Branch. No stream mitigation is anticipated.

UNT to Silverville Branch is an intermittent stream flowing south into the project area. Its dimensions at the OHWM are 0.67-feet-deep and 4-feet-wide. This stream is of average quality due to the lack of entrenchment. The 42-foot-long CMP carrying the private drive will be removed and replaced to accommodate a 52-foot-long CMP on an altered alignment. A total of 62 LFT of permanent

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impacts are anticipated due to the removal of the existing 42-foot-long pipe, backfill of the pipe alignment, and backfill of 20 LFT of stream channel upstream of the existing stream in order to accommodate the replacement CMP on an altered alignment. The new pipe outlet will closely match the existing pipe outlet. There will be approximately 10 LFT of temporary impacts due to the utilization of a pumparound. No mitigation is anticipated.

The Indiana Department of Natural Resources Division of Fish and Wildlife (IDNR-DFW) responded to early coordination on June 24, 2022 with recommendations for stream crossing structures as well as commitments for erosion control (Appendix C, pages 5 to 7).

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

Open Water Feature(s)	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"/>
Retention/Detention Basin	<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"/>

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

Based on the desktop review, the aerial map of the project area (Appendix B, page 3), and the RFI report (Appendix E, pages 1 to 8), there are two lakes within the 0.5-mile search radius. No open water features are present within the project area. That number was confirmed by the site visit on June 14, 2021 by BF&S. No impact is expected.

A *Waters of the U.S. Determination/Wetland Delineation Report* was approved by INDOT EWPO on July 1, 2022. Please refer to Appendix F for the *Waters of the U.S. Determination/Wetland Delineation Report*. No open water features were found within the project area. The USACE makes all final determinations regarding jurisdiction.

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

Total wetland area: _____ Acre(s) Total wetland area impacted: _____ Acre(s)

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

Wetland No.	Classification	Total Size (Acres)	Impacted Acres	Comments (i.e. location, likely Water of the US, appendix reference)

Wetlands (Mark all that apply)	Documentation	ESD Approval Dates
	Wetland Determination	<input checked="" type="checkbox"/>
Wetland Delineation	<input type="checkbox"/>	
USACE Isolated Waters Determination	<input type="checkbox"/>	

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

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

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

Based on the desktop review, the aerial map of the project area (Appendix B, page 3), and the RFI report (Appendix E, pages 1 to 8) there are ten wetlands within the 0.5-mile search radius. There are no wetlands present within the project area. That number was confirmed by the site visit on June 14, 2021 by BF&S.

A *Waters of the U.S. Determination/Wetland Delineation Report* was approved by INDOT EWPO on July 1, 2022. Please refer to Appendix F for the *Waters of the U.S. Determination/Wetland Delineation Report*. No wetlands were found within the project area. The USACE makes all final determinations regarding jurisdiction.

Terrestrial Habitat	Presence	Impacts	
		Yes	NO
	X	X	

Total terrestrial habitat in project area: 0.48 Acre(s) Total tree clearing: 0.45 Acre(s)

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

Based on the desktop review, the aerial map of the project area (Appendix B, page 3), a site visit on June 14, 2021 by BF&S, and the RFI report (Appendix E, pages 1 to 8), there are three types of terrestrial habitats in the project area: fallow field/agricultural land, mowed lawn, and forest.

The land use in the area is primarily agricultural with scattered residences. Approximately 0.036 acre of non-forested terrestrial land will be impacted by the replacement of Bridge (158)58-47-03027. Of this total, approximately 0.004 acre consists of fallow field, and approximately 0.032 acre consists of mowed roadside and residential lawn areas. These properties mainly contain kept lawns (grassland) which are dominated by grasses and forbs. The lawns may contain some trees and shrubs, but they are not the dominant flora. Approximately 0.495 acre of forested area will be permanently impacted and 0.035 will be temporarily impacted. The dominant tree species in the forested area along SR 158 are American sycamore (*Platanus occidentalis*), Black walnut (*Juglans nigra*), Tulip tree (*Liriodendron tulipifera*), Black maple (*Acer nigrum*), Sugar maple (*Acer saccharum*), and Ohio buckeye (*Aesculus glabra*). Minimization measures include a limited working area to avoid unnecessary impacts to the surrounding vegetation. Mitigation is not anticipated.

The IDNR-DFW responded to early coordination on June 24, 2022 with recommendations to avoid or minimize fish, wildlife and botanical resources (Appendix C, pages 5 to 7), including to minimize the clearing of trees and brush, developing a mitigation plan for any unavoidable habitat impacts and protecting all disturbed areas immediately after construction with native vegetation.

During coordination with INDOT EWPO on December 27, 2022, INDOT stated that when going from a bridge to a culvert, the ability of wildlife to use the structure for passage must be maintained. This includes creating a sufficient height for a deer to pass through and the bottom needs to be finished appropriately. Due to the change from a bridge to a culvert, there will be wildlife impacts based on this design change (Appendix C, page 36). To minimize impacts to wildlife, the culvert is a three-sided structure which will have a natural bottom. Further, the minimum dimensions for passage of deer with box culverts are 8 feet in height by 20 feet in width or 10 feet in height by 10 feet in width. The current design is 11-feet 3-inches in height by 32-feet wide (Appendix B, page 12).

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

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Protected Species

Federally Listed Bats

	Yes	No
Information for Planning and Consultation (IPaC) determination key completed	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Section 7 informal consultation completed (IPaC cannot be completed)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Section 7 formal consultation Biological Assessment (BA) required	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Determination Received for Listed Bats from USFWS: NE NLAA LAA

Other Species not included in IPaC

	Yes	No
Additional federal species found in project area (based on IPaC species list)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
State species (not bird) found in project area (based upon consultation with IDNR)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Migratory Birds

	Yes	No
Known usage or presence of birds (i.e. nests)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
State bird species based upon coordination with IDNR	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

Based on a desktop review and the RFI report (Appendix E, pages 1 to 8) completed by BF&S on May 12, 2022, the IDNR Lawrence County Endangered, Threatened and Rare (ETR) Species List has been checked. According to the IDNR-DFW early coordination response letter dated June 24, 2022 (Appendix C, pages 5 to 7), the Natural Heritage Program's Database has been checked and no species have been documented within 0.5 mile of the project area. An INDOT 0.5-mile bat review occurred on July 6, 2021 and did not indicate the presence of endangered bat species.

Project information was submitted through the USFWS's Information for Planning and Consultation (IPaC) portal, and an official species list was generated (Appendix C, pages 14 through 19). The project is within range of the federally endangered Indiana bat (*Myotis sodalis*) and the federally threatened northern long-eared bat (NLEB) (*Myotis septentrionalis*). The monarch butterfly (*Danaus plexippus*) is listed as a candidate species. The bridge replacement project is not anticipated to significantly impact the monarch butterfly nor its habitat. No additional species were generated in the IPaC species list other than the ones listed above.

The project qualifies for the *Range-wide Programmatic Informal Consultation for the Indiana bat and NLEB*, dated May 2016 (revised February 2018), between FHWA, Federal Railroad Administration (FRA), Federal Transit Administration (FTA), and USFWS. A bridge inspection was conducted on July 1, 2021 and no evidence of bats was observed (Appendix C, page 34).

An effect determination key was completed on December 19, 2021, and based on the responses provided, the project was found "Not Likely to Adversely Affect (NLAA)" the Indiana bat and the NLEB (Appendix C, pages 20 to 32). INDOT reviewed and verified the effect finding on December 29, 2021 and requested USFWS's review of the finding (Appendix C, page 33). No response was received from USFWS within the 14-day review period; therefore, it was concluded they concur with the finding. Avoidance and Minimization Measures (AMMs) to inform workers, limit tree removal, minimize effects from temporary lighting, and void impacts to hibernacula are included as firm commitments in the *Environmental Commitments* section of this document.

According to the August 9, 2022 INDOT Bridge Inspection Report, empty nests were present during the bridge inspection (Appendix I, page 3). Coordination occurred on November 15, 2022 with the INDOT Ecology and Waterway Permitting Office (EWPO) (Appendix C, page 35). INDOT EWPO directed that the Migratory Bird RSP (below) be included, but stated that due to a lack of water on the surface, the bridge would not likely be a desirable location for swallows or Eastern Phoebes.

Bridge (158)58-47-03027 located on SR 158 over Silversville Branch has shown evidence of use (i.e. nests) by a bird species protected under the Migratory Bird Treaty Act (MBTA) during the August 9, 2022 INDOT Bridge inspection. Avoidance and minimization measures must be implemented prior to the start of and during the nesting season. Nests without eggs or young should be removed prior to construction during the non-nesting season (September 8 – April 30) and during the nesting season if no eggs or young are present. Nests with eggs or young cannot be removed or disturbed during the nesting season (May 1 – September 7). Nests with eggs or young should be screened or buffered from active construction. Details of the required procedures are outlined in the "Potential Migratory Bird on Structure" Unique Special Provision (USP). This firm commitment is included in the *Environmental Commitments* of this document.

