



**Indiana Department of Transportation**

County Sullivan

Route SR 159

Des. No. 1700148

Name and Organization of CE/EA Preparer:

Chad Costa/Lochmueller Group

**Part I - PUBLIC INVOLVEMENT**

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

Does the project have a historic bridge processed under the Historic Bridges PA*?	<b>Yes</b>	<b>No</b>
	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If No, then:		
Opportunity for a Public Hearing Required?	<input checked="" type="checkbox"/>	<input 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.

Remarks: Notice of Entry:  
 Notice of Entry letters were mailed to potentially affected property owners near the project area on April 3, 2018 notifying them about the project and that individuals responsible for land surveying and field activities may be seen in the area. A sample copy of the Notice of Entry letter is included in Appendix G, page G1.

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

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

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

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

Sponsor of the Project: Indiana Department of Transportation INDOT District: Vincennes  
 Local Name of the Facility: SR 159

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

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

Indiana Department of Transportation

County Sullivan

Route SR 159

Des. No. 1700148

PURPOSE AND NEED:

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

Need:

The need stems from the deteriorated condition of Bridge No. 159-77-05955 B (NBI No. 028060). During field inspections completed by representatives of Lochmueller Group in September of 2018 and the routine inspection completed by INDOT in June of 2019, heavy cracking was observed at the south end joint and spalling was exhibited at the north end joint on the deck. Additionally, the wearing surface shows evidence of delamination. The channel also shows signs of significant erosion and the timber piles beneath the deck have surface decay at the ground line. Both the superstructure and deck have condition ratings of 6 out of 9, which is considered "satisfactory." Both the substructure and channel have condition ratings of 5 out of 9, which is considered "fair." In its current condition, the bridge has an estimated remaining life of 10-15 years. Representative photographs of the deficiencies associated with the bridge that were included with the June 12, 2019 INDOT Bridge Inspection Report are included in Appendix J (J2 to J13).

Purpose:

The purpose is to extend the service life of the crossing to a minimum of 20 years, and increase the condition of the superstructure, deck, substructure, and channel to a rating of at least 8, which is considered to be in "very good condition." Meeting the purpose of the project will address the identified structural deficiencies and provide a crossing sufficient for continued vehicular operations.

PROJECT DESCRIPTION (PREFERRED ALTERNATIVE):

County: Sullivan

Municipality: N/A

Limits of Proposed Work: Beginning at the center of the Bridge No. 159-77-05955 B (NBI No. 028060), the project limits extend along SR 159 to a point 424.5 feet to the north and to a point 460.5 feet to the south for a total distance of 885 feet (Appendix B, B29).

Total Work Length: 0.17 Mile(s)

Total Work Area: 1.79 Acre(s)

Is an Interchange Modification Study / Interchange Justification Study (IMS/IJS) required? If yes, when did the FHWA grant a conditional approval for this project?

Yes No X Date:

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

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

The Federal Highway Administration (FHWA) and the INDOT - Vincennes District intend to proceed with a bridge replacement project involving Bridge No. 159-77-05955 B (NBI No. 028060), which carries SR 159 over Branch Spencer Creek in southeastern Sullivan County, Indiana. The replacement structure will be assigned a new bridge number, Bridge No. 159-77-10338.

Location:

The project is located along SR 159, approximately 6.76 miles south of SR 54. Specifically, the project is located within Sections 11 and 12 of Township 6 North, Range 8 West in Jefferson Township of Sullivan County, Indiana as depicted on the Bucktown, Indiana U.S. Geological Survey (USGS) 1:24,000 scale quadrangle (Appendix B, B2).

## Indiana Department of Transportation

County Sullivan

Route SR 159

Des. No. 1700148

### Existing Conditions:

SR 159 is classified as a rural major collector within the project area and consists of two, 12-foot asphalt travel lanes (one in each direction) with 2.17-foot paved shoulder on both sides. The posted speed limit is 40 miles per hour. The existing Bridge No. 159-77-05955 B is a 30-foot long, single span concrete box beam bridge supported by timber abutments. The span of the bridge is 28 feet and the clear roadway width is 28.33 feet. According to the June of 2019 INDOT Bridge Inspection Report, extensive cracking was observed at the south end joint and spalling was observed at the north end joint. The timber abutments were observed to have surface decay and channel erosion has caused for more exposure of the bottom-most planks of the timber abutments.

### Preferred Alternative:

The preferred alternative intends to replace the existing bridge that carries SR 159 over Branch Spencer Creek. The preferred alternative for the new structure is a 3-sided flat top box culvert structure with a 30-foot span and a 10-foot rise. The new roadway typical cross-section on structure will include two 11-foot asphalt travel lanes with 4.75-foot paved shoulders. The clear roadway width will be 31.5 feet and the out-to-out deck width will be 32 feet. Additionally, this project will involve the realignment of Branch Spencer Creek in the southwest quadrant of the crossing, upstream of the bridge crossing. Approximately 455 feet of Branch Spencer Creek will be filled and seeded, and the new stream alignment will be constructed approximately 35 feet west of its current alignment. After 380 feet, Branch Spencer Creek will rejoin its current alignment as it crosses under the bridge to be replaced. The length of the new stream alignment will be 465 feet. The channel width of the new alignment of Branch Spencer Creek will be 10 feet wide and the banks will rise at a 3:1 slope. The project will also involve the installation of riprap for erosion control along the limits of the wing walls of the proposed bridge and around the bends of the new alignment of Branch Spencer Creek.

The roadway approach pavement will also be removed and replaced to full depth from a point approximately 460.5 feet south of the existing bridge to a point approximately 424.5 feet to the north. The typical section for SR 159 along the reconstructed approaches will consist of two, 11-foot asphalt travel lanes with 4.75-foot usable shoulders. Outside of the paved shoulders, there will be a 3.25-foot compacted aggregate shoulder with a 4:1 slope. The total length of the project along SR 159 is approximately 885 feet. See Appendix B, pages B24 to B33 for the preliminary design plans.

The termini of the project provide the logical beginning and end point necessary to complete the bridge replacement and transition the roadway profile back to the existing approaches. The project is independent of any other action and able to be constructed without relying on the completion of any other project.

Every effort to avoid, minimize, and/or mitigate project impacts will be made.

### Maintenance of Traffic:

The proposed maintenance of traffic plan includes the full closure of SR 159. Because SR 159 ends at CR 900 E, east of the community of Pleasantville, no official detour route will be established (Appendix B, B28). Please refer to the Maintenance of Traffic section of this document for full details. The MOT will be implemented per the *Indiana Design Manual* guidelines.

### Right-of-Way

The proposed project will require the acquisition of 1.79 acres of permanent ROW (Appendix B, B4 and B29) from six parcels all owned by the State of Indiana, Department of Natural Resources. No temporary ROW or relocations will be required.

### Purpose and Need:

The preferred alternative meets the purpose and need by providing a structure that has a rating of 9 out of 9 and represents a new structure with no deficiencies. This exceeds the goal identified in the purpose statement of reaching a condition rating of at least 8. Additionally, the preferred alternative provides a service life of 75 years, which also exceeds the identified goal of at least 20 years.

## Indiana Department of Transportation

County Sullivan

Route SR 159

Des. No. 1700148

### OTHER ALTERNATIVES CONSIDERED:

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

Slab Bridge with Vertical Abutments (No Skew): This alternative involves replacing the existing structure with a single-span slab bridge with vertical abutments. This alternative would have met the purpose and need by improving the condition rating and extending the service life. The environmental impacts to the surrounding area would be comparable to that of the preferred alternative; however, this alternative would result in increased construction costs as compared to the preferred alternative. Therefore, this alternative was discarded from further consideration.

Slab Bridge with Vertical Abutments (45° Skew): This alternative involves replacing the existing structure with a single-span slab bridge with vertical abutments at a 45° Skew of the original alignment. The purpose of the skew is to create a more favorable stream alignment. This alternative would have met the purpose and need of the project by improving the condition rating and extending the service life. Having the bridge at a skew would result in less impacts to Branch Spencer Creek but would result in more ground disturbance and impacts to Wetland A. Therefore, this alternative was discarded from further consideration.

Do Nothing Alternative: This alternative would involve not improving Bridge No. 159-77-05955 B (NBI No. 028060). While this alternative eliminates costs and any environmental impacts it would not have met the objectives of the purpose and need of the project. Therefore, this alternative was discarded from further consideration.

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

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

X
X

### ROADWAY CHARACTER:

Functional Classification: State Collector  
 Current ADT: 850 VPD (2022) Design Year ADT: 1,000 VPD (2042)  
 Design Hour Volume (DHV): 90 Truck Percentage (%): 5  
 Designed Speed (mph): 40 Legal Speed (mph): 40

	Existing		Proposed	
Number of Lanes:	2		2	
Type of Lanes:	Through lanes		Through lanes	
Pavement Width:	26	ft.	31.6	ft.
Shoulder Width:	1	ft.	4.75	ft.
Median Width:	N/A	ft.	N/A	ft.
Sidewalk Width:	N/A	ft.	N/A	ft.

Setting:  Urban  Suburban  Rural  
 Topography:  Level  Rolling  Hilly

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

## Indiana Department of Transportation

County Sullivan

Route SR 159

Des. No. 1700148

**DESIGN CRITERIA FOR BRIDGES:**

Structure/NBI Number(s): Bridge No. - 159-77-05955 B Sufficiency Rating: 87.9 - INDOT Bridge Inspection Report (06/12/2019)  
NBI No. - 028060 (Rating, Source of Information)

	Existing	Proposed
Bridge Type:	Prestressed Concrete Box Beam Bridge	Precast Reinforced Concrete Three-sided Structure
Number of Spans:	1	1
Weight Restrictions:	N/A	N/A
Height Restrictions:	N/A	N/A
Curb to Curb Width:	28.3	31.5
Outside to Outside Width:	30.3	32
Shoulder Width:	1	4.75
Length of Channel Work:	1	541

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

Remarks: The project will replace Bridge No. 159-77-05955 B (NBI No. 028060), a prestressed concrete box beam bridge that carries SR 159 over Branch Spencer Creek, with a precast reinforced concrete 3-sided flat top box culvert structure. The replacement structure will be assigned a new bridge number, Bridge No. 159-77-10338. The project will impact a total of 541 linear feet of Branch Spencer Creek (Appendix B, B29). Please refer to the Streams, Rivers, Watercourses & Jurisdictional Ditches under Section A, Ecological Resources for a more detailed discussion of the impacts.

A corrugated metal pipe (CMP) with an 18-inch diameter is present in the northwest quadrant of the bridge. This CMP conveys roadside drainage into Branch Spencer Creek. Due to its size, it is not included in the INDOT Bridge Inspection Application System (BIAS). This CMP will remain in-place and riprap will be placed at the pipe outlet.

**Yes**     
  **No**     
  **N/A**

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

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

**MAINTENANCE OF TRAFFIC (MOT) DURING CONSTRUCTION:**

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

## Indiana Department of Transportation

County Sullivan Route SR 159 Des. No. 1700148

Remarks: The MOT requires the closure of SR 159 between CR 750 S to CR 700 S during construction. No state route detour is feasible due to SR 159 ending at CR 900 E, east of the community of Pleasantville. Signs informing motorists of the closure will be posted. All access to driveways in the closure area will be maintained. It is anticipated that the closure will last eight months. The MOT will be implemented per the *Indiana Design Manual* guidelines (Appendix B, B28).

The closures/lane restrictions will pose a temporary inconvenience to traveling motorists (including school buses and emergency services). This inconvenience will cease upon project completion. Delays would occur during construction but will cease with project completion.

**ESTIMATED PROJECT COST AND SCHEDULE:**

Engineering: \$ 149,000 (2019) Right-of-Way: \$ 70,000 (2020) Construction: \$ 1,997,040 (2022)

Anticipated Start Date of Construction: Spring 2022

Date project incorporated into STIP July 2, 2019

Is the project in an MPO Area?  **Yes**  **No**

If yes,

Name of MPO N/A

Location of Project in TIP N/A

Date of incorporation by reference into the STIP N/A

**RIGHT OF WAY:**

Land Use Impacts	Amount (acres)	
	Permanent	Temporary
Residential	0	0
Commercial	0	0
Agricultural	0	0
Forest	0.61	0
Wetlands	0.03	0
Other: Maintained Roadside	1.15	0
Other:	0	0
<b>TOTAL</b>	<b>1.79</b>	<b>0</b>

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

**Indiana Department of Transportation**

County Sullivan

Route SR 159

Des. No. 1700148

Remarks: Within the project area, the existing ROW is located along the edge of the pavement of SR 159. The typical width of the existing ROW is the roadway width of the approaches, 24 feet. The maximum existing ROW width is 28.33 feet, which is the width of the bridge.

The project requires the acquisition of 1.79 acres of permanent right-of-way along both sides of SR 159. No temporary right-of-way will be required. The typical width of the proposed ROW is approximately 85 feet with the maximum width being approximately 145 feet. The land to be acquired consists of maintained roadside (1.15 acres), forest associated with the Greene-Sullivan State Forest (0.61 acre), and wetland (0.03 acre) (Appendix B, B4).

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

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

**SECTION A – ECOLOGICAL RESOURCES**

	<u>Presence</u>	<u>Impacts</u>	
		<u>Yes</u>	<u>No</u>
<b>Streams, Rivers, Watercourses &amp; Jurisdictional Ditches</b>	<b>X</b>	<b>X</b>	
Federal Wild and Scenic Rivers			
State Natural, Scenic or Recreational Rivers			
Nationwide Rivers Inventory (NRI) listed			
Outstanding Rivers List for Indiana			
Navigable Waterways			

Remarks: Based on a desktop review, a site visit on June 28, 2019 by Lochmueller Group, the aerial map of the project area (Appendix B, B3), the USGS topographic map (Appendix B, B2), and the water resources map of the Red Flag Investigation (RFI) report (Appendix E, E8) there are two streams, rivers, watercourses, and/or jurisdictional ditches located within the 0.5 mile search radius. Although not mapped in the available GIS layers, there is one stream, Branch Spencer Creek, present within the project area.

