FHWA-Indiana Environmental Document

CATEGORICAL EXCLUSION LEVEL 1 FORM

GENERAL PROJECT INFORMATION

Road No./County:	**United States (US) 41 and 151st Avenue / Lake County**
Designation Number(s):	**2003098**
Project Description/Termini:	**Intersection Improvement Project/Median U-Turn US 41 at 151st Avenue; 3.8 Miles North of State Road (SR) 2**

[X] **CE Level 1 documentation for exempted projects**

[ ] **Additional Information to CE Level 1**

Approval:

INDOT DE/ESD Signature and Date

Release for Public Involvement: SFM 08/23/2024

INDOT DE/ESD Initials and Date

Certification of Public involvement:

INDOT Consultant Services Signature and Date

INDOT DE/ESD Reviewer:

Signature and Date

CE Preparer: Elayna Stoner, Metric Environmental

Name and Organization

GENERAL PROJECT INFORMATION, DESCRIPTION, AND DESIGN INFORMATION

Purpose and Need:	The need for this project is based on the high crash rate at the intersection of US 41 and 151st Avenue. Specifically, the occurrence of right-angle crashes at the intersection is attributed to eastbound and westbound traffic from 151st Avenue failing to yield the right-of-way to US 41 traffic. Per the Engineering Assessment Report, prepared by Lawson-Fisher Associates (November 22, 2022) most crashes occur within the southeast quadrant of the intersection, where northbound US 41 encounters conflicting movements from the westbound approach of 151st Avenue. Crashes involving southbound US 41 and eastbound 151st Avenue traffic have also been recorded. Excerpts from the Engineering Assessment Report are provided in Appendix I, pages I-2 to I-14. Crash data obtained by the Indiana Department of Transportation (INDOT) from January 2019 to December 2021 recorded twenty accidents/crashes at the intersection. Sixteen of the accidents were caused by east and westbound traffic from 151st Avenue failing to yield the right-of-way to US 41 traffic. The data was analyzed using the Road Hazard Analysis Tool (RoadHAT) to evaluate crash frequency and crash severity. The RoadHAT analysis considers the Index of Crash Frequency (ICF) which measures the difference between expected and reported number of crashes and the Index of Crash Cost (ICC) which measures the difference between expected and reported crash costs. The ICC is used to consider the severity of crashes. The ICF and ICC values are calculated to achieve a standardized value to aid in the identification of locations with higher-than-expected crash rates/crash severity. The values are the same for both indexes. An ICF/ICC value of 0 indicates that a transportation facility (roadway/intersection) is performing as expected. An ICF/ICC value of 1 signifies a moderate crash frequency/severity and an ICF/ICC value of 2 or greater signifies a crash rate/crash severity exceeding the expected thresholds. The project intersection has an ICF value of 1.67 and an ICC value of 2.42. The analysis indicates that the number and severity of crashes recorded at the intersection are higher-than-expected. Level of Service (LOS) is a term used to qualitatively describe the operating conditions of a transportation facility (vehicle mobility). It is based on factors such as speed, travel time, mobility and delays. There are six criteria to determine LOS and each level is assigned a letter designation from A to F, with LOS A representing the best operating conditions, and LOS F the worst operating conditions. The current design guidelines for LOS recommend that all legs of an intersection should operate at a LOS D or better. The traffic data analyzed for this project demonstrates the north and southbound approaches of US 41 operate at a LOS A. The eastbound approach of 151st Avenue has a LOS F and the westbound approach, a LOS C. The purpose of this project is to address the high crash rate at the intersection to achieve an ICF/ICC value of 1 or less and improve the LOS to a LOS B or better.
Project Description (Preferred Alternative):	INDOT and the Federal Highway Administration (FHWA) intend to proceed with a proposed reduced conflict intersection (RCI) intersection project on US 41 and 151st Avenue in Lake County, Indiana. Specifically, the project is located approximately 3.8 miles north of SR 2 in Sections 4 and 5, Township 33 North, Range 9 West, in West Creek Township, as illustrated on the Cedar Lake, Indiana 7.5-minute United States Geological Survey (USGS) topographic quadrangle (Appendix B, page B-2). US 41 is classified as a Principal Arterial-Other with the north side of the intersection classified as Urban and the south side classified as Rural. US 41 is part of the US National Highway System and National Truck Network with partial access control. The existing cross-section of US 41 consists of a four-lane divided highway separated by a 40 ft. grass median and left turn lanes at the intersection with 151st Avenue. The cross-section of US 41 consists of two 12 ft. travel lanes northbound and two 12 ft. travel lanes southbound. The travel lanes are bordered by 4 ft. interior shoulders and 9 ft. exterior shoulders. The posted speed limit on US 41 is 60 miles per hour (mph). 151st Avenue is classified as a Rural Major Collector on the west approach and Urban Major Collector on the east approach. The posted speed limit on 151st Avenue is 30 mph on the west approach and 40 mph on the east approach.

The existing cross-section of 151st Avenue (eastbound and westbound) provides two 10 ft. wide travel lanes with variable width shoulders. The intersection of US 41 and 151st Avenue is currently controlled with stop signs on 151st Avenue with traffic on US 41 having the right-of-way. There are no sidewalks or other pedestrian amenities within the project limits. Land use in the project area consists primarily of agricultural land, John's Flea Market, and rural residential dwellings (Appendix B, pages B-2 to B-6).

There are two existing U-Turn access openings on US 41 located within the proposed project limits. One is located approximately 930 ft. north of the project intersection and the second is located approximately 850 ft. south of the project intersection. The northern U-Turn allows access to both directions of travel on US 41. The southern U-Turn access opening is utilized by vehicles traveling southbound on US 41 to access John's Flea Market located on the east side of US 41.

In July 2024, INDOT closed the US 41 median to improve safety at the project location ahead of the proposed intersection improvement project. The closure was initiated due to recent accidents involving vehicles using the median to make turn movements that conflict with US 41 through traffic.

The preferred alternative will construct a RCI with U-Turns. RCIs are known to significantly reduce right-angle crashes and severity of crashes that occur at an intersection with unbalanced traffic volumes between major and minor roadways. The preferred alternative will redirect the left-turn movements from eastbound and westbound 151st Avenue through the installation of U-Turns on US 41, located north and south of the intersection. The 151st Avenue approaches to US 41 will become right-turn only movements onto US 41. The existing mainline left-turn movements onto eastbound and westbound 151st Avenue from US 41 will be maintained with the addition of concrete curb islands. The existing U-Turn access located south of the project intersection that provides access to John's Flea Market will be removed and relocated further south as part of the proposed project. This access drive will be reconstructed to provide only right-turn ingress and egress to the flea market from northbound US 41. The existing U-Turn access located north of the intersection will be reconstructed at approximately the same location.

New overhead lighting will also be installed as part of the proposed improvements. Existing roadside ditches will be reconstructed, and the associated small drainage structures will be replaced to maintain existing drainage needs. There are nineteen existing small drainage structures and inlets that convey drainage through the project area. The existing roadside ditches will be reconstructed with "v" shaped channels with 3:1 sidelsopes. Additional details regarding the existing drainage structures and proposed modifications are provided in the "*Bridges/Small Structures*" section of this document. Riprap will be installed for erosion control at the inlets/outlets of modified ditches and drainage structures per design requirements.

The project will permanently impact approximately 0.029 acre of Wetland B. The permanent wetland impacts are necessary to reconstruct the roadside drainage ditches per design requirements. All efforts to avoid and minimize wetland impacts were considered during the design process. Approximately 0.34 acre of additional permanent right-of-way will be required to complete the project.

Project limits will extend approximately 2,110 ft. along US 41 and approximately 100 ft. east and 100 ft. west along 151st Avenue for a total project length of 0.38 mile. Project plan sheets are provided in Appendix B, pages B-7 to B-23. The project termini are logical because they encompass only the area necessary to reconstruct the intersection and tie the improvements into the existing roadways for a smooth transition. The project has independent utility as it does not depend on the construction of a secondary project.

The maintenance of traffic (MOT) plan will utilize phased construction, with traffic being maintained on US 41 using alternating single lane closures. Phase I will include the construction of outside shoulders, turn lanes and reconstruction of existing roadside ditches and small drainage structures. Public road approaches will also be constructed during Phase I. There will be short term closures for the eastbound and westbound approaches of 151st Avenue.

	Phase II will include construction of median shoulders, turn lanes, raised median islands and reconstruction of existing drainage structures. Additional details are provided in the MOT Section of this document. The preferred alternative will meet the purpose and need of the project by addressing the high crash rate at the intersection to achieve an ICF/ICC value of 1 or less and improve the LOS to a LOS B or better.
Other Alternatives Considered:	Excerpts from the Engineering Assessment Report are provided in Appendix I, pages I-7 to I-8. **Alternative No. 1 No Build Alternative** The "No Build" alternative would allow the existing intersection to remain in place with no improvements and would not require the expenditure of funds. This option would not result in any environmental impacts. Although this alternative is feasible it would not be prudent to allow the higher-than-expected crash conditions to persist at the project intersection. This alternative does not meet the purpose and need of the project and was therefore discarded from further consideration. **Alternative No. 2 Traffic Signal Installation** This alternative would consist of installing a new traffic signal at the project intersection. In accordance with FHWA roadway engineering design parameters, there are standard criteria (warrants) that an intersection must meet to justify the installation of a traffic signal; traffic volume being a primary justification in most instances. For this project, Traffic Signal Warrants No. 1, 2 and 3 were considered. Traffic Signal Warrant No. 1 is met when the eight-hour traffic volumes on the major and minor roadway approaches to an intersection meet the traffic volume specifications to warrant the installation of a traffic signal. Traffic Signal Warrant No. 2 is met when the four-hour traffic volumes for both the major and minor roadways meet the traffic volume specifications. Traffic Signal Warrant No. 3 is met when traffic conditions are such that for a minimum of one hour of an average day, the minor roadway traffic experiences undue delay making movements onto the major roadway. Based on the traffic data analyzed for this project, the parameters of Traffic Signal Warrants No. 1 and No. 2 were not met. The parameters of Traffic Signal Warrant No. 3 were not met due to the significant difference in average daily traffic volumes on US 41 (major roadway) versus 151st Avenue (minor roadway). Signalized intersections can reduce some right-angle crashes, but they also increase rear-end crashes and crashes caused by vehicles running red lights; furthermore, signalized intersections do not reduce conflict movements. The difference in traffic volumes and the crash data do not support the installation of a traffic signal. For these reasons, it was determined that this alternative would not meet the purpose and need of the project, and it was discarded from further consideration. **Alternative No. 3 Roundabout Construction** This alternative would consist of installing a roundabout at the project intersection. Roundabouts have less points of conflict than standard cross-intersections and significantly reduce the severity of crashes. Evaluation of vehicle turning movements at the project intersection indicates that more than 75% of the traffic volume consists of US 41 through movements. Traffic volumes on 151st Avenue are less than 25% of traffic volumes on US 41. This traffic pattern indicates the project intersection has unbalanced traffic movements. Roundabouts perform best under balanced traffic patterns. As a result of the unbalanced traffic movements, a roundabout intersection was determined to be a less desirable solution to meet the purpose and need of the project. Therefore, this alternative was not considered further. **Alternative No. 4 Median U-Turn Only (MUT)** The MUT alternative is a variation of a RCI that involves re-directing US 41 northbound and southbound left-turn and through movements to U-Turn access locations located north and south of the intersection. The MUT alternative also would re-route left-turn and through movements from the eastbound and westbound approaches of 151st Avenue via U-Turn access (same as the preferred RCI alternative). Although the MUT alternative provides less conflict points than a RCI, the traffic data analyzed for this project did not demonstrate a significant difference of crash frequency compared to the preferred alternative.

	The preferred RCI alternative, however, would maintain traffic mobility more so than the MUT alternative. Although the MUT alternative would meet the purpose and need of the project, it was determined to be a less desirable alternative and was not considered further.			
Funding Source(s):	[X] Federal [X] State [ ] Local [ ] Other			
Project Sponsor:	INDOT			
Estimated Cost:	$1,684,332.00 (2026)	**Project Length:**	0.38 Mile	
Public Involvement:			**No:**	**Yes: X**

Notice of Entry letters were mailed to potentially affected property owners near the project area on June 6, 2022, 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 provided in Appendix G, page G-1.

The project does not meet the minimum requirements described in the current *Indiana Department of Transportation (INDOT) Project Development Public Involvement Procedures Manual* which requires the project sponsor to offer the public an opportunity to submit comments and/or request a public hearing. However, the INDOT LaPorte District Office will hold a public hearing to provide transparency and obtain public input, opinions or concerns with the proposed project. Once this document is released for public involvement legal notices will be published twice in at least one of the most widely circulated local publications announcing the location, date and time of the public hearing. The legal notice will also be mailed to adjacent landowners and project stakeholders impacted by the project. All comments obtained as part of the public hearing will be evaluated and considered as part of the ongoing design process. This document will be updated and revised after the public involvement requirements are fulfilled.

Right-of-Way:	**No:**	**Yes: X**

The existing right-of-way widths along US 41 vary from approximately 86 ft. to 95 ft. from the center median. The existing right-of-way widths along 151st Avenue vary from approximately 20 ft. to 37 ft. from the center of the roadway. The existing right-of-way consists of agricultural land and maintained grass lawns adjacent to the existing residential dwellings and commercial businesses.

Approximately 0.34 acre of additional permanent right-of-way will be required to complete the project. The proposed permanent right-of-way consists of approximately 0.25 acre of agricultural land, 0.09 acre of commercial land. No temporary right-of-way will be required.

The proposed permanent right-of-way widths along US 41 will extend approximately 91 ft. to 100 ft. from the center median. The proposed permanent right-of-way widths along 151st Avenue will vary from approximately 25 ft. to 43 ft. from the centerline of the roadway on the west approach. No additional permanent right-of-way is required on the east approach of 151st Avenue. Plan sheets are provided in Appendix B, pages B-7 to B-23.

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.

Maintenance of Traffic (MOT) During Construction:	**No:**	**Yes: X**

The MOT plan will utilize phased construction, with traffic being maintained on US 41 using alternating single lane closures. Phase I construction will include the construction of outside shoulders, turn lanes, truck turning loons, and reconstruction of the existing roadside ditches/storm drain structures. Public road approaches will be constructed during Phase I. There will be short term closures for the eastbound and westbound approaches of 151st Avenue.

Phase II construction will include construction of median shoulders, turn lanes, raised median islands and reconstruction of the existing roadside ditches/storm drain structures.

Coordination with the Lake County Highway Department will be conducted to determine the preferred local detour route(s). The MOT sheets are provided in Appendix B, pages B-11 to B-16.

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

Bridge(s) and/or Small Structure(s) (include structure number(s)):	**No:**	**Yes: X**

There are no bridges located within the project limits. There are nineteen existing small drainage pipes and inlets that convey roadside drainage through the project area. The following table illustrates the existing drainage structures and proposed modifications to accommodate the redesign of the drainage. Existing roadside ditches will be reconstructed with "v" shaped channels with 3:1 sidelsopes.

Station No.	**Existing Small Drainage Structure**	**Proposed Small Drainage Structure Type**
429+75	No. 11A - inlet	Inlet Type N-12 w/65 Linear Feet of 18 inch Pipe
430+50	No. 11B - inlet	Inlet Type P-12 w/72 Linear Feet of 12 inch Pipe
431+15	Ex. Inlet w/65 Linear Feet of 15 inch CMP	Existing structure to be replaced with Str. No.11A and Str. No. 11B
429+91	Str. No. 12 - roadside drainage pipe	217 Linear Feet of 18 inch Pipe
430+67	18 inch CMP	Existing structure to be replaced with Str. No. 12
435+29	13	39 Linear Feet of 15 inch Pipe
435+29	15 inch CMP	Existing structure to be replaced with Str. No. 13
437+36	14	35 Linear Feet of 15 inch Pipe
437+36	12 inch CMP	Existing structure to be replaced with Str. No. 14
439+26	15	154 Linear Feet of 15 inch Pipe
439+26	15 inch CMP	Existing structure to be replaced with Str. No. 15
439+80	16	Inlet Type E-7 w/129 Linear Feet of 24 inch Pipe
439+80	15 inch CMP	Existing structure to be replaced with Str. No. 16
440+30	17	Inlet Type E-7 w/49 Linear Feet of 24 inch Pipe
440+24	18A	Inlet Type N-12 w/79 Linear Feet of 18 inch Pipe
441+00	18B	Inlet Type P-12 w 75 Linear Feet of 12 inch Pipe
439+92	Ex. Inlet w/65 Linear Feet of 15 inch CMP	Existing structure to be replaced with Str. No. 18A and Str. No. 18B
442+50	19	Inlet Type E-7 w/217 Linear Feet of 15 inch Pipe
445+00	20	Inlet Type E-7 w/247 Linear Feet of 12 inch Pipe

Corrugated Metal Pipe (CMP)
Structure (Str.)
Length of existing drainage structures is unknown

IDENTIFICATION AND EVALUATION OF IMPACTS

Early Coordination:

Early coordination letters were sent on November 17, 2022, June 21 and 22, 2023 to the agencies listed below. A copy of the early coordination letter is provided in Appendix C, pages C-1 to C-2.

Agency	Date Sent	Response Received	Appendix C
FHWA	November 17, 2022	N/A	N/A
Indiana Department of Natural Resources Division of Fish and Wildlife (IDNR-DFW)	November 17, 2022	December 16, 2022	Pages C-4 to C-6
US Army Corps of Engineers, Chicago District	November 17, 2022	No Response	N/A
US Fish and Wildlife, Northern Indiana Field Office	November 17, 2022	November 17, 2022	Page C-36
US Department of Housing and Urban Development	November 17, 2022	No Response	N/A
National Parks Service, Midwest Regional Office	November 17, 2022	No Response	N/A
INDOT, Office of Aviation	June 21, 2023	June 23, 2023	Page C-41
INDOT, Laporte District Office	November 17, 2022	No Response	N/A
Indiana Geological and Water Survey	June 22, 2023	June 22, 2023	Pages C-37 to C-38
Lake County Highway Department	November 17, 2022	No Response	N/A
Lake County Surveyor	November 17, 2022	November 17, 2022	Page C-42 to C-45
Lake County Commissioners	November 17, 2022	No Response	N/A
Lake County Emergency Management	November 17, 2022	No Response	N/A
Northwestern Indiana Regional Planning Commission	November 17, 2022	No Response	N/A
Natural Resource Conservation Service (NRCS)	June 22, 2023	June 26, 2023	Pages C-39 to C-40

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

Streams, Rivers, and Other Jurisdictional Features Impacted:	**No: X**	**Yes:**

Based on the desktop review, the aerial map of the project area (Appendix B, page B-3) and the Red Flag Investigation (RFI) report (Appendix E, page E-2) there are three streams, rivers, watercourses, or other jurisdictional features within the 0.5 mile search radius. There are no streams, rivers, watercourses, or other jurisdictional features within or adjacent to the project area, which was confirmed by the site visit on August 18, 2022, conducted by Metric Environmental. Therefore, no impacts are expected.

A *Waters of the U.S. Determination/Wetland Delineation Report* was completed for the project on December 15, 2022, by Metric Environmental and approved by INDOT Ecology and Waterway Permitting Office on January 3, 2023. Please refer to Appendix F for the *Waters of the U.S. Determination/Wetland Delineation Report*. It was determined that no likely jurisdictional streams or roadside ditches are located within the project area. The U.S. Army Corps of Engineers (USACE) makes all final determinations regarding jurisdiction.

Open Water Feature(s):	**No: X**	**Yes:**

Based on the desktop review, the aerial map of the project area (Appendix B, page B-3) and the RFI report (Appendix E, page E-3) there are four open water features within the 0.5 mile search radius. There are no open water features within or adjacent to the project area, which was confirmed by the site visit conducted by Metric Environmental on August 18, 2022. Therefore, no impacts are expected.

Wetlands:	**No:**	**Yes: X**

Based on the desktop review, the aerial map of the project area (Appendix B, page B-3) and the RFI report (Appendix E, page E-3) there are sixteen wetlands within the 0.5 mile search radius. There are three wetlands within or adjacent to the project area, which was confirmed by the site visit conducted by Metric Environmental on August 18, 2022.

A *Waters of the U.S. Determination/Wetland Delineation Report* was completed for the project on December 15, 2022, by Metric Environmental and approved by INDOT Ecology and Waterway Permitting Office on January 3, 2023. Please refer to Appendix F for the *Waters of the U.S. Determination/Wetland Delineation Report*. It was determined that three likely jurisdictional wetlands are located within the project area. The USACE makes all final determinations regarding jurisdiction.