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A bridge inspection occurred on July 1, 2021 and no evidence of bats nor birds was identified (Appendix C, page 34). USFWS Bridge/Structure Assessments are only valid for two years. However, an INDOT Bridge Inspection occurred on August 9, 2022 (Appendix I, pages 2 to 3). If construction will begin after August 9, 2024, an inspection of the structure by a qualified individual, must be performed. Inspection of the structure should check for presence of bats/bat indicators and/or presence of birds. The results of the inspection must indicate no signs of bats or birds. If signs of bats or birds are documented during this inspection, the INDOT District Environmental Manager must be contacted immediately. This firm commitment is included in the *Environmental Commitments* of this document.

An additional Culvert Inspection occurred on December 21, 2022 for the CMPs under the Private Drive adjacent to SR 158 and under Graded Lane. No evidence of bats nor birds was identified (Appendix C, pages 37 to 38). If construction will begin after December 21, 2024, an inspection of the structure by a qualified individual, must be performed. Inspection of the structure should check for presence of bats/bat indicators and/or presence of birds. The results of the inspection must indicate no signs of bats or birds. If signs of bats or birds are documented during this inspection, the INDOT District Environmental Manager must be contacted immediately. This firm commitment is included in the *Environmental Commitments* of this 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.

Geological and Mineral Resources

- Project located within the Indiana Karst Region
- Karst features identified within or adjacent to the project area
- Oil/gas or exploration/abandoned wells identified in the project area

Yes	No
X	
X	
	X

Date Karst Evaluation reviewed by INDOT EWPO (if applicable): N/A

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

Based on a desktop review and the Indiana Karst Region map, the project is located inside the designated Indiana Karst Region as outlined in the most current *Protection of Karst Features during Project Development and Construction*. According to the topo map of the project area (Appendix B, page 2), the RFI report (Appendix E), and early coordination, there are karst features identified within or adjacent to the project area. The project is located in an area of high cave entrance density. An additional karst evaluation was not required per coordination with INDOT EWPO that occurred on December 27, 2022 (Appendix C, page 36). No mitigation is anticipated. In the early coordination response July 21, 2022, the Indiana Geological and Water Survey (IGWS) stated that karst features may exist in the project area (Appendix C, page 12). The IGWS also reported a moderate potential for bedrock resources. Response from IGWS has been communicated to the designer on October 3, 2022.

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SECTION C – OTHER RESOURCES

Drinking Water Resources

- Wellhead Protection Area(s)
- Source Water Protection Area(s)
- Water Well(s)
- Urbanized Area Boundary
- Public Water System(s)

Presence

Impacts

Yes	No

- Is the project located in the St. Joseph Sole Source Aquifer (SSA):
- If Yes, is the FHWA/EPA SSA MOU Applicable?
- If Yes, is a Groundwater Assessment Required?

Yes	No
	X

Check the appropriate boxes and discuss each topic below. Provide details about impacts and summarize resource-specific coordination responses and any mitigation commitments. Reference responses in the Appendix.

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

The IDEM Wellhead Proximity Determinator website (<http://www.in.gov/idem/cleanwater/pages/wellhead/>) was accessed on September 8, 2022 by BF&S. This project is not located within a Wellhead Protection Area and is not located within a Source Water Area. No impacts are expected.

The Indiana Department of Natural Resources Water Well Record Database website (<https://www.in.gov/dnr/water/3595.htm>) was accessed on September 8, 2022 by BF&S. No wells are located near this project. Therefore, no impacts are expected.

Based on a desktop review of aerial maps by BF&S on September 8, 2022, this project is not located in an Urban Area Boundary. No impacts are expected.

Based on a desktop review, a site visit on June 14, 2021 by BF&S, the aerial map of the project area (Appendix B, page 3), and utility coordination, no public water systems were identified. Therefore, no impacts are expected.

Floodplains

- Project located within a regulated floodplain
- Longitudinal encroachment
- Transverse encroachment
- Homes located in floodplain within 1000' up/downstream from project

Presence

X
X
X

Impacts

Yes	No
	X
	X
	X

If applicable, indicate the Floodplain Level?

Level 1 Level 2 Level 3 Level 4 Level 5

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

Based on a desktop review of The Indiana Department of Natural Resources Indiana Floodway Information Portal website (<https://indnr.maps.arcgis.com/apps/webappviewer/index.html?id=05026dabc2e8461983e196d56a213c1e>) by BF&S on February 16, 2022, and the RFI report (Appendix E), this project is located in a regulatory floodplain as determined from approved IDNR floodplain maps (Appendix F, page 8). An early coordination letter was sent on May 25, 2022 to the local Floodplain Administrator. The floodplain administrator did not respond within the 30-day time frame. This project qualifies as a Category 4 per the current INDOT CE Manual, which covers projects involving replacement of existing drainage structures on essentially the same alignment.

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There will be transverse impacts on the floodplains.

Zero homes are located within the base floodplain within 1,000 feet upstream and one home is 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 alternatives will be completed during the preliminary design phase. A summary of this study will be included with the Field Check Plans.

No Construction in a Floodway Permit is necessary as the bridge falls under an exemption. The bridge is located on a state road in a rural area. Additionally, the upstream drainage area is less than 50 square miles.

Farmland	<u>Presence</u>	<u>Impacts</u>	
		<u>Yes</u>	<u>No</u>
Agricultural Lands	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Prime Farmland (per NRCS)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Total Points (from Section VII of CPA-106/AD-1006*)	<u>130</u>		

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

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

Based on a desktop review, a site visit on July 1, 2021 by BF&S, and the aerial map of the project area (Appendix B, page 3), this project will convert 0.01 acre of farmland as defined by the Farmland Protection Policy Act. An early coordination letter was sent on May 25, 2022 to Natural Resources Conservation Service (NRCS). Coordination with NRCS resulted in a score of 130 on the AD-1006 (03-02) form (Appendix C, page 9). NRCS's threshold score for significant impacts to farmland that result in the consideration of alternatives is 160. Since this project score is less than the threshold, no significant loss of prime, unique, statewide, or local important farmland will result from this project. No alternatives other than those previously discussed in this document will be investigated without reevaluating impacts to prime farmland.

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SECTION D – CULTURAL RESOURCES

Minor Projects PA	Category(ies) and Type(s) <input type="text" value="B-9, B-12"/>	INDOT Approval Date(s) <input type="text" value="12-12-2022"/>	N/A <input type="text"/>
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Full 106 Effect Finding

No Historic Properties Affected <input type="checkbox"/>	No Adverse Effect <input type="checkbox"/>	Adverse Effect <input type="checkbox"/>
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Eligible and/or Listed Resources Present

NRHP Building/Site/District(s) <input type="checkbox"/>	Archaeology <input type="checkbox"/>	NRHP Bridge(s) <input type="checkbox"/>
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Documentation Prepared (mark all that apply)

APE, Eligibility and Effect Determination	<input type="checkbox"/>
800.11 Documentation	<input type="checkbox"/>
Historic Properties Report or Short Report	<input type="checkbox"/>
Archaeological Records Check and Assessment	<input type="checkbox"/>
Archaeological Phase Ia Survey Report	<input checked="" type="checkbox"/>
Archaeological Phase Ic Survey Report	<input type="checkbox"/>
Other:	<input type="checkbox"/>

ESD Approval Date(s)
SHPO Approval Date(s)

<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input checked="" type="checkbox"/>	12-9-2022	N/A
<input type="checkbox"/>	<input type="text"/>	<input type="text"/>
<input type="checkbox"/>	<input type="text"/>	<input type="text"/>

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

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

On December 12, 2022, the INDOT Cultural Resource Office (CRO) determined that this project falls within the guidelines of Categories B-9 and B-12 under the Minor Projects Programmatic Agreement (MPPA) (Appendix D, pages 1 to 7).

Category B-9 covers installation, replacement, repair, lining, or extension of culverts and other drainage structures in previously disturbed soils. Category B-12 covers bridge replacements, widenings, or raising the elevation of the superstructures where no archaeological properties eligible for the National Register of Historic Places (NRHP) are present (Condition A ii.) and where the bridge is not eligible for listing in the National Register for Historic Places according to the Indiana Historic Bridge Inventory (Condition B ii.a).

An Archaeological Report was approved on December 9, 2022 by Gray & Pape, Inc. (Appendix D, pages 8 to 11). No archaeological sites were located. 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 E – SECTION 4(f) RESOURCES/ SECTION 6(f) RESOURCES

	<u>Presence</u>	<u>Use</u>	
		Yes	No
Parks and Other Recreational Land			
Publicly owned park	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Publicly owned recreation area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (school, state/national forest, bikeway, etc.)	X	<input type="checkbox"/>	X
Wildlife and Waterfowl Refuges			
National Wildlife Refuge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
National Natural Landmark	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
State Wildlife Area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
State Nature Preserve	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Historic Properties			
Site eligible and/or listed on the NRHP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Evaluations		
	Prepared		
Programmatic Section 4(f)	<input type="checkbox"/>		
"De minimis" Impact	<input type="checkbox"/>		
Individual Section 4(f)	<input type="checkbox"/>		
Any exception included in 23 CFR 774.13	<input type="checkbox"/>		

Discuss Programmatic Section 4(f) and "de minimis" Section 4(f) impacts in the discussion below. Individual Section 4(f) documentation must be included in the appendix and summarized below. Discuss proposed alternatives that satisfy the requirements of Section 4(f). FHWA has identified various exceptions to the requirement for Section 4(f) approval. Refer to 23 CFR § 774.13 - Exceptions.