A *Waters of the U.S. Determination/Wetland Delineation Report* was completed for the project on July 26, 2019 (Appendix F, F1 to F27) and INDOT Ecology and Waterway Permitting Office (EWPO) approved the report on July 31, 2019 (Appendix F, F28). Branch Spencer Creek was identified flowing northeast through the project area. According to the USGS (1:24,000 scale) topographic map, Branch Spencer Creek is not a mapped blue line feature. Branch Spencer Creek has an ordinary high-water mark (OHWM) of 11.8 feet wide and 0.6 feet deep. Branch Spencer Creek flows north to Spencer Creek, which flows to Brewer Ditch and then to Black Creek, approximately 6.2 river miles downstream of the project area. Branch Spencer Creek is likely a Water of the U.S. due to the well-defined OHWM and the hydrologic connection with the Black River, a Traditionally Navigable Water (TNW). Branch Spencer Creek is not listed as a Federal Wild and Scenic River, a State Natural, Scenic, and Recreational River or as an Indiana Department of Natural Resources (IDNR) Outstanding River. The U.S. Army Corps of Engineers (USACE) makes all final determinations regarding jurisdiction.

Approximately 541 linear feet (0.14 acre below OHWM) of Branch Spencer Creek flows within the project area. Impacts to the channel will result from construction access, vegetation clearing, and channel realignment upstream of the bridge. The channel realignment will be a permanent impact. Approximately 455 feet of Branch Spencer Creek will be filled, and the new stream alignment will be constructed approximately 35 feet west of its current alignment. The length of the new alignment will be 465 feet. The channel width of Branch Spencer

## Indiana Department of Transportation

County Sullivan

Route SR 159

Des. No. 1700148

Creek along the new alignment will be 10 feet wide with banks rising at a 3:1 slope. After 380 feet, Branch Spencer Creek will rejoin its current alignment as it crosses under the bridge to be replaced. Approximately 0.08 acre of Class I riprap will be placed at the wing walls of the bridge and around the bends of the new alignment of Branch Spencer Creek to protect the new banks from erosion. The alignment of Branch Spencer Creek downstream (northeast) of the bridge will remain unchanged; however, minor channel shaping and vegetation clearing will occur within the construction limits. The total length of impact to Branch Spencer Creek is 541 linear feet (0.14 acre).

Due to impacts to Branch Spencer Creek, a USACE Section 404 Regional General Permit (RGP) and Indiana Department of Environmental Management (IDEM) Section 401 Water Quality Certification (WQC) will be required. Impacts to a jurisdictional stream in excess of 300 linear feet (0.1 acre below OHWM), requires mitigation as part of the IDEM Section 401 WQC.

Early coordination letters were sent on October 8, 2019. The USACE did not respond to the early coordination letter.

The USFWS responded on October 10, 2019 (Appendix C, C17 to C18). They provided standard recommendations pertaining to streams which included: limiting the types of below low-water work, limiting channel work to the minimum necessary, minimizing the use of riprap, and time of year restrictions for work in the inundated part of the stream channel. All applicable USFWS recommendations are included in the Environmental Commitments section of this CE document.

The IDNR Division of Fish and Wildlife (DFW) responded on November 8, 2019 (Appendix C, C47 to C50). They provided recommendations with pertaining to streams which included: minimizing the use of riprap, considering other options beside channel relocation, coordinating with the appropriate agencies with regards to stream impacts, minimizing in-channel disturbance, time of year restrictions for work in the stream, type and placement of riprap to be used, and methods of protecting all disturbed streambanks and slopes. All applicable IDNR recommendations are included in the Environmental Commitments section of this CE document.

An automated letter was generated from the IDEM website on October 8, 2019 (Appendix C, C12 to C16). Applicable recommendations from the Proposed Roadway Letter include coordinating with appropriate agencies with regards to wetland impacts and limiting stream disturbance.

**Other Surface Waters**

- Reservoirs
- Lakes
- Farm Ponds
- Detention Basins
- Storm Water Management Facilities
- Other: \_\_\_\_\_

<u>Presence</u>	<u>Impacts</u>	
	Yes	No

## Indiana Department of Transportation

County Sullivan Route SR 159 Des. No. 1700148

Remarks: Based on a desktop review, a site visit on June 28, 2019 by Lochmueller Group, the aerial map of the project area (Appendix B, B3), the USGS topographic map (Appendix B, B2), and the water resources map of the RFI report (Appendix E, E8), there are 15 other surface waters within the 0.5 mile search radius. No other surface waters are present within the project area; therefore, no impacts are expected.

The USACE did not respond to the early coordination letter. The USFWS responded on October 10, 2019 (Appendix C, C17 and C18) and the IDNR DFW responded on November 8, 2019 (Appendix C, C47 to C50). No recommendations pertained to other surface water feature impacts.

An automated letter was generated from the IDEM website on October 8, 2019 (Appendix C, C12 to C16). Applicable recommendations from the Proposed Roadway Letter include coordinating with appropriate permitting agencies.

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

Total wetland area: 0.21 acre(s) Total wetland area impacted: 0.00 acre(s)

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

Wetland No.	Classification	Total Size (Acres)	Impacted Acres	Comments
Wetland A	PSS1	0.21	0.00	Located along the east side of SR 159 south of Branch Spencer Creek

	<b>Documentation</b>	<b>ES Approval Dates</b>
<b>Wetlands</b> (Mark all that apply)		
Wetland Determination	<input type="checkbox"/>	<input type="checkbox"/>
Wetland Delineation	<input checked="" type="checkbox"/>	<b>July 31, 2019</b>
USACE Isolated Waters Determination	<input type="checkbox"/>	<input type="checkbox"/>
Mitigation Plan	<input type="checkbox"/>	<input type="checkbox"/>

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

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

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

Remarks: Based on a review of the National Wetlands Inventory (NWI) on-line mapper ([www.fws.gov/wetlands/data/Map-per.html](http://www.fws.gov/wetlands/data/Map-per.html)) (Appendix F, F14), a site visit on June 28, 2019 by Lochmueller Group, the USGS topographic map (Appendix B, B2), and the water resource map of the RFI report (Appendix E, E8), there are 25 wetlands located within the 0.5 mile search radius. There are no wetlands mapped within or adjacent to the project area.

A *Waters of the U.S. Determination/Wetland Delineation Report* was completed for the project on July 26, 2019 (Appendix F, F1 to F27) and INDOT Ecology and Waterway Permitting Office (EWPO) approved the report on July 31, 2019 (Appendix F, F28). One wetland, Wetland A, was identified within the project area

## Indiana Department of Transportation

County Sullivan

Route SR 159

Des. No. 1700148

along the east side of SR 159 south of Branch Spencer Creek. Due to its direct hydrologic connection to a jurisdictional water, Branch Spencer Creek, Wetland A is likely to be considered a jurisdictional wetland feature. Although within the survey area, the boundary of Wetland A is outside of the construction limits of the project (Appendix B, B29). Wetland A is identified on the plans as “Do Not Disturb” and appropriate best management practices (BMPs) will be in place to ensure that no direct or indirect impacts to Wetland A will occur. Therefore, no direct or indirect impacts are expected.

The USACE did not respond to the early coordination letter. The USFWS responded on October 10, 2019 (Appendix C, C17 and C18) and the IDNR DFW responded on November 8, 2019 (Appendix C, C47 to C50). Since this project will not cause impacts to wetlands, none of the recommendations regarding wetland impacts apply.

An automated letter was generated from the IDEM website on October 8, 2019 (Appendix C, C12 to C16). Applicable recommendations from the Proposed Roadway Letter include limiting wetland disturbance and coordinating with appropriate permitting agencies.

	<u>Presence</u>	<u>Impacts</u>	
<b>Terrestrial Habitat</b>		<b>Yes</b>	<b>No</b>
Unique or High Quality Habitat	<b>X</b>	<b>X</b>	

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

Remarks: Based on a desktop review, a site visit on June 28, 2019 by Lochmueller Group, and the aerial map of the project area (Appendix B, B3) there is maintained roadside and forested habitat within the project area. The maintained roadside is dominated by tall fescue (*Schedonorus arundinacea*) and the forested habitat is dominated by silver maple (*Acer saccharinum*), red maple (*Acer rubrum*), bur oak (*Quercus macrocarpa*), black cherry (*Prunus serotina*), and black walnut (*Juglans nigra*). It is anticipated that 1.32 acres of ground disturbance will occur as part of this project (ground disturbance limited to construction limits). A total of 0.48 acre of tree clearing will be required for construction access, riprap placement, realignment of the stream, and grading activities (0.61 acre of forest is within the proposed right-of-way). The dominant trees to be removed will be red maple, bur oak, and black walnut. The remaining 0.84 acre of ground disturbance will occur to maintained vegetated roadside for grading activities. Avoidance of impacts to terrestrial habitat is not practical providing the purpose and need of the project is to address the deficiencies of the bridge, of which the channel erosion is included. All alternatives considered, aside from the Do Nothing alternative, require work that extends beyond the edge of pavement. Mitigation for impacts to Branch Spencer Creek will be required as part of the IDEM Section 401 WQC.

The USACE did not respond to the early coordination letter. However, the USFWS responded on October 10, 2019 with recommendations to avoid or minimize impacts to terrestrial habitat (Appendix C, C17 to C18). Recommendations included time of year restrictions for tree clearing, only clearing trees within the construction zone, minimizing the use of riprap to that which is necessary, and evaluating the wildlife crossing under the bridge. All applicable USFWS recommendations are included in the Environmental Commitments section of this CE document.

The IDNR DFW responded on November 8, 2019 with recommendations to avoid or minimize impacts to terrestrial habitat in the area (Appendix C, C47 to C50). Recommendations include recommending certain crossing structures to maintain fish and wildlife passage, minimizing the use of riprap, developing a mitigation plan, mitigating forest impacts, contacting the appropriate agencies, replanting recommendations, seeding and protecting disturbed stream banks, implementing time of year restrictions on clearing suitable bat habitat, and minimizing tree and other vegetation clearing to be within the construction limits. All applicable IDNR DFW recommendations are included in the Environmental Commitments section of this CE document.

## Indiana Department of Transportation

County Sullivan

Route SR 159

Des. No. 1700148

An automated letter was generated from the IDEM website on October 8, 2019 (Appendix C, C12 to C16). Applicable recommendations from the Proposed Roadway Letter include limiting stream disturbance and coordinating with appropriate permitting agencies.

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

**Karst**

Is the proposed project located within or adjacent to the potential Karst Area of Indiana?  
 Are karst features located within or adjacent to the footprint of the proposed project?

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

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

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

Remarks:

Based on a desktop review, the proposed project is located outside the designated karst region of Indiana, as outlined in the October 13, 1993 Memorandum of Understanding (MOU). According to the topographic map of the project area (Appendix B, B2) and the water resources map of the RFI report (Appendix E, E8) there are no karst features identified within or adjacent to the project area. In the early coordination response, the Indiana Geological Survey (IGS) did not indicate that karst features may exist in the project area (Appendix C, C5 to C7). The IGS did indicate there was moderate liquefaction potential, high potential for encountering bedrock resources, and that surface coal mines are in the area. The features will not be affected because all excavation is expected to occur in previously disturbed soil. The response from IGS was communicated with the designer on December 19, 2019. No impacts are expected.

**Threatened or Endangered Species**

Within the known range of any federal species  
 Any critical habitat identified within project area  
 Federal species found in project area (based upon informal consultation)  
 State species found in project area (based upon consultation with IDNR)

	Presence	Impacts	
		Yes	No
Within the known range of any federal species	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Any critical habitat identified within project area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Federal species found in project area (based upon informal consultation)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
State species found in project area (based upon consultation with IDNR)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Is Section 7 formal consultation required for this action?

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

Remarks:

Based on a desktop review and the RFI report (Appendix E, E1 to E10) completed by Lochmueller Group on August 29, 2019, the IDNR Sullivan County Endangered, Threatened, and Rare Species List has been checked and is included in Appendix E, E11 to E12. The highlighted species on the list reflect the federal and state identified ETR species located within the county. According to the IDNR-DFW early coordination response dated November 8, 2019 (Appendix C, C47 to C50), the Natural Heritage Program's Database has been checked. To date no plant or animal species listed as state or federally threatened, endangered or rare have been reported to occur in the project vicinity.

Project information was submitted through the USFWS's Information for Planning and Consultation (IPaC) portal, and an official species list was generated (Appendix C, C19 to C24). The project is within the range of the federally endangered Indiana bat (*Myotis sodalis*) and the federally threatened northern long-eared bat (NLEB) (*Myotis septentrionalis*). No additional species were found within or adjacent to the project area, other than the Indiana bat and NLEB.

## Indiana Department of Transportation

County Sullivan

Route SR 159

Des. No. 1700148

The project qualifies for the *Range-wide Programmatic Informal Consultation for the Indiana bat and northern long-eared bat (NLEB)*, dated May 2016 (revised February 2018), between FHWA, Federal Railroad Administration (FRA), Federal Transit Administration (FTA), and USFWS. An effect determination key was completed on November 1, 2019 and based on the responses provided, the project was found to “May Affect - Not Likely Adversely Affect” the Indiana bat and/or the NLEB. INDOT reviewed and verified the effect finding on November 6, 2019 and requested USFWS’s review of the finding (Appendix C, C25 to C40). No response was received from USFWS within the 14-day review period; therefore, it was concluded that they concur with the finding. Avoidance and Mitigation Measures (AMMs) are included as firm commitments in the Environmental Commitments section of this CE document.

This 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 this site becomes available, or if project plans are changed, USFWS will be contacted for consultation.

### SECTION B – OTHER RESOURCES

**Drinking Water Resources**

- Wellhead Protection Area
- Public Water System(s)
- Residential Well(s)
- Source Water Protection Area(s)
- Sole Source Aquifer (SSA)

	<b>Presence</b>	<b>Impacts</b>	
		<b>Yes</b>	<b>No</b>
Wellhead Protection Area			
Public Water System(s)	X	X	
Residential Well(s)			
Source Water Protection Area(s)			
Sole Source Aquifer (SSA)			

If a SSA is present, answer the following:

- Is the Project in the St. Joseph Aquifer System?
- Is the FHWA/EPA SSA MOU Applicable?
- Initial Groundwater Assessment Required?
- Detailed Groundwater Assessment Required?

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

**Remarks:**

The project is located in Sullivan 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/United States Environmental Protection Agency (EPA) Sole Source Aquifer Memorandum of Understanding* is not applicable to this project. Therefore, a detailed groundwater assessment is not needed and no impacts are expected.

The IDEM Wellhead Proximity Determinator website (<http://www.in.gov/idem/cleanwater/pages/wellhead/>) was accessed on December 19, 2019 by Lochmueller Group. This project is not located within a Wellhead Protection Area or Source Water Area. No impacts are expected.

The Indiana Department of Natural Resources Water Well Record Database website ([www.in.gov/dnr/water/3595.htm](http://www.in.gov/dnr/water/3595.htm)) was accessed on December 19, 2019 by Lochmueller Group. No wells are located near this project area. Therefore, no impacts are expected.