Wetland A (0.042 acre)
Wetland A was classified as a Palustrine, Emergent, Persistent, Temporarily Flooded (PEM1A) wetland. This wetland is located in a ditch in the southeast quadrant of the project area. The boundaries of Wetland A were delineated by lack of wetland vegetation and increased elevation. Due to its location within a ditch, Wetland A likely receives drainage on a consistent basis during rain events. The wetland exhibited poor plant species diversity. These factors contribute to the conclusion that Wetland A can support a limited amount of wildlife or aquatic habitat and therefore should be considered poor quality. Based on topography, it can be deduced that water drains south from Wetland A into an unnamed tributary to West Creek, which flows into West Creek, which flows into Singleton Ditch, which flows into Kankakee River, a Section 10 Traditionally Navigable Waterway (TNW). Because Wetland A contributes flow to a TNW, it should be considered a jurisdictional Water of the U.S.

Wetland B (0.137 acre)
Wetland B was classified as a PEM1A wetland. This wetland is located in a ditch in the southwest quadrant of the project area. The boundaries of Wetland B were delineated by lack of wetland vegetation and increased elevation. Due to its location within a ditch, Wetland B likely receives drainage on a consistent basis during rain events. The wetland exhibited poor plant species diversity and developed in a primarily riprap-bottom ditch. These factors contribute to the conclusion that Wetland B can support a limited amount of wildlife or aquatic habitat and therefore should be considered poor quality. Based on topography, it can be deduced that water drains south from Wetland B into an unnamed tributary to West Creek, which flows into West Creek, which flows into Singleton Ditch, which flows into Kankakee River, a Section 10 TNW. Because Wetland B contributes flow to a TNW, it should be considered a jurisdictional Water of the U.S.

Wetland C (0.055 acre)
Wetland C was classified as a PEM1A wetland. This wetland is located in a ditch in the northwest quadrant of the project area. The boundaries of Wetland C were delineated by lack of wetland vegetation and increased elevation. Due to its location within a ditch, Wetland C likely receives drainage on a consistent basis during rain events. The wetland is located adjacent to US 41 and a commercial lawn and likely receives run-off from the adjacent sources. The wetland exhibited poor plant species diversity. These factors contribute to the conclusion that Wetland C can support a limited amount of wildlife or aquatic habitat and therefore should be considered poor quality. Based on topography, it can be deduced that water drains south into Wetland B, a likely jurisdictional Water of the U.S. Because Wetland B also contributes flow to a TNW, it should be considered a jurisdictional Water of the U.S.

A letter dated September 19, 2023, from the USACE (Appendix F, pages F-38 to F-39) stated there are no waterways, wetlands or other areas considered "Waters of the United States" under Corps of Engineers jurisdiction at the site, including Wetland A, Wetland B and Wetland C. A Waters of the State Jurisdictional Determination (WOSD) was conducted by the Indiana Department of Environmental Management (IDEM). On December 1, 2023, IDEM determined that Wetlands A and C meet the definition of exempt isolated wetlands; however, Wetland B was determined to be a Class II State regulated wetland. An IDEM Isolated Wetland Permit will be required for any permanent or temporary impacts to Wetland B (Appendix F, pages F-36 to F-37).

A total of 0.029 acre of permanent impacts to Wetland B (Class II State Regulated Wetland) will result from the project. Wetland B will be permanently impacted by the placement of clean earthen fill due to re-grading for roadside ditch relocation to widen the roadway and provide adequate drainage. There will be no temporary impacts to Wetland B. Wetland A (0.042 acre) and Wetland C (0.055 acre) will be permanently impacted in their entirety by the placement of clean earthen fill to facilitate reconstruction of the roadside drainage ditches. Since Wetlands A and C are exempt, the impacts do not require a permit from IDEM.

Specialized fencing will be installed along the construction limits to prohibit encroachment upon Wetland B beyond the construction limits. Areas of Wetland B outside the construction limits will be labeled "Do Not Disturb" on the project plans. This is included as a firm commitment in the *Environmental Commitments* section of this document.

The permanent impacts to Wetland B will require an IDEM Isolated Wetland Permit. All efforts to avoid and minimize wetland impacts were considered during the design process. Wetland mitigation may likely be required and will be determined during the permitting process.

Terrestrial Habitat:	**No:**	**Yes: X**

Based on the desktop review, a site visit on August 18, 2022, by Metric Environmental, a review of the aerial map (Appendix B, page B-3), the predominant land use in the project area consists of maintained roadside grass bordered by agricultural and pasture fields. The dominant vegetation along the project roadway consists of red fescue (*Festuca rubra*), green foxtail (*Setaria viridis*), and smooth brome (*Bromus inermis*).

Approximately 7.58 acres of terrestrial habitat will be impacted to construct the proposed improvements. Approximately eleven trees (0.99 acre) will be removed to build the project. The dominant tree species to be removed consist of one black walnut (*Juglans nigra*) and ten eastern redcedar (*Juniperus virginiana*). Of these eleven trees, nine of these (0.81 acre) are directly associated with the proposed intersection improvement. The remaining two trees (0.18 acre) will be removed to accommodate the utility relocation work associated with the project.

All efforts to minimize terrestrial impacts were considered during the design phase of the project. The construction limits have been reduced to the extent that is practical to build the project while limiting terrestrial disturbance. All disturbed areas will be stabilized, graded and re-seeded per INDOT standard specifications. No terrestrial habitat restoration or mitigation will be necessary.

The IDNR-DFW responded on December 16, 2022, with recommendations to minimize terrestrial impacts including revegetating all areas that are not currently mowed/maintained with a mixture of grasses, sedges, and wildflowers native to Northern Indiana as soon as possible upon completion. The IDNR-DFW also recommended that appropriately designed erosion control measures should be implemented and maintained until construction is complete (Appendix C, pages C-4 to C-6). All applicable recommendations are provided in the *Environmental Commitments* section of this document.

Protected Species:	**No:**	**Yes: X**

Based on a desktop review and the RFI report (Appendix E) completed by Metric Environmental on March 7, 2023, the IDNR Lake County Endangered, Threatened and Rare (ETR) Species List has been checked. According to the IDNR-DFW early coordination response letter dated December 16, 2022 (Appendix C, pages C-4 to C-6) the Natural Heritage Program's Database has been checked and no state species of special concern have been documented within 0.5 mile of the project area. An INDOT 0.5-mile bat review occurred on November 21, 2022. No reports of the Indiana bat or the northern long-eared bat have been documented within 0.5 mile of the project site.

Project information was submitted through the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) portal, and an official species list was generated (Appendix C, pages C-22 to C-35). The project is within range of the federally endangered Indiana bat (*Myotis sodalis*) and the endangered northern long-eared bat (NLEB) (*Myotis septentrionalis*). Other species were generated in the IPaC species list along with the Indiana bat and the NLEB.

The project qualifies for the *Range-wide Programmatic Informal Consultation for the Indiana bat and northern long-eared bat (NLEB)*, dated May 2016 (revised February 2018), between FHWA, Federal Railroad Administration (FRA), Federal Transit Administration (FTA), and USFWS. An effect determination key was completed on August 14, 2023, and based on the responses provided, the project was found to "May Affect/Not Likely to Adversely Affect" the Indiana bat and the NLEB (Appendix C, pages C-7 to C-21). INDOT reviewed and verified the effect finding on August 14, 2023, and requested USFWS's review of the finding. No response was received from USFWS within the 14-day review period; therefore, it was concluded they concur with the finding.

Avoidance and Minimization Measures (AMMs) include directing temporary lighting away from suitable habitat, restricting tree clearing to what that specified in the plans, applying time of year restrictions for tree removal and ensuring all operators and contractors are aware of all environmental commitments and AMMs. The AMMs are included as firm commitments in the *Environmental Commitments* section of this document. The official species list generated from IPaC indicated four other listed species present within the project area: the tricolored bat (*Perimyotis subflavus*), the whooping crane (*Grus americana*), the monarch butterfly (*Danaus plexippus*) and Mead's Milkweed (*Asclepias meadii*).

The whooping crane is listed as endangered wherever found, except where listed as an experimental population according to the Environmental Conservation Online System (https://ecos.fws.gov/ecp/species/758). The whooping crane is listed as an experimental population in this location. The monarch butterfly is identified as a candidate species and is not yet listed or proposed for listing. The tricolored bat is proposed for future listing. Mead's Milkweed is listed as a threatened species; however, no critical habitat has been designated for this species. Therefore, these species were not considered as part of this project, and the USFWS Interim Policy is not applicable because there are no other federally protected species identified within the project area.

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

Geological and Mineral Resources:	**No: X**	**Yes:**

Based on a desktop review and the Indiana Karst Region map, the project is located outside the designated Indiana Karst Region as outlined in the most current *Protection of Karst Features during Project Development and Construction*. According to the topo map of the project area (Appendix B, page B-2), the RFI report (Appendix E, page E-2) there are no karst features identified within or adjacent to the project area. In the early coordination response dated June 22, 2023, the Indiana Geological and Water Survey (IGWS) did not indicate that karst features exist in the project area (Appendix C, pages C-37 to C-38).

The IGWS did identify geological hazards including a moderate liquefaction potential, a high potential for bedrock resources and low potential for sand and gravel resources. No documented active or abandoned mineral resource extraction sites are documented within the search radius. The aforementioned geological features will not be affected because the scope of work will not involve deep excavation (i.e., greater than 5 feet below ground surface). Response from IGWS has been communicated with the designer on June 22, 2023. No impacts are expected.

Drinking Water Resources:	**No: X**	**Yes:**

The project is located in Lake 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/U.S. Environmental Protection Agency (EPA)/INDOT Sole Source Aquifer Memorandum of Understanding (MOU) is not applicable to this project. A detailed groundwater assessment is not needed, and no impacts are expected.

The IDEM Wellhead Proximity Determinator website (http://www.in.gov/idem/cleanwater/pages/wellhead/) was accessed on June 3, 2023, by Metric Environmental. This project is not located within a Wellhead Protection or Source Water Protection Area. No impacts are expected.

The IDNR Water Well Record Database website (https://www.in.gov/dnr/water/3595.htm) was accessed on June 3, 2023, by Metric Environmental. There are five drinking water wells associated with the residential dwellings and commercial businesses located in the southeast quadrant of the project site. The wells will not be affected because of their distance from the project site and there being no excavation deeper than approximately 5 ft. Therefore, no impacts are expected. Should it be determined during the right-of-way phase that wells are affected, a cost to cure will likely be included in the appraisal to restore the wells.

Based on a desktop review of the INDOT Municipal Separate Storm Sewer Systems (MS4) website (https://entapps.indot.in.gov/MS4/) by Metric Environmental on June 3, 2023, and the RFI report, this project is not located within an Urban Area Boundary. No impact is expected.

Based on a desktop review, a site visit on August 18, 2022, by Metric Environmental, and a review of the aerial map (Appendix B, page B-3) no public water systems were identified. Therefore, no impacts are expected.

Floodplains:	**No: X**	**Yes:**
The Indiana Department of Natural Resources Indiana Floodway Information Portal website (https://indnr.maps.arcgis.com) was accessed on August 3, 2023, by Metric Environmental. This project is not located in a regulatory floodplain as determined from approved IDNR floodplain map (Appendix B, page B-24). 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.		
Farmland:	**No:**	**Yes: X**
Based on a desktop review, a site visit on August 18, 2022, by Metric Environmental, and the aerial map of the project area (Appendix B, page B-3) the project will convert less than 0.001 acre of farmland as defined by the Farmland Protection Policy Act. This estimate differs from the amount of acquired right-of-way categorized as farmland, due to the definition of prime farmland by the Farmland Protection Policy Act. Prime farmland is defined by soil type and not the current land use. An early coordination letter was sent on June 22, 2023, to the Natural Resources Conservation Service (NRCS). Coordination with NRCS resulted in a score of 138 on the AD 1006 Form (Appendix C, page C-40). NRCS's threshold score for significant impacts to farmland that result in the consideration of alternatives is 160. Since this project score is less than the threshold, no significant loss of prime, unique, statewide, or local important farmland will result from this project. No alternatives other than those previously discussed in this document will be investigated without re-evaluating impacts to prime farmland.		
Cultural Resources:	**No: X**	**Yes:**
On April 15, 2024, INDOT Cultural Resources Office (INDOT CRO) determined that the project meets the guidelines of Category A, Type 9 and Category B, Types 2, 3, 9 and under the Minor Projects Programmatic Agreement (MPPA) (Appendix D, pages D-1 to D-10). MPPA Category A-9 projects include the installation, repair or replacement of erosion control measures along roadways, waterways and bridge piers within previously disturbed soils (Appendix D, page D-15). MPPA Category B-2 projects include the installation of new lighting, signals, signage, and other traffic control devices. Category B-3 projects include the construction of added travel, turning, or auxiliary lanes (e.g., bicycle, truck climbing, acceleration, and deceleration lanes) and shoulder widening. Category B-9 projects include the installation, replacement, repair, lining, or extension of culverts and other drainage structures when the structures exhibit no unusual features such as wood, stone, or brick. These MPPA categories apply when such projects take place in undisturbed soils and an archaeological investigation conducted by the applicant and reviewed by INDOT CRO determines that no National Register-listed (National Register of Historic Places (NRHP)) or potentially NRHP-eligible archaeological resources are present within the project area; and when work does not occur adjacent to or within a NRHP-listed or NRHP-eligible historic district or individual above-ground resource. A Phase Ia archaeological field reconnaissance was completed for the project by Metric Environmental in November 2022 (Stevenson and Snell 2023) and approved by INDOT CRO. The archaeological reconnaissance did not locate any archaeological resources within the survey area and no further work was recommended. In February 2024, Metric Environmental completed an addendum Phase Ia archaeological investigation to survey a small area of undisturbed land not covered by the previous archaeological field reconnaissance (O'Connor and Snell 2024). The addendum Phase Ia archaeological reconnaissance did not locate any archaeological resources within the survey area and no further work was recommended (Appendix D, pages D-11 to D-14). INDOT CRO reviewed and approved the archaeological addendum on April 15, 2024. No further consultation is required. This completes the Section 106 process and the responsibilities of the FHWA under Section 106 have been fulfilled.		
Section 4(f) and Section 6(f) Resources:	**No: X**	**Yes:**
Section 4(f) of the U.S. Department of Transportation Act of 1966 prohibits the use of certain public and historic lands for federally funded transportation facilities unless there is no feasible and prudent alternative. The law applies to significant publicly owned parks, recreation areas, wildlife / waterfowl refuges, and NRHP eligible or listed historic properties regardless of ownership. Lands subject to this law are considered Section 4(f) resources. Based on a desktop review, the aerial map of the project area (Appendix B, page B-3), and the RFI report (Appendix E, page E-2) there are two Section 4(f) resources located within the 0.5 mile search radius.		

According to additional research and the site visit conducted on August 18, 2022, by Metric Environmental there are no Section 4(f) resources within or adjacent to the project area. Therefore, no use is expected.

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) properties on the INDOT ESD website revealed fifty-four properties in Lake County that have received LWCF funding (Appendix I, page I-1). None of these properties are located within or adjacent to the project area. Therefore, there will be no impacts to 6(f) resources.

Air Quality:	**No: X**	**Yes:**

The project is located within the Fiscal Year (FY) 2022-2026 Northwestern Indiana Regional Planning Commission (NIRPC) Transportation Improvement Plan (TIP) (Appendix H, pages H-5 to H-6). The 2022-2026 NIRPC TIP was incorporated by reference into the FY 2024-2028 Indiana Statewide Transportation Improvement Plan (STIP) (Appendix H, pages H-1 to H-4). Project funding was not carried forward in subsequent actions. Therefore, an amendment to the 2024-2028 STIP will be required to reflect future funding, prior to approval of this document.

This project is located in Lake County, which is designated as a maintenance area for 1997 8-hour Ozone according to the EPA website https://www.epa.gov/green-book/green-book-8-hour-ozone-1997-area-information-naaqs-revoked. This project has been identified as being exempt from air quality analysis in accordance with 40 CFR Part 93.126 and this project is not a project of air quality concern (40 CFR Part 93.123). Therefore, the project will have no significant impact on air quality.

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.

Community Impacts:	**No: X**	**Yes:**

Under FHWA Order 6640.23A, FHWA and the project sponsor, as a recipient of funding from FHWA, are responsible to ensure that their programs, policies, and activities do not have a disproportionately high and adverse effect on minority or low-income populations. Per the current INDOT *Categorical Exclusion Manual*, an Environmental Justice (EJ) Analysis is required for any project that has two or more relocations or 0.5 acre of additional permanent right-of-way. The project will only require approximately 0.34 acre of additional permanent right-of-way, and there will be no relocations. Therefore, an EJ Analysis is not required.

Public Facilities and Services (e.g. schools, emergency services):	**No: X**	**Yes:**

Based on a desktop review, a review of the aerial map of the project area (Appendix B, page B-3), and the RFI report (Appendix E, page E-2), there are two public facilities/managed lands located within the 0.5 mile search radius. There are no public facilities located within or adjacent to the project area, which was confirmed by the site visit conducted on August 18, 2022, by Metric Environmental. Therefore, no impacts are expected. Access to all properties will be maintained during construction.

The project will require the relocation of overhead utility poles; however, there will be no disruption to any public services.

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.

Hazardous Materials and Regulated Substances:	**No: X**	**Yes:**

Based on a review of Geographical Information Systems (GIS) and available public records, and a RFI completed by Metric Environmental on March 7, 2023, and INDOT SAM (Site Assessment and Management) provided their concurrence on March 9, 2023 (Appendix E, page E-4). No sites with hazardous material concerns (hazmat sites) or sites involved with regulated substances were identified in or within 0.5 mile of the project area. Further investigation for hazardous material concerns or regulated substances is not required at this time.

Permits:	**No:**	**Yes: X**

The project will require an IDEM Construction Stormwater General permit due to the disturbance of more than 1.0 acre of land.

An IDEM Isolated Wetland Permit will likely be required for the permanent impacts to Wetland B. Applicable recommendations provided by resource agencies are included in the *Environmental Commitments* section of this document. If permits are found to be necessary, the conditions of the permit will be requirements of the project and will supersede these recommendations.