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

Based on a desktop review, the aerial map of the project area (Appendix B, page 3) and the RFI report (Appendix E), there is one potential 4(f) resource located within the 0.5-mile search radius. According to additional research, and by the site visit on June 14, 2021 by BF&S, there is one 4(f) resource located within or adjacent to the project area. The Hoosier National Forest is located adjacent to the project area. The project will not use this resource by taking permanent right of way and will not indirectly use the resource in such a way that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired. Therefore, no 4(f) use is expected.

Section 6(f) Involvement

Section 6(f) Property

<u>Presence</u>	<u>Use</u>	
	Yes	No
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

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

A review of 6(f) properties on the INDOT ESD website revealed a total of three properties in Lawrence County (Appendix I, page 1). None of these properties are located within or adjacent to the project area. Therefore, there will be no impacts to 6(f) resources.

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SECTION F – Air Quality

STIP/TIP and Conformity Status of the Project

Is the project in the most current STIP/TIP? Yes No
 Is the project located in an MPO Area? Yes No
 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? Yes No
 Is the project exempt from conformity? Yes No
 If No, then:
 Is the project in the Transportation Plan (TP)? Yes No
 Is a hot spot analysis required (CO/PM)? Yes No

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

Location in STIP: Pg. 143
 Name of MPO (if applicable): N/A
 Location in TIP (if applicable): N/A

Level of MSAT Analysis required?

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

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

The Fiscal Year (FY) 2022-2026 Statewide Transportation Improvement Program (STIP) is listed based on the lead DES number in the contract. The lead DES number for this contract is Des. No. 1800133. The FY 2022-2026 STIP includes DES No. 1800133, 1800135, 2000651 by reference with the contract number B-42174 (Appendix H, page 1).

This project is located in Lawrence County, which is currently in attainment for all criteria pollutants according to EPA (<https://www.epa.gov/green-book>). Therefore, the conformity procedures of 40 CFR Part 93 do not apply.

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

SECTION G - NOISE

Noise

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

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

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

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

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SECTION H – COMMUNITY IMPACTS

Regional, Community & Neighborhood Factors

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

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

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

The surrounding area is residential, forested and agricultural. No changes in surrounding land use are anticipated. The existing tax base and property values are not likely to decrease due to this project.

INDOT has updated its Americans with Disabilities Act (ADA) ADA Transition plan, which can be found at <https://www.in.gov/indot/files/21-ADA-Transition-Plan.pdf>. This project does not include any pedestrian facilities; therefore, the Transition Plan is not applicable. Based on the above investigations and coordination, no permanent community or economic impacts are anticipated from this project. This Des. No. is the lead in a contract with two other projects, Des. 1800135 and 2000651, both of which are along SR 158. These projects are intended to maintain and allow vehicular traffic along SR 158 in Silverville, Indiana.

Public Facilities and Services

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

Based on a desktop review, the aerial map of the project area (Appendix B, page 3), and the RFI report (Appendix E), there are two public facilities within the 0.5-mile search radius. There are no public facilities within or adjacent to the project area, which was confirmed by the site visit on June 14, 2021 by BF&S. Therefore, no impacts are expected. Access to all properties will be maintained during construction.

The Lawrence County Surveyor responded to early coordination on May 25, 2022 and stated the project was not in conflict with county section corners (Appendix C, page 10).

Naval Surface Warfare Center-Crane Division did not respond to early coordination.

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 and disproportionate impacts to EJ populations?

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

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

Under FHWA Order 6640.23A, Federal Highway Administration (FHWA) and the project sponsor, as a recipient of funding from FHWA, are responsible to ensure that their programs, policies, and activities do not have a disproportionately high and adverse effect on minority or low-income populations. This project will have no relocations and will require less than 0.5 acre of additional permanent ROW; therefore, an EJ analysis is not required per the current INDOT Categorical Exclusion Manual.

Indiana Department of Transportation

County Lawrence Route SR 158 Des. No. 1800133

Relocation of People, Businesses or Farms

Will the proposed action result in the relocation of people, businesses or farms?
Is a BIS or CSRS required?

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

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

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

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

SECTION I – HAZARDOUS MATERIALS & REGULATED SUBSTANCES

Hazardous Materials & Regulated Substances (Mark all that apply)

Documentation

- Red Flag Investigation (RFI)
- Phase I Environmental Site Assessment (Phase I ESA)
- Phase II Environmental Site Assessment (Phase II ESA)
- Design/Specifications for Remediation required?

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

Date RFI concurrence by INDOT SAM (if applicable): May 24, 2022

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

Based on a review of GIS and available public records, the RFI was completed by BF&S on May 12, 2022 and INDOT Site Assessment and Management (SAM) provided their concurrence on May 24, 2022 (Appendix E, page 5). No sites with hazardous material concerns (hazmat sites) or sites involved with regulated substances were identified in or within 0.5 mile of the project area. Further investigation for hazardous material concerns or regulated substances is not required at this time.

Indiana Department of Transportation

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Part IV – Permits and Commitments

PERMITS CHECKLIST

Permits (mark all that apply)

Likely Required

Army Corps of Engineers (404/Section10 Permit)

Nationwide Permit (NWP)	<input type="checkbox"/>
Regional General Permit (RGP)	<input type="checkbox"/>
Individual Permit (IP)	X
Other	<input type="checkbox"/>

IN Department of Environmental Management (401/Rule 5)

Nationwide Permit (NWP)	<input type="checkbox"/>
Regional General Permit (RGP)	X
Individual Permit (IP)	<input type="checkbox"/>
Isolated Wetlands	<input type="checkbox"/>
Rule 5	<input type="checkbox"/>
Other	<input type="checkbox"/>

IN Department of Natural Resources

Construction in a Floodway	<input type="checkbox"/>
Navigable Waterway Permit	<input type="checkbox"/>
Other	<input type="checkbox"/>

Mitigation Required

US Coast Guard Section 9 Bridge Permit

Others (Please discuss in the discussion below)

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

A 404 permit from the USACE and a 401 permit from IDEM will be required for the replacement of Bridge (158)58-47-03027.

No Construction in a Floodway Permit is necessary as the bridge falls under an exemption. The bridge is located on a state road in a rural area. Additionally, the upstream drainage area is less than 50 square miles.

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

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

ENVIRONMENTAL COMMITMENTS

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

Firm

- 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)
- 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)
- 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)

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4. Tree Removal AMM 1: Modify all phases/aspects of the project (e.g., temporary work areas, alignments) to avoid tree removal. (USFWS)
5. 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 surface and outside of documented roosting/foraging habitat or travel corridors; visual emergence survey must be conducted with no bats observed. (USFWS)
6. 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)
7. 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)
8. Lighting AMM 1: Direct temporary lighting away from suitable habitat during the active season. (USFWS)
9. Hibernacula AMM 1: For projects located within karst areas, on-site personnel will use best management practices, secondary containment measures, or other standard spill prevention and countermeasures to avoid impacts to possible hibernacula. Where practicable, a 300-foot buffer will be employed to separate fueling areas and other major containment risk activities from caves, sinkholes, losing streams, and springs in karst topography. (USFWS)
10. Bridge (158)58-47-03027 located on SR 158 over Silverville Branch has shown evidence of use (i.e. nests) by a bird species protected under the Migratory Bird Treaty Act (MBTA) during the August 9, 2022 INDOT Bridge inspection. Avoidance and minimization measures must be implemented prior to the start of and during the nesting season. Nests without eggs or young should be removed prior to construction during the non-nesting season (September 8 – April 30) and during the nesting season if no eggs or young are present. Nests with eggs or young cannot be removed or disturbed during the nesting season (May 1 – September 7). Nests with eggs or young should be screened or buffered from active construction. Details of the required procedures are outlined in the “Potential Migratory Bird on Structure” Unique Special Provision (USP). This firm commitment is included in the *Environmental Commitments* of this document. (USFWS)
11. Culvert Inspections occurred on December 21, 2022 for the CMPs under the Private Drive adjacent to SR 158 and under Graded Lane. No evidence of bats nor birds was identified. If construction will begin after December 21, 2024, an inspection of the structure by a qualified individual, must be performed. Inspection of the structure should check for presence of bats/bat indicators and/or presence of birds. The results of the inspection must indicate no signs of bats or birds. If signs of bats or birds are documented during this inspection, the INDOT District Environmental Manager must be contacted immediately. (USFWS)
12. 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)
13. A bridge inspection for Bridge (158)58-47-03027 occurred on August 9, 2022 and no evidence of bats nor birds was identified. USFWS Bridge/Structure Assessments are only valid for two years. If construction will begin after July 1, 2023, an inspection of the structure by a qualified individual, must be performed. Inspection of the structure should check for presence of bats/bat indicators and/or presence of birds. The results of the inspection must indicate no signs of bats or birds. If signs of bats or birds are documented during this inspection, the INDOT District Environmental Manager must be contacted immediately. (USFWS)
14. INDOT EWPO stated in coordination on December 27, 2022 that when going from a bridge to a culvert, the ability of wildlife to use the structure for passage must be maintained. This includes creating a sufficient height for a deer to pass through and the bottom needs to be finished appropriately. (INDOT EWPO)