Based on a desktop review of the INDOT MS4 website (<https://entapps.indot.in.gov/MS4/>) by Lochmueller Group on December 19, 2019 and the RFI report; this project is not located within an Urban Area Boundary location. No impacts are expected.

Based on a desktop review, a site visit on June 28, 2019 by Lochmueller Group, the aerial map of the project area (Appendix B, B3), and survey information shown on the plans (Appendix B, B29) this project is located

## Indiana Department of Transportation

County Sullivan

Route SR 159

Des. No. 1700148

where there is a public water system. An underground public water line owned and maintained by Pleasantville Water Company, Inc. is located within the project area. The public water system will be affected because the project will likely result in the relocation of the water line. Utility coordination, by Lochmueller Group, has begun and will continue through project development to ensure that impacts to the public water system are minimal.

**Flood Plains**

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

Presence


Impacts

Yes	No

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

Remarks: The Indiana Department of Natural Resources Indiana Floodway Information Portal website (<http://dnr-maps.dnr.in.gov/appsphp/fdms/>) was accessed on December 19, 2019 by Lochmueller Group. This project is not located in a regulatory floodplain from approved IDNR floodplain maps (Appendix F, F15). Therefore, it does not fall within the guidelines for the implementation of 23 CFR 650, 23 CFR 771, and 44 CFR. No impacts are expected.

In their early coordination response on November 8, 2019 (Appendix C, C47 to C50), the IDNR DFW stated that the project will require approval for construction in a floodway pursuant to the Flood Control Act (IC 14-28-1), unless it qualifies for a bridge exemption. The project is located in a rural area, more than two miles away from an incorporated municipality, and the upstream drainage area of Branch Spencer Creek is less than 50 square miles. Therefore, the project does qualify for the bridge exemption; no IDNR Construction in a Floodway Permit is anticipated.

**Farmland**

- Agricultural Lands
- Prime Farmland (per NRCS)

Presence


Impacts

Yes	No

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

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

Remarks: Based on a desktop review, a site visit on June 28, 2019 by Lochmueller Group and the aerial map of the project area (Appendix B, B3) there is no land that meets the definition of farmland under the Farmland Protection Policy Act (FPPA) within or adjacent to the project area. The requirements of FPPA do not apply to this project; therefore, no impacts are expected. An early coordination letter was sent on October 8, 2019 to the Natural Resources Conservation Services (NRCS). In their response letter, dated October 22, 2019 (Appendix C, C44), the NRCS stated that the project will not convert any prime farmland.

**SECTION C – CULTURAL RESOURCES**

	Category	Type	INDOT Approval Dates	N/A
Minor Projects PA Clearance	A	9	October 29, 2019	<input type="checkbox"/>
	B	4 & 12		

# Indiana Department of Transportation

County Sullivan

Route SR 159

Des. No. 1700148

**Eligible and/or Listed  
Resource Present**

**Results of Research**

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

**Project Effect**

No Historic Properties Affected       No Adverse Effect       Adverse Effect

**Documentation  
Prepared**

**Documentation** (mark all that apply)

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

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

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

Remarks: On October 29, 2019, the INDOT Cultural Resources Office (CRO) determined that this project falls within the guidelines of Category A, Type 9 and Category B, Type 4 and 12 under the Minor Projects Programmatic Agreement (MPPA) (Appendix D, D1 to D5).

The project type within Category A is:

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

The project types within Category B are:

4. Installation of new safety appurtenances in previously disturbed soils not adjacent to or within a National Register of Historic Places (NRHP) listed or eligible district or individual above ground resource.
12. Replacement, widening, or raising the elevation of the superstructure on existing bridges and bridge replacement projects within previously disturbed soils on a common-type bridge built after 1945 not adjacent to or within a NRHP listed or eligible district or individual above ground resource.

## Indiana Department of Transportation

County Sullivan

Route SR 159

Des. No. 1700148

According to the MPPA Determination Form, the project will take place in previously disturbed soils. Therefore, no archaeological assessment is needed. No further consultation is required. This completes the Section 106 process and the responsibilities of the FHWA under Section 106 have been fulfilled.

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

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

**Parks & Other Recreational Land**

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

Presence


Use

Yes	No

Evaluations Prepared

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


FHWA Approval date

**Wildlife & Waterfowl Refuges**

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

Presence


Use

Yes	No

Evaluations Prepared

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


FHWA Approval date

**Historic Properties**

- Sites eligible and/or listed on the NRHP

Presence

--

Use

Yes	No

Evaluations Prepared

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


FHWA Approval date

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

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

## Indiana Department of Transportation

County Sullivan

Route SR 159

Des. No. 1700148

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

Based on a desktop review, a site visit on June 28, 2019 by Lochmueller Group, the aerial map of the project area (Appendix B, B3), and the RFI report (Appendix E, E1 to E12), there are three Section 4(f) resources located within the 0.5 mile search radius. There are no Section 4(f) resources within or adjacent to the project area. Therefore, no use is expected.

Greene-Sullivan State Forest is located within the project area. However, forest conservation areas are not considered Section 4(f) resources unless there is a public recreational component within the project limits (i.e., a trail). In correspondence dated January 31, 2020, the IDNR Division of Forestry stated there are no recreational features of the Greene-Sullivan State Forest within or near the project limits (Appendix C, C10).

**Section 6(f) Involvement**

**Presence**

**Use**

**Section 6(f) Property**

**Yes**

**No**



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

Remarks: The U.S. Land and Water Conservation Fund Act of 1965 established the 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 Section 6(f) property on the INDOT Environmental Policy website (<https://www.in.gov/indot/2523.htm>) revealed a total of three properties in Sullivan County (Appendix J, J1). None of these properties are located within or adjacent to the project area. Therefore, there will be no impacts to Section 6(f) resources as a result of this project.

**SECTION E – Air Quality**

**Air Quality**

**Conformity Status of the Project**

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

**Yes**

**No**



If YES, then:

Is the project in the most current MPO TIP?



Is the project exempt from conformity?



If the project is NOT exempt from conformity, then:

Is the project in the Transportation Plan (TP)?



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



Level of MSAT Analysis required?

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

## Indiana Department of Transportation

County Sullivan

Route SR 159

Des. No. 1700148

Remarks: This project is included in the Fiscal Year (FY) 2020-2024 Statewide Transportation Improvement Program (Appendix H, H1).

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

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

**SECTION F – NOISE**

Noise	Yes	No
Is a noise analysis required in accordance with FHWA regulations and INDOT's traffic noise policy?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

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

**SECTION G – COMMUNITY IMPACTS**

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

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

According to the Indiana Fairs and Festivals website ([www.indianafestivals.org](http://www.indianafestivals.org)) accessed on November 4, 2019 by Lochmueller Group there are no fairs and festivals scheduled within 10 miles of the project.

The MOT may pose delays and temporary inconveniences to traveling motorists (including school buses and emergency services); however, all inconveniences will cease upon project completion. The MOT for the project

## Indiana Department of Transportation

County Sullivan

Route SR 159

Des. No. 1700148

is not anticipated to impact access to community events. The project sponsor will be responsible for contacting school districts and emergency services at least two weeks prior to any construction activities that would limit access, this is included as a commitment in the Environmental Commitments section of this CE document.

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

**Indirect and Cumulative Impacts**

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

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

Remarks:

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

This project will not add substantial capacity to the existing roadway network or provide additional access to any currently undeveloped area. Therefore, the project is not expected to increase development in the area or result in substantial indirect or cumulative impacts.

**Public Facilities & Services**

Will the proposed action result in substantial impacts on health and educational facilities, public and private utilities, emergency services, religious institutions, airports, public transportation or pedestrian and bicycle facilities? *Discuss how the maintenance of traffic will affect public facilities and services.*

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

Remarks:

Based on a desktop review, a site visit on June 28, 2019 by Lochmueller Group, the aerial map of the project area (Appendix B, B3), survey information from the plans (Appendix B, B29), and the RFI report (Appendix E, E7) there are three trails located within 0.5 mile of the project area. Three utilities are also located within the project area. Two aerial electrical lines, one underground communication line, and an underground water line will likely be impacted by the project. It is anticipated that the relocation of the water line and electrical lines will be required. Utility coordination, by Lochmueller Group, has begun and will continue throughout project development.

Early coordination information was sent to Sullivan County Highway Department, Sullivan County Emergency Management Agency, Sullivan County Board of Commissioners, Sullivan County Surveyor, Sullivan County Sheriff's Department, Jefferson Township Fire Department, and Northeast School Corporation on October 8, 2019 (Appendix C, C1 to C4). None of the agencies listed responded to the early coordination letter.

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

**Environmental Justice (EJ)** (Presidential EO 12898)

During the development of the project were EJ issues identified?

Does the project require an EJ analysis?

If YES, then:

Are any EJ populations located within the project area?

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

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

## Indiana Department of Transportation

County Sullivan Route SR 159 Des. No. 1700148

**Remarks:**

Under FHWA Order 6640.23A, FHWA and the project sponsor, as a recipient of funding from FHWA, are responsible to ensure that their programs, policies, and activities do not have a disproportionately high and adverse effect on minority or low-income populations. Per the current INDOT *Categorical Exclusion Preparation Manual*, an Environmental Justice (EJ) Analysis is required for any project that has two or more relocations or 0.5 acre of additional permanent right-of-way. This project will require 1.79 acres of new permanent right-of-way. Therefore, an EJ analysis is required.

Potential EJ impacts are detected by locating minority populations and low-income populations relative to a reference population to determine if populations of EJ concern exist and whether there could be disproportionately high and adverse impacts to them. The reference population may be a county, city, or town and is called the community of comparison (COC). In this project, the COC is Sullivan County. The community that overlaps the project limits is called the affected community (AC). In this project, the AC is Census Tract 505.

An AC has a population of concern for EJ if the population is more than 50% minority or low-income or if the low-income or minority population is 125% of the COC. Data from the American Community Survey five-year estimate (2013-2017) was obtained from the U.S. Census Bureau website (<https://factfinder.census.gov>) on December 2, 2019 by Lochmueller Group. The data collected for minority and low-income populations within the AC are summarized in the table below.

Minority and Low-Income Data (2017 ACS 5-year estimate)		
	COC	AC
	Sullivan County	Census Tract 505
<b>Minority</b>		
Percent Minority	7.9%	23.5%
125% of COC	9.9%	AC > 125% COC
EJ Population of Concern?		Yes
<b>LOW-INCOME</b>		
Percent low-income	15.6%	17.6%
125% of COC	19.5%	AC < 125% COC
EJ Population of Concern?		No

The AC, Census Tract 505, has a percent minority of 23.5% which is below 50% but is above the 125% COC threshold. Therefore, the AC is a minority population of EJ concern.

The AC, Census Tract 505, has a percent low-income of 17.6% which is below 50% and is below the 125% COC threshold. Therefore, the AC is not a low-income population of EJ concern.

The identified EJ population will benefit from the project, by having an improved crossing at this location. Overall, the negative impacts to the identified EJ population of concern will consist of short-term construction impacts resulting from the temporary closure of SR 159 between CR 700 S and CR 750 S. In relationship to the project, the nearest urbanized areas likely servicing the affected community are the community of Pleasantville, which is approximately 0.5 mile to the southeast via SR 159; the town of Dugger, which is located approximately six miles to the north via SR 159; and the City of Linton (Greene County), which is located approximately 9 miles to the northeast via SR 159, CR 425 S, CR 450 S, and SR 59. During the closure, which is anticipated to last approximately eight months, the affected community will be able to use other adjacent local roads to navigate around the closure. Access to the Greene-Sullivan State Forest will not be affected by the project given the lack of access drives within the proposed temporary closure area. With adequate routes around the closure, the temporary inconvenience should not affect the identified EJ population's ability to access goods and services. Once construction is complete, access along SR 159 at this location will be restored.

## Indiana Department of Transportation

County Sullivan

Route SR 159

Des. No. 1700148

The impacts resulting from the temporary road closure are not anticipated to cause an economic burden to the identified EJ population of concern. Such an impact could create a burden if the community affected was required to travel an unreasonable distance for an extended length of time. However, the availability of several close local roads to navigate around the closure area should not noticeably affect the community's ability to access goods and services. Therefore, it is expected the project will not have a disproportionately high and adverse environmental or social impact to low-income or minority populations of EJ concern when compared to non-EJ populations that will experience similar temporary inconveniences.

The prepared EJ Analysis was sent to INDOT ESD on December 16, 2019. INDOT ESD responded on January 3, 2020 and agreed that the project will not have a disproportionately high and adverse environmental or social impact to EJ populations (Appendix I, I10).

The completed analysis, census data sheets, map, and calculations can be found in Appendix I (I1 to I9). No further environmental justice analysis is warranted.

**Relocation of People, Businesses or Farms**

- Will the proposed action result in the relocation of people, businesses or farms?
- Is a Business Information Survey (BIS) required?
- Is a Conceptual Stage Relocation Study (CSRS) required?
- Has utility relocation coordination been initiated for this project?

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

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

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

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

It is likely that power lines and a water line will have to be relocated as part of this project. Utility coordination, by Lochmueller Group, has begun and will continue through project development.

**SECTION H – HAZARDOUS MATERIALS & REGULATED SUBSTANCES**

**Hazardous Materials & Regulated Substances** (Mark all that apply)

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

Documentation

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

	No	Yes/ Date
<b>ES Review of Investigations</b>	<input type="checkbox"/>	October 1, 2019

*Include a summary of findings for each investigation.*

Remarks: Based on a review of GIS and available public records, an RFI was approved by INDOT Site Assessment and Management (SAM) on October 1, 2019 (Appendix E, E1 to E12). Two National Pollutant Discharge Elimination System (NPDES) pipe location sites are located within 0.5 mile of the project area and no sites are located within the project area; however, no hazardous material sites were identified in or within 0.5 mile of the project area that will impact the project. The nearest NPDES pipe is 0.25 mile from the project area. No impacts are expected because the pipe is located downstream of the project area. Further investigation for hazardous material concerns is not required at this time.

**Indiana Department of Transportation**

County Sullivan

Route SR 159

Des. No. 1700148

**SECTION I – PERMITS CHECKLIST**

Permits (mark all that apply)

Likely Required

**Army Corps of Engineers (404/Section10 Permit)**

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

**IDEM**

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

**IDNR**

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

**US Coast Guard Section 9 Bridge Permit**

**Others (Please discuss in the remarks box below)**

Remarks: A total of 541 linear feet (0.14 acre below OHWM) of Branch Spencer Creek will be impacted by the project. Impacts will be limited to the portion of the creek and wetland within the construction limits of the project. A USACE Section 404 RGP and IDEM Section 401 WQC will be required due to the impacts to Branch Spencer Creek. A formal jurisdictional determination has not yet been made by the USACE, which will be required during the permitting phase.