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

ENVIRONMENTAL COMMITMENTS:

Firm:

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

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

3. Any work in a wetland area within INDOT's right of way or in borrow/waste areas is prohibited unless specifically allowed in the US Army Corps of Engineers or IDEM permit. (INDOT EWPO)

4. Specialized fencing will be installed along the construction limits to prohibit encroachment upon Wetland B beyond the construction limits. Any areas of Wetland B outside the construction limits will be labeled "Do Not Disturb" on the project plans. (INDOT ESD and INDOT LaPorte District Office)

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 the extent practicable to avoid tree removal in excess of what is required to implement the project safely. (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. Install bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits. Ensure that contractors understand clearing limits and how they are marked in the field. (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 mile of roosts or documented foraging habitat at any time of year. (USFWS)

11. Lighting AMM 2: When installing new or replacing lights, use downward-facing, full cut-off lens lights (with same intensity or less for replacement lighting); or for those transportation agencies using the BUG system developed by the Illumination Engineering Society, be as close to 0 for all three ratings with a priority of uplight of 0 and backlight as low as practicable. (USFWS)

12. Be advised that any monumentation that is directly or indirectly impacted with the proposed project, must be replaced/ restored to its original condition or better by you or your contractor, and is subject to conditions set forth by the Lake County Surveyor's Office or its agents. Indiana Code 36-2-12-1 et. seq.and other applicable statutes and/or ordinances. (Lake County Surveyor)

13. Any Section Corner disturbed or removed must be re-established by an Indiana Registered Land Surveyor and/or Professional Engineer. All witness references must be tied to the newly established Section Corner, and ALL documentation immediately forwarded to the Lake County Surveyor's Office for its records. (Lake County Surveyor)

14. Any Benchmark in danger of disturbance must be replaced with a Brass Monument and must have an elevation established by an Indiana Registered Land Surveyor and/or Professional Engineer. The elevation must be tied to an existing USC&GS benchmark, and ALL documentation immediately forwarded to the Lake County Surveyor's Office for its records. (Lake County Surveyor)

15. All visible stamped or tagged survey monuments found in rights-of-way that may be destroyed by construction or maintenance activities must be perpetuated under the supervision of a licensed Indiana Professional Land Surveyor. (Lake County Surveyor)

For Consideration:

16. Any new/replacement/rehabilitated crossing structures, and any bank stabilization under or around the structures, must not create conditions that are less favorable for wildlife passage when compared to existing conditions. Upgrading wildlife passage for replacement/rehabilitated structures is recommended whenever possible to improve wildlife/vehicle safety. (IDNR- DFW)

Table of Contents

APPENDIX A
INDOT Supporting Documentation

Categorical Exclusion Level Thresholds

	PCE	Level 1	Level 2	Level 3	Level 4[1]
Section 106	Falls within guidelines of Minor Projects PA	"No Historic Properties Affected"	"No Adverse Effect"	-	"Adverse Effect" Or Historic Bridge involvement[2]
Stream Impacts[3]	No construction in waterways or water bodies	< 300 linear feet of stream impacts	≥ 300 linear feet of stream impacts	-	USACE Individual 404 Permit[4]
Wetland Impacts[3]	No adverse impacts to wetlands	< 0.1 acre	-	< 1.0 acre	≥ 1.0 acre
Right-of-way[5]	Property acquisition for preservation only or none	< 0.5 acre	≥ 0.5 acre	-	-
Relocations[6]	None	-	-	< 5	≥ 5
Threatened/Endangered Species (Species Specific Programmatic for Indiana bat & northern long eared bat)*	"No Effect", "Not likely to Adversely Affect" (With select AMMs[7])	"Not likely to Adversely Affect" (With any AMMs or commitments)	-	"Likely to Adversely Affect"	Project does not fall under Species Specific Programmatic[8]
Threatened/Endangered Species (Any other species)*	Falls within guidelines of USFWS 2013 Interim Policy or "No Effect"	"Not likely to Adversely Affect"	-	-	"Likely to Adversely Affect"
Environmental Justice	No disproportionately high and adverse impacts	-	-	-	Potential[9]
Sole Source Aquifer	No Detailed Groundwater Assessment	-	-	-	Detailed Groundwater Assessment
Floodplain	No Substantial Impacts	-	-	-	Substantial Impacts
Section 4(f) Impacts	None	-	-	-	Any[10]
Section 6(f) Impacts	None	-	-	-	Any
Permanent Traffic Alteration	None	-	-	-	Any
Noise Analysis Required	No	-	-	-	Yes
Air Quality Analysis Required	No	-	-	-	Yes[11]
Approval Level • **District Env. (DE)** • **Env. Serv. Div. (ESD)** • **FHWA**	Concurrence by DE or ESD	DE or ESD	DE or ESD	DE and/or ESD	DE and/or ESD; and FHWA

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

APPENDIX B
Graphics

P:\2022\22-0002 INDOT-LFA - RFP 220112 LaPorte District PDS\5 - Deliverables\Exhibits\Task 2\CE\CAD Files\Location Map.dwg

Source: http://maps.indiana.edu/

Project Location Map

Intersection Improvement Project
US 41 at 151st Avenue
Des. No. 2003098
West Creek Township, Lake County, IN

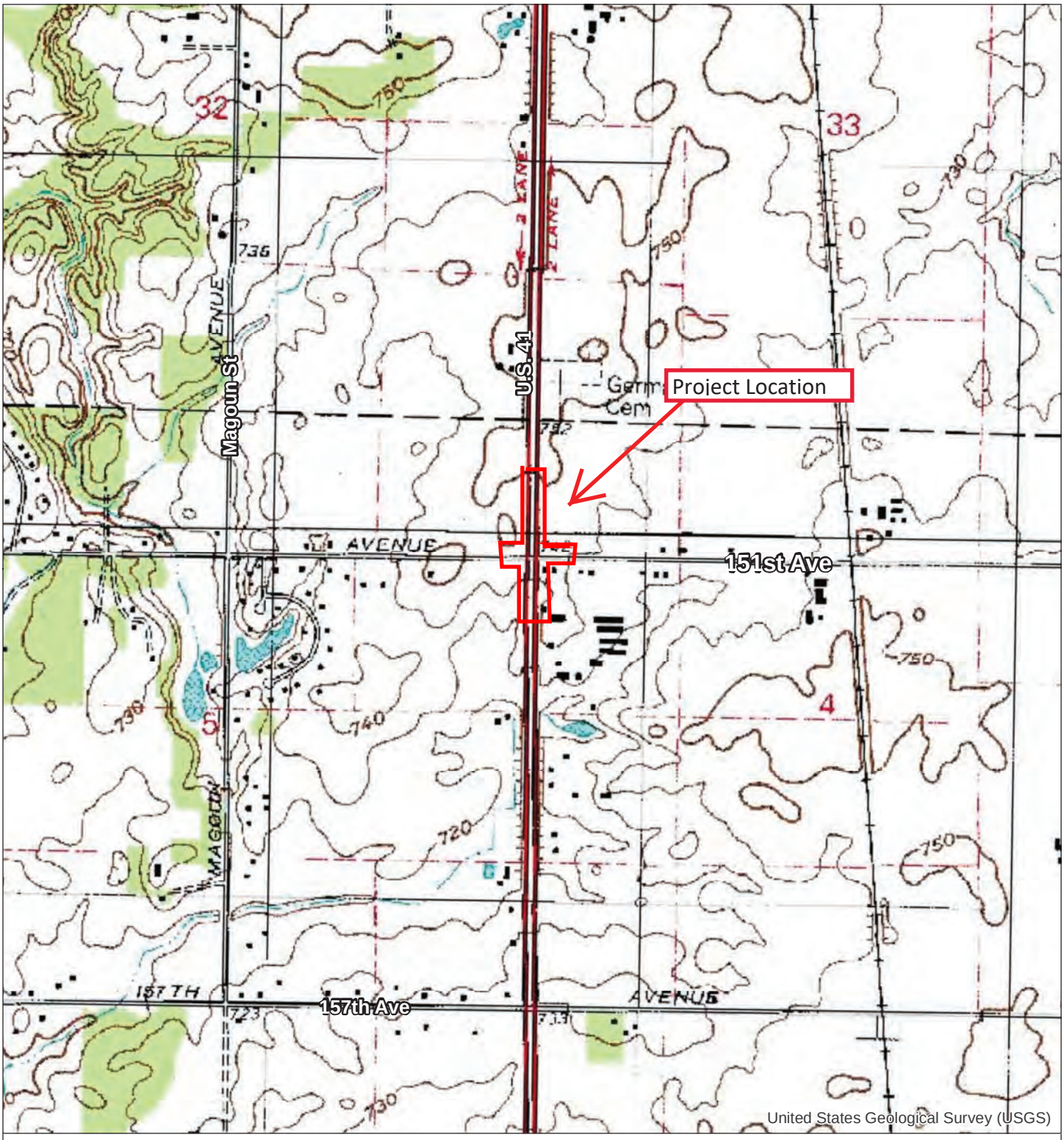
All locations approximate

N

Not to Scale

METRIC ENVIRONMENTAL

Drawn by:	ILJ
Checked by:	ES
Approved by:	LBH
Date:	August, 2022



USGS Topographic Map

Intersection Improvement Project
US 41 at 151st Avenue
Des. No. 2003098
West Creek Township, Lake County, IN

All locations approximate
Source: Indiana Spatial Data Portal (1996)

N

0 500 1,000 2,000
Feet

METRIC ENVIRONMENTAL

P:\2022\22-0002 INDOT-LFA - RFP 220112 LaPorte District PDS\5 - Deliverables\Exhibits\Task 2\CE\CAD Files\Topo & Aerial.dwg

Source: https://portico.mygisonline.com/html5/?viewer=lakeinsurveyor

2022 Aerial Photograph

Intersection Improvement Project
US 41 at 151st Avenue
Des. No. 2003098
West Creek Township, Lake County, IN

Note: All locations are approximate

N

0 200'

Scale

METRIC ENVIRONMENTAL

Drawn by: ILJ
Checked by: ES
Approved by: LBH
Date: August, 2022

View looking north along US 41 from northern project termini

View looking north along US 41 from southern project termini

Photo Log
Intersection Improvement Project
Des. No. 2003098
US 41 at 151st Avenue
Lake County, Indiana

METRIC ENVIRONMENTAL

View looking south along east side of US 41, south of 151st Avenue

View looking west along 151st Avenue, from east side of US 41 intersection

Photo Log
Intersection Improvement Project
Des. No. 2003098
US 41 at 151st Avenue
Lake County, Indiana

METRIC ENVIRONMENTAL

View looking east along 151st Avenue, toward US 41 intersection

View looking west along 151st Avenue, from west side of US 41 intersection

Photo Log
Intersection Improvement Project
Des. No. 2003098
US 41 at 151st Avenue
Lake County, Indiana

METRIC ENVIRONMENTAL

PROJECT	DESIGNATION
2003098	2003098
CONTRACT	
R-43907	

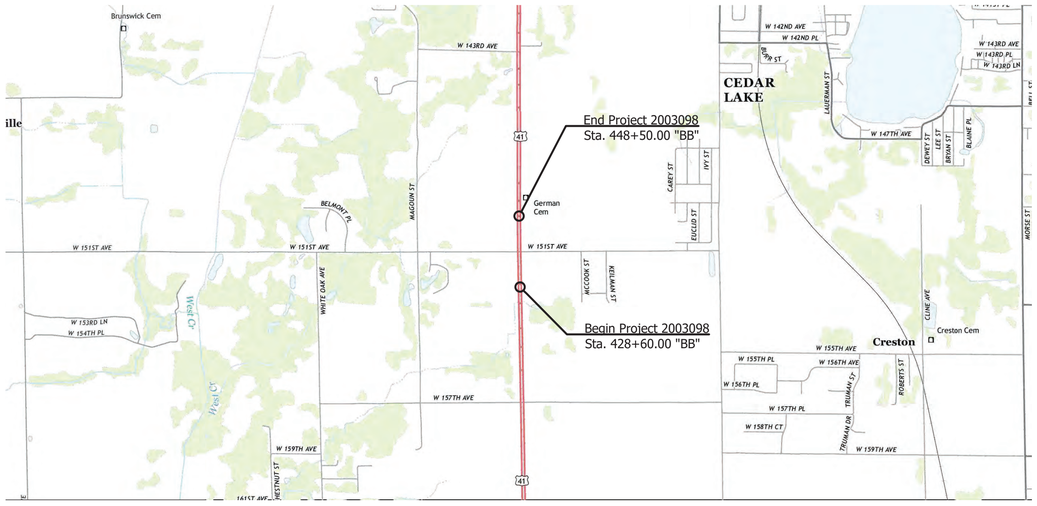
INDIANA DEPARTMENT OF TRANSPORTATION

ROAD PLANS

ROUTE: U.S. 41 AT: RP 253+01

PROJECT NO. 2003098 P.E.
2003098 R/W
2003098 CONST.

Median U-Turn Intersection Improvement on U.S. 41 at 151st Ave., 3.8 Miles North of S.R. 2
Sections 4 and 5, T-33-N, R-9-W, West Creek Township, Lake County, Indiana



LOCATION MAP
LAKE COUNTY

TRAFFIC DATA		U.S. 41
A.A.D.T.	(2025)	13,940 V.P.D.
A.A.D.T.	(2045)	15,283 V.P.D.
D.H.V	(2045)	1,375 V.P.H.
DIRECTIONAL DISTRIBUTION		50.41 %
TRUCKS		9.21 % A.A.D.T.
		4.04 % D.H.V.

DESIGN DATA	
DESIGN SPEED	60 MPH
PROJECT DESIGN CRITERIA	3R (NON-FREEWAY)
FUNCTIONAL CLASSIFICATION	PRINCIPAL ARTERIAL
RURAL/URBAN	RURAL
TERRAIN	LEVEL
ACCESS CONTROL	PARTIAL

PROJECT LOCATION SHOWN BY
LAKE COUNTY

LATITUDE: 41°20'35"N LONGITUDE: 87°28'11"W

GROSS LENGTH: 0.38 MI.
NET LENGTH: 0.38 MI.
MAX. GRADE: 1.16 %

HYDROLOGIC UNIT CODE (S): 071200011309

SCALE: 1" = 2000'

STAGE 2 PLANS
JULY 24, 2023

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

LFA
LAWSON-FISHER ASSOCIATES P.C.
525 W. WASHINGTON AVENUE
SOUTH BEND, INDIANA 46601
PH. (574) 234-3167

NOT FOR CONSTRUCTION

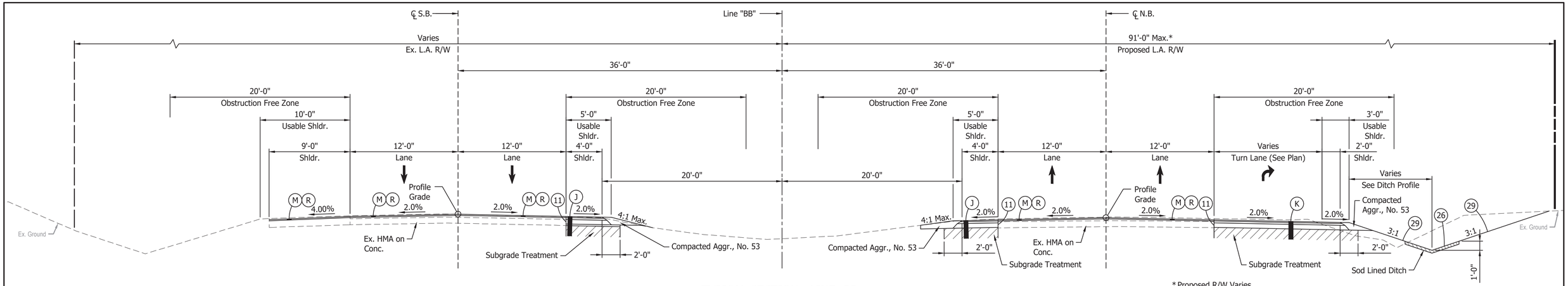
PLANS PREPARED BY: LAWSON–FISHER ASSOC. P.C. 574–234–3167
PHONE NUMBER

CERTIFIED BY: _____ DATE

APPROVED FOR LETTING: _____ DATE
INDIANA DEPARTMENT OF TRANSPORTATION

DESIGNATION
2003098

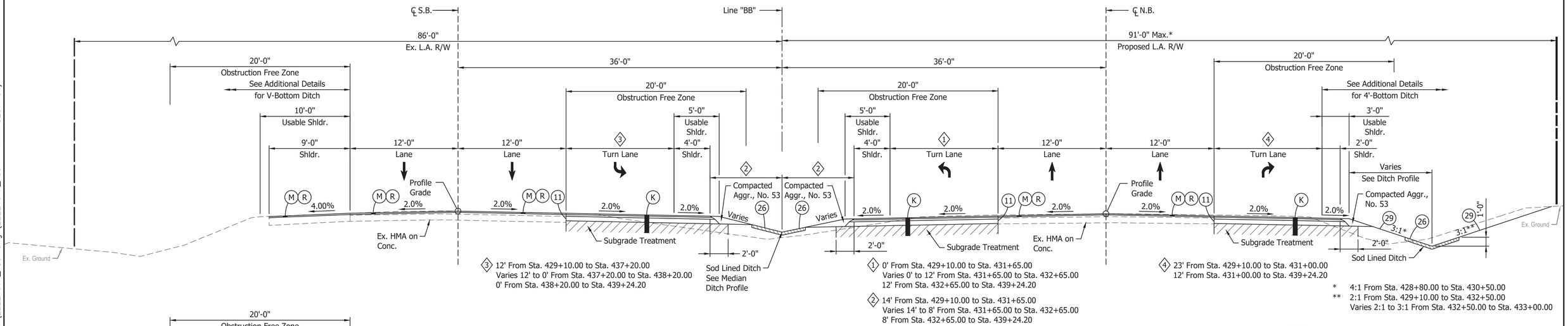
SURVEY BOOK	SHEETS
	1 of 42
CONTRACT	PROJECT
R-43907	2003098



TYPICAL SECTION - LINE "BB"

Sta. 428+60.00 to Sta. 429+10.00
Scale: 3/16" = 1'-0"

* Proposed R/W Varies
86'-0" to 91'-0"
From Sta. 428+60.00 to Sta. 434+00.00



3 12' From Sta. 429+10.00 to Sta. 437+20.00
Varies 12' to 0' From Sta. 437+20.00 to Sta. 438+20.00
0' From Sta. 438+20.00 to Sta. 439+24.20

1 0' From Sta. 429+10.00 to Sta. 431+65.00
Varies 0' to 12' From Sta. 431+65.00 to Sta. 432+65.00
12' From Sta. 432+65.00 to Sta. 439+24.20

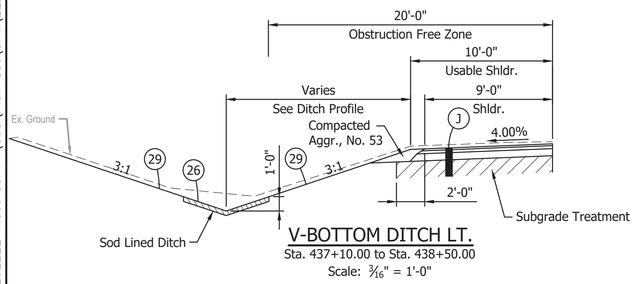
2 14' From Sta. 429+10.00 to Sta. 431+65.00
Varies 14' to 8' From Sta. 431+65.00 to Sta. 432+65.00
8' From Sta. 432+65.00 to Sta. 439+24.20

4 23' From Sta. 429+10.00 to Sta. 431+00.00
12' From Sta. 431+00.00 to Sta. 439+24.20

* 4:1 From Sta. 428+80.00 to Sta. 430+50.00
** 2:1 From Sta. 429+10.00 to Sta. 432+50.00
Varies 2:1 to 3:1 From Sta. 432+50.00 to Sta. 433+00.00

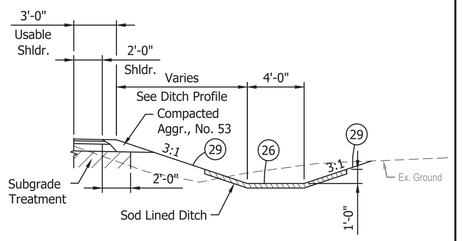
TYPICAL SECTION - LINE "BB"

Sta. 429+10.00 to Sta. 439+24.20
Scale: 3/16" = 1'-0"



V-BOTTOM DITCH LT.

Sta. 437+10.00 to Sta. 438+50.00
Scale: 3/16" = 1'-0"



4'-BOTTOM DITCH RT.

Sta. 435+44.00 to Sta. 437+17.00
Sta. 437+52.00 to Sta. 438+50.00
Scale: 3/16" = 1'-0"

LEGEND:

- (J) 165 #/sys QC/QA-HMA, 3, 70, Surface, 9.5 mm on 275 #/sys QC/QA-HMA, 3, 70, Intermediate, 19.0 mm on 880 #/sys QC/QA-HMA, 3, 64, Base, 25.0 mm Variable Depth Compacted Aggregate, No. 53 on (As Needed to Match Existing Adjacent Mainline Pavement Thickness) Subgrade Treatment, Type ID
- (K) 165 #/sys QC/QA-HMA, 3, 70, Surface, 9.5 mm on 275 #/sys QC/QA-HMA, 3, 70, Intermediate, 19.0 mm on 880 #/sys QC/QA-HMA, 3, 64, Base, 25.0 mm Variable Depth Compacted Aggregate, No. 53 on (As Needed to Match Existing Adjacent Mainline Pavement Thickness) Subgrade Treatment, Type ID
- (M) Milling, Profile (0" - 4")
- (R) 165 #/sys QC/QA-HMA, 3, 70, Surface, 9.5 mm
- (11) Saw Cut
- (26) Sodding
- (29) Mulched Seeding, Type R

NOT FOR CONSTRUCTION

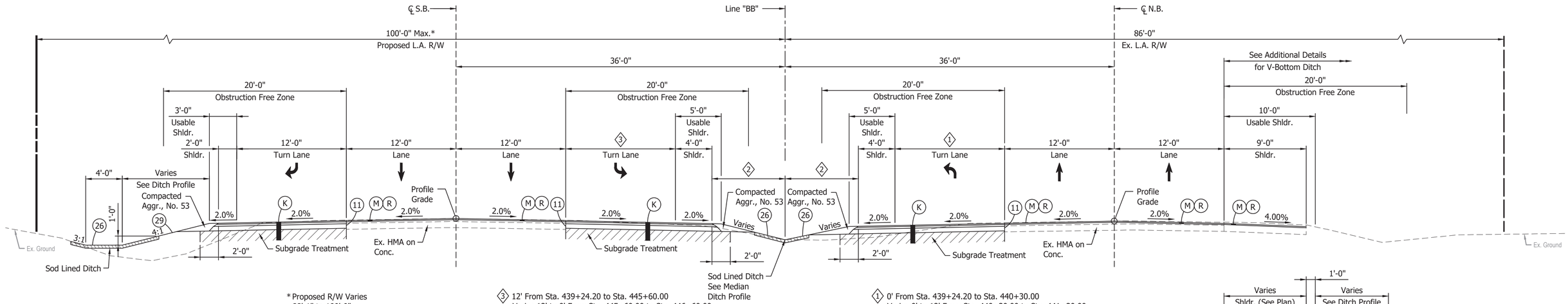
RECOMMENDED FOR APPROVAL
DESIGN ENGINEER DATE

DESIGNED: JDD
DRAWN: GDH
CHECKED: DGD
CHECKED: JDD

INDIANA
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS
LINE "BB"