For Further Consideration

15. For crossing replacements, the new structure must include wildlife passage appropriate for the type of replacement structure being proposed. If the replacement structure is sized to accommodate white-tailed deer passage, then it should be included in the design of the new structure. If white-tailed deer passage is not possible with the existing structure, deer passage still

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needs to be considered in the design and at minimum the bank lines must be restored within structures to allow for smaller wildlife passage above the ordinary high-water mark. All wildlife passage designs must include a smooth level pathway a minimum of 1-2 feet in width composed of natural substrate (soil, sand, gravel, etc.) or compacted aggregate fill over riprap (#2, #53, #73, etc.) tied into existing elevations both upstream and downstream. The stream crossing repairs or modifications, and any bank stabilization under or around the structure, must not create conditions that are less favorable for wildlife passage when compared to existing conditions. Upgrading wildlife passage for rehabilitated/modified structures is encouraged whenever possible to improve wildlife/vehicle safety. (IDNR-DFW)

16. For purposes of maintaining fish and wildlife passage through a crossing structure, the Environmental Unit recommends bridges rather than culverts and bottomless culverts rather than box or pipe culverts. Wide culverts are better than narrow culverts, and culverts with shorter through lengths are better than culverts with longer through lengths. If box or pipe culverts are used, the bottoms should be buried a minimum of 6 in. (or 20% of the culvert height/pipe diameter, whichever is greater up to a maximum of 2 ft.) below the stream bed elevation to allow a natural streambed to form within or under the crossing structure. Crossings should: span the entire channel width (a minimum of 1.2 times the OHWM width); maintain the natural stream substrate within the structure; have a minimum openness ratio (height x width / length) of 0.25; and have stream depth, channel width, and water velocities during low-flow conditions that are approximate to those in the natural stream channel. Banklines should be restored within box and pipe structures to allow for wildlife passage above the ordinary highwater mark. (IDNR-DFW)
17. 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. The mitigation site should be located in the floodway, downstream of the one (1) square mile drainage area of that stream (or another stream within the 8-digit HUC, preferably as close to the impact site as possible) and adjacent to existing forested riparian habitat. (IDNR-DFW)
18. 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)
19. Do not construct any temporary runarounds, access bridges, causeways, cofferdams, diversions, or pumpharounds. (IDNR-DFW)
20. Use minimum average 6-inch-graded riprap stone extended below the normal water level to provide habitat for aquatic organisms in the voids. (IDNR-DFW)
21. Do not excavate in the low flow area except for the placement of piers, foundations, and riprap, or removal of the old structure. (IDNR-DFW)

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Lawrence County, Indiana
Des. No. 1800133

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Page 220 from FY 2022-2026 INDOT STIP H-1

Appendix I: Additional Studies

List of LWCF Section 6(f) Properties in Lawrence County I-1

Excerpt from the 2022 Bridge Inspection Report I-2 to I-3

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 Impacts³	No construction in waterways or water bodies	< 300 linear feet of stream impacts	≥ 300 linear feet of stream impacts	-	USACE Individual 404 Permit ⁴
Wetland Impacts³	No adverse impacts to wetlands	< 0.1 acre	-	< 1.0 acre	≥ 1.0 acre
Right-of-way⁵	Property acquisition for preservation only or none	< 0.5 acre	≥ 0.5 acre	-	-
Relocations⁶	None	-	-	< 5	≥ 5
Threatened/Endangered Species (Species Specific Programmatic for Indiana bat & northern long eared bat)*	"No Effect", "Not likely to Adversely Affect" (With select AMMs ⁷)	"Not likely to Adversely Affect" (With any AMMs or commitments)	-	"Likely to Adversely Affect"	Project does not fall under Species Specific Programmatic ⁸
Threatened/Endangered Species (Any other species)*	Falls within guidelines of USFWS 2013 Interim Policy or "No Effect"	"Not likely to Adversely Affect"	-	-	"Likely to Adversely Affect"
Environmental Justice	No disproportionately high and adverse impacts	-	-	-	Potential ⁹
Sole Source Aquifer	No Detailed Groundwater Assessment	-	-	-	Detailed Groundwater Assessment
Floodplain	No Substantial Impacts	-	-	-	Substantial Impacts
Section 4(f) Impacts	None	-	-	-	Any ¹⁰
Section 6(f) Impacts	None	-	-	-	Any
Permanent Traffic Alteration	None	-	-	-	Any
Noise Analysis Required	No	-	-	-	Yes
Air Quality Analysis Required	No	-	-	-	Yes ¹¹
Approval Level					
<ul style="list-style-type: none"> • District Env. (DE) • Env. Serv. Div. (ESD) • FHWA 	Concurrence by DE or ESD	DE or ESD	DE or ESD	DE and/or ESD	DE and/or ESD; and FHWA

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

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

³ Total permanent impacts to streams (linear feet) and wetlands (acres).

⁴ US Army Corps of Engineers Individual 404 Permit

⁵ Total permanent and temporary right-of-way. This does not include reacquisition of existing apparent right-of-way.

⁶ If any relocations are within an area with a known or suspected Environmental Justice (EJ) or disadvantaged population, or has greater than 5 relocations, a conversation with FHWA, through INDOT ESD, is needed to confirm NEPA classification and outreach plan for the project.

⁷ Avoidance and Mitigation Measures (AMMs) determined by the IPAC determination key to be required that are not tree AMMs, bridge AMMs, or structure AMMs.

⁸ Projects that do not fall under a Species Specific Programmatic and results in a "Likely to Adversely Affect". Other findings can be processed as a lower-level CE.

⁹ Potential for causing a disproportionately high and adverse impact.

¹⁰ Section 4(f) use resulting in an Individual, Programmatic, or *de minimis* evaluation. The only exception is a *de minimis* evaluation for historic properties (Effective January 2, 2020). If a historic property *de minimis* and no other use, mark the *None* column.

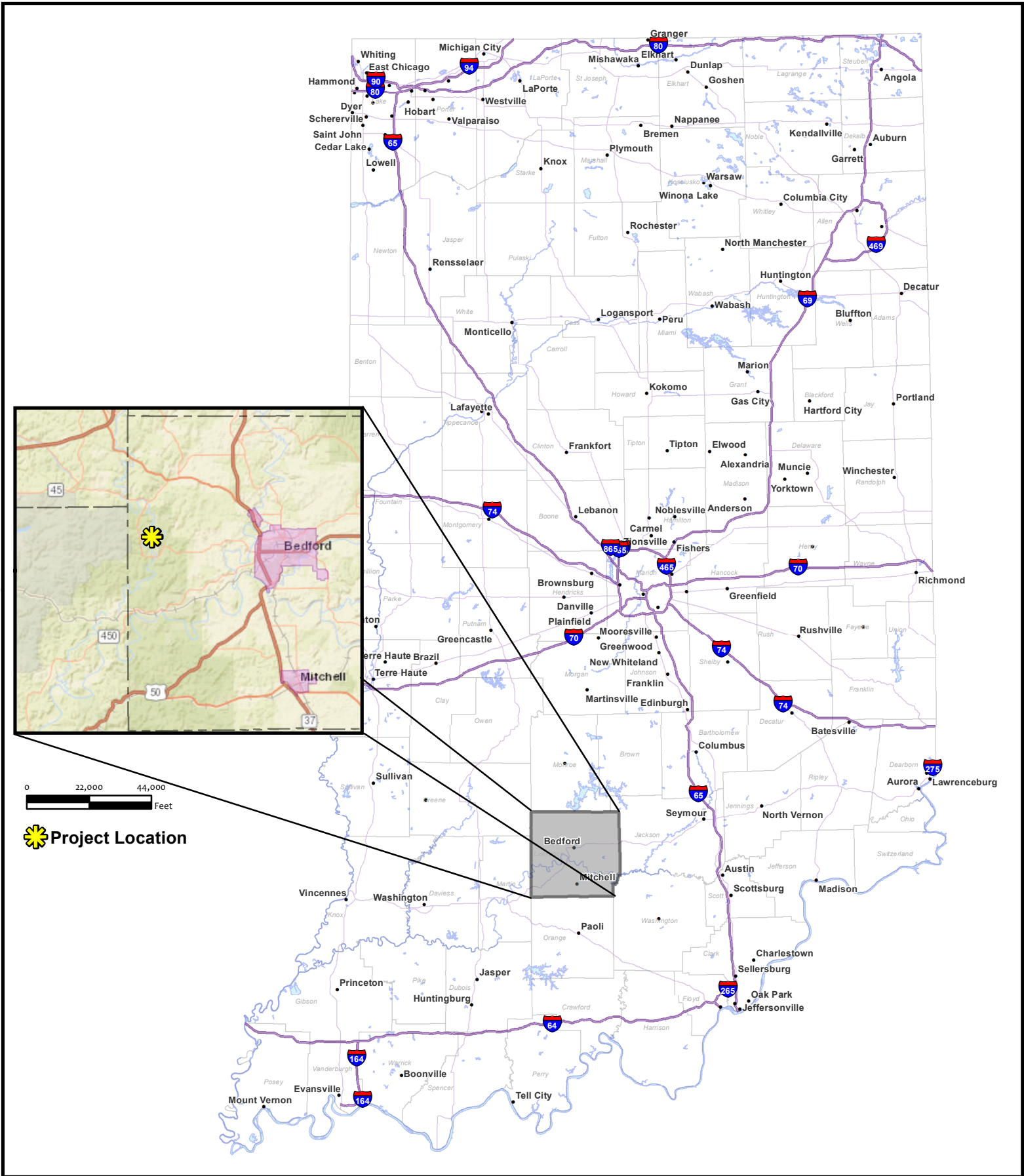
¹¹ Hot Spot Analysis and/or MSAT Quantitative Emission Analysis.