Mitigation for the IDEM Section 401 WQC is required when cumulative stream and wetland impacts meet or exceed 300 linear feet or 0.1 acre below the ordinary high-water mark. Due to the cumulative impacts of 541 linear feet and 0.14 acre, mitigation is likely required.

The project may disturb up to 1.5 acres of land. Therefore, the project is expected to exceed the minimal guidelines of soil disturbance and an IDEM Rule 5 Notice of Intent will be required.

Applicable recommendations provided by IDEM and the USACE are included in the Environmental Commitments section of this CE 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.

# Indiana Department of Transportation

County Sullivan

Route SR 159

Des. No. 1700148

## SECTION J- ENVIRONMENTAL COMMITMENTS

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

Remarks:

### Firm:

1. If the scope of work or permanent or temporary right-of-way amounts change, the INDOT Environmental Services Division (ESD) and the INDOT Vincennes District Environmental Section will be contacted immediately. (INDOT ESD and INDOT Vincennes District)
2. It is the responsibility of the project sponsor to notify school corporations and emergency services at least two weeks prior to any construction that would block or limit access. (INDOT ESD)
3. USFWS Bridge/Structure Assessment shall take place no earlier than two (2) years prior to the start of construction. If construction will begin after June 28, 2021, an inspection of the structure by a qualified individual, must be performed. Inspection of the structure should check for presence of bats/bat indicators and/or presence of birds. The results of the inspection must indicate no signs of bats or birds. If signs of bats or birds are documented during this inspection, the INDOT District Environmental Manager must be contacted immediately. (INDOT ESD)
4. Bridge No. 159-77-05955 B (NBI: 028060) along SR 159, approximately 6.76 miles south of SR 54, over Branch Spencer Creek has shown no evidence of use (for example, nests) by a bird species protected under the Migratory Bird Treaty Act (MBTA) during previous inspections. However, the structure is located over or near water which is preferred habitat for migratory birds. Avoidance and minimization measures must be implemented prior to the start of and during the nesting season. Nests without eggs or young should be removed prior to construction during the non-nesting season (September 8 – April 30) and during the nesting season if no eggs or young are present. Nests with eggs or young cannot be removed or disturbed during the nesting season (May 1 – September 7). Nests with eggs or young should be screened or buffered from active construction. Details of the required procedures are outlined in the “Potential Migratory Bird on Structure Unique Special Provision”. (INDOT ESD)
5. **General AMM 1:** Ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable AMMs. (USFWS)
6. **Lighting AMM 1:** Direct temporary lighting away from suitable habitat during the active season. (USFWS)
7. **Tree Removal AMM 1:** Modify all phases/aspects of the project (e.g., temporary work areas, alignments) to avoid tree removal. (USFWS)
8. **Tree Removal AMM 2:** Apply time of year restrictions for tree removal when bats are not likely to be present, or limit tree removal to 10 or fewer trees per project at any time of year within 100 feet of existing road/rail surface and **outside of documented** roosting/foraging habitat or travel corridors; visual emergence survey must be conducted with no bats observed. (USFWS)
9. **Tree Removal AMM 3:** Ensure tree removal is limited to that specified in project plans and ensure that contractors understand clearing limits and how they are marked in the field (e.g., install bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits). (USFWS)
10. **Tree Removal AMM 4:** Do not remove **documented** Indiana bat or NLEB roosts that are still suitable for roosting, or trees within 0.25 miles of roosts, or **documented** foraging habitat any time of year. (USFWS)

### For Further Consideration:

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

This is page 23 of 25 Project name: SR 159 Bridge Replacement Project Date: April 20, 2020

## Indiana Department of Transportation

County Sullivan

Route SR 159

Des. No. 1700148

- boulders, the existing substrate should be left undisturbed beneath the culvert to provide natural habitat for the aquatic community. (USFWS)
13. Minimize the extent of hard armor (riprap) in bank stabilization by using bioengineering techniques whenever possible. If riprap is utilized for bank stabilization, extend it below low-water elevation to provide aquatic habitat. (USFWS)
  14. Avoid all work within the inundated part of the stream channel during the fish spawning season (April 1 through June 30); except for work within sealed structures such as caissons or cofferdams that were installed prior to the spawning season. No equipment shall be operated below Ordinary High Water Mark during this time unless the machinery is within the caissons or on the cofferdams. (USFWS)
  15. Evaluate wildlife crossings under bridge projects in appropriate situations. Suitable crossings include flat areas below bridge abutments with suitable ground cover, high water shelves in culverts, amphibian tunnels, and diversion fencing. (USFWS)
  16. Crossings should: span the entire channel width (a minimum of 1.2 times the bankfull width); maintain the natural stream substrate within the structure; have a minimum openness ratio (height x width/length) of 0.25; and have stream depth and water velocities during low-flow conditions that are approximate to those in the natural stream channel. (IDNR DFW)
  17. The new, replacement, or rehabbed structure should not create conditions that are less favorable for wildlife passage under the structure compared to the current conditions. (IDNR DFW)
  18. Riprap must not be placed in the active thalweg channel or placed in the streambed in a manner that precludes fish or aquatic organism passage (riprap must not be placed above the existing streambed elevation). Riprap may be used only at the toe of the sideslopes up to the ordinary high water mark (OHWM). The banks above the OHWM must be restored, stabilized, and revegetated using geotextiles and a mixture of grasses, sedges, wildflowers, shrubs, and trees native to the area and specifically for stream bank/floodway stabilization purposes as soon as possible upon completion. (IDNR DFW)
  19. Impacts to non-wetland forest of one (1) acre or more should be mitigated at a minimum 2:1 ratio. If less than one acre of non-wetland forest is removed in a rural setting, replacement should be at a 1:1 ratio based on area. Impacts to non-wetland forest under one acre in an urban setting should be mitigated by planting five trees, at least 2 inches in diameter-at-breast height (dbh), for each tree which is removed that is 10" dbh or greater (5:1 mitigation based on the number of large trees). (IDNR DFW)
  20. Do not cut any trees suitable for Indiana bat or Northern Long-eared bat roosting from April 1 through September 30. (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)
  22. Do not construct any temporary runarounds, access bridges, causeways, cofferdams, diversions, or pumparounds. (IDNR DFW)
  23. 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)
  24. Plant native hardwood trees along the top of the bank and right-of-way to replace the vegetation destroyed during construction. (IDNR DFW)

## Indiana Department of Transportation

County Sullivan

Route SR 159

Des. No. 1700148

### SECTION K- EARLY COORDINATION

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

Remarks:

Early coordination with the regulatory agencies was completed on October 8, 2019 (Appendix C, C1 to C4). If no response was received, it was assumed the agency did not feel the project will result in substantial impacts. The following agencies/individuals were contacted during the coordination phase.

	Agency	Date of Response(s)
1.	USACE, Louisville District	No Response
2.	USFWS, Bloomington Field Office	October 10, 2019
3.	USDA, NRCS	October 22, 2019
4.	National Park Service, Midwest Regional Office	No Response
5.	U.S. Department of Housing and Urban Development	No Response
6.	FHWA, Indiana Division	No Response
7.	IDNR, Division of Fish and Wildlife	November 8, 2019
8.	IDNR, Division of Forestry	October 9, 2019
9.	IDNR, Division of Reclamation	No Response
10.	Indiana Geological Survey	October 8, 2019
11.	INDOT, Office of Public Involvement	October 9, 2019
12.	INDOT, Environmental Services	November 4, 2019
13.	INDOT, Vincennes District Environmental Scoping Manager	No Response
14.	IDEM (electronic submission)	October 8, 2019
15.	Sullivan County Board of Commissioners	No Response
16.	Sullivan County Council	No Response
17.	Sullivan County Highway Department	No Response
18.	Sullivan County Drainage Board	No Response
19.	Sullivan County Surveyor's Office	No Response
20.	Sullivan County Emergency Management Agency	No Response
21.	Sullivan County 911 Center	No Response
22.	Sullivan County Ambulance Service	No Response
23.	Sullivan County Sheriff's Department	No Response
24.	Jefferson Township Trustee	No Response
25.	Northeast School Corporation	No Response
26.	Jefferson Township Fire Department	No Response

**Appendix A: INDOT Supporting Documentation**

Threshold Chart.....A1

**Appendix B: Graphics**

General Location Map..... B1  
 USGS Bucktown, Indiana Quadrangle Topographic Map ..... B2  
 Aerial Map (2018)..... B3  
 ROW Map ..... B4  
 Photo Location Map ..... B5  
 Site Photographs ..... B6-B23  
 Preliminary Design Plans ..... B24-B33

**Appendix C: Early Coordination**

Sample Early Coordination Letter (October 8, 2019) ..... C1-C4  
 Indiana Geological Survey  
     Electronic Response (October 8, 2019)..... C5-C7  
 Indiana Department of Natural Resources (IDNR), Division of Forestry  
     Response Email (October 9, 2019) ..... C8-C9  
     Additional Coordination Response Email (January 31, 2020)..... C10  
 Indiana Department of Transportation (INDOT), Office of Public Involvement  
     Response Email (October 9, 2019) ..... C11  
 Indiana Department of Environmental Management  
     Electronic Response (October 10, 2019)..... C12-C16  
 United States Fish and Wildlife Service  
     Response Email (October 10, 2019) ..... C17-C18  
     IPaC Official Species List (March 17, 2020)..... C19-C24  
     IPaC Concurrence Verification Letter (November 6, 2019) ..... C25-C40  
     Bridge Assessment Form ..... C41-C42  
     Database check email response (August 19, 2019)..... C43  
 Natural Resources Conservation Service  
     Response Letter (October 22, 2019) ..... C44  
 INDOT, Environmental Services  
     Response Letter (November 4, 2019) ..... C45-C46  
 IDNR, Division of Fish and Wildlife  
     Response Letter (November 8, 2019) ..... C47-C50

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

MPPA Project Assessment Form (October 29, 2019) ..... D1-D4  
 Supplemental Correspondence from INDOT Cultural Resources Office (January 3, 2020)... D5-D6

**Appendix E: Red Flag Investigation**

Red Flag Investigation..... E1-E12

**Appendix F: Water Resources**

Waters of the U.S. Determination Report..... F1-F8  
 Soil Survey..... F9-F13  
 NWI Wetlands Map ..... F14  
 FEMA Floodplain Insurance Rate Map ..... F15  
 USGS StreamStats Map ..... F16  
 Water Resources Map ..... F17  
 Stream and Wetland Data Sheets ..... F18-F23  
 Preliminary Jurisdictional Determination ..... F24-F27  
 INDOT Ecology and Waterway Permitting approval email (July 31, 2019)..... F28

**Appendix G: Public Involvement**

Notice of Survey (April 3, 2018).....G1

**Appendix H: Air Quality**

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

**Appendix I: Environmental Justice (EJ) Analysis**

Environmental Justice Analysis .....I1-I9

INDOT Environmental Services EJ Approval (January 3, 2020)..... I10

**Appendix J: Other Information**

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

Excerpts from the INDOT Bridge Inspection Report (June 12, 2019)..... J2-J13

**Categorical Exclusion**

**Appendix A**

**INDOT Supporting Documentation**

## Categorical Exclusion Level Thresholds

	PCE	Level 1	Level 2	Level 3	Level 4 <sup>1</sup>
<b>Section 106</b>	Falls within guidelines of Minor Projects PA	“No Historic Properties Affected”	“No Adverse Effect”	-	“Adverse Effect” Or Historic Bridge involvement <sup>2</sup>
<b>Stream Impacts</b>	No construction in waterways or water bodies	< 300 linear feet of stream impacts	≥ 300 linear feet of stream impacts	-	Individual 404 Permit
<b>Wetland Impacts</b>	No adverse impacts to wetlands	< 0.1 acre	-	< 1 acre	≥ 1 acre
<b>Right-of-way<sup>3</sup></b>	Property acquisition for preservation only or none	< 0.5 acre	≥ 0.5 acre	-	-
<b>Relocations</b>	None	-	-	< 5	≥ 5
<b>Threatened/Endangered Species (Species Specific Programmatic for Indiana bat &amp; northern long eared bat)</b>	“No Effect”, “Not likely to Adversely Affect” (Without AMMs <sup>4</sup> or with AMMs required for all projects <sup>5</sup> )	“Not likely to Adversely Affect” (With any other AMMs)	-	“Likely to Adversely Affect”	Project does not fall under Species Specific Programmatic
<b>Threatened/Endangered Species (Any other species)</b>	Falls within guidelines of USFWS 2013 Interim Policy	“No Effect”, “Not likely to Adversely Affect”	-	-	“Likely to Adversely Affect”
<b>Environmental Justice</b>	No disproportionately high and adverse impacts	-	-	-	Potential <sup>6</sup>
<b>Sole Source Aquifer</b>	Detailed Assessment Not Required	-	-	-	Detailed Assessment
<b>Floodplain</b>	No Substantial Impacts	-	-	-	Substantial Impacts
<b>Coastal Zone Consistency</b>	Consistent	-	-	-	Not Consistent
<b>National Wild and Scenic River</b>	Not Present	-	-	-	Present
<b>New Alignment</b>	None	-	-	-	Any
<b>Section 4(f) Impacts</b>	None	-	-	-	Any
<b>Section 6(f) Impacts</b>	None	-	-	-	Any
<b>Added Through Lane</b>	None	-	-	-	Any
<b>Permanent Traffic Alteration</b>	None	-	-	-	Any
<b>Coast Guard Permit</b>	None	-	-	-	Any
<b>Noise Analysis Required</b>	No	-	-	-	Yes
<b>Air Quality Analysis Required</b>	No	-	-	-	Yes <sup>7</sup>
<b>Approval Level</b>	Concurrence by INDOT District Environmental or Environmental Services	Yes	Yes	Yes	Yes
<ul style="list-style-type: none"> <li>• District Env. Supervisor</li> <li>• Env. Services Division</li> <li>• FHWA</li> </ul>				Yes	Yes

<sup>1</sup>Coordinate with INDOT Environmental Services. INDOT will then coordinate with the appropriate FHWA Environmental Specialist.

<sup>2</sup>Any involvement with a bridge processed under the Historic Bridge Programmatic Agreement.

<sup>3</sup>Permanent and/or temporary right-of-way.

<sup>4</sup>AMMs = Avoidance and Mitigation Measures.