SCALE	BRIDGE FILE
3/16" = 1'-0"	
	DESIGNATION
	2003098
SURVEY BOOK	SHEETS
	3 of 42
CONTRACT	PROJECT
R-43907	2003098



* Proposed R/W Varies
88'-1" to 100'-0"
From Sta. 444+25.00 to Sta. 449+90.00

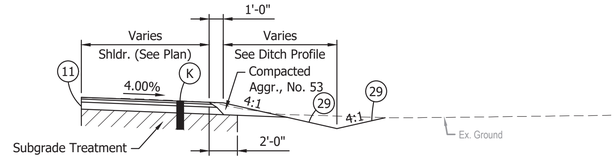
◇3 12' From Sta. 439+24.20 to Sta. 445+60.00
Varies 12' to 0' From Sta. 445+60.00 to Sta. 446+60.00
0' From Sta. 446+60.00 to Sta. 448+00.00

◇1 0' From Sta. 439+24.20 to Sta. 440+30.00
Varies 0' to 12' From Sta. 440+30.00 to Sta. 441+30.00
12' From Sta. 441+30.00 to Sta. 448+00.00

◇2 8' From Sta. 439+24.20 to Sta. 445+85.00
Varies 8' to 14' From Sta. 445+85.00 to Sta. 446+85.00
14' From Sta. 446+85.00 to Sta. 448+00.00

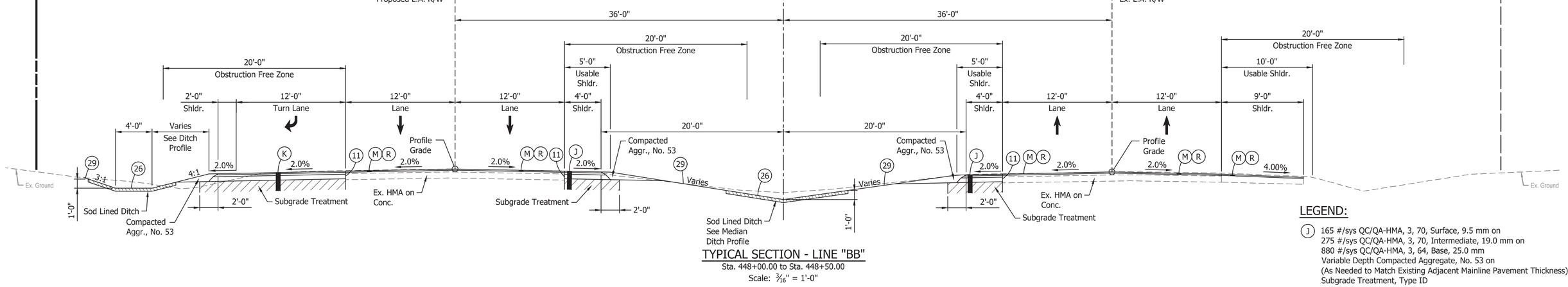
TYPICAL SECTION - LINE "BB"

Sta. 439+24.20 to Sta. 448+00.00
Scale: 3/16" = 1'-0"



V-BOTTOM DITCH

Sta. 440+05.00 to Sta. 441+10.00
Scale: 3/16" = 1'-0"



TYPICAL SECTION - LINE "BB"

Sta. 448+00.00 to Sta. 448+50.00
Scale: 3/16" = 1'-0"

LEGEND:

(J) 165 #/sys QC/QA-HMA, 3, 70, Surface, 9.5 mm on
275 #/sys QC/QA-HMA, 3, 70, Intermediate, 19.0 mm on
880 #/sys QC/QA-HMA, 3, 64, Base, 25.0 mm
Variable Depth Compacted Aggregate, No. 53 on
(As Needed to Match Existing Adjacent Mainline Pavement Thickness)
Subgrade Treatment, Type ID

(K) 165 #/sys QC/QA-HMA, 3, 70, Surface, 9.5 mm on
275 #/sys QC/QA-HMA, 3, 70, Intermediate, 19.0 mm on
880 #/sys QC/QA-HMA, 3, 64, Base, 25.0 mm
Variable Depth Compacted Aggregate, No. 53 on
(As Needed to Match Existing Adjacent Mainline Pavement Thickness)
Subgrade Treatment, Type ID

(M) Milling, Profile (0" - 4")

(R) 165 #/sys QC/QA-HMA, 3, 70, Surface, 9.5 mm

(11) Saw Cut

(26) Sodding

(29) Mulched Seeding, Type R

NOT FOR CONSTRUCTION

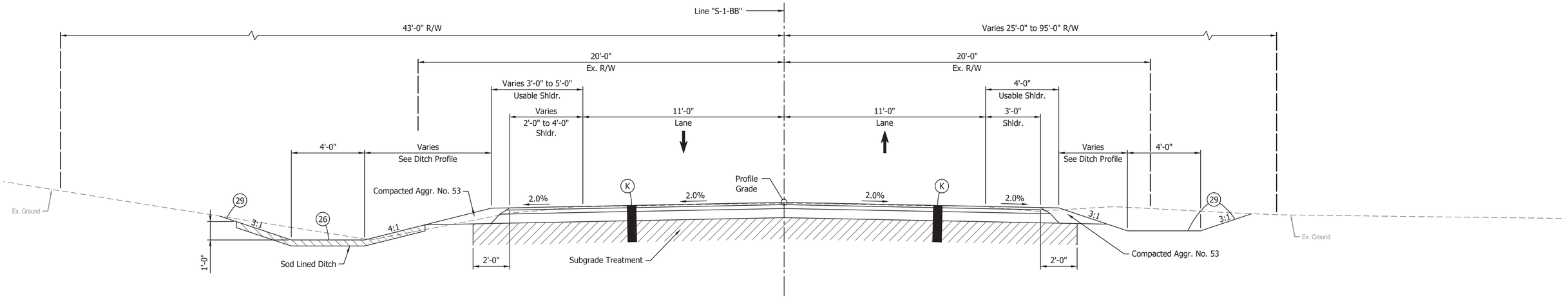
RECOMMENDED FOR APPROVAL
DESIGN ENGINEER DATE

DESIGNED: JDD DRAWN: GDH
CHECKED: DGD CHECKED: JDD

INDIANA
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS
LINE "BB"

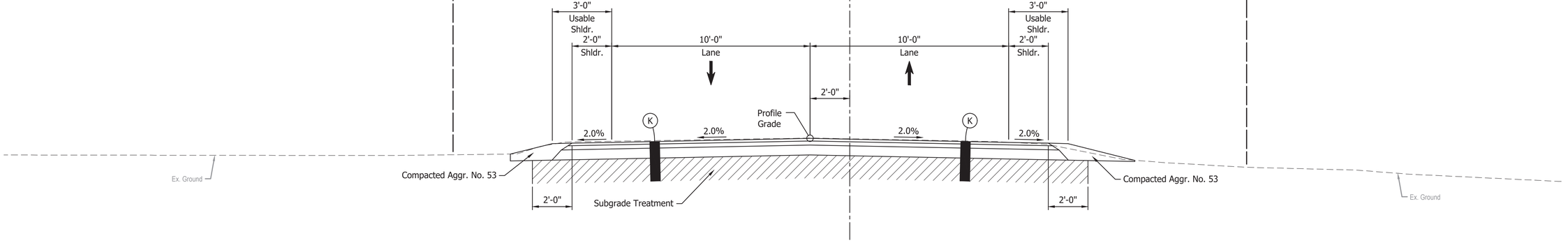
SCALE	BRIDGE FILE
3/16" = 1'-0"	
	DESIGNATION
	2003098
SURVEY BOOK	SHEETS
	4 of 42
CONTRACT	PROJECT
R-43907	2003098



TYPICAL SECTION - LINE "S-1-BB"

Sta. 18+05.00 to Sta. 19+52.00

Scale: 3/8" = 1'-0"



TYPICAL SECTION - LINE "S-1-BB"

Sta. 20+48.00 to Sta. 21+95.00

Scale: 3/8" = 1'-0"

LEGEND:

(K) 165 #/sys QC/QA-HMA, 3, 70, Surface, 9.5 mm on
275 #/sys QC/QA-HMA, 3, 70, Intermediate, 19.0 mm on
880 #/sys QC/QA-HMA, 3, 64, Base, 25.0 mm
Variable Depth Compacted Aggregate, No. 53 on
(As Needed to Match Existing Adjacent Mainline Pavement Thickness)
Subgrade Treatment, Type ID

(26) Sodding

(29) Mulched Seeding, Type R

NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: JDD | DRAWN: GDH | CHECKED: DGD | CHECKED: JDD

INDIANA
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS
LINE "S-1-BB"

SCALE	BRIDGE FILE
3/8" = 1'-0"	
	DESIGNATION
	2003098
SURVEY BOOK	SHEETS
	5 of 42
CONTRACT	PROJECT
R-43907	2003098

GENERAL NOTES:

1. Install construction signs as shown on plans and as directed.
2. U.S. 41 shall remain open at all times and maintain at least one lane in each direction.
3. All type 'A' construction signs to have low intensity flashing yellow light, type 'A'.
4. All materials, procedures, signs, markings, and miscellaneous items shall conform to the requirements of the INDOT standard specifications and the Indiana Manual on Uniform Traffic Control Devices, and revisions there to.
5. Contractor shall coordinate with INDOT PE/PS to notify local fire department, police, ambulance services, and schools at least two weeks prior to any construction that would block or limit access
6. The construction zone speed limit for U.S. 41 is 50 mph (Design Speed = 60 mph).
7. U.S. 41 traffic barrel spacing on tangent: 50 ft
   U.S. 41 traffic barrel spacing on taper: 25 ft
8. U.S. 41 construction clear zone requirements: 16 ft for 4:1
9. Cover any existing speed limit signs that conflict with construction speed reduction.

PHASE I:

1. Construction activities shall include construction of outside shoulders, turn lanes, truck turning loons, and roadside ditches/storm structures. Public road approaches shall be constructed in this phase. Full depth shoulder reconstruction where traffic is to run in Phase II as shown shall be constructed before the start of Phase II.

PHASE II:

1. Construction activities shall include construction of median shoulders, turn lanes, raised median island, and median ditches/storm structures.

POST PHASE II (NOT DETAILED):

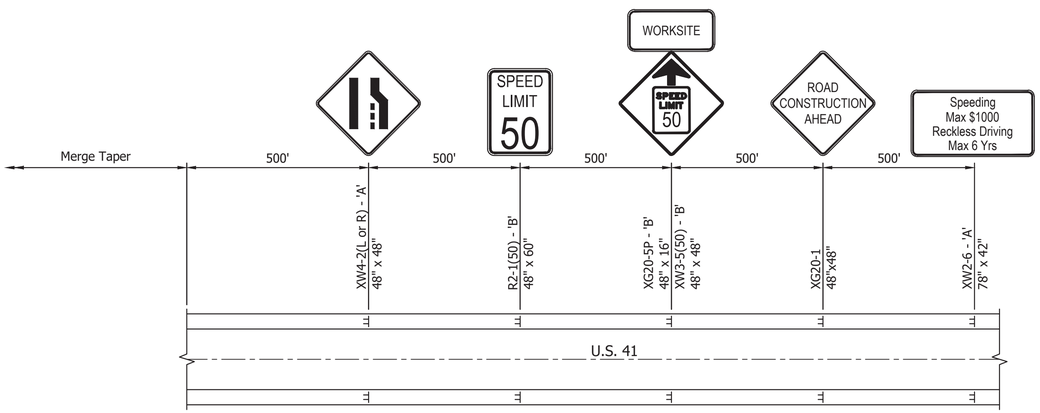
1. Construction activities shall include mill and overlay of travel lanes. This shall be completed under traffic as a moving operation.

ESTIMATE OF QUANTITIES - CONTROLLING		
ITEM	QUANTITY	UNIT
Maintaining Traffic	1	Lump Sum
Construction Sign Type A	24	Each
Construction Sign Type B	4	Each
Temporary Pavement Marking, Paint, Solid, White, 4"	6850	ft
Temporary Pavement Marking, Paint, Solid, Yellow, 4"	6850	ft
Temporary Pavement Marking, Removable, Solid, White, 4"	6850	ft
Temporary Pavement Marking, Removable, Solid, Yellow, 4"	6850	ft
Line Remove	18332	ft
Temporary Traffic Barrier, Type 2	747	ft
Energy Absorbing Terminal, CZ, TL-3	2	Each
Barricade, Type III-B	216	ft
Flashing Arrow Board	120	Days

ESTIMATE OF QUANTITIES - PHASE I		
ITEM	QUANTITY	UNIT
Maintaining Traffic	1	Lump Sum
Construction Sign Type A	24	Each
Construction Sign Type B	4	Each
Temporary Pavement Marking, Paint, Solid, White, 4"	3885	ft
Temporary Pavement Marking, Paint, Solid, Yellow, 4"	2965	ft
Temporary Pavement Marking, Removable, Solid, White, 4"	3885	ft
Temporary Pavement Marking, Removable, Solid, Yellow, 4"	2965	ft
Temporary Traffic Barrier, Type 2	747	ft
Energy Absorbing Terminal, CZ, TL-3	2	Each
Line Remove	12464	ft
Barricade, Type III-B	216	ft
Flashing Arrow Board	60	Days

ESTIMATE OF QUANTITIES - PHASE II		
ITEM	QUANTITY	UNIT
Maintaining Traffic	1	Lump Sum
Construction Sign Type A	24	Each
Construction Sign Type B	4	Each
Temporary Pavement Marking, Paint, Solid, White, 4"	2965	ft
Temporary Pavement Marking, Paint, Solid, Yellow, 4"	3885	ft
Temporary Pavement Marking, Removable, Solid, White, 4"	2965	ft
Temporary Pavement Marking, Removable, Solid, Yellow, 4"	3885	ft
Temporary Traffic Barrier, Type 2	701	ft
Energy Absorbing Terminal, CZ, TL-3	2	Each
Line Remove	5868	ft
Barricade, Type III-B	120	ft
Flashing Arrow Board	60	Days

PROJECT LOCATION
Scale: 1" = 1,000'



ADVANCED SIGNING DETAIL
Not to Scale

NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: JDD DRAWN: GDH

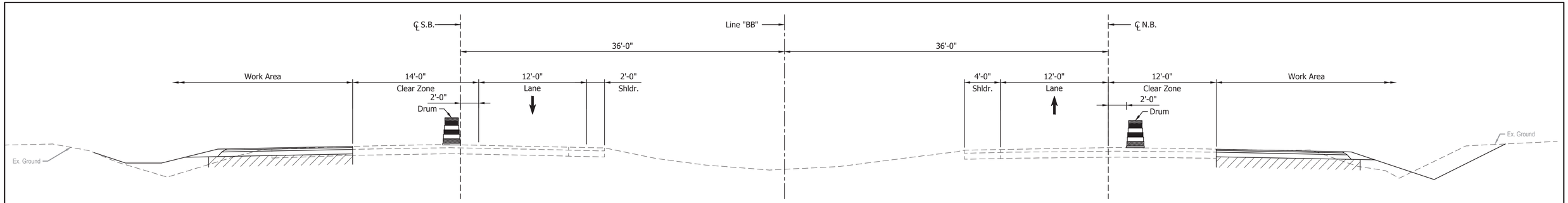
CHECKED: DGD CHECKED: JDD

INDIANA DEPARTMENT OF TRANSPORTATION

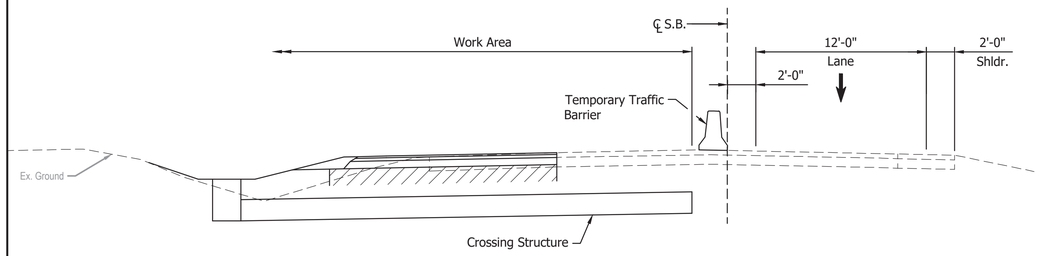
MAINTENANCE OF TRAFFIC GENERAL NOTES

SCALE	BRIDGE FILE
AS SHOWN	
	DESIGNATION
	2003098
SURVEY BOOK	SHEETS
	7 of 42
CONTRACT	PROJECT
R-43907	2003098

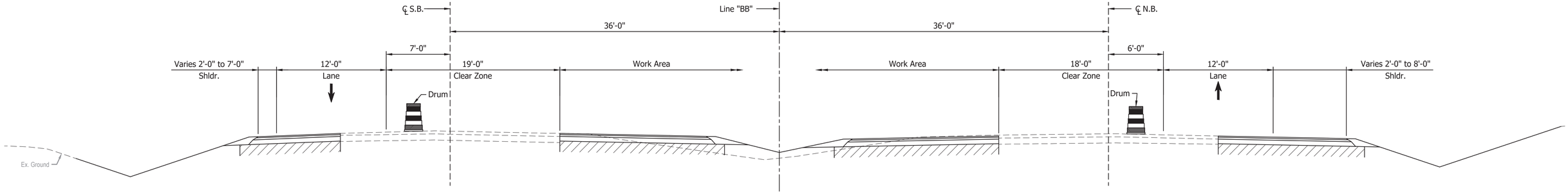
PJV – 7/24/2023 2:31 PM – U:\2022\202222 indot us 41\Cad\Plan Set\Civil\222240MT_GN01.dwg (MOT GENERAL NOTES)



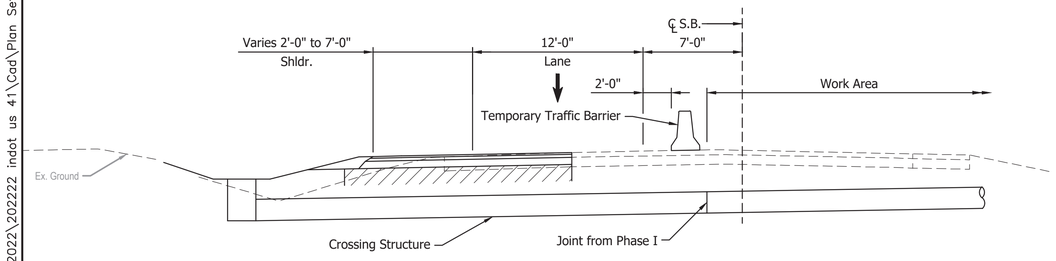
PHASE I - MOT TYPICAL SECTION
LINE "BB"
Scale: 3/16" = 1'-0"



PHASE I TEMPORARY TRAFFIC BARRIER DETAIL
Scale: 3/16" = 1'-0"



PHASE II - TYPICAL SECTION
LINE "BB"
Scale: 3/16" = 1'-0"



PHASE II TEMPORARY TRAFFIC BARRIER DETAIL
Scale: 3/16" = 1'-0"

GDH – 7/24/2023 2:31 PM – U:\2022\202222 indot us 41\Cad\Plan Set\Civil\222240MT_TS01.dwg (MOT TYP. SECT. 01)

NOT FOR CONSTRUCTION

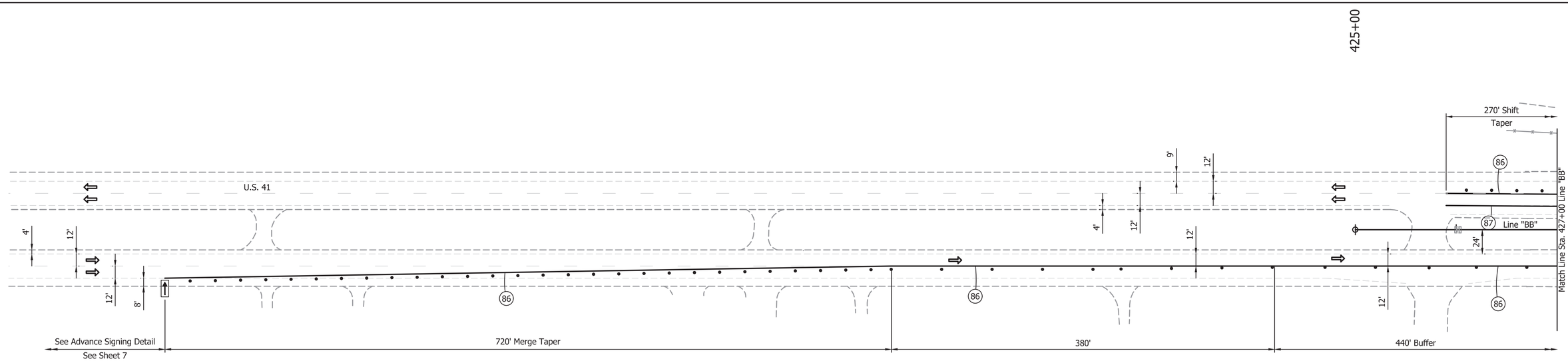
RECOMMENDED FOR APPROVAL
DESIGN ENGINEER DATE