* Includes the threatened/endangered species critical habitat

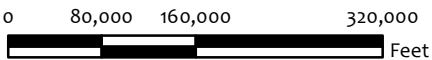
Note: Substantial public or agency controversy may require a higher-level NEPA document.

Appendix B

Graphics



 Project Location

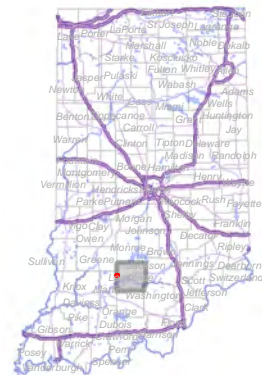


State Map

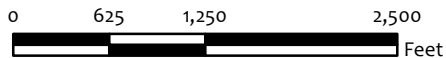
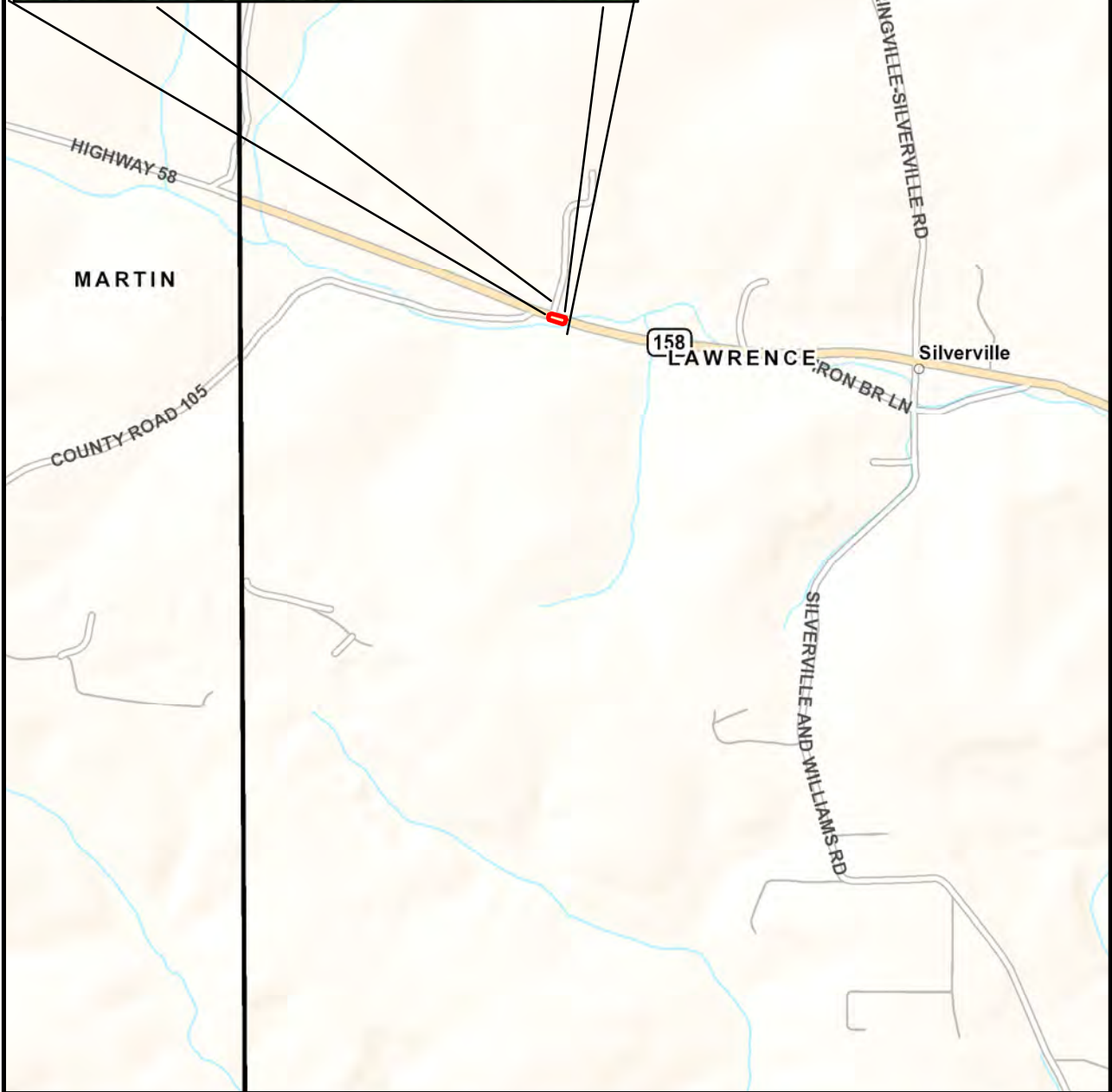
SR 158 over Silverville Branch, Bridge Project
 Lawrence County, Indiana
 Des. No. 1800133



Map Source: Indiana Map



 Project Location



Roadway Location Map

SR 158 over Silverville Branch
Bridge Project Lawrence County, Indiana
Des. No.1800133

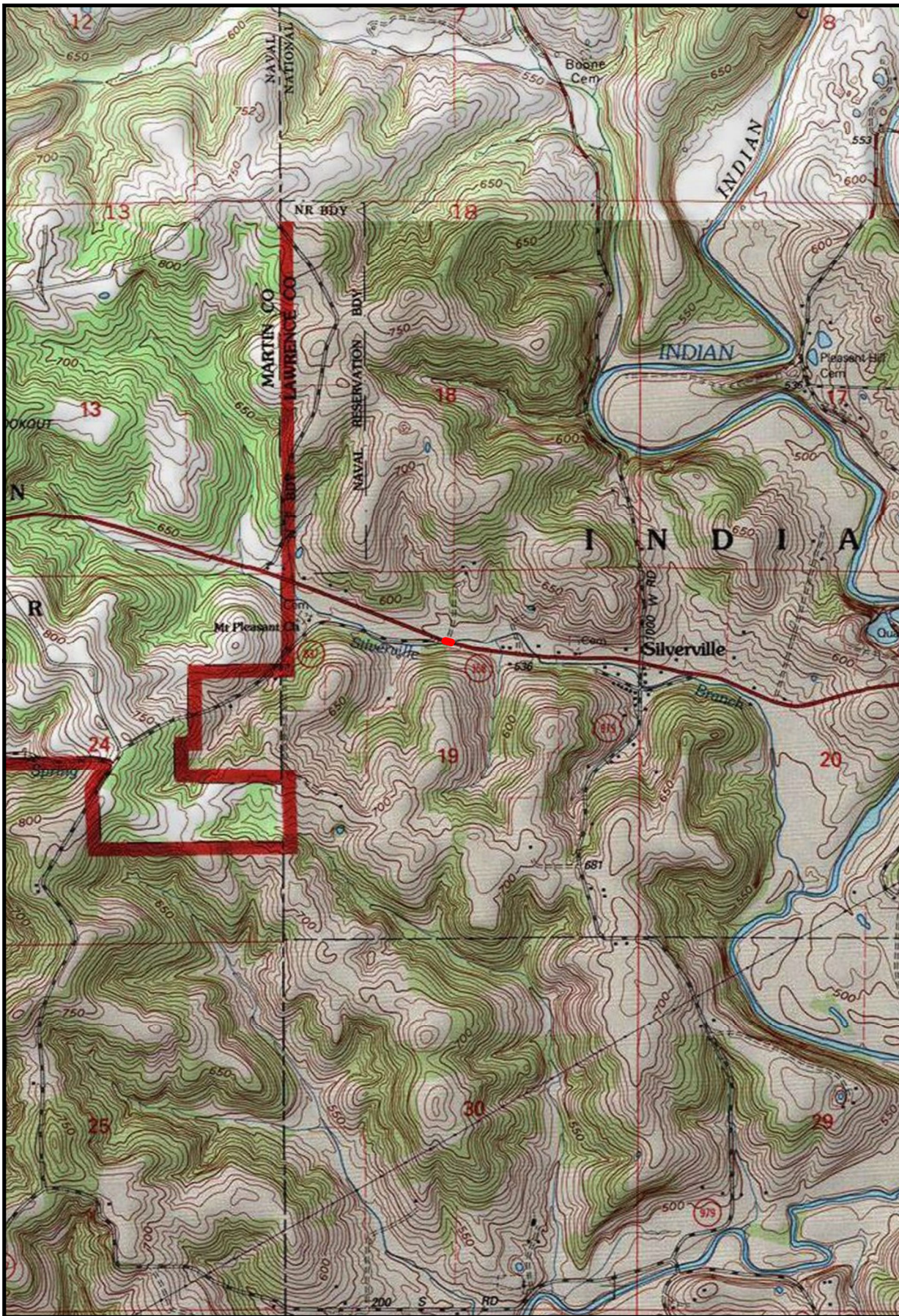


Map Source: Indiana Map

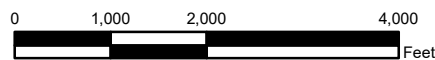


Legend

 Project Area



Map Source: Indiana Geological Survey (IGS), IndianaMap, ArcGIS Online (ESRI) World Imagery.