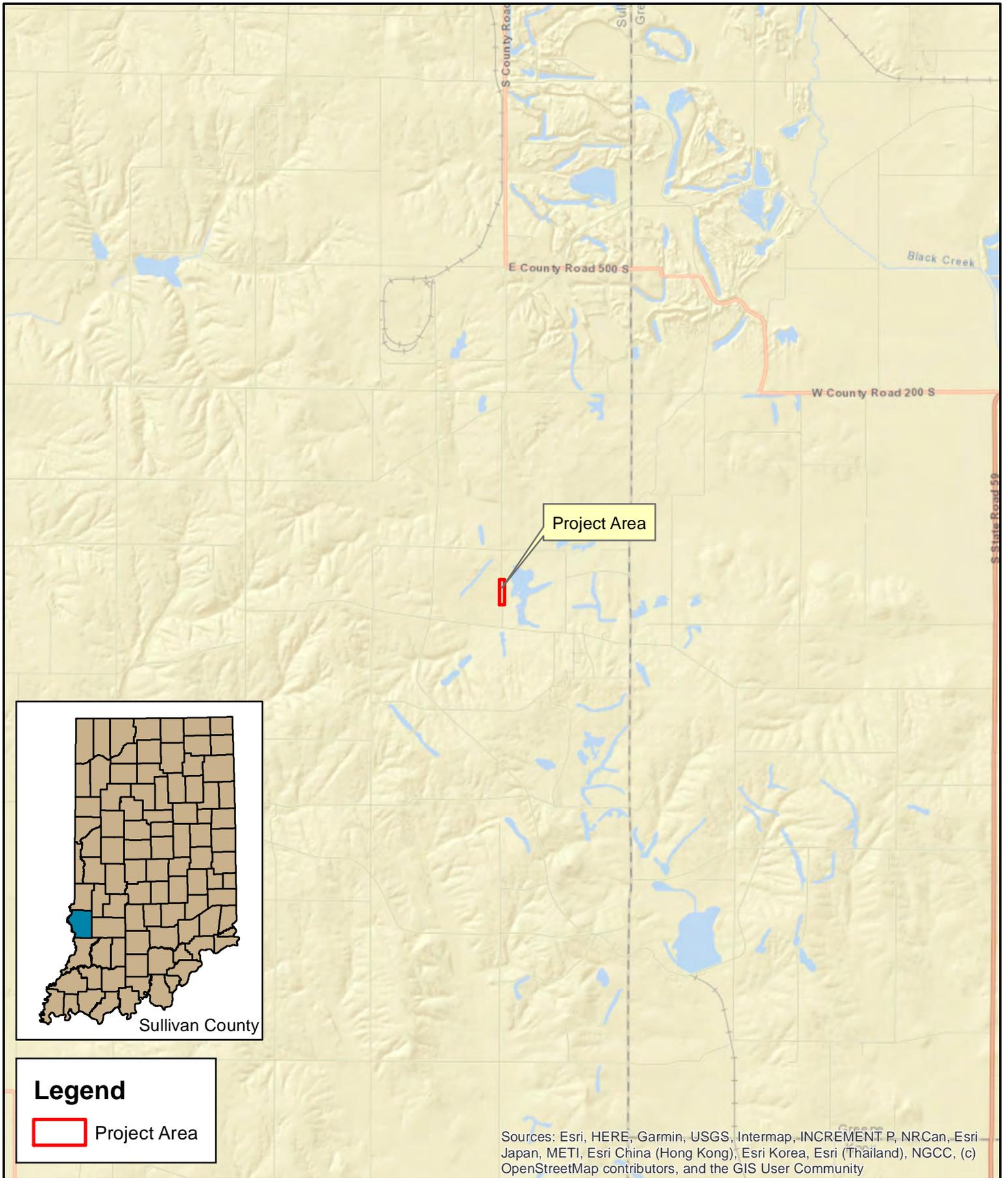
<sup>5</sup>AMMs determined by the IPAC decision key to be needed that are listed in the USFWS *User’s Guide for the Range-wide Programmatic Consultation for Indiana bat and Northern long-eared bat* as “required for all projects”.

<sup>6</sup>Potential for causing a disproportionately high and adverse impact.

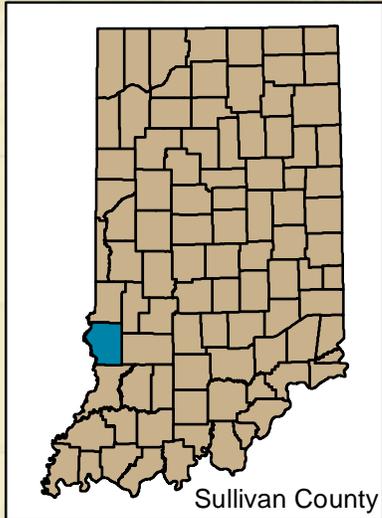
<sup>7</sup>Hot Spot Analysis and/or MSAT Quantitative Emission Analysis.

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

**Categorical Exclusion**  
**Appendix B**  
**Graphics**



Project Area



**Legend**

Project Area

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

**LOCHMUELLER GROUP**

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

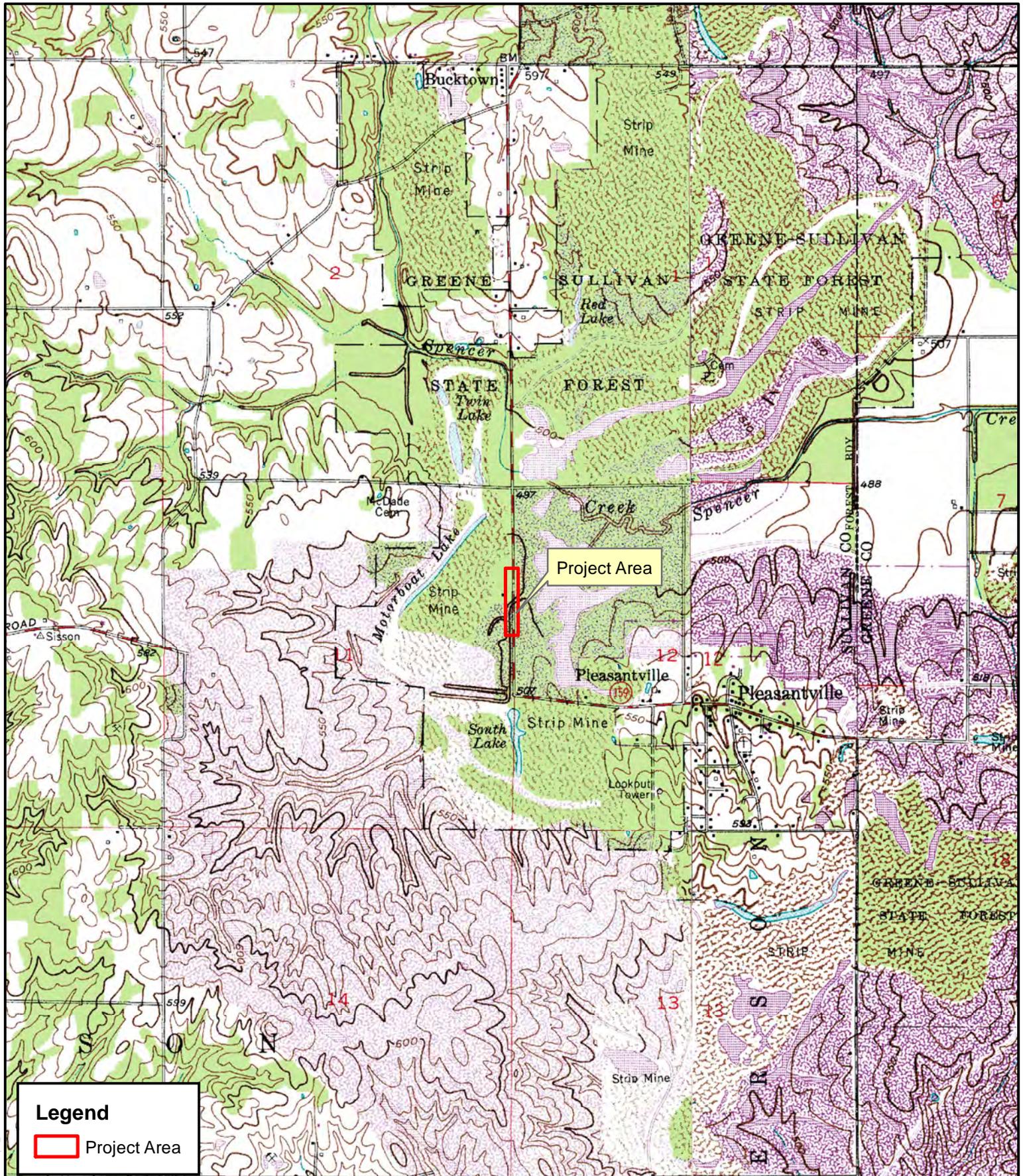
**General Location Map**

Des. No. 1700148

County: Sullivan  
 Township: Jefferson  
 State: Indiana



SR 159 Bridge Replacement Project  
 SR 159, 6.76 miles south of SR 54  
 Created: 3/25/2020, CKunkel



**Legend**  
 Project Area

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



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

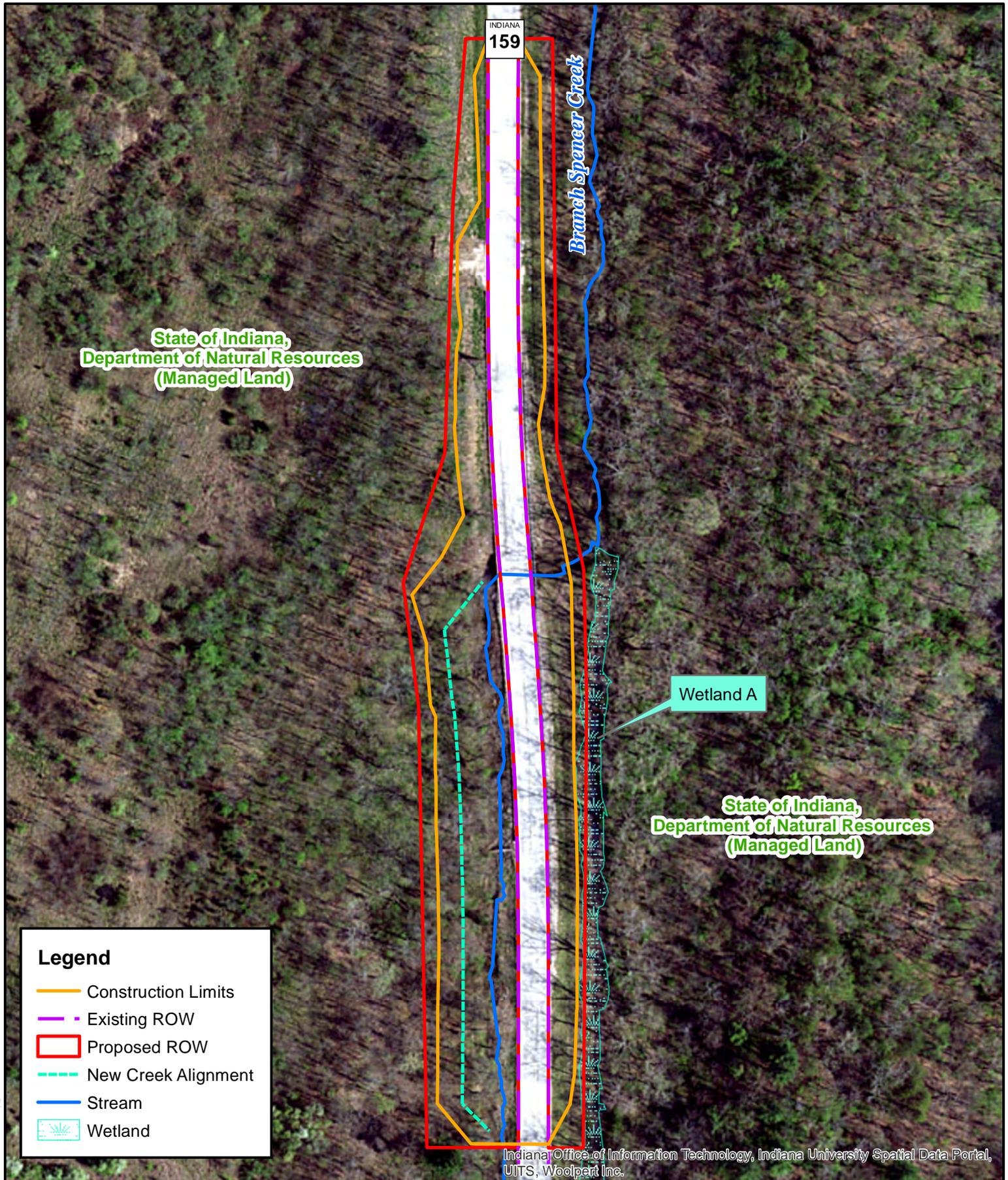
**USGS Topographic Map**  
**Bucktown Quadrangle**  
**Des. No. 1700148**

0    0.25    0.5  
 Miles



County: Sullivan  
 Township: Jefferson  
 State: Indiana

SR 159 Bridge Replacement Project  
 SR 159, 6.76 miles south of SR 54  
 Created: 3/25/2020, CKunkel



**Legend**

- Construction Limits
- - Existing ROW
- Proposed ROW
- - - New Creek Alignment
- Stream
- Wetland Wetland