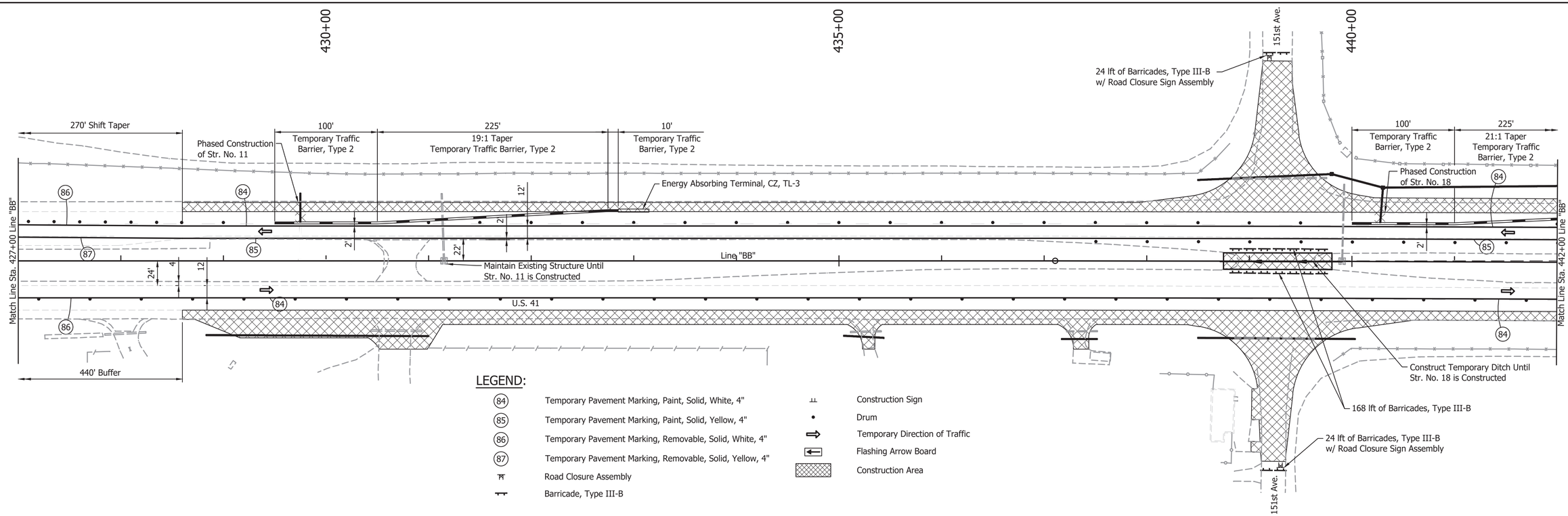
DESIGNED: JDD
DRAWN: GDH
CHECKED: DGD
CHECKED: JDD

INDIANA
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC
TYPICAL SECTIONS

SCALE	BRIDGE FILE
AS SHOWN	
	DESIGNATION
	2003098
SURVEY BOOK	SHEETS
	8 of 42
CONTRACT	PROJECT
R-43907	2003098





LEGEND:

84	Temporary Pavement Marking, Paint, Solid, White, 4"		Construction Sign
85	Temporary Pavement Marking, Paint, Solid, Yellow, 4"		Drum
86	Temporary Pavement Marking, Removable, Solid, White, 4"		Temporary Direction of Traffic
87	Temporary Pavement Marking, Removable, Solid, Yellow, 4"		Flashing Arrow Board
	Road Closure Assembly		Construction Area
	Barricade, Type III-B		

NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL
DESIGN ENGINEER DATE

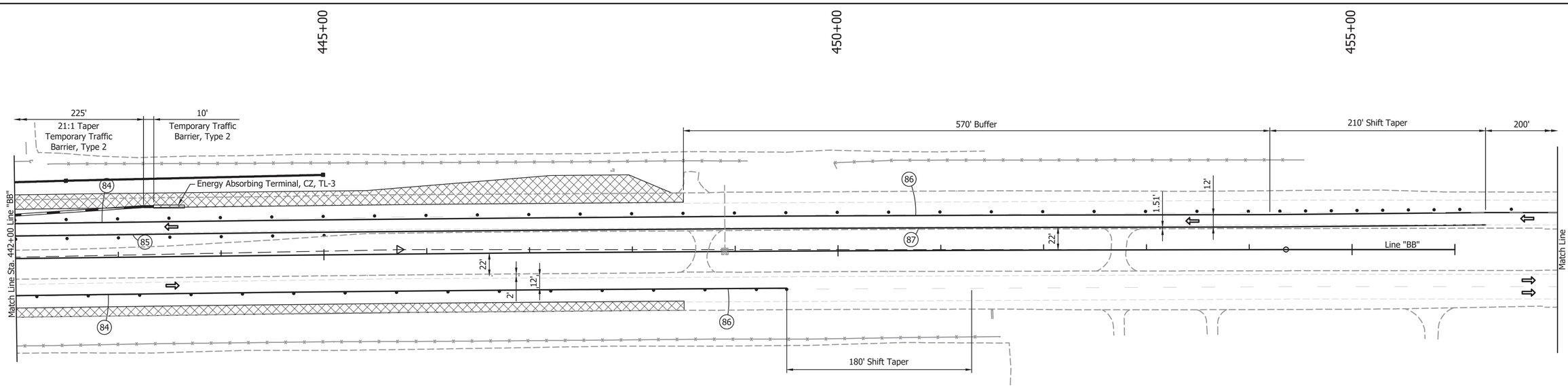
DESIGNED: JDD
DRAWN: GDH
CHECKED: DGD
CHECKED: JDD

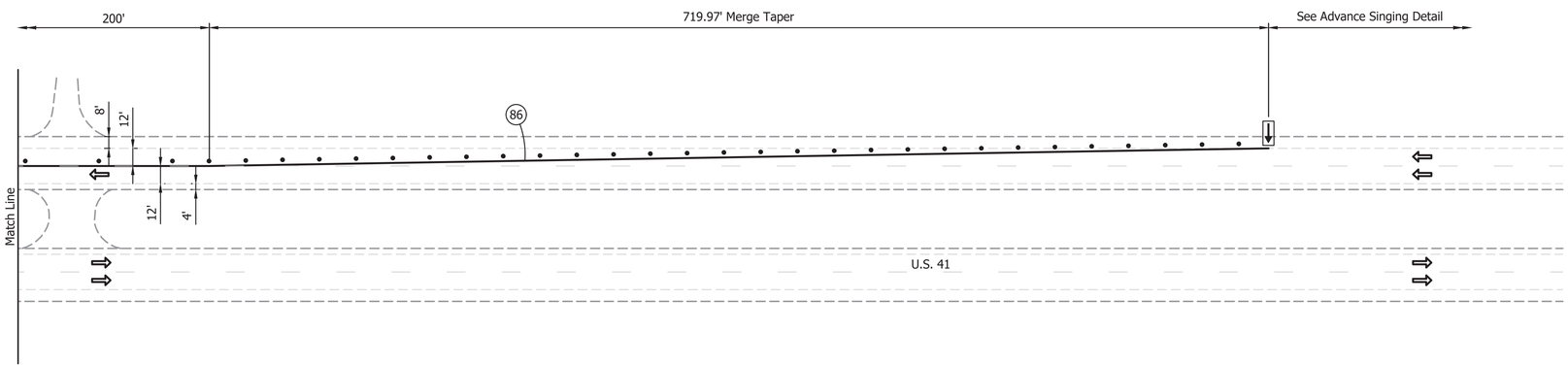
INDIANA
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC
PHASE I

SCALE	BRIDGE FILE
1" = 50'	
	DESIGNATION
	2003098
SURVEY BOOK	SHEETS
	9 of 42
CONTRACT	PROJECT
R-43907	2003098

GDH – 7/24/2023 2:31 PM – U:\2022\202222 indot us 41\Cad\Plan Set\Civil\222240MT_PL1.dwg (PHASE I PL1)





LEGEND:

(84)	Temporary Pavement Marking, Paint, Solid, White, 4"
(85)	Temporary Pavement Marking, Paint, Solid, Yellow, 4"
(86)	Temporary Pavement Marking, Removable, Solid, White, 4"
(87)	Temporary Pavement Marking, Removable, Solid, Yellow, 4"
	Road Closure Assembly
	Barricade, Type III-B
	Construction Sign
	Drum
	Temporary Direction of Traffic
	Flashing Arrow Board
	Construction Area

NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

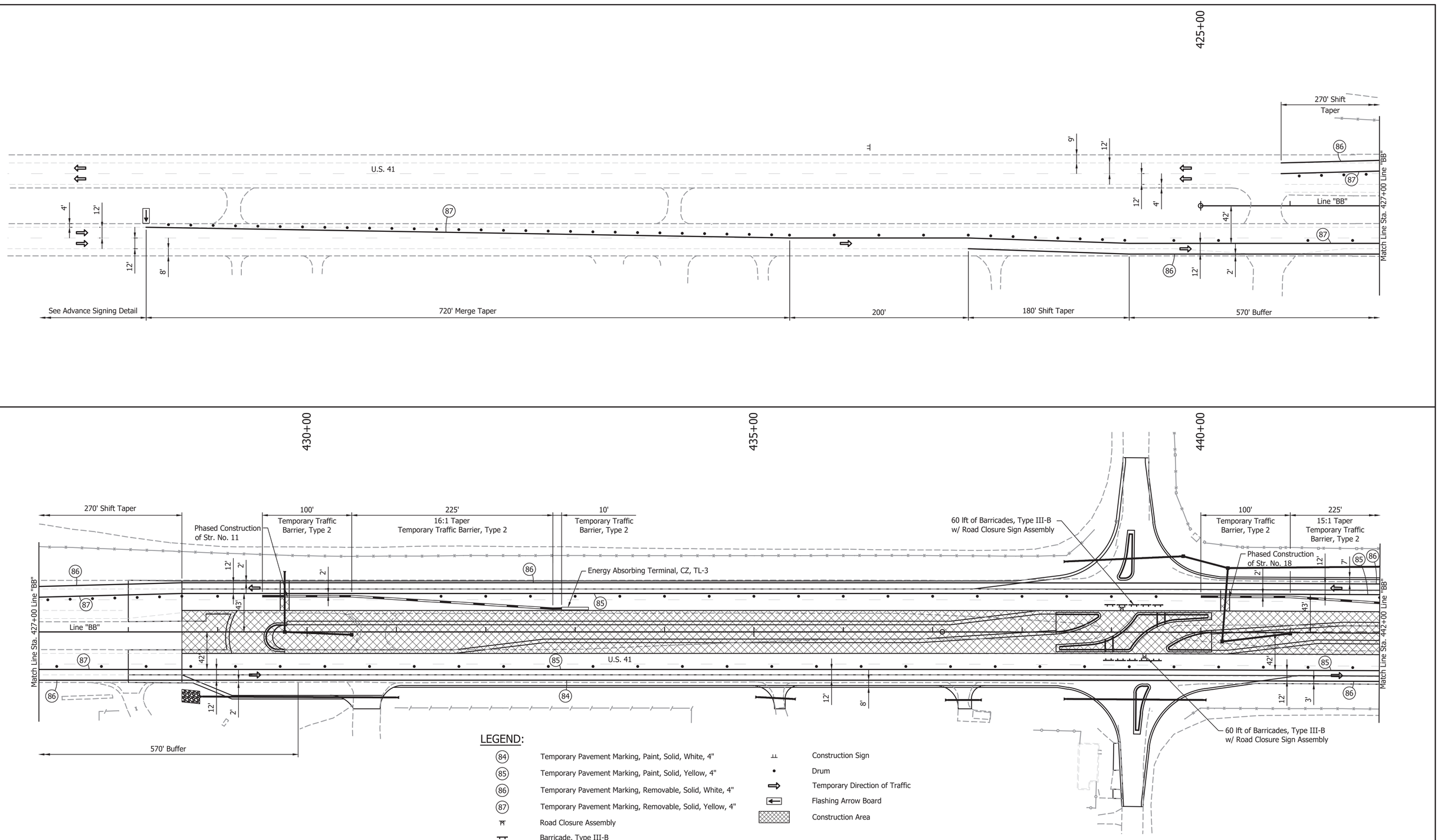
DESIGNED: JDD | DRAWN: GDH

CHECKED: DGD | CHECKED: JDD

INDIANA
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC
PHASE I

SCALE	BRIDGE FILE
1" = 50'	
	DESIGNATION
	2003098
SURVEY BOOK	SHEETS
	10 of 42
CONTRACT	PROJECT
R-43907	2003098



GDH – 7/24/2023 2:31 PM – U:\2022\202222 indot us 41\Cad\Plan Set\Civil\222240MT_PL.dwg (PHASE II PL1)

NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

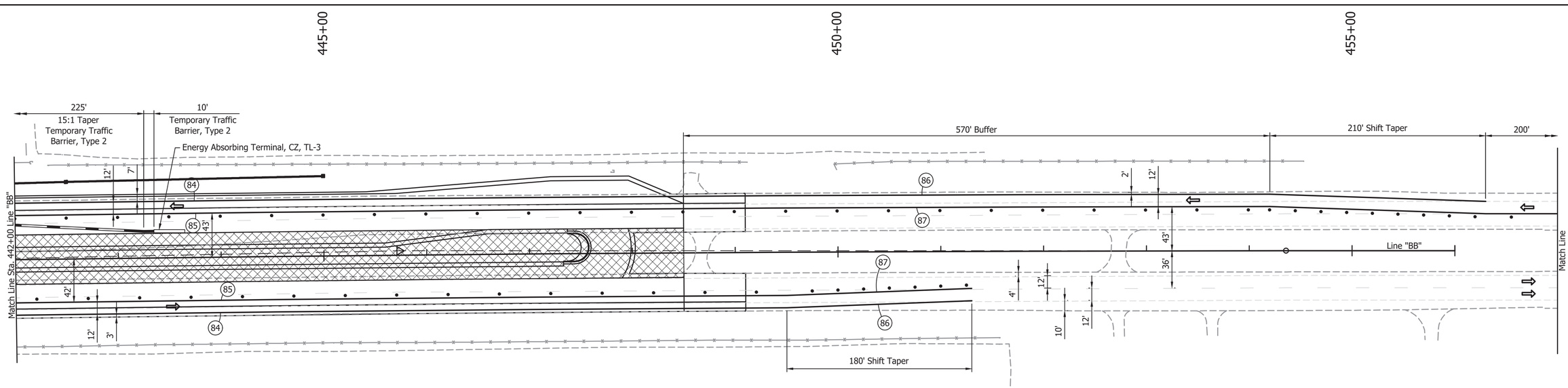
DESIGNED: JDD | DRAWN: GDH

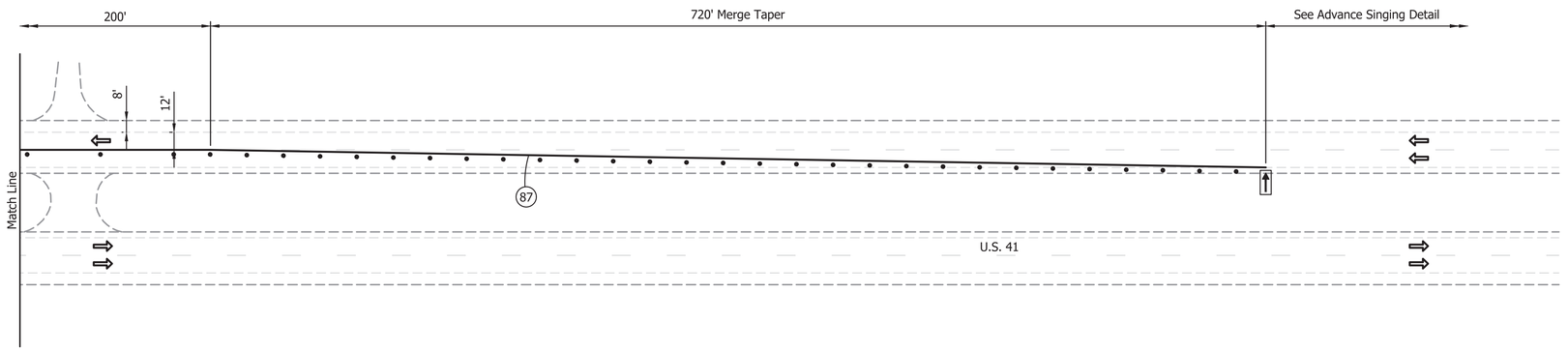
CHECKED: DGD | CHECKED: JDD

INDIANA DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC PHASE II

SCALE	BRIDGE FILE
1" = 50'	
	DESIGNATION
	2003098
SURVEY BOOK	SHEETS
	11 of 42
CONTRACT	PROJECT
R-43907	2003098





LEGEND:

- (84) Temporary Pavement Marking, Paint, Solid, White, 4"
- (85) Temporary Pavement Marking, Paint, Solid, Yellow, 4"
- (86) Temporary Pavement Marking, Removable, Solid, White, 4"
- (87) Temporary Pavement Marking, Removable, Solid, Yellow, 4"
- Road Closure Assembly
- Barricade, Type III-B
- Construction Sign
- Drum
- Temporary Direction of Traffic
- Flashing Arrow Board
- Construction Area

NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

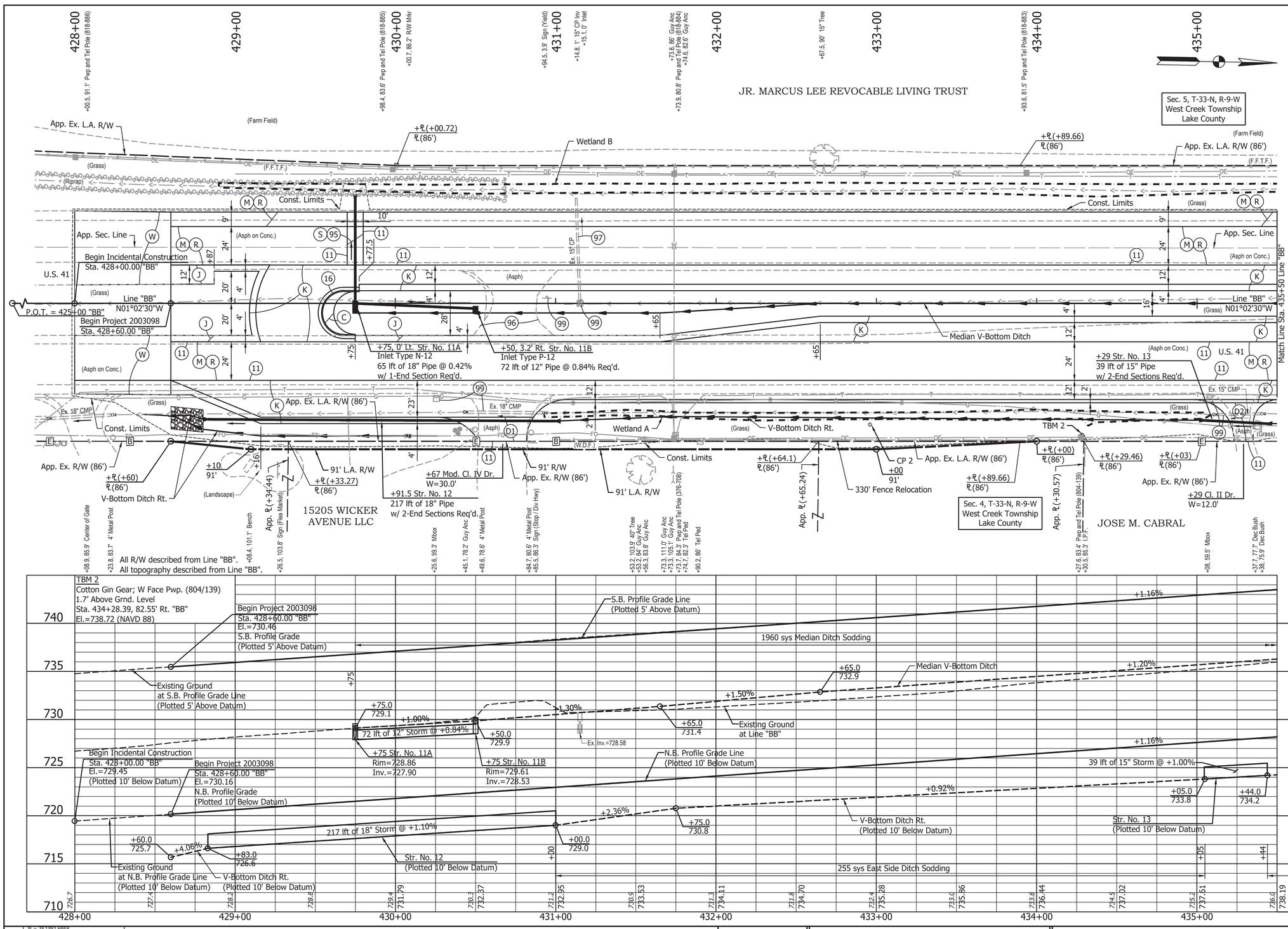
DESIGNED: JDD | DRAWN: GDH

CHECKED: DGD | CHECKED: JDD

INDIANA
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC
PHASE II

SCALE	BRIDGE FILE
1" = 50'	
	DESIGNATION
	2003098
SURVEY BOOK	SHEETS
	12 of 42
CONTRACT	PROJECT
R-43907	2003098



LEGEND:

- (C) PCCP for Approaches, 9" on Dense Graded Subbase, 6", on Geogrid Type 1B, on Subgrade Treatment, Type II
- (D1) HMA for Approaches, Type B 165 #/sys HMA Surface, Type B, on 275 #/sys HMA Intermediate, Type B, on 660 #/sys HMA Base, Type B, on Subgrade Treatment, Type II, on Geogrid, Type 1B
- (D2) HMA for Approaches, Type B 165 #/sys HMA Surface, Type B, on 275 #/sys HMA Intermediate, Type B, on 6" Compacted Aggregate, No. 53, on Subgrade Treatment, Type II
- (J) 165 #/sys QC/QA-HMA, 3, 70, Surface, 9.5 mm on 275 #/sys QC/QA-HMA, 3, 70, Intermediate, 19.0 mm on 880 #/sys QC/QA-HMA, 3, 64, Base, 25.0 mm Variable Depth Compacted Aggregate, No. 53 on (As Needed to Match Existing Adjacent Mainline Pavement Thickness) Subgrade Treatment, Type ID
- (K) 165 #/sys QC/QA-HMA, 3, 70, Surface, 9.5 mm on 275 #/sys QC/QA-HMA, 3, 70, Intermediate, 19.0 mm on 880 #/sys QC/QA-HMA, 3, 64, Base, 25.0 mm Variable Depth Compacted Aggregate, No. 53 on (As Needed to Match Existing Adjacent Mainline Pavement Thickness) Subgrade Treatment, Type ID
- (M) Milling, Profile (0" - 4")
- (R) 165 #/sys QC/QA-HMA, 3, 70, Surface, 9.5 mm
- (S) HMA for Structure Installation 165 #/sys HMA Surface, Type C on 275 #/sys HMA Intermediate, Type C on 880 #/sys HMA Base, Type C on 6" Compacted Aggregate, No. 53 Base on Subgrade Treatment, Type II
- (W) Transition Milling on 165 #/sys QC/QA-HMA, 3, 70, Surface, 9.5 mm
- (11) Saw Cut
- (16) Curb and Gutter, B, Concrete
- (95) Pavement Removal
- (96) Remove, Asphalt Pavement
- (97) Pipe Abandon Grout and Fill
- (99) Remove
- Uniform Riprap

EARTHWORK BALANCE

Line "BB"		
Fill +25%	=	2135 cys
Common Excavation	=	4610 cys
B-Borrow	=	0 cys
Waste	=	2475 cys

CP 2	N = 352392.6958 E = 768318.2613

19.2' Shldr.
Az.=269°

U.S. 41 (N.B.L.)

202.7' C.M.P.
Az.=181°

Az.=357°
215.5' C.M.P.

Sta. 432+96.07, 75.56' Rt. "BB"
1/2" X 18" Rebar w/Blue LFA Cap

NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL
DESIGN ENGINEER DATE

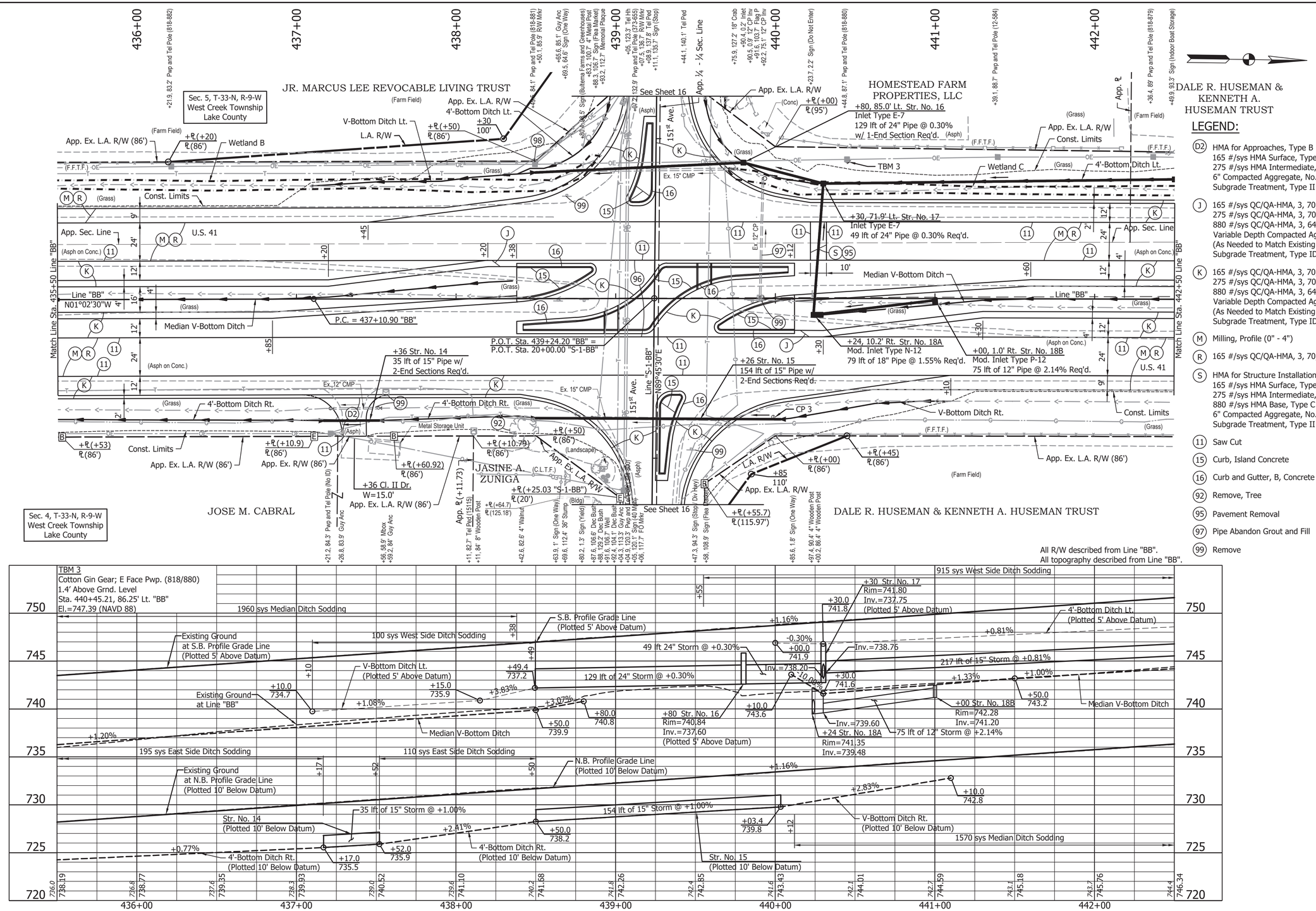
DESIGNED: JDD
DRAWN: GDH
CHECKED: DGD
CHECKED: JDD

INDIANA
DEPARTMENT OF TRANSPORTATION

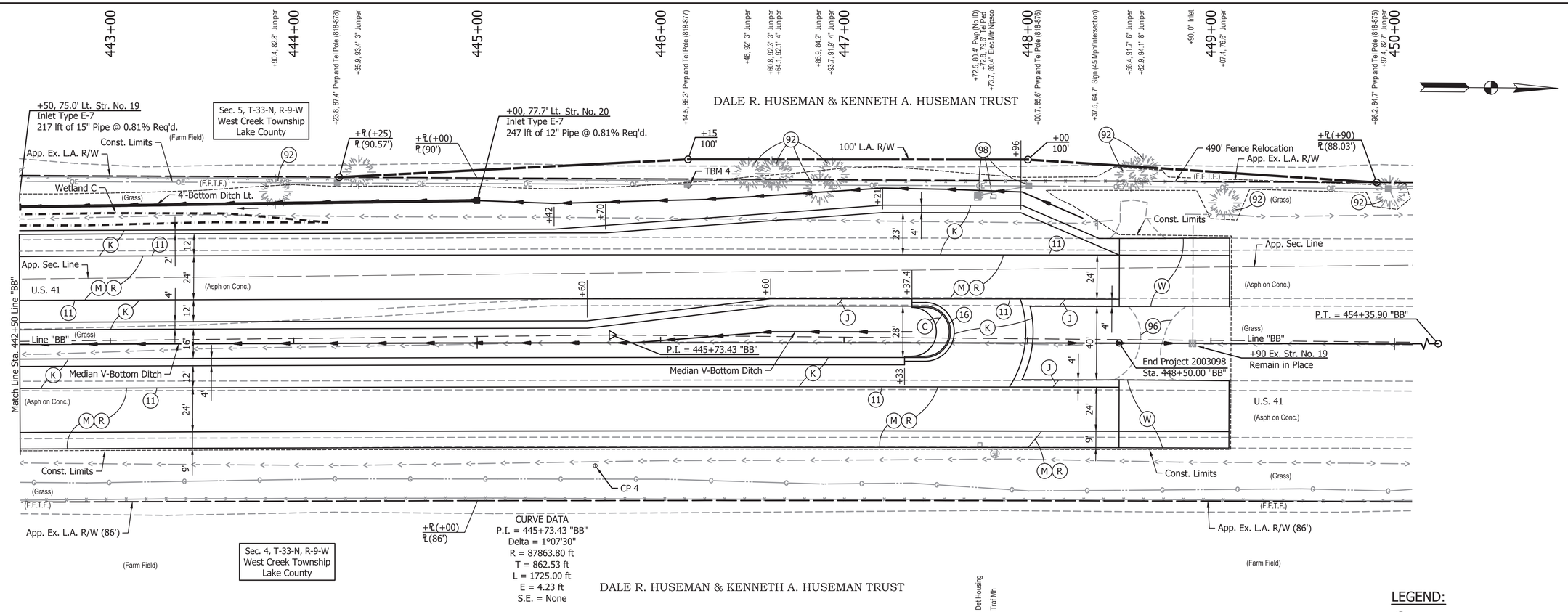
PLAN AND PROFILE - LINE "BB"
STA. 428+00 TO STA. 435+50

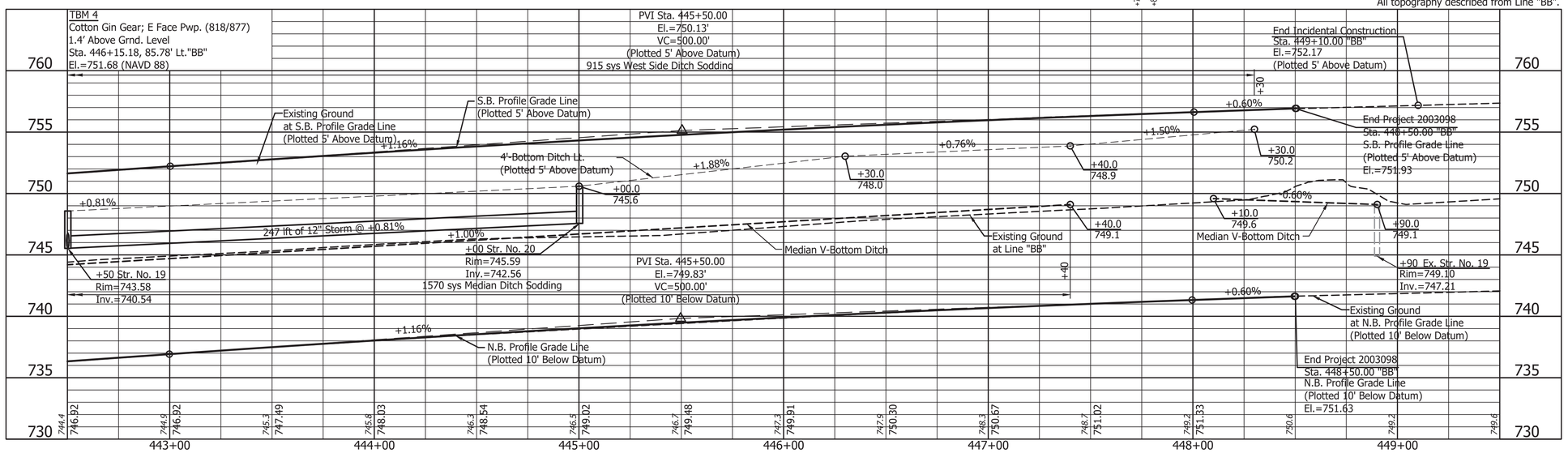
HORIZONTAL SCALE	BRIDGE FILE
1" = 30'	
VERTICAL SCALE	DESIGNATION
1" = 5'	2003098
SURVEY BOOK	SHEETS
	13 of 42
CONTRACT	PROJECT
R-43907	2003098

GDH – 7/24/2023 2:32 PM – U:\2022\202222 indot us 41\Cad\Plan Set\Civil\222240TR_PP01 – P & P – LINE BB) (222240TR_PP01.dwg



GDH – 7/24/2023 2:32 PM – U:\2022\202222 indot us 41\Cad\Plan Set\Civil\222240TR_PP02.dwg (222240TR_PP02 – P & P – LINE BB)





LEGEND:

- (C) PCCP for Approaches, 9" on Dense Graded Subbase, 6", on Geogrid Type 1B, on Subgrade Treatment, Type II
- (J) 165 #/sys QC/QA-HMA, 3, 70, Surface, 9.5 mm on 275 #/sys QC/QA-HMA, 3, 70, Intermediate, 19.0 mm on 880 #/sys QC/QA-HMA, 3, 64, Base, 25.0 mm Variable Depth Compacted Aggregate, No. 53 on (As Needed to Match Existing Adjacent Mainline Pavement Thickness) Subgrade Treatment, Type ID
- (K) 165 #/sys QC/QA-HMA, 3, 70, Surface, 9.5 mm on 275 #/sys QC/QA-HMA, 3, 70, Intermediate, 19.0 mm on 880 #/sys QC/QA-HMA, 3, 64, Base, 25.0 mm Variable Depth Compacted Aggregate, No. 53 on (As Needed to Match Existing Adjacent Mainline Pavement Thickness) Subgrade Treatment, Type ID
- (M) Milling, Profile (0" - 4")
- (R) 165 #/sys QC/QA-HMA, 3, 70, Surface, 9.5 mm
- (W) Transition Milling on 165 #/sys QC/QA-HMA, 3, 70, Surface, 9.5 mm
- (11) Saw Cut
- (15) Curb, Island Concrete
- (16) Curb and Gutter, B, Concrete
- (92) Remove, Tree
- (95) Pavement Removal
- (96) Remove, Asphalt Pavement
- (98) Remove, By Others
- (99) Remove

CP 4 N = 353659.9546 E = 768290.7696
U.S. 41 (N.B.L.)
10.3' Shldr. Az.=270°
Az.=356°
210.0' Sig. Detc. in Shldr.
17.9' @ 90° Rt.
4' F.F.T.F.
Sta. 445+64.28, 66.97' Rt. "BB"
1/2" X 18" Rebar w/Blue LFA Cap

NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL
DESIGN ENGINEER DATE

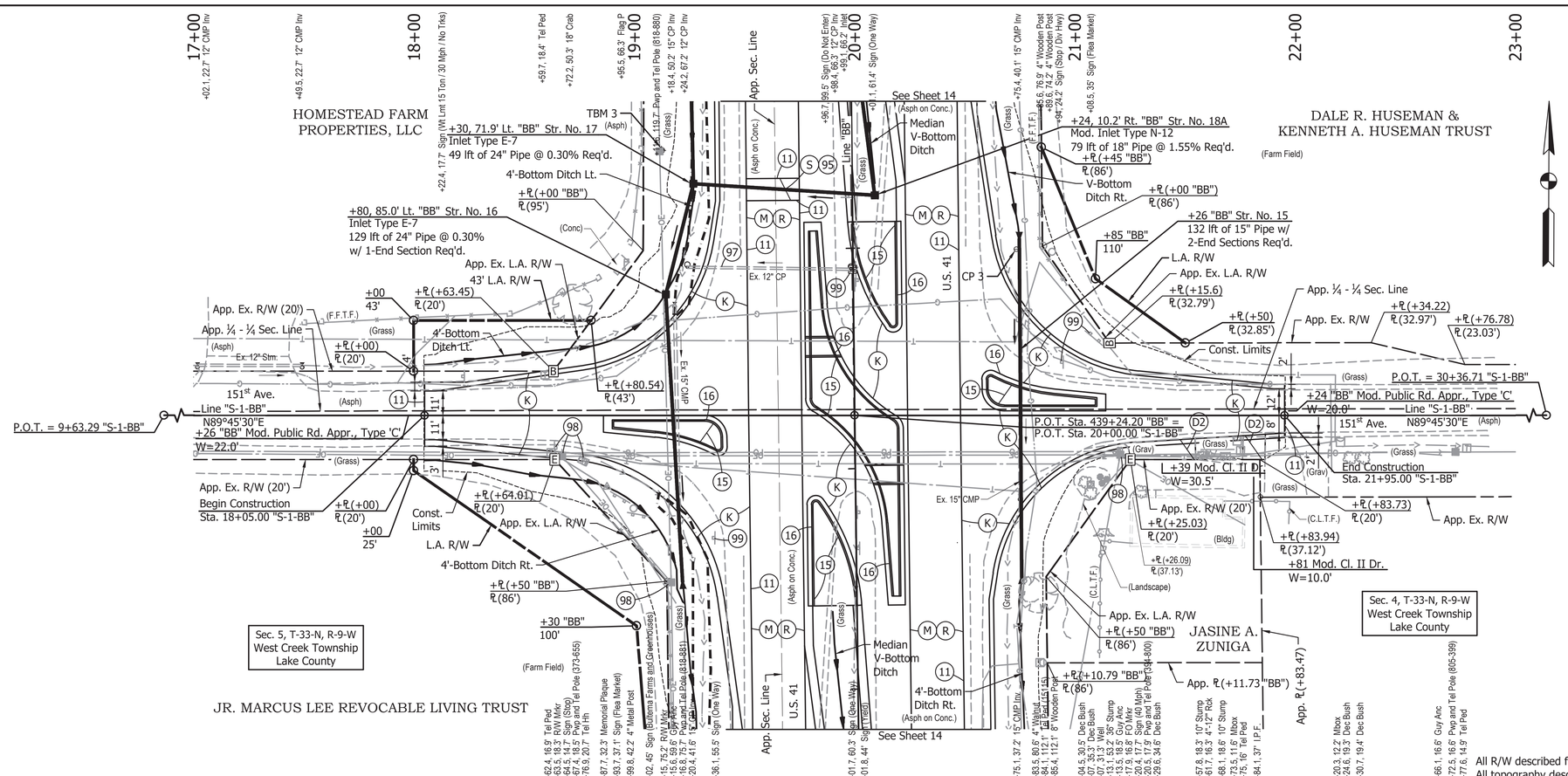
DESIGNED: JDD DRAWN: GDH
CHECKED: DGD CHECKED: JDD

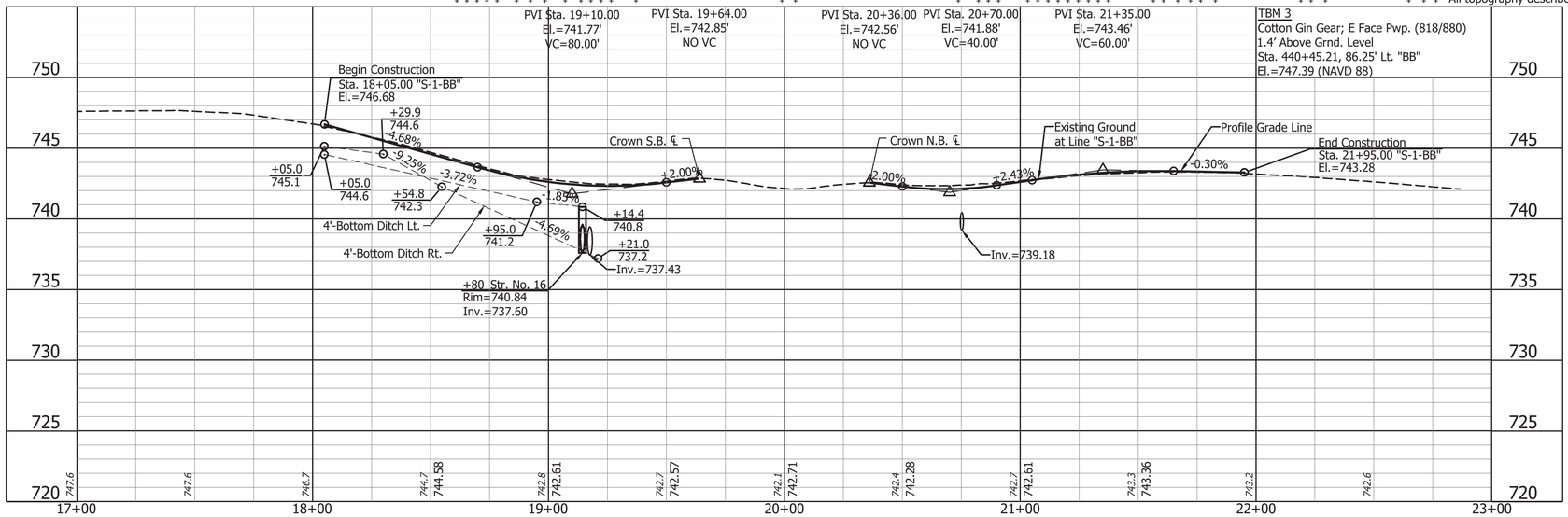
INDIANA DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE - LINE "BB"
STA. 442+50 TO STA. 449+50