7.5-minute USGS Williams Quadrangle

SR 158 over Silverville Branch
Bridge Project, Lawrence County, Indiana
Des. No.1800133





Legend

 Study Area



UNT to Branch of Silverville Creek

Branch of Silverville Creek

Map Source: Indiana Geological Survey (IGS), IndianaMap, ArcGIS Online (ESRI) World Imagery.





Aerial Map

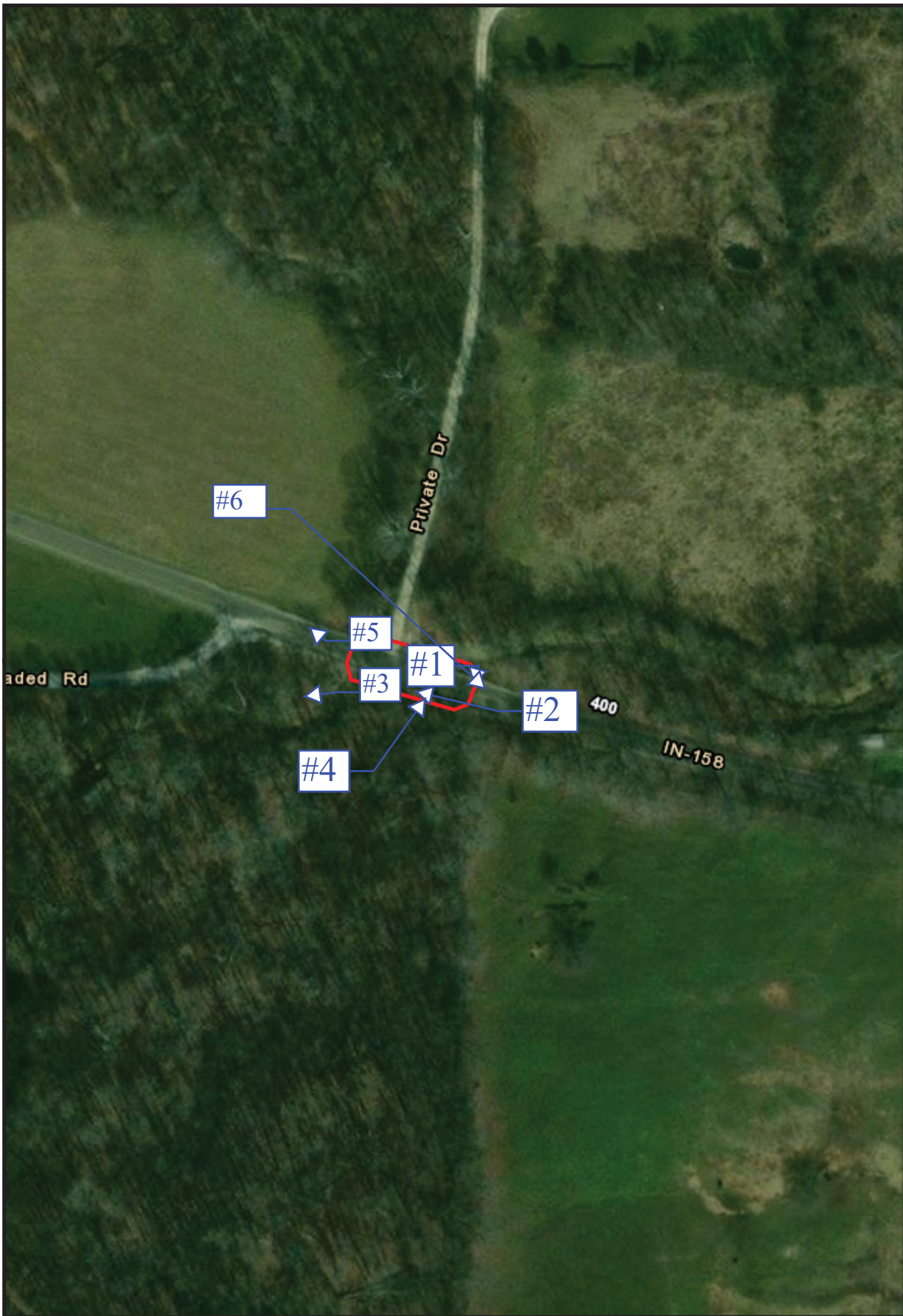


SR 158 over Silverville Branch
Bridge Replacement, Lawrence County, Indiana
Des. No.1800133



Legend

-  Project Area
-  Photo #



Map Source: Indiana Geological Survey (IGS), IndianaMap, ArcGIS Online (ESRI) World Imagery.



Aerial /Photo Orientation Map

SR 158 over Silverville Branch
Bridge Project, Lawrence County,
Indiana Des. No.1800133
B-5



Photo 1: Looking southeast at Private Drive along Bridge # (158)58-47-03027.



Photo 2: Looking northwest at CMP underneath north side of Private Drive.



Photo 3: Looking southwest upstream of Silverville Creek from Bridge # (158)58-47-03027.



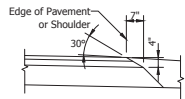
Photo 4: Looking northeast (downstream) of Bridge # (158)58-47-03027.



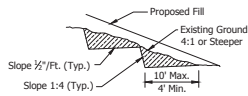
Photo 5: Looking northwest along SR 158 away from Bridge # (158)58-47-03027 near Graded Road.



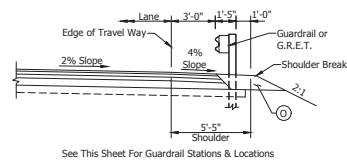
Photo 6: Looking southeast towards SR 158 along Bridge # (158)58-47-03027.



SAFETY EDGE DETAIL
Scale: 1/2" = 1'-0"



TYPICAL BENCHING DETAIL
Not to Scale



TYPICAL SECTION WITH GUARDRAIL
Scale: 1/4" = 1'-0"

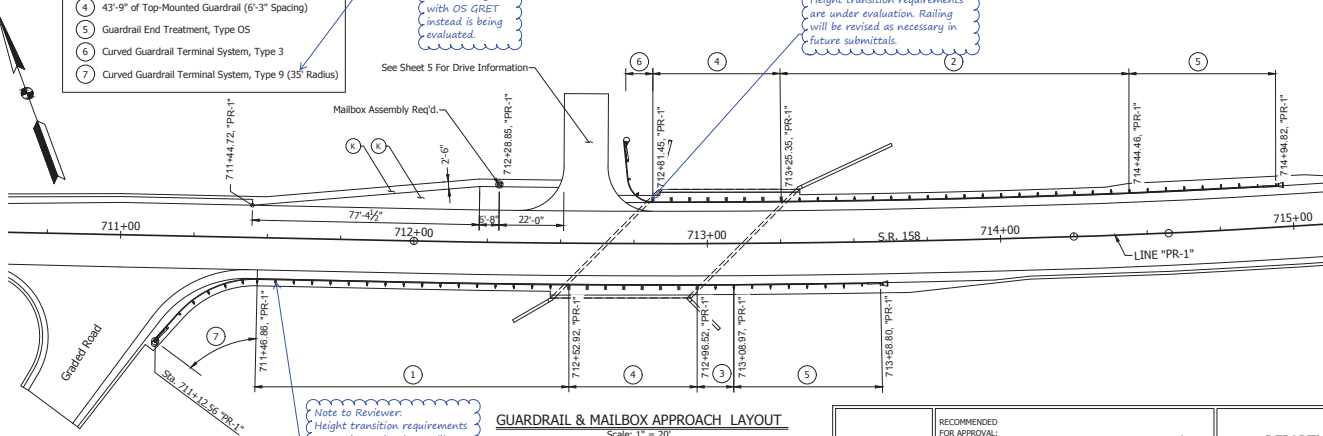
- GUARDRAIL LEGEND**
- 1 106'-3" of MGS W-Beam Guardrail (6'-3" Spacing)
 - 2 118'-9" of MGS W-Beam Guardrail (6'-3" Spacing)
 - 3 12'-6" of MGS W-Beam Guardrail (6'-3" Spacing)
 - 4 43'-9" of Top-Mounted Guardrail (6'-3" Spacing)
 - 5 Guardrail End Treatment, Type OS
 - 6 Curved Guardrail Terminal System, Type 3
 - 7 Curved Guardrail Terminal System, Type 9 (35' Radius)

Note to Reviewer:
Radius/type and whether this should be a modified curved connector system with OS GRET instead is being evaluated.