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

**LOCHMUELLER GROUP**

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

**Aerial Map (2018)**

**Des. No. 1700148**

0

80

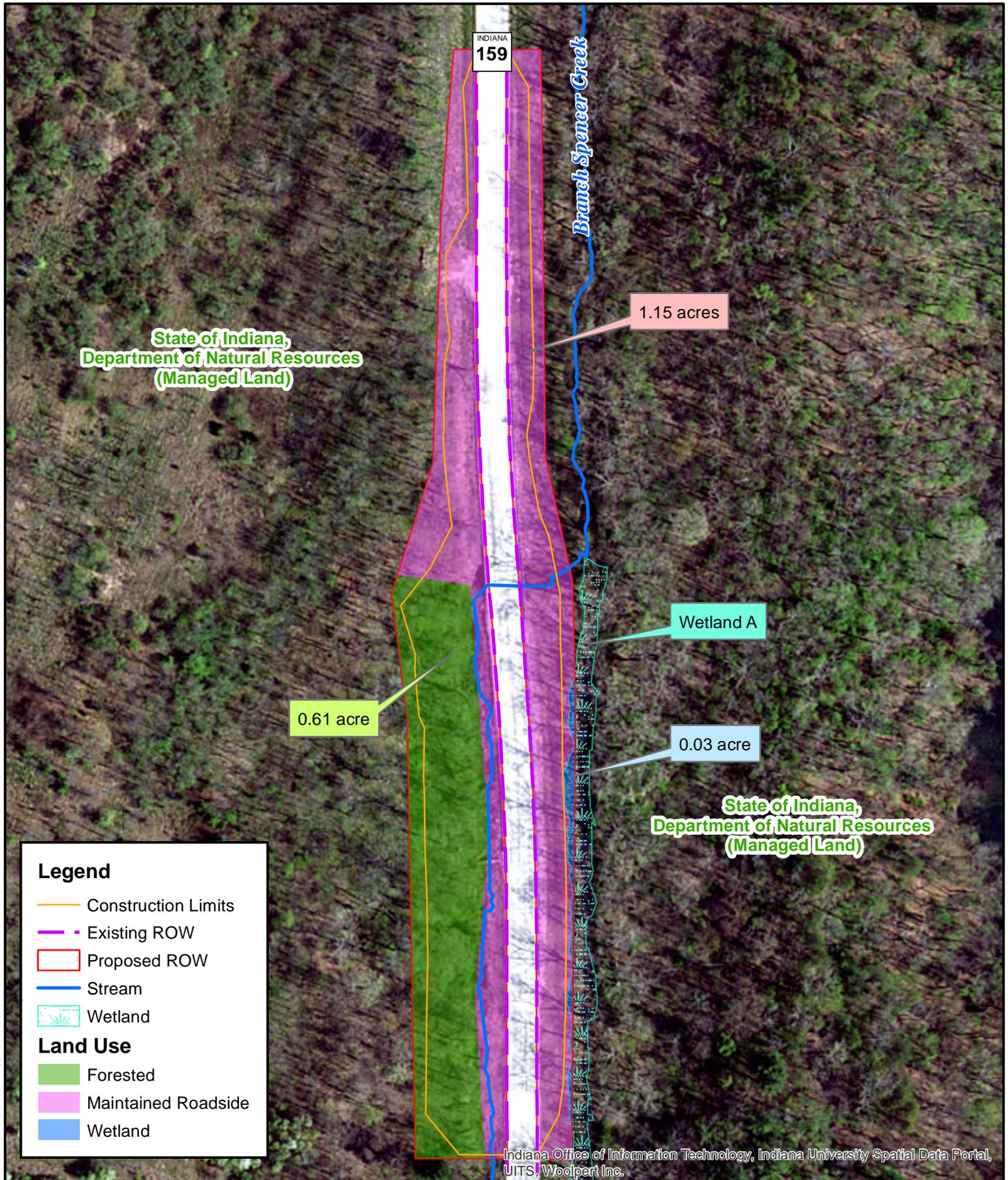
160

Feet

County: Sullivan  
 Township: Jefferson  
 State: Indiana

SR 159 Bridge Replacement Project  
 SR 159, 6.76 miles south of SR 54  
 Created: 1/14/2020, CKunkel

S:\\_2017\17-0051\BDD\Enviro\Mapas\X\Aerial Map\_C2.mxd



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

**Legend**

- Construction Limits
- - Existing ROW
- - - Proposed ROW
- Stream
- Wetland

**Land Use**

- Forested
- Maintained Roadside
- Wetland



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

**ROW Map**  
 Des. No. 1700148

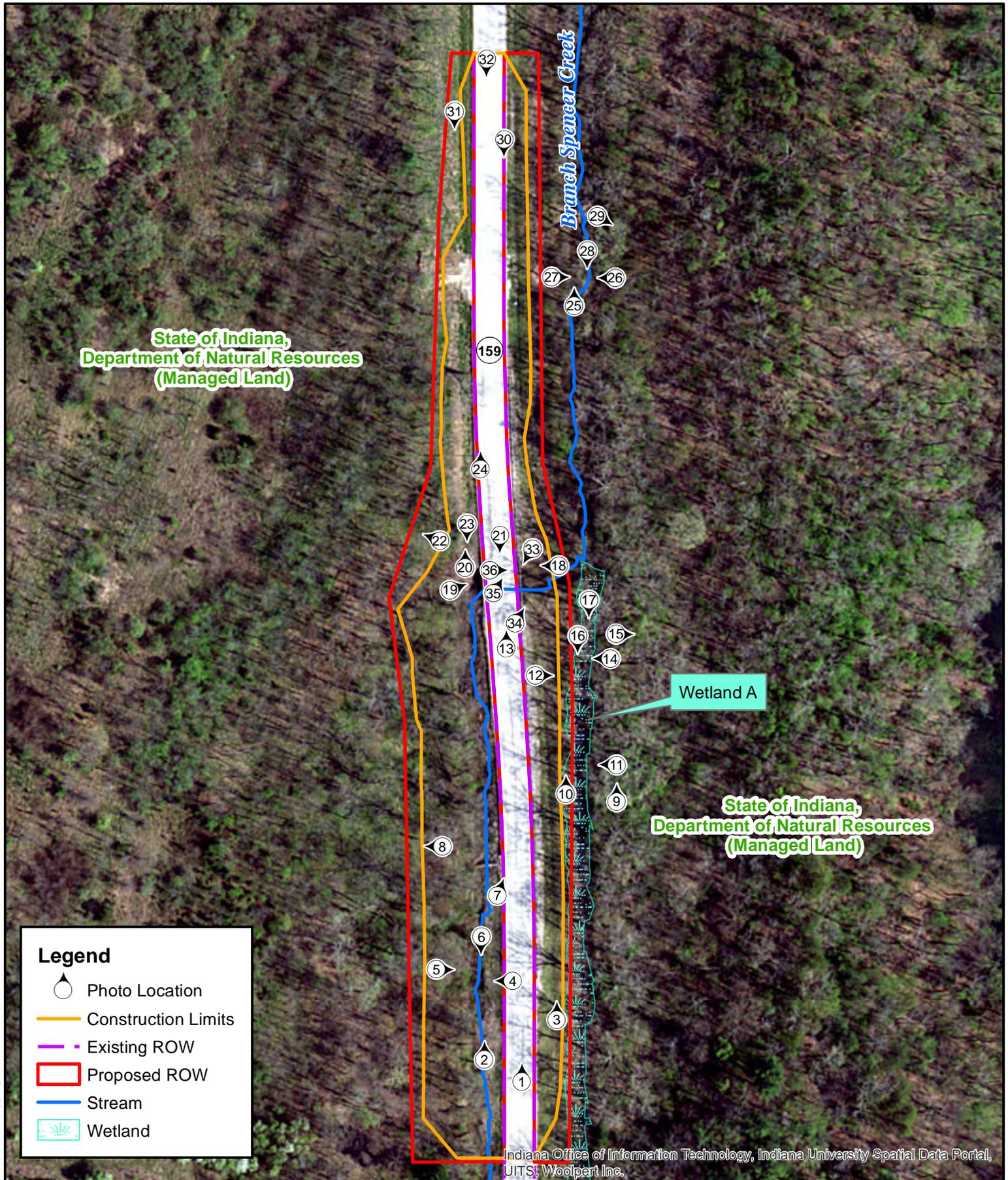
0    50    100  
 Feet



County: Sullivan  
 Township: Jefferson  
 State: Indiana

SR 159 Bridge Replacement Project  
 SR 159, 6.76 miles south of SR 54  
 Created: 3/17/2020, CKunkel

J:\F521\Share\2017\17-005\FRED\Emiroli\Map\X\Des\ROW\_Map\_CE.mxd



**Legend**

- Photo Location
- Construction Limits
- Existing ROW
- Proposed ROW
- Stream
- Wetland

**LOCHMUELLER GROUP**

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

**Photo Location Map**

**Des. No. 1700148**

0      80      160  
 Feet

County: Sullivan  
 Township: Jefferson  
 State: Indiana

SR 159 Bridge Replacement Project  
 SR 159, 6.76 miles south of SR 54  
 Created: 12/20/2019, CKunkel

S:\\_2017\17-0051\BDD\Enviro\Mapas\X\Photo\_Map\_CE\_rev.mxd



1. Looking north along SR 159 toward bridge approach and project area - 6/28/2019



2. Looking north (downstream) along Branch Spencer Creek - 6/28/2019



3. Looking north along SR 159 at roadside drainage - 6/28/2019



4. Looking west at left bank of Branch Spencer Creek - 6/28/2019



5. Looking east at right bank of Branch Spencer Creek - 6/28/2019



6. Looking south (upstream) along Branch Spencer Creek - 6/28/2019



7. Looking northeast along SR 159 toward bridge - 6/28/2019



8. Looking west at dry upland forest with Bur Oak and Black Walnut - 6/28/2019



9. Looking north at upland area - 6/28/2019



10. Looking north at Wetland A - 6/28/2019



11. Looking west at upland area - 6/28/2019



12. Looking east at Wetland A - 6/28/2019



13. Looking north toward bridge - 6/28/2019



14. Looking west at Wetland A - 6/28/2019



15. Looking east at upland area - 6/28/2019



16. Looking south at Wetland A - 6/28/2019



17. Looking south at upland area - 6/28/2019



18. Looking upstream (west) at Branch Spencer Creek - 6/28/2019



19. Looking downstream (northeast) at Branch Spencer Creek - 6/28/2019



20. Looking north at culvert capturing roadside runoff feeding Branch Spencer Creek - 6/28/2019



21. Looking south toward bridge - 6/28/2019



22. Looking northwest at dry upland forest dominated by Black Walnut - 6/28/2019



23. Looking south at culvert capturing roadside runoff feeding Branch Spencer Creek - 6/28/2019



24. Looking north at roadside drainage - 6/28/2019



25. Looking north (downstream) at Branch Spencer Creek - 6/28/2019



26. Looking west at left bank of Branch Spencer Creek - 6/28/2019



27. Looking east at right bank of Branch Spencer Creek - 6/28/2019



28. Looking south (upstream) at Branch Spencer Creek - 6/28/2019



29. Dry upland forest dominated by Black Locust and Black Cherry - 6/28/2019



30. Looking south at grassy roadside drainage - 6/28/2019



31. Looking south at grassy roadside drainage - 6/28/2019



32. Looking south toward bridge approach and project area - 6/28/2019



33. Looking southwest toward deterioration along east coping of bridge - 9/27/2018



34. Looking northwest at deterioration along east coping of bridge - 9/27/2018



35. Looking northeast at underside of bridge showing leakage - 9/27/2018



36. Looking east at spalling at north bridge to pavement transition - 9/27/2018

PROJECT	DESIGNATION
1700148	1700148
CONTRACT	BRIDGE FILE
B-40555	159-77-10338

STRUCTURE INFORMATION				
STRUCTURE	TYPE	SPAN AND SKEW	OVER	STATION
159-77-10338	Precast Reinforced Concrete Three-Sided Structure	1 Span: 30'-0" Skew: 0°	BRANCH SPENCER CREEK	115+05.50 "A"

KIN PROJECT INFORMATION	
DESIGNATION	PROJECT DESCRIPTION
1600732	SR 54 - SMALL STRUCTURE REPLACEMENT
1700169	SR 154 - SMALL STRUCTURE REPLACEMENT

# INDIANA DEPARTMENT OF TRANSPORTATION



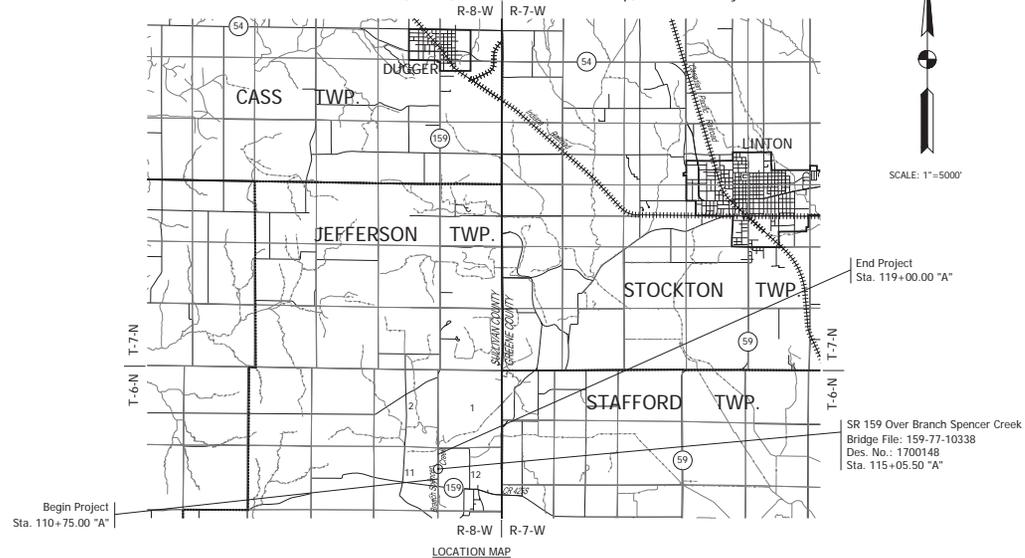
## BRIDGE PLANS

FOR SPANS OVER 20 FEET

ROUTE: SR 159 AT: RP 7+38

PROJECT NO. 1700148 P.E.  
1700148 R/W  
1700148 CONST.

Bridge Replacement, Concrete on SR 159 over Branch Spencer Creek  
Located 6.76 Miles South of SR 54  
Sections 11 & 12, T-6-N, R-8-W, Jefferson Township, Sullivan County



TRAFFIC DATA	
A.A.D.T. (2022)	850 V.P.D.
A.A.D.T. (2042)	1,000 V.P.D.
D.H.V. (2042)	90 V.P.H.
DIRECTIONAL DISTRIBUTION	51/49 %
TRUCKS	5% A.A.D.T. 3% D.H.V.