HORIZONTAL SCALE	BRIDGE FILE
1" = 30'	
VERTICAL SCALE	DESIGNATION
1" = 5'	2003098
SURVEY BOOK	SHEETS
	15 of 42
CONTRACT	PROJECT
R-43907	2003098

JDD – 7/31/2023 8:15 AM – U:\2022\202222 indot us 41\Cad\Plan Set\Civil\222240TR_PP03 – (222240TR_PP03.dwg – P & P – LINE BB)





LEGEND:

- (D2) HMA for Approaches, Type B
  165 #/sys HMA Surface, Type B, on
  275 #/sys HMA Intermediate, Type B, on
  6" Compacted Aggregate, No. 53, on
  Subgrade Treatment, Type II
- (J) 165 #/sys QC/QA-HMA, 3, 70, Surface, 9.5 mm on
  275 #/sys QC/QA-HMA, 3, 70, Intermediate, 19.0 mm on
  880 #/sys QC/QA-HMA, 3, 64, Base, 25.0 mm
  Variable Depth Compacted Aggregate, No. 53 on
  (As Needed to Match Existing Adjacent Mainline Pavement Thickness)
  Subgrade Treatment, Type ID
- (K) 165 #/sys QC/QA-HMA, 3, 70, Surface, 9.5 mm on
  275 #/sys QC/QA-HMA, 3, 70, Intermediate, 19.0 mm on
  880 #/sys QC/QA-HMA, 3, 64, Base, 25.0 mm
  Variable Depth Compacted Aggregate, No. 53 on
  (As Needed to Match Existing Adjacent Mainline Pavement Thickness)
  Subgrade Treatment, Type ID
- (M) Milling, Profile (0" - 4")
- (R) 165 #/sys QC/QA-HMA, 3, 70, Surface, 9.5 mm
- (S) HMA for Structure Installation
  165 #/sys HMA Surface, Type C on
  275 #/sys HMA Intermediate, Type C on
  880 #/sys HMA Base, Type C on
  6" Compacted Aggregate, No. 53 Base on
  Subgrade Treatment, Type II
- (11) Saw Cut
- (15) Curb, Island Concrete
- (16) Curb and Gutter, B, Concrete
- (95) Pavement Removal
- (97) Pipe Abandon Grout and Fill
- (98) Remove, By Others
- (99) Remove

All R/W described from Line "S-1-BB".
All topography described from Line "S-1-BB".

CP 3 N = 353095.0359 E = 768304.6673
U.S. 41 (N.B.L.) Az.=269°
16.6' Shldr.
35.2' C.M.P. Az.=177°
Az.=84°
10.5' Cor. F.F.T.F.
W 151st Ave.
Sta. 439+98.78, 74.27' Rt. "BB"
1/2" X 18" Rebar w/Blue LFA Cap

NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL
DESIGN ENGINEER DATE

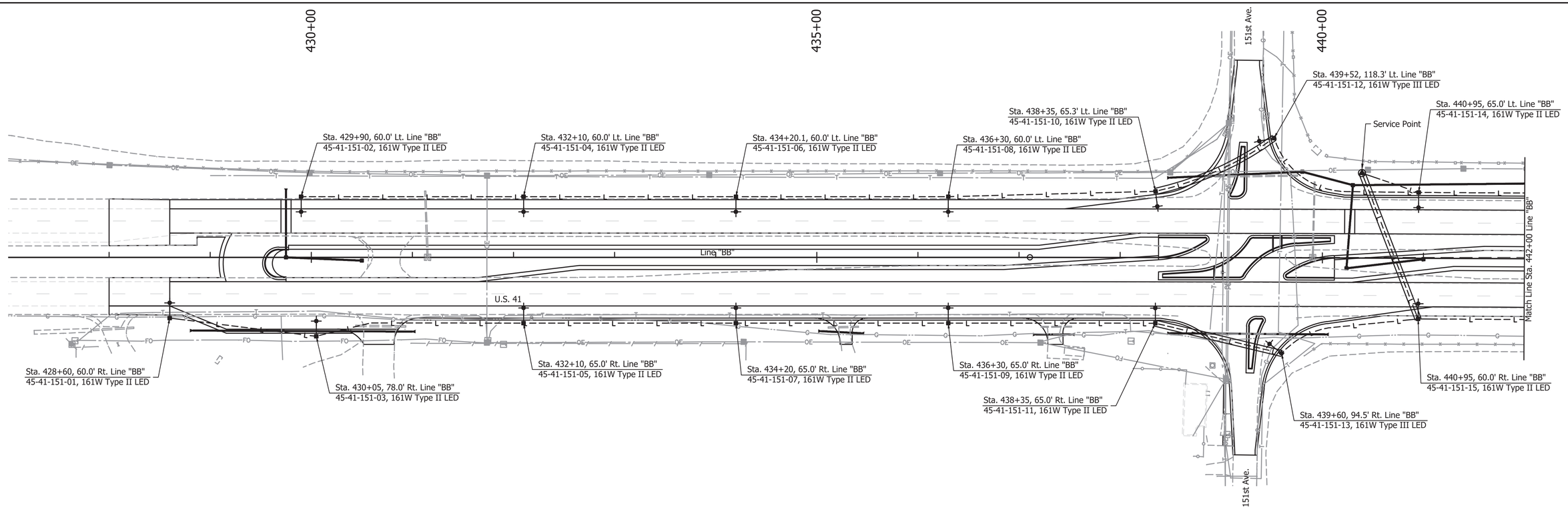
DESIGNED: JDD DRAWN: GDH
CHECKED: DGD CHECKED: JDD

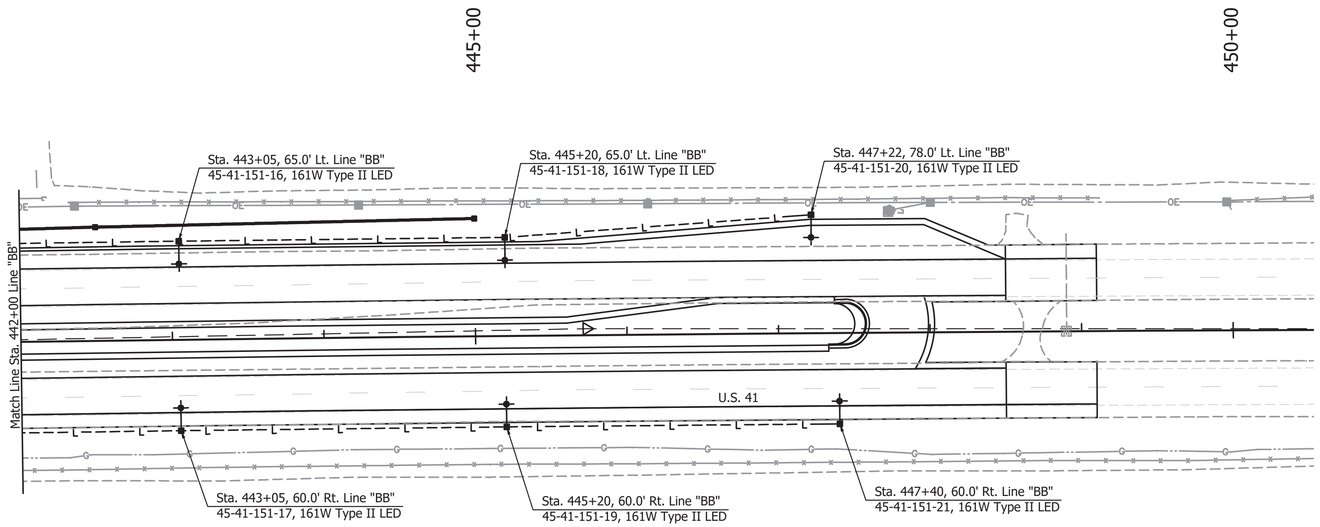
INDIANA DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE - LINE "S-1-BB"
STA. 17+00 TO STA. 23+00

HORIZONTAL SCALE	BRIDGE FILE
1" = 30'	
VERTICAL SCALE	DESIGNATION
1" = 5'	2003098
SURVEY BOOK	SHEETS
	16 of 42
CONTRACT	PROJECT
R-43907	2003098

GDH – 7/24/2023 2:33 PM – U:\2022\202222 indot us 41\Cad\Plan Set\Civil\222240TR_PP04.dwg (222240TR_PP04 – P & P – LINE S-1-BB)





DESIGN DATA TABLE	
Initial Lamp Lumens (LL) 161W LED	18,300 Lu
Average Maintained Illumination (Roadway)	1.1 FT. CD.
Light Loss Factor	0.87
Uniformity Ratio (Roadway)	4:1
Roadway Luminaire Classification, Conventional	As Noted
Effective Mounting Height	40'
Color Temperature	4000k

LUMINAIRE IDENTIFICATION

45 - 41 - 151 - 99

- 45 — Lake County
- 41 — Mainline, US 41
- 151 — Cross Street, 151st Ave
- 99 — Luminaire No.

Note:
Type II Luminaire Shall Provide a Light Distribution Equivalent to RFM-160W48LED4K-G2-R2M.ies. Type III Luminaire Shall Provide a Light Distribution Equivalent to RFM-160W48LED4K-G2-R3M.ies

LEGEND:

- Luminaire on Breakaway Light Pole, 40 ft E.M.H., 15 ft Mast Arm, on Lighting Standard Foundation, Concrete with Grounding 36 in. x 36 in. x 96 in.
- Service Point, Type II
- 4-1/C No. 4 AWG in Plastic Conduit
- 4-1/C No. 4 AWG in 2" Sch. 80 HDPE Conduit

NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

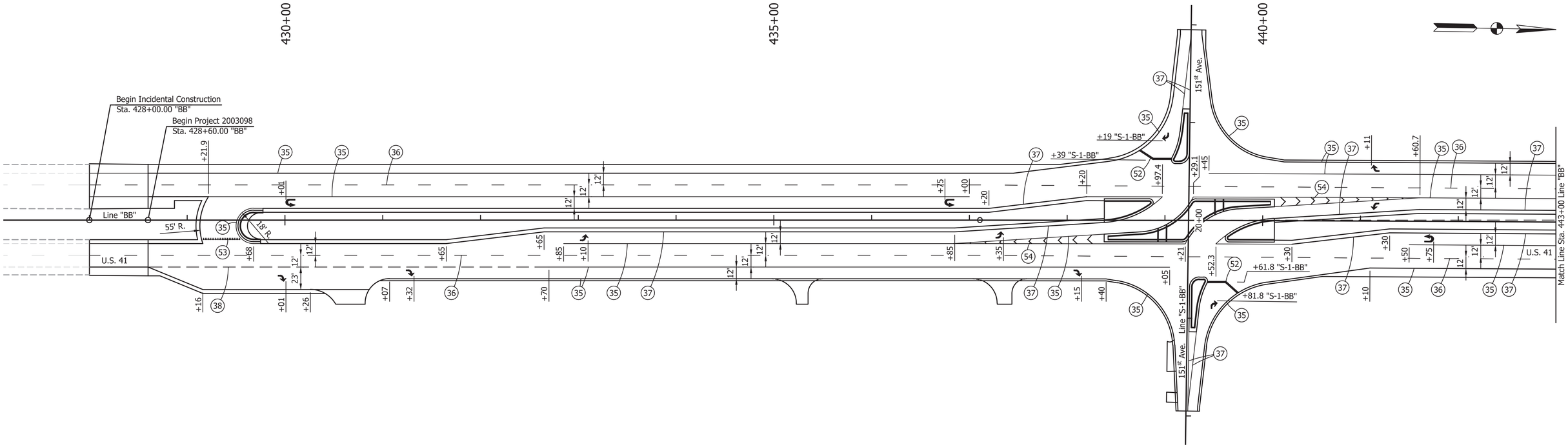
DESIGNED: JDD | DRAWN: GDH

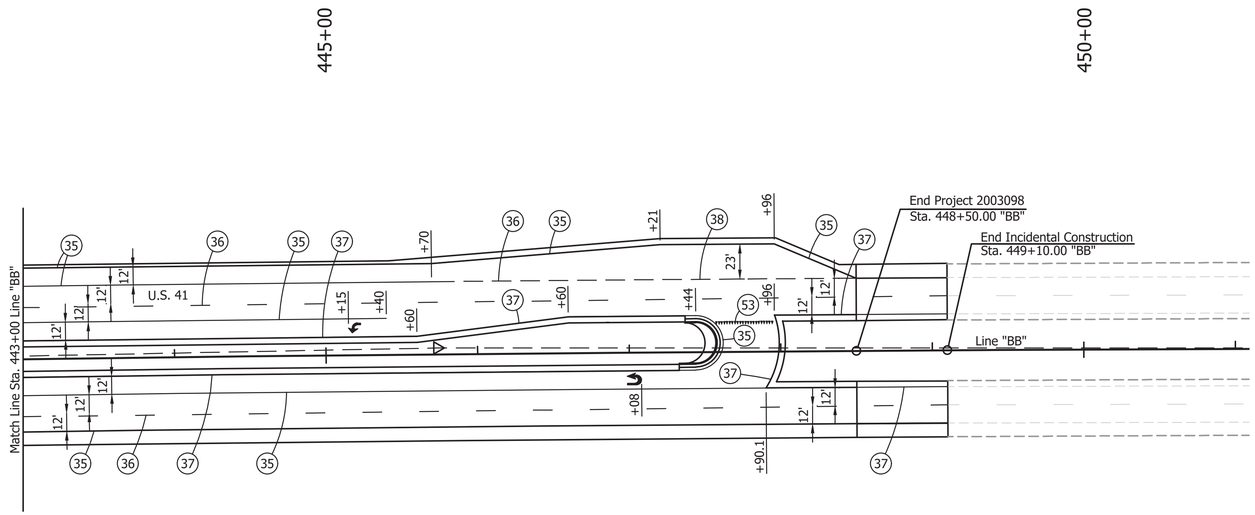
CHECKED: DGD | CHECKED: JDD

INDIANA DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN
LINE "BB"

SCALE	BRIDGE FILE
1" = 50'	
	DESIGNATION
	2003098
SURVEY BOOK	SHEETS
	20 of 42
CONTRACT	PROJECT
R-43907	2003098





NOTES:

1. Longitudinal pavement markings along U.S. 41 shall be grooved.
2. Replace all pavement markings removed due to Maintenance of Traffic scheme.

LEGEND:

(35)	Line, Multi-Component, Solid, White 6"
(36)	Line, Multi-Component, Broken, White, 6"
(37)	Line, Multi-Component, Solid, Yellow, 6"
(38)	Line, Multi-Component, Dotted, White, 12"
(51)	Transverse Marking, Multi-Component, Solid, White, Cross Hatch, 12"
(52)	Transverse Marking, Multi-Component, Stop Line, White, 24"
(53)	Transverse Marking, Multi-Component, Yield Line, White, 18"
(54)	Transverse Marking, Multi-Component, Cross Hatch Line, White, 8"
	or or Pavement Message Marking, Multi-Component,Turn Arrow

NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

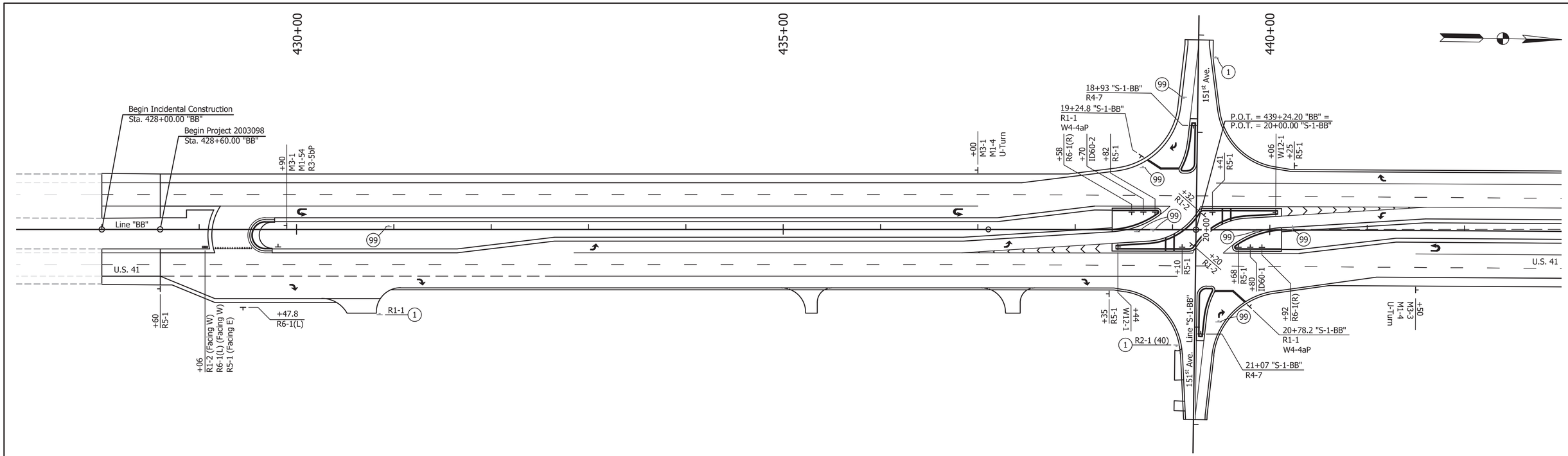
DESIGNED: JDD | DRAWN: GDH

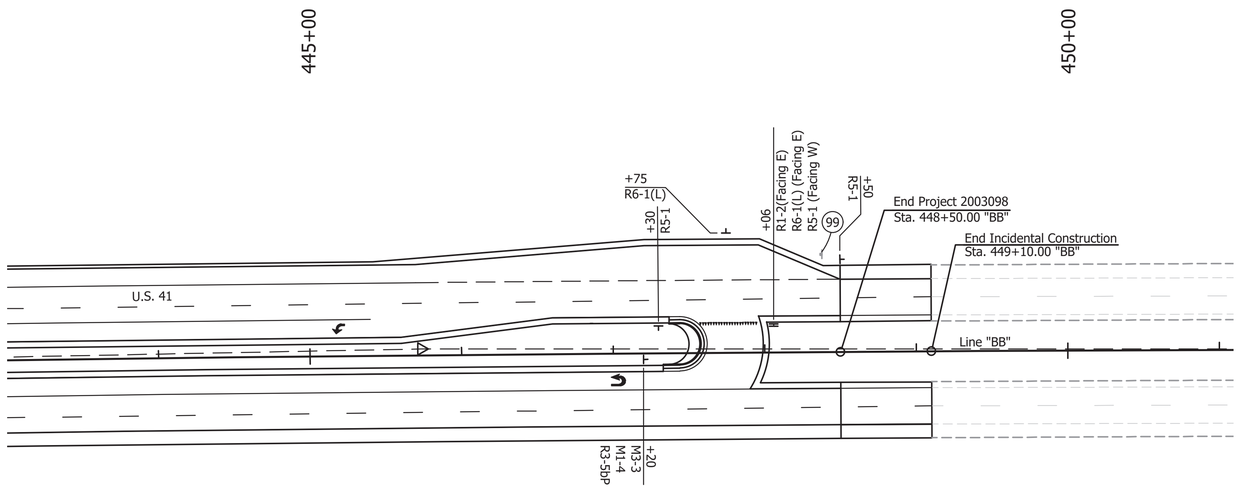
CHECKED: DGD | CHECKED: JDD

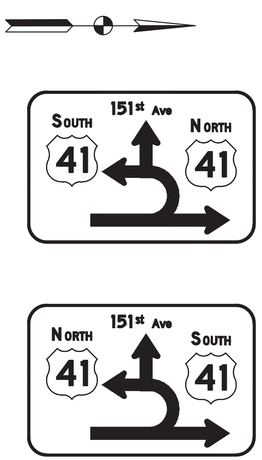
INDIANA DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN

SCALE	BRIDGE FILE
1" = 50'	
	DESIGNATION
	2003098
SURVEY BOOK	SHEETS
	21 of 42
CONTRACT	PROJECT
R-43907	2003098







ID60-1
108" x 72"

ID60-2
108" x 72"

M1-4
24" x 24"

M3-1, M3-3
24" x 12"

R1-1
36" x 36"

R1-2
48" x 48" x 48"

R2-1(40)
30" x 36"

R3-5bP
30" x 12"

R4-7
24" x 30"

R5-1
36" x 36"

R6-1(L or R)
54" x 18"

U-Turn
24" x 24"

W4-4aP
24" x 12"

W12-1
36" x 36"

LEGEND:

(1) No Changes to Existing Sign or Supports

(99) Remove

NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL

DESIGN ENGINEER DATE

DESIGNED: JDD DRAWN: GDH

CHECKED: DGD CHECKED: JDD

INDIANA
DEPARTMENT OF TRANSPORTATION

SIGNING PLAN

SCALE	BRIDGE FILE
1" = 50'	
	DESIGNATION
	2003098
SURVEY BOOK	SHEETS
	22 of 42
CONTRACT	PROJECT
R-43907	2003098

GDH – 7/24/2023 2:34 PM – U:\2022\202222 indot us 41\Cad\Plan Set\Civil\222240SN_PL01.dwg (SIGNING PLAN)

DNR Indiana Department of Natural Resources

Floodplain Analysis & Regulatory Assessment (FARA)

Point of Interest

Base Flood Elevation Point

POI

POI

FloodHazard_BestAvai_DN

Not Mapped

Long: -87.46969822082183

Lat: 41.344703955903285

The information provided below is based on the point of interest shown in the map above.