See Sheet 5 For Drive Information

Note to Reviewer:
Height transition requirements are under evaluation. Railing will be revised as necessary in future submittals.

Mailbox Assembly Req'd.



GUARDRAIL & MAILBOX APPROACH LAYOUT
Scale: 1" = 20'

Note to Reviewer:
Height transition requirements are under evaluation. Railing will be revised as necessary in future submittals.

See Sheet 5 For Drive Information

Mailbox Assembly Req'd.

711+44.72 "PR-1"

712+28.88 "PR-1"

713+08.15 "PR-1"

713+25.35 "PR-1"

714+44.48 "PR-1"

714+04.82 "PR-1"

715+58.80 "PR-1"

711+48.86 "PR-1"

712+48.52 "PR-1"

713+08.97 "PR-1"

714+44.48 "PR-1"

715+58.80 "PR-1"

711+48.86 "PR-1"

712+48.52 "PR-1"

713+08.97 "PR-1"

714+44.48 "PR-1"

715+58.80 "PR-1"

711+48.86 "PR-1"

712+48.52 "PR-1"

713+08.97 "PR-1"

714+44.48 "PR-1"

715+58.80 "PR-1"

711+48.86 "PR-1"

712+48.52 "PR-1"

713+08.97 "PR-1"

714+44.48 "PR-1"

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711+48.86 "PR-1"

712+48.52 "PR-1"

713+08.97 "PR-1"

714+44.48 "PR-1"

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712+48.52 "PR-1"

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714+44.48 "PR-1"

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713+08.97 "PR-1"

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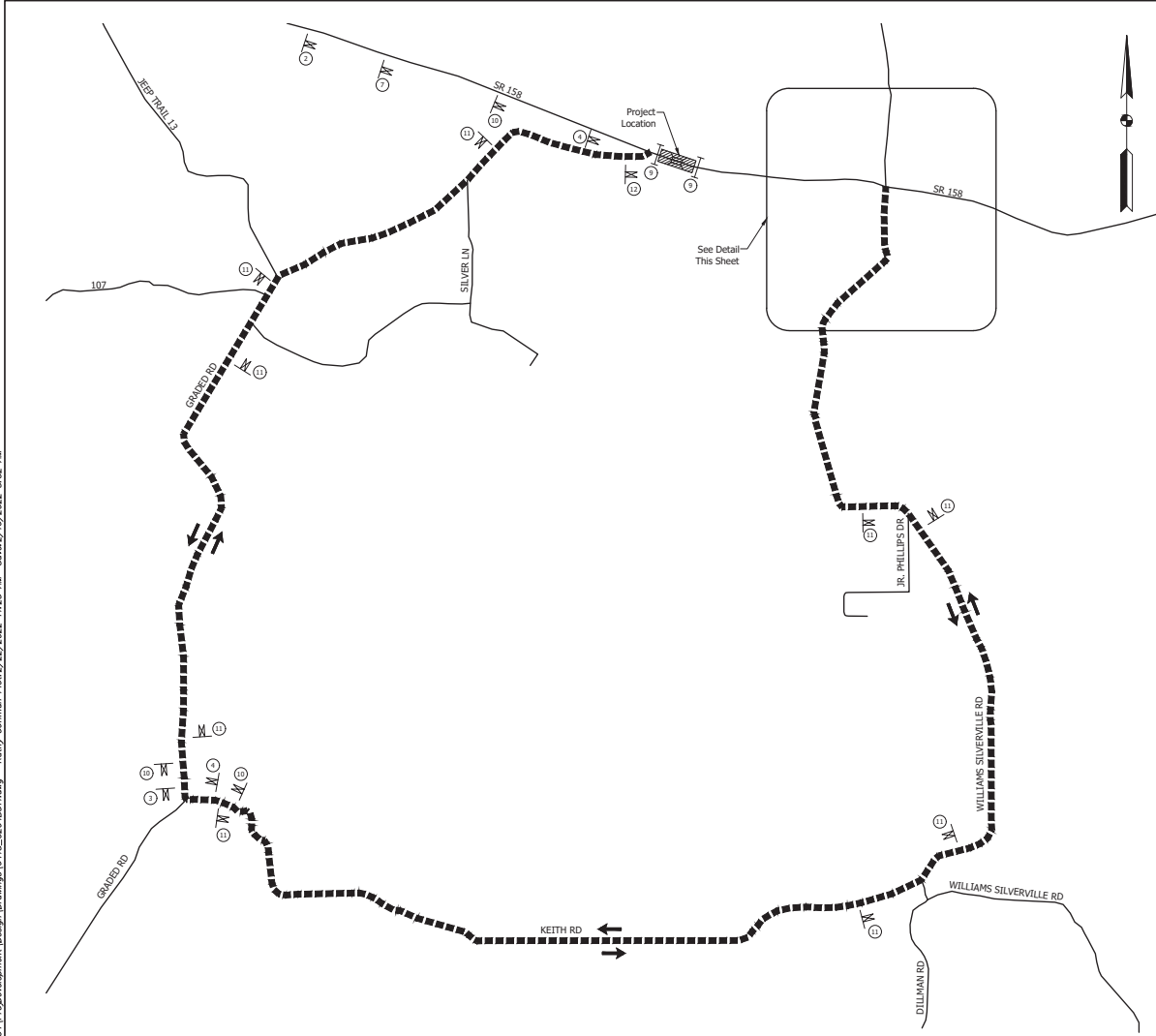
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I:\Users\241\OneDrive\Documents\Drawings\Design\Development\Design\Drawings\6415_20240311.dwg - Kathy Coffman Plot: 2/22/2022 11:23 AM Save: 2/16/2022 8:52 AM

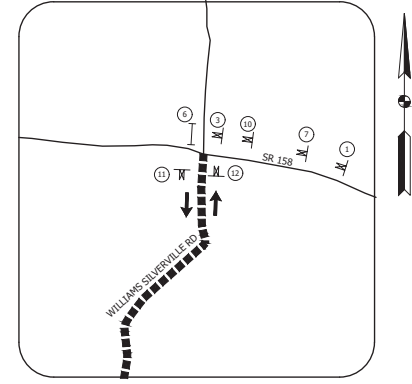


OVERALL LOCAL DETOUR ROUTE
Scale: 1" = 600'

- LEGEND**
- DETOUR ROUTE
 - BRIDGE LOCATION
 - AREA OF CONSTRUCTION
 - TYPE III-A/III-B BARRICADE
 - TRAFFIC FLOW
 - CONSTRUCTION SIGN TYPE AS SHOWN
 - SYMBOL