DESIGN DATA	
DESIGN SPEED	40 M.P.H.
PROJECT DESIGN CRITERIA	3R (NON-FREEWAY)
FUNCTIONAL CLASSIFICATION	STATE COLLECTOR
RURAL/URBAN	RURAL
TERRAIN	LEVEL
ACCESS CONTROL	NONE



LATITUDE: 38°58'16" N LONGITUDE: 87°15'35" W

BRIDGE LENGTH:	0.006	MI.
ROADWAY LENGTH:	0.150	MI.
TOTAL LENGTH:	0.156	MI.
MAX. GRADE:	1.50	%

HUC 12: 051202020603  
HUC 14: 05120202060020

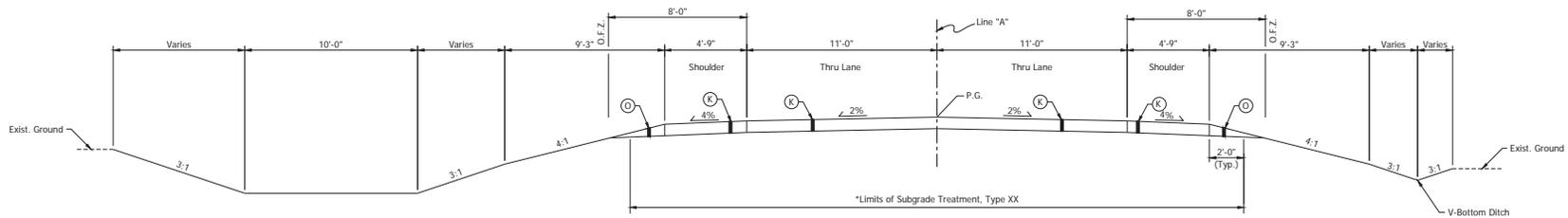
INDIANA DEPARTMENT OF TRANSPORTATION  
STANDARD SPECIFICATIONS DATED 2020  
TO BE USED WITH THESE PLANS



PLANS PREPARED BY:	LOCHMUELLER GROUP, INC.	(812) 479-6200
		PHONE NUMBER
CERTIFIED BY:		DATE
APPROVED FOR LETTING:	INDIANA DEPARTMENT OF TRANSPORTATION	DATE

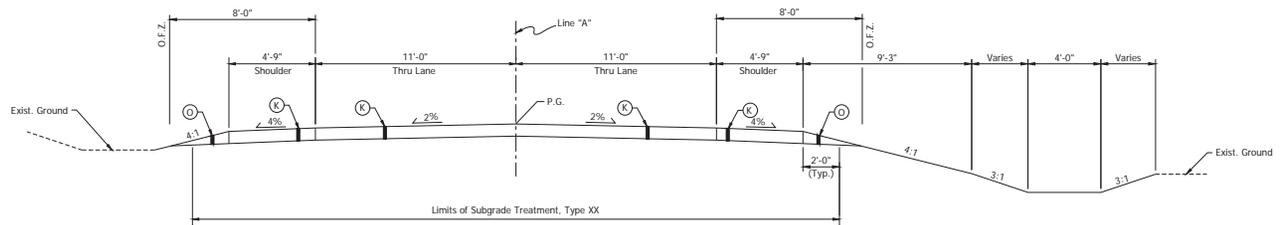
BRIDGE FILE	
159-77-10338	DESIGNATION
1700148	DESIGNATION
SHEET	
SURVEY BOOK	1 of 20
ELECTRONIC	PROJECT
CONTRACT	PROJECT
B-40555	1700148





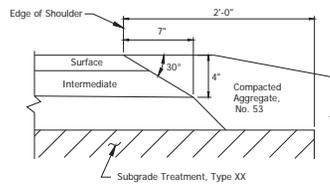
**Typical Tangent Section**  
 Sta. 110+75.00 to P.C. Sta. 111+51.46  
 P.T. Sta. 114+37.65 to P.C. Sta. 115+36.85

\*Subgrade Treatment Exception/Bridge Limits  
 Sta. 114+83.61 to Sta. 115+27.37



**Typical Tangent Section**  
 P.T. Sta. 117+23.68 to Sta. 119+00.00

**NOTE TO REVIEWER:**  
 PAVEMENT DESIGN WILL BE DETERMINED AFTER COMPLETION  
 OF GEOTECHNICAL REPORT.



**SAFETY EDGE DETAIL FOR HMA PAVEMENT**  
 Not To Scale

- LEGEND**
- (K) HMA Pavement
  - (D) 6" Compacted Aggregate, No. 53

- Notes:**
1. All Disturbed Areas Shall Have Seed Mixture, R, Unless Otherwise Shown.
  2. See Super-elevation Transition Diagram on Sheet 7.

O.F.Z. Obstruction Free Zone

Date: Jan 17, 2020 @ 2:28 PM User Name: Tracy  
 File: S:\170714\170714-0051\170714-0051\170714-0051\170714-0051.dwg

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: JAW	10/2019	DRAWN: TAM
CHECKED: ACS	10/2019	CHECKED: JAW
	10/2019	

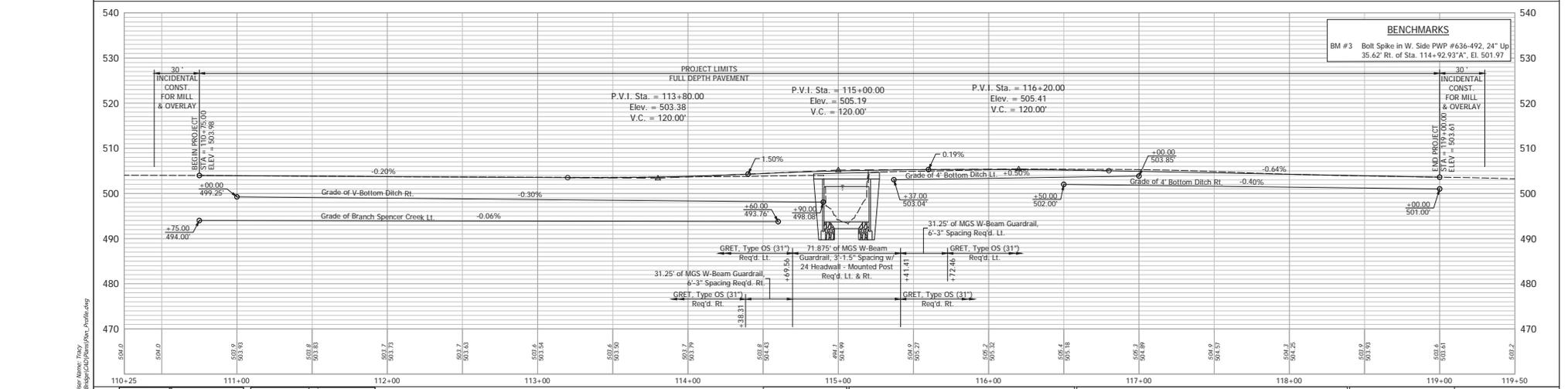
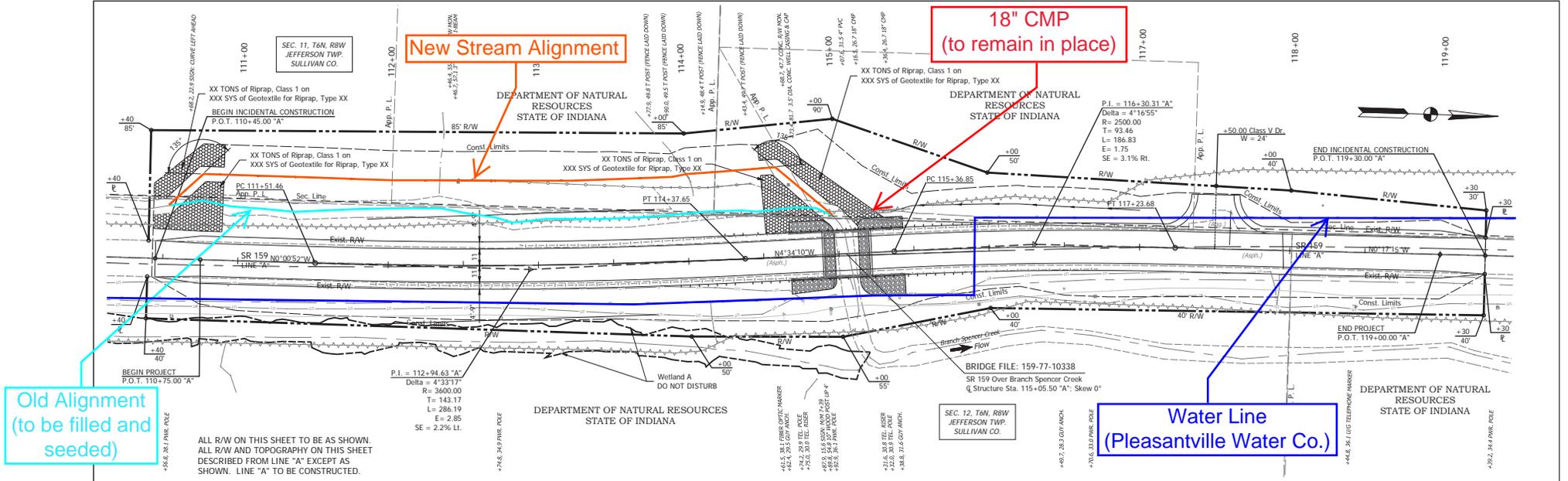
INDIANA  
 DEPARTMENT OF TRANSPORTATION

TYPICAL CROSS SECTIONS

HORIZONTAL SCALE	BRIDGE FILE
5/16"=1'-0"	159-77-10338
VERTICAL SCALE	DESIGNATION
5/16"=1'-0"	170014B
SURVEY BOOK	SHEET
ELECTRONIC	3 of 20
CONTRACT	PROJECT
B-40555	170014B

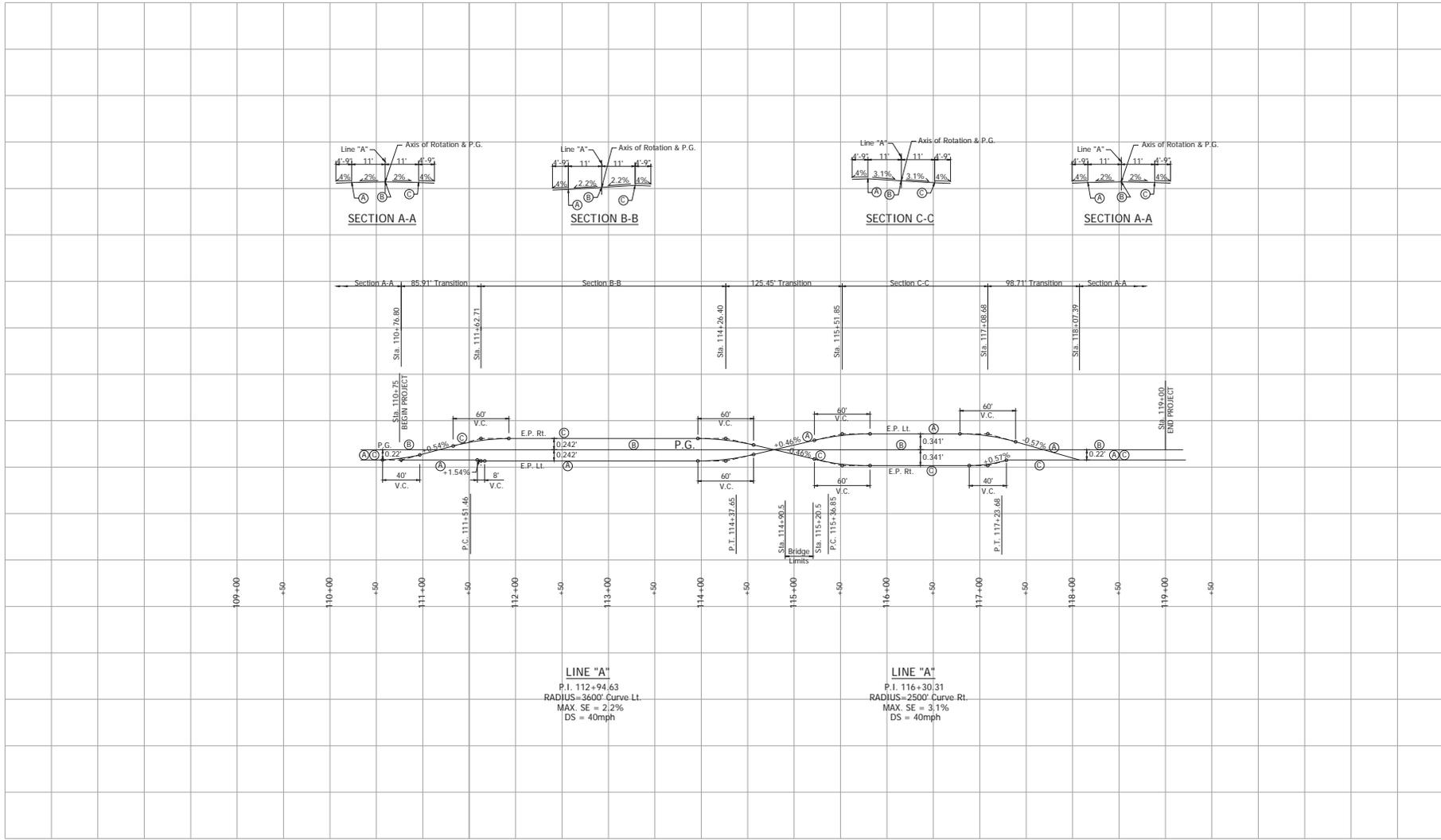






BACK CEN. OF CONC. R/W MON. #902 P.I. 112+94.63 Line "A" Set Mag. w/ Washer Recessed 1"		BACK CEN. OF CONC. R/W MON. #905 P.I. 116+30.31 Line "A" Set Mag. w/ Washer Recessed 1"		RECOMMENDED FOR APPROVAL _____ DATE _____ DESIGN ENGINEER _____ DATE _____ DESIGNED: JAW 10/2019 DRAWN: TAM 10/2019 CHECKED: ACS 10/2019 CHECKED: ACS 10/2019		INDIANA DEPARTMENT OF TRANSPORTATION BRIDGE FILE 159-77-10338 DESIGNATION 170014B SURVEY BOOK SHEET ELECTRONIC 6 of 20 CONTRACT PROJECT B-40555 170014B	
---	--	---	--	--	--	---	--

Date: 10/17/2019 10:27:00 AM User Name: Tracy  
 File: S:\2019\17-4055\17-4055\Bridges\CAD\Plans\SE\_Traffic.dwg



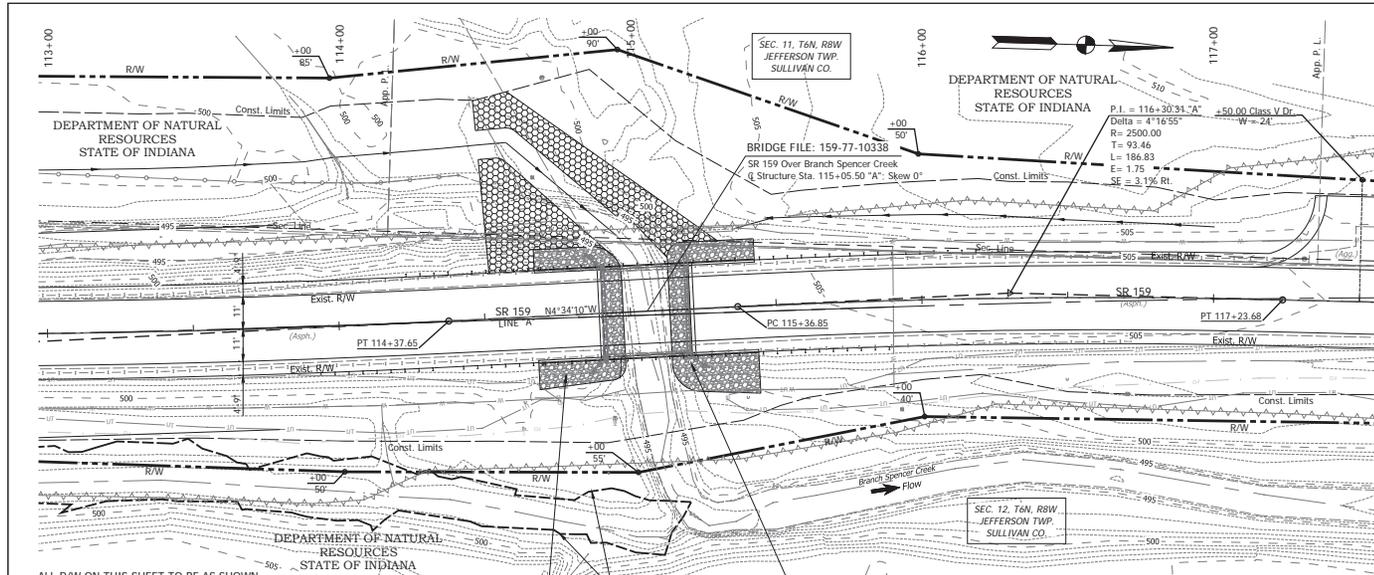
**LINE "A"**  
 P.I. 112+94.63  
 RADIUS=3600' Curve Lt.  
 MAX. SE = 2.2%  
 DS = 40mph

**LINE "A"**  
 P.I. 116+30.31  
 RADIUS=2500' Curve Rt.  
 MAX. SE = 3.1%  
 DS = 40mph

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: JAW 10/2019	DRAWN: TAM 10/2019	
CHECKED: ACS 10/2019	CHECKED: JAW 10/2019	

INDIANA  
 DEPARTMENT OF TRANSPORTATION  
  
**SUPERELEVATION TRANSITION DIAGRAM**

HORIZONTAL SCALE	BRIDGE FILE
1"=50'	159-77-10338
VERTICAL SCALE	DESIGNATION
1"=1'	170014B
SURVEY BOOK	SHEET
ELECTRONIC	7 of 20
CONTRACT	PROJECT
B-4055	170014B



**EXISTING STRUCTURE**  
 The existing structure (159-77-05995 B) is a single span prestressed concrete adjacent box beam bridge built in 1968 with a 28.0' span and a 28.3' clear roadway.  
 Existing structure to be removed.

 DENOTES LIMITS OF RIPRAP, REVELTMENT ON GEOTEXTILE FOR RIPRAP, TYPE XX  
 DENOTES LIMITS OF RIPRAP, CLASS 1 ON GEOTEXTILE FOR RIPRAP, TYPE XX

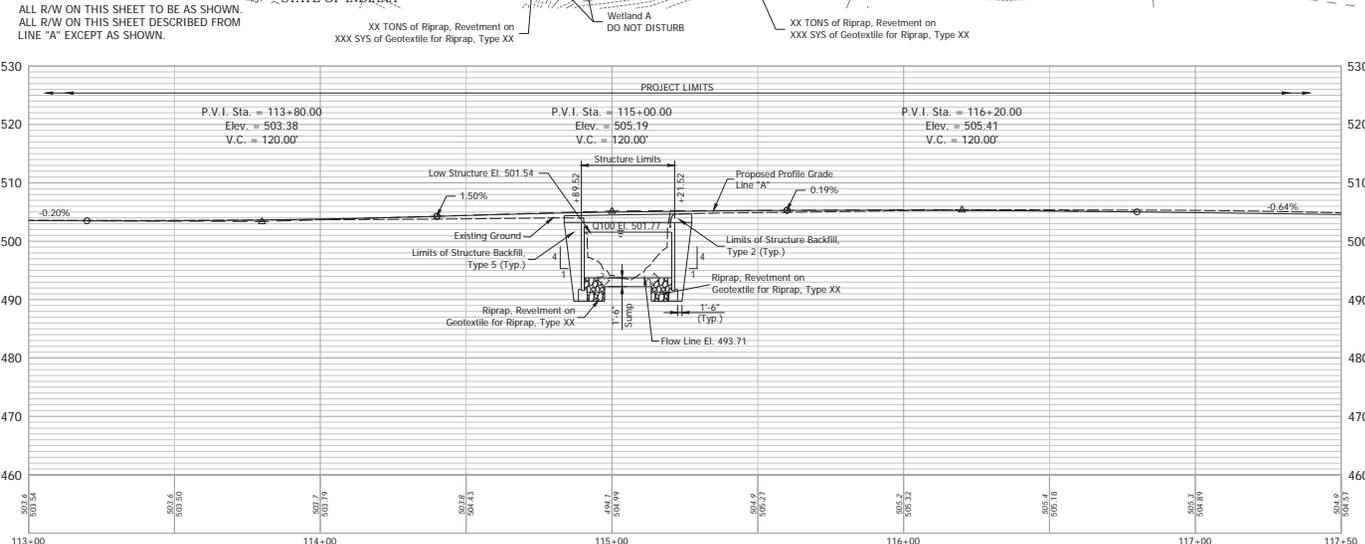
**HYDRAULIC DATA**

Drainage Area	=2.20 sq. mi.
Waterway Opening Required	=227.0 sq. ft.
Waterway Opening Provided	=234.9 sq. ft.
O100 Discharge	=1090 cu ft./sec.
O100 Elevation	=501.77 ft.
Proposed Velocity	=5.15 ft./sec.
Proposed Backwater Depth (O100)	=0.34 ft.
Existing Waterway Opening	=172.0 sq. ft.
Existing Velocity	=8.54 ft./sec.
Existing Backwater Depth (Q100)	=0.96 ft.
Minimum Low Structure Elev.	=501.51 ft.

**HYDRAULIC DATA (ARCH TOP ALTERNATE)**

Drainage Area	=2.20 sq. mi.
Waterway Opening Required	=202.0 sq. ft.
O100 Discharge	=1090 cu ft./sec.
O100 Elevation	=501.77 ft.
Proposed Velocity	=6.15 ft./sec.
Proposed Backwater Depth (O100)	=0.55 ft.
Minimum Low Structure Elev.	=501.51 ft.

**PRECAST REINFORCED CONCRETE THREE-SIDED STRUCTURE**  
 1 SPAN @ 30'-0"; 10'-0" RISE  
 CLEAR ROADWAY: 31'-6"  
 SKEW: 0°  
 SR 159 OVER BRANCH SPENCER CREEK  
 SULLIVAN COUNTY



Date: 10/17/2019 10:27am User Name: Tracy  
 File: S:\2019\17-0551\B01\B01.dwg(CAD)\PLOT\Layout\_Sheet.dwg

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: ACS 10/2019	DRAWN: TAM 10/2019	
CHECKED: MAR 10/2019	CHECKED: ACS 10/2019	

INDIANA DEPARTMENT OF TRANSPORTATION
LAYOUT

HORIZONTAL SCALE	BRIDGE FILE
1"=20'	159-77-10338
VERTICAL SCALE	DESIGNATION
1"=10'	170014B
SURVEY BOOK	SHEET
ELECTRONIC	8 of 20
CONTRACT	PROJECT
B-40555	170014B

**TYPICAL ROAD CROSS SECTION**  
See Sheet No. 3 & 4

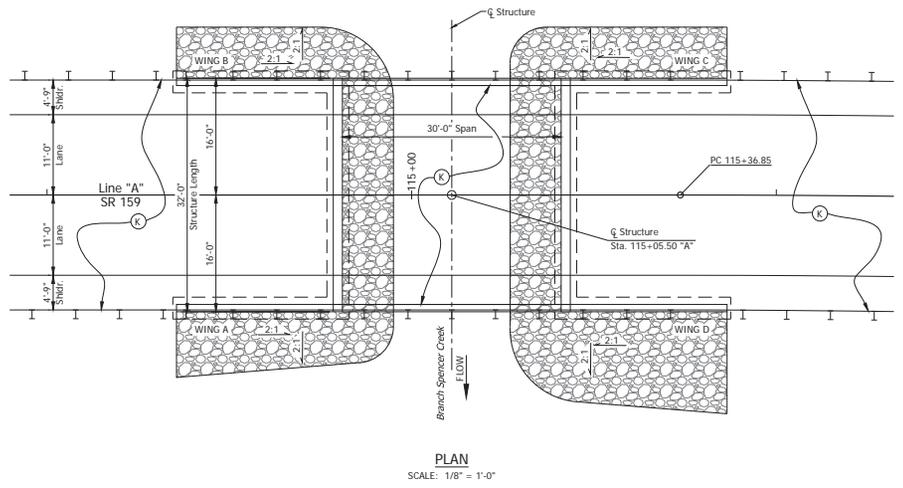
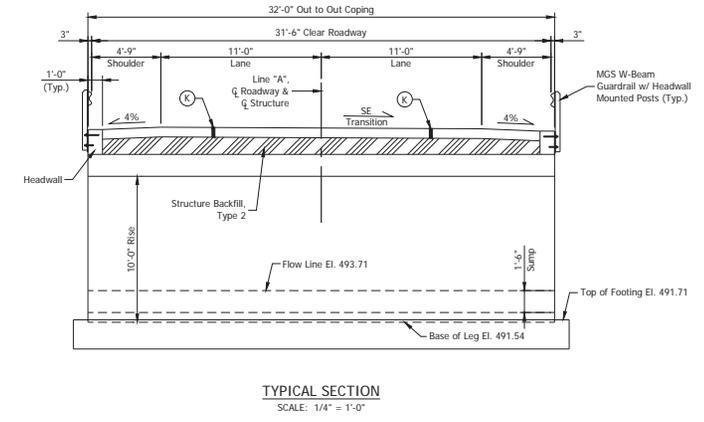
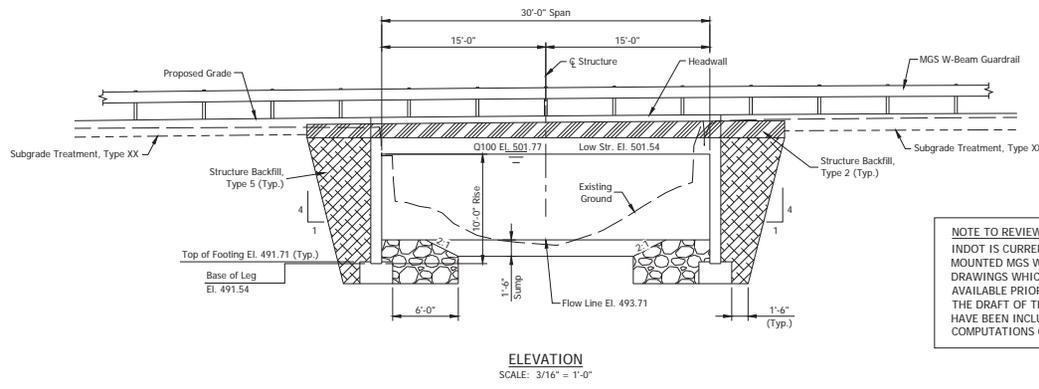
**DESIGN DATA**

Live Load: Designed for HL-93 loading in accordance with AASHTO LRFD Bridge Design Specifications, Eighth Edition, 2017, and all subsequent interims.  
Dead Load: Actual weight plus 35 lbs/ft<sup>2</sup> for future wearing surface

**GENERAL NOTES**

1. An alternate arch top, precast reinforced concrete three-sided structure with a 32 ft perpendicular span and a 10 ft rise may be substituted for the structure shown on the Layout sheet.
2. A true-arch structure will not be permitted at this location.
3. The Contractor shall verify the existing flowline elevation to set the appropriate sump depth.
4. Retrievment Riprap and Geotextile for Riprap, Type XX shall be placed as scour protection. See Sheet 8 for quantities.
5. Headwalls and wingwalls shall be designed for Mounted MGS W-Beam Guardrail. For additional details, see INDOT Std. Drawg. 601-MCSA-24 thru 601-MCSA-28.

**NOTE TO REVIEWER:**  
INDOT IS CURRENTLY DEVELOPING HEADWALL MOUNTED MGS W-BEAM GUARDRAIL STANDARD DRAWINGS WHICH ARE ANTICIPATED TO BE AVAILABLE PRIOR TO THIS PROJECT'S LETTING. THE DRAFT OF THESE STANDARD DRAWINGS HAVE BEEN INCLUDED IN THE DESIGN COMPUTATIONS OF THIS SUBMISSION.



**LEGEND**  
⊙ HMA Pavement

**NOTE TO REVIEWER:**  
GEOTEXTILE FOR RIPRAP TYPE WILL BE ADDED TO PLANS ONCE GEOTECHNICAL REPORT IS RECEIVED AND PRIOR TO STAGE 3 SUBMISSION.

DENOTES LIMITS OF RIPRAP. RETIEMENT ON GEOTEXTILE FOR RIPRAP, TYPE XX

**PRECAST REINFORCED CONCRETE THREE-SIDED STRUCTURE**  
1 SPAN @ 30'-0"; 10'-0" RISE  
CLEAR ROADWAY: 31'-6"  
SKEW: 0°  
SR 159 OVER BRANCH SPENCER CREEK  
SULLIVAN COUNTY

Date: Jan 17, 2020 @ 2:27pm User Name: Tracy File: S:\2019\17-A651\A651\A651\A651\A651\A651\A651\A651\A651\A651.dwg

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: ACS 10/2019	DRAWN: VCH	10/2019
CHECKED: MAR 10/2019	CHECKED: ACS	10/2019

INDIANA  
DEPARTMENT OF TRANSPORTATION  
  
GENERAL PLAN

HORIZONTAL SCALE	BRIDGE FILE
AS SHOWN	159-77-1033B
VERTICAL SCALE	DESIGNATION
AS SHOWN	170014B
SURVEY BOOK	SHEET
ELECTRONIC	9 of 20
CONTRACT	PROJECT
B-4055	170014B