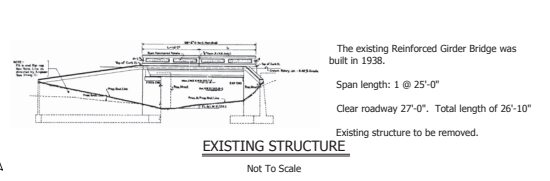
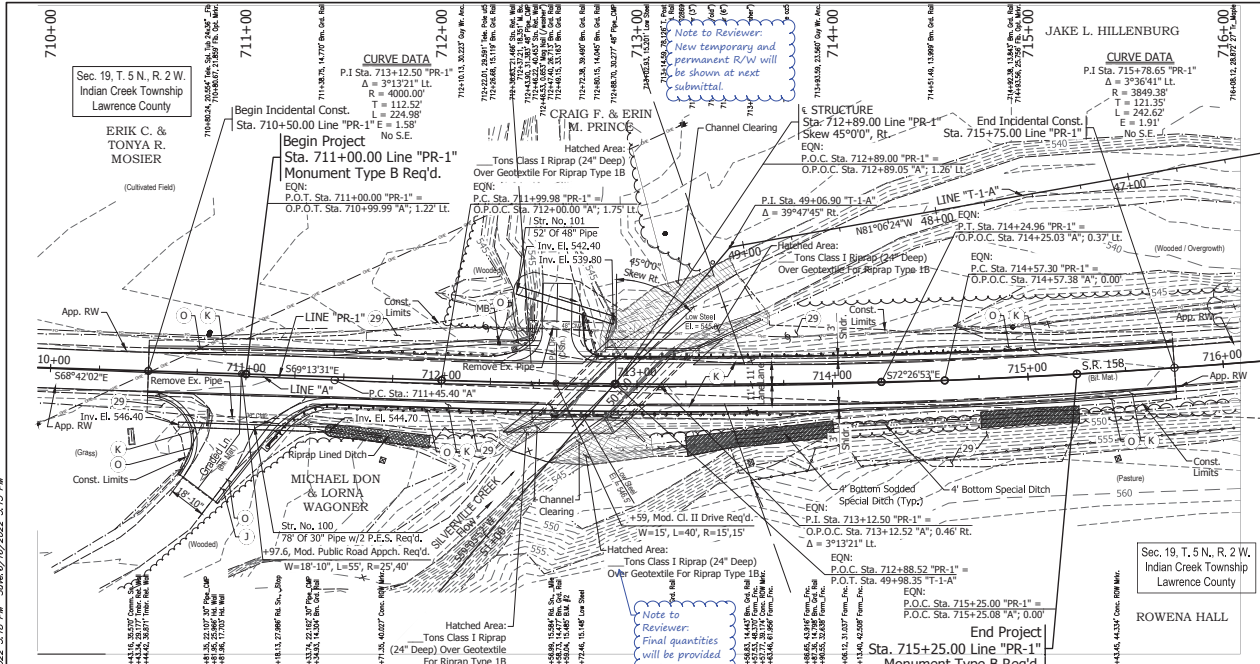
CONSTRUCTION SIGN SUMMARY				
SYMBOL	MESSAGE	NUMBER	TYPE	REQD.
①	ROAD CLOSED 0.5 MILES AHEAD LOCAL TRAFFIC ONLY	R11-3	A	*1
	DETOUR	XM4-10 (L)	B	
②	ROAD CLOSED 0.5 MILES AHEAD LOCAL TRAFFIC ONLY	R11-3	A	*1
	DETOUR	XM4-10 (R)	B	
③	DETOUR ROUTE MARKER ASSEMBLY (LEFT)			2
④	DETOUR ROUTE MARKER ASSEMBLY (RIGHT)			2
⑤	ROAD CLOSED AHEAD	XW20-3	A	-
⑥	STANDARD BARRICADE (TYPE III-B) (12'-0" SECTION)			1
⑦	DETOUR AHEAD	XW20-2	A	2
⑧	ROAD CONSTRUCTION AHEAD	XW20-1	A	-
⑨	STANDARD BARRICADE (TYPE III-A) (12'-0" SECTION)			3
⑩	ROAD CLOSURE SIGN ASSEMBLY (R11-2)			3
⑪	DETOUR ROUTE MARKER ASSEMBLY (ADVANCE TURN)			4
⑫	DETOUR ROUTE MARKER ASSEMBLY (CONFIRMING)			10
⑬	END DETOUR	M4-8a	B	2

* Indicates Signs to be Included with Road Closure Sign Assembly.



SR 158 & WILLIAMS SILVERVILLE RD
Scale: 1" = 500'

RECOMMENDED FOR APPROVAL: _____ DESIGN ENGINEER: _____ DATE: _____ DESIGNED: C. RENFROW DRAWN: K. COFFMAN CHECKED: B. WRIGHT CHECKED: B. WRIGHT	INDIANA DEPARTMENT OF TRANSPORTATION DETOUR	HORIZONTAL SCALE	BRIDGE FILE
		AS NOTED	(158)158-47-03027
		VERTICAL SCALE	DESIGNATION
		AS NOTED	1800133
		SURVEY BOOK	SHEET
		ELECTRONIC	4 OF 17
		CONTRACT	PROJECT
		B-42174	1800133



- LINE "PR-1" TO BE CONSTRUCTED
- ALL TOPOGRAPHY INFORMATION REFERENCED TO LINE "A" UNLESS OTHERWISE NOTED
- ALL R/W ON THIS SHEET DESCRIBED FROM LINE "A" UNLESS OTHERWISE NOTED

- LEGEND**
- (K) HMA Pavement For Mainline
 - (O) Variable Depth Compacted Aggregate, No. 53
 - (29) Mulched Seeding, R
 - MB Mailbox Assembly & Approach (See Sheet)

HYDRAULIC DATA		
ITEM	EXISTING STRUCTURE	PROPOSED STRUCTURE
DRAINAGE AREA	1.57 Sq. Mi.	1.57 Sq. Mi.
Q100	543.64 Cfs.	543.64 Cfs.
DESIGN DISCHARGE Q100	1,690 Cu. Ft./Sec.	1,690 Cu. Ft./Sec.
BACKWATER Q100	4.47 Ft.	0.02 Ft.
GROSS WATERWAY AREA PROVIDED BELOW Q100	100.96 Sq. Ft.	197.19 Sq. Ft.
ROADWAY OVERFLOW	0 Sq. Ft.	0 Sq. Ft.
TOTAL WATERWAY AREA PROVIDED	134.99 Sq. Ft.	296.00 Sq. Ft.
VELOCITY THROUGH STRUCTURE	14.79 Ft./Sec.	8.15 Ft./Sec.
LOW STRUCTURE ELEVATION	546.71 Ft.	546.73 Ft.

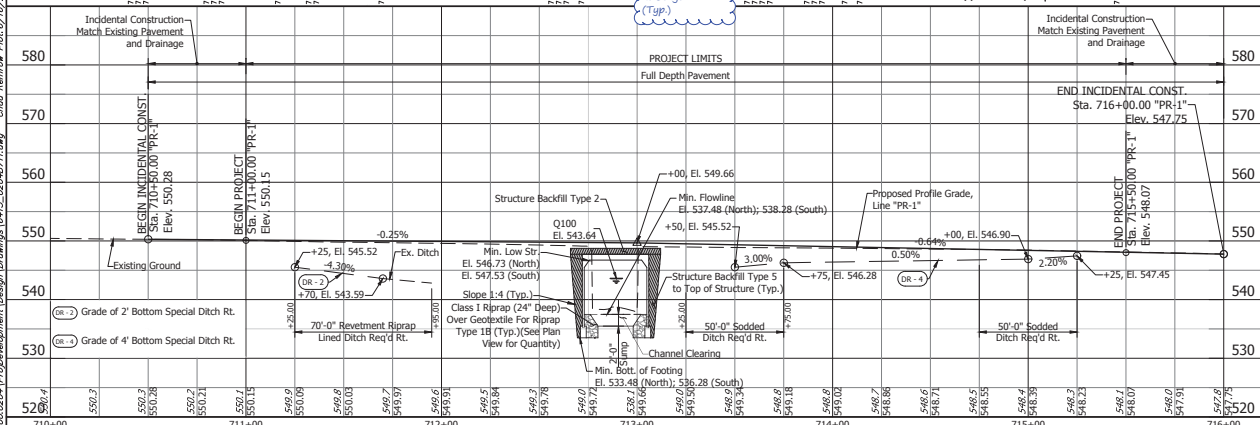
EARTHWORK	
ITEM	QUANTITY
FILL + 15%	Cys.
COMMON EXCAVATION	Cys.
USABLE WATERWAY EXCAVATION (30%)	Cys.
BORROW	Cys.

STRUCTURE EXCAVATION	
ITEM	QUANTITY
WATERWAY EXCAVATION	Cys.
WET EXCAVATION	Cys.
FOUNDATION EXCAVATION (UNCLASSIFIED)	Cys.
DRY EXCAVATION	Cys.

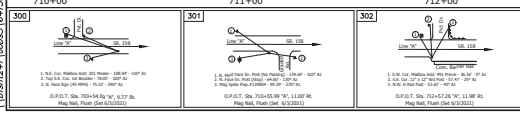
Note: Above Quantities Do Not Include ### Cys. For Benching. Estimated Benching Will Not Be Paid For Directly. Cost Of Benching Shall Be Included In Cost Of Common Excavation.

Note to Reviewer: Tables and notes will be completed in later submittals. Erosion Control table will be added.

1. Maxfield, Laska & Associates, Inc. 4/20/2022 3:18 PM 2. Chief Reviewer: P. Rice 6/16/2022 3:15 PM



PRECAST REINFORCED CONCRETE THREE-SIDED STRUCTURE
 32'-0" SPAN X 11'-3" RISE; SKEW: 45°0'0" RT.
 SR 158 OVER SILVERVILLE CREEK
 LAWRENCE COUNTY



BM #1 El. = 550.25'
 Mag. Spike Pcp. #139804
 Sta. 709+52.41 "A", 44.56' Rt.
 BM #2 El. = 552.26'
 Cut Square S. Barrier Rail S.W. Cor.
 Sta. 712+59.04 "A", 15.49' Rt.

RECOMMENDED FOR APPROVAL:	DESIGN ENGINEER:	DATE:
DESIGNED: B. WRIGHT	DRAWN: L. KIRSCH	
CHECKED: C. RENDROW	CHECKED: B. WRIGHT	

INDIANA
 DEPARTMENT OF TRANSPORTATION

LAYOUT

HORIZONTAL SCALE	BRIDGE FILE
1" = 30'-0"	(158)158-47-0307
VERTICAL SCALE	DESIGNATION
1" = 10'-0"	1800133
SURVEY BOOK	SHEET
ELECTRONIC	5 OF 17
CONTRACT	PROJECT
B-42174	1800133