County: **Lake**

Stream Name:
Unnamed Tributary

Best Available Flood Hazard Zone: **Not Mapped**

National Flood Hazard Zone: **Not Mapped**

Approximate Ground Elevation: **742.8 feet (NAVD88)**

Base Flood Elevation: **Not Available**

Drainage Area: **Not Available**

IDNR Floodplain Map

Intersection Improvement Project
US 41 at 151st Avenue
Des. No. 2003098
West Creek Township, Lake County, IN

METRIC ENVIRONMENTAL

APPENDIX C
Early Coordination

INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N758
Indianapolis, Indiana 46204

PHONE: (855) - INDOT 4U

Eric J. Holcomb, Governor
Michael Smith, Commissioner

November 17, 2022

Sample Early Coordination Letter

{See Attached List}

Re: Early Coordination
Designation Number (Des. No.) 2003098
Intersection Improvement Project
US 41 at 151st Avenue; 3.8 miles north of SR 2
West Creek Township, Lake County, Indiana

Dear Agency:

The Indiana Department of Transportation (INDOT) with oversight and partial funding from the Federal Highway Administration (FHWA) intend to proceed with an intersection improvement project in Lake County, Indiana. This letter is part of the early coordination phase of the environmental review process. We are requesting comments from your area of expertise regarding any possible environmental effects associated with this project. **Please use the above designation number and description in your reply**. We will incorporate your comments into a study of the project's environmental impacts.

The project is located at the intersection of US 41 and 151st Avenue, in Lake County, Indiana. Specifically, the project is located in Sections 4 and 5, Township 33 North, Range 9 West, as illustrated on the Cedar Lake, Indiana 7.5 minute United States Geological Survey (USGS) topographic quadrangle.

US 41 provides two travel lanes in each direction. The travel lanes are separated by a grass median. The posted speed limit on US 41 is 60 miles per hour (mph). 151st Avenue provides one travel lane in each direction. The intersection is currently controlled with stop signs on 151st Avenue with traffic on US 41 having the right-of-way. Land use in the project area is a combination of residential, commercial, and agricultural.

The purpose of the project is to reduce crashes and injuries while maintaining or improving mobility. The need for this project is due to the high frequency of crashes at this intersection. The intersection of US 41 and 151st Avenue experienced 6 incapacitating injury crashes, 4 non-incapacitating injury crashes, and 3 property damage only crashes from 2017-2019. For the facility and the average amount of traffic, these totals are higher than expected. The severe (incapacitating) crashes are likely due to the right-angle of the collision. Right-angle crashes more often result in severe injury. 11 of 13 crashes were right-angle crashes. Eight crashes were attributed to eastbound vehicles on 151st Avenue failing to yield.

The proposed project would construct a reduced conflict intersection with a median U-turn to reduce conflict for left turning traffic through the intersection.

Additional permanent right-of-way will likely be required to complete this project; however, the exact amount is not yet known. Temporary right-of-way may also be required. The maintenance of traffic plan is still under development; however, it is anticipated that traffic will be maintained on each roadway during construction with temporary lane restrictions.

This project appears to fall under the *Programmatic Agreement (PA) among the Federal Highway Administration (FHWA), the INDOT, the Advisory Council on Historic Preservation (ACHP), and the Indiana State Historic Preservation Officer (Indiana SHPO) regarding the implementation of the Federal Aid Highway Program in the State of Indiana* (MPPA). At this time, no cultural resource investigations have occurred; however, the results of cultural resource identification and evaluation efforts, both above-ground and archaeological, will be forthcoming. Coordination with the INDOT Cultural Resources Office will be ongoing as process advances.

This project qualifies for the application of the USFWS range-wide programmatic informal consultation for the Indiana bat and northern long-eared bat and project information will be submitted through USFW's Information for Planning and Consultation (IPaC) separately.

Should we not receive your response within thirty (30) calendar days from the date of this letter, it will be assumed that your agency believes that there will be no adverse effects incurred as a result of the proposed project. However, should you find that an extension to the response time is necessary, a reasonable amount may be granted upon request. If you have any questions regarding this matter, please feel free to contact Elayna Stoner, Project Manager at Metric Environmental elaynas@metricenv.com, or write to her at 6958 Hillsdale Court, Indianapolis, IN 46250. You can also contact Mr. Glenn Handzlik, INDOT PM at the INDOT LaPorte District Office GHandzlik@indot.IN.gov or write to him at 315 East Boyd Boulevard, LaPorte IN, 46350.

Thank you in advance for your input.
Sincerely,

Elayna Stoner
Elayna Stoner, Project Manager
Metric Environmental, LLC

cc: Metric File No. 22-0002-2
Mr. Dan Delgado, Lawson-Fisher Associates P.C.

Attachments Provided with this Letter are Located in Appendix B of this Document

Early Coordination Recipients:

Federal Highway Administration
LaPorte District
k.carmanygeorge@dot.gov

Indiana Geological and Water Survey
https://igws.indiana.edu/eAssessment

Indiana Department of Natural Resources
Division of Fish and Wildlife
environmentalreview@dnr.in.gov

Regional Environmental Coordinator
Midwest Regional Office, National Park Service
MWRO_Compliance@nps.gov

Wellhead Proximity Determinator
https://www.in.gov/idem/cleanwater/pages/wellhead/

Field Environmental Officer
Chicago Regional Office
US Department of Housing & Urban Development
Erik.r.sandstedt@hud.gov

Indiana Department of Transportation, LaPorte District
Project Manager
GHandzlik@indot.IN.gov

Indiana Department of Transportation, LaPorte District
Environmental Section Manager
SMichels@indot.in.gov

Indiana Department of Transportation
Office of Aviation
TLewandowski@indot.IN.gov

State Conservationist
Natural Resource Conservation Service
john.allen@usda.gov

U.S. Fish and Wildlife Service
Northern Indiana Suboffice
elizabeth_mccloskey@fws.gov

Northwestern Indiana Regional Planning Commission
twarner@nirpc.org

Lake County Highway Department
smoljjs@lakecountyin.org

Lake County Surveyor
lopezjx@lakecountyin.org

Lake County Commissioner
allenkw@lakecountyin.org

Lake County Emergency Management
ppetrice@lakecountyin.org

THIS IS NOT A PERMIT

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

DNR #: ER-25154 **Request Received:** November 17, 2022

Requestor:
Metric Environmental
Elayna Stoner
6958 Hillsdale Court
Indianapolis, IN 46250

Project: US 41 and 151st Avenue intersection improvement, 3.8 miles north of SR 2; Des #2003098

County/Site info: Lake

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

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

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

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

Fish & Wildlife Comments: Avoid and minimize impacts to fish, wildlife, and botanical resources to the greatest extent possible, and compensate for impacts. The following are recommendations that address potential impacts identified in the proposed project area:

1) Culverts & Drainage Structures:
It is unclear if this project will impact any existing culverts or drainage structures. It is important to note that even small culverts and drainage structures can be used by wildlife species to pass under the roadway. Any new/replacement/rehabilitated crossing structures, and any bank stabilization under or around the structures, must not create conditions that are less favorable for wildlife passage when compared to existing conditions. Upgrading wildlife passage for replacement/rehabilitated structures is recommended whenever possible to improve wildlife/vehicle safety. Bank lines must be maintained or restored within structures to allow for wildlife passage above the ordinary high water mark whenever possible. All wildlife passage designs must include a smooth level pathway a minimum of 1-3 feet in width composed of natural substrate (soil, sand, gravel, etc.) or compacted aggregate fill over riprap (#2, #53, #73, etc.) tied into existing elevations both upstream and downstream. The width and location of the wildlife pathway is dependent on the wildlife species using the area.

There are a number of techniques and materials for incorporating wildlife passage into the design of a crossing structure if maintaining or restoring banklines is not possible. Coordination with a Regional Environmental Biologist to address wildlife passage issues before submitting a permit application (if required) is encouraged to avoid delays in the permitting process. The following links are good resources to consider in the design of stream crossing structures to maintain fish and wildlife passage:
https://www.fs.usda.gov/wildlifecrossings/library/index.php,
https://www.fhwa.dot.gov/clas/ctip/wildlife_crossing_structures/,
https://www.fhwa.dot.gov/engineering/hydraulics/pubs/11008/hif11008.pdf,

https://www.fs.usda.gov/ccrc/tool/fishxing-fish-passage-learning-systems.

2) Drainage & Stormwater Management:
The Division of Fish & Wildlife recommends considering a more sustainable approach to stormwater management. The traditional model of stormwater management aims to drain runoff as quickly as possible with the help of channels and pipes, which increases peak flows and costs of stormwater management. This type of solution only transfers drainage problems from one section of a basin to another. A more sustainable approach should aim to rebuild the natural water cycle by using storage techniques (retention basins, constructed wetlands, raingardens, etc.) and recharging groundwater using infiltration techniques (infiltration basins or trenches, pervious pavement, etc.). The following links give a good overview of traditional and sustainable stormwater management systems and their pros and cons for consideration during the design of the proposed project:
https://www.epa.gov/greeningepa/epa-facility-stormwater-management;
https://www.epa.gov/greeningepa/stormwater-management-practices-epa-facilities

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

The additional measures listed below should be implemented to avoid, minimize, or compensate for impacts to fish, wildlife, and botanical resources:
1. Revegetate all bare and disturbed areas that are not currently mowed and maintained with a mixture of grasses, sedges, and wildflowers native to Northern Indiana as soon as possible upon completion; turf-type grasses (including low-endophyte, friendly endophyte, and endophyte free tall fescue but excluding all other varieties of tall fescue) may be used in currently mowed areas only. A native herbaceous seed mixture must include at least 5 species of grasses and sedges and 5 species of wildflowers.
2. Appropriately designed measures for controlling erosion and sediment must be implemented to prevent sediment from entering the waterbody or leaving the construction site; maintain these measures until construction is complete and all disturbed areas are stabilized.
3. Seed and protect all disturbed streambanks and slopes not protected by other methods that are 3:1 or steeper with erosion control blankets that are heavy-duty, biodegradable, and net free or that use loose-woven / Leno-woven netting to minimize the entrapment and snaring of small-bodied wildlife such as snakes and turtles (follow manufacturer's recommendations for selection and installation); seed and apply mulch on all other disturbed areas.

THIS IS NOT A PERMIT

State of Indiana
DEPARTMENT OF NATURAL RESOURCES
Division of Fish and Wildlife

Early Coordination/Environmental Assessment

Contact Staff: Christie L. Stanifer, Environ. Coordinator, Fish & Wildlife

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

Christie L. Stanifer **Date:** December 16, 2022

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

United States Department of the Interior

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

In Reply Refer To: August 14, 2023
Project code: 2023-0095256
Project Name: Des. 2003098, Intersection Improvement Project, US 41 at 151st Avenue, Lake County, Indiana

Subject: Concurrence verification letter for the 'Des. 2003098, Intersection Improvement Project, US 41 at 151st Avenue, Lake County, Indiana' project under the amended February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion (dated March 23, 2023) for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat (NLEB).

To whom it may concern:

The U.S. Fish and Wildlife Service (Service) has received your request dated August 14, 2023 to verify that the **Des. 2003098, Intersection Improvement Project, US 41 at 151st Avenue, Lake County, Indiana** (Proposed Action) may rely on the concurrence provided in the amended February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion (dated March 23, 2023) for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat (PBO) to satisfy requirements under Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 *et seq.*).

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

The Service has 14 calendar days to notify the lead Federal action agency or designated non-federal representative if we determine that the Proposed Action does not meet the criteria for a NLAA determination under the PBO. If we do not notify the lead Federal action agency or designated non-federal representative within that timeframe, you may proceed with the Proposed Action under the terms of the NLAA concurrence provided in the PBO. This verification period allows Service Field Offices to apply local knowledge to implementation of the PBO, as we may identify a small subset of actions having impacts that were unanticipated. In such instances,

Service Field Offices may request additional information that is necessary to verify inclusion of the proposed action under the PBO.

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

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

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

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

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

- Mead's Milkweed *Asclepias meadii* Threatened
- Monarch Butterfly *Danaus plexippus* Candidate
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered
- Whooping Crane *Grus americana* Experimental Population, Non-Essential

PROJECT DESCRIPTION

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

NAME

Des. 2003098, Intersection Improvement Project, US 41 at 151st Avenue, Lake County, Indiana

DESCRIPTION

The Indiana Department of Transportation (INDOT), with partial funding and oversight from the Federal Highway Administration (FHWA), intends to proceed with an intersection improvement project located at United States (US) 41 and 151st Avenue, in Lake County, Indiana (Des. No. 2003098).

This proposed project is located at the US 41 intersection with 151st Avenue, approximately 3.8 miles north of State Route (SR) 2, Lake County, Indiana. US 41 provides two travel lanes in each direction. The travel lanes are separated by a grass median. The posted speed limit on US 41 is 60 miles per hour. 151st Avenue provides one travel lane in each direction. The intersection is currently controlled with stop signs on 151st Avenue, with traffic on US 41 having the right-of-way. Land use in the project area is a combination of residential, commercial, and agricultural.

The current project scope includes the reconstruction of the existing junction to a reduced-conflict intersection, using slotted turn lanes to retain the mainline left-turn movement while installing a center island to restrict traffic entering from 151st Avenue to right-turn-only. Median U-turn crossovers will be added approximately 800 feet north and south of the intersection to allow traffic from 151st Avenue access to the opposing lane.

In order to construct the proposed project, it will be necessary to relocate existing overhead utilities and associated poles. FHWA has recently requested that State DOTS begin to consider the foreseeable environmental impacts associated with utility relocations as a result of federally funded transportation projects. FHWA has furthermore requested that these impacts be incorporated into the environmental document produced for the project under the regulations of the NEPA process. INDOT has selected this test project to work through how best to incorporate foreseeable utility relocation impacts into the overall environmental documentation process.

New permanent lighting will be installed as part of the proposed improvements. There is no existing lighting currently located at the project site. The lighting will extend throughout the project limits and no further. The standard cobra head style LED lights with downward facing will be used. Temporary lighting may be utilized during construction.

There is suitable summer habitat located within the project area. It is anticipated that 11 trees totaling approximately 0.99 acre (11 trees x 0.09 acre/tree) will be removed; one (1) black

walnut (Juglans nigra) and 10 eastern redcedar (Juniperus virginiana). Of these 11 trees, nine (9) of these (0.81 acre) are directly associated with the proposed intersection improvement. The remaining two (2) trees (0.18 acre) will be removed to accommodate the utility relocation work associated with the project. These two trees are both eastern redcedar and are identified with purple circles on the attached plan excerpt. All tree impacts described above will occur during the 2025 inactive season and will be conducted by an INDOT contractor. If further tree removal should be required for utility relocation needs, this will be coordinated by the utility provider. No tree mitigation is anticipated.

Maintenance of traffic will utilize phased construction, with traffic being maintained on US 41 using single lane closures. The project is anticipated to require approximately 0.34 acre of additional permanent Right-of-Way (ROW). No temporary ROW is anticipated.

Based on consultation with INDOT LaPorte District, a November 21, 2022, review of the U.S. Fish and Wildlife Service database did not indicate the presence of endangered bat species within 0.5 mile of the project area.

The project is scheduled to begin in fall 2025 and be completed by fall 2026.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.344588599999994,-87.46981658518675,14z

DETERMINATION KEY RESULT

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

QUALIFICATION INTERVIEW

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

   [1] See Indiana bat species profile

   Automatically answered
   Yes

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

   [1] See northern long-eared bat species profile

   Automatically answered
   Yes

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

   A) Federal Highway Administration (FHWA)

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

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

   No

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

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

   No

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

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

   No

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

   No

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

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

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

   Yes

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

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

   Yes

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

    No

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

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

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

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

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

    No

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

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

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

    No

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

    Yes

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

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

    B) During the inactive season

15. Does the project include activities **within documented NLEB habitat**[1][2]?

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

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

    No

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

    Yes

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

    B) During the inactive season

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

    Yes

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

    No

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

    Yes

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

    Yes

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

    No

23. Does the project include slash pile burning?

    No

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

    No

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

    No

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

    Yes

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

    Yes

28. Will the project install *any* new or replace any existing **permanent** lighting in addition to the lighting already indicated for habitat removal (including the removal or trimming of trees) or bridge/structure removal, replacement or maintenance activities?

    Yes

29. Is there *any* suitable habitat **within** 1,000 feet of the location(s) where **permanent** lighting (other than the lighting already indicated for habitat removal (including the removal or trimming of trees) or bridge/structure removal, replacement or maintenance activities) will be installed or replaced?

    Yes

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

    No

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

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

    Yes

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

    No

33. Are the project activities that are not associated with habitat removal, tree removal/ trimming, bridge and/or structure activities, temporary or permanent lighting, or use of percussives consistent with a No Effect determination in this key?

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

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

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

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

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

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

    Yes

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

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

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

Yes

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

Yes

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

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

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

Yes

40. **Lighting AMM 2**
Does the lead agency use the BUG (Backlight, Uplight, and Glare) system developed by the Illuminating Engineering Society[1] to rate the amount of light emitted in unwanted directions?

[1] Refer to The BUG System—A New Way To Control Stray Light

Yes

41. **Lighting AMM 2**
Will the **permanent** lighting used during removal of suitable habitat and/or the removal/ trimming of trees within suitable habitat be designed to be as close to 0 for all three BUG ratings as possible, with a priority of "uplight" of 0 and "backlight" as low as practicable?

Yes

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

    Yes

43. **Lighting AMM 2**
    Does the lead agency use the BUG (Backlight, Uplight, and Glare) system developed by the Illuminating Engineering Society[1] to rate the amount of light emitted in unwanted directions?

    [1] Refer to The BUG System—A New Way To Control Stray Light

    Yes

44. **Lighting AMM 2**
    Will the **permanent** lighting (other than any lighting already indicated for tree clearing or bridge/structure removal, replacement or maintenance activities) be designed to be as close to 0 for all three BUG ratings as possible, with a priority of "uplight" of 0 and "backlight" as low as practicable?

    Yes

PROJECT QUESTIONNAIRE

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

   Yes

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

   No

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

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

   0.99

AVOIDANCE AND MINIMIZATION MEASURES (AMMS)

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

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.

LIGHTING AMM 2
When installing new or replacing existing permanent lights, use downward-facing, full cut-off lens lights (with same intensity or less for replacement lighting); or for those transportation agencies using the BUG system developed by the Illuminating Engineering Society, be as close to 0 for all three ratings with a priority of "uplight" of 0 and "backlight" as low as practicable.

TREE REMOVAL AMM 3
Ensure tree removal is limited to that specified in project plans and ensure that contractors understand clearing limits and how they are marked in the field (e.g., install bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits).

TREE REMOVAL AMM 4
Do not remove **documented** Indiana bat or NLEB roosts that are still suitable for roosting, or trees within 0.25 miles of roosts, or
documented foraging habitat any time of year.

GENERAL AMM 1
Ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable AMMs.

TREE REMOVAL AMM 1
Modify all phases/aspects of the project (e.g., temporary work areas, alignments) to avoid tree removal.

LIGHTING AMM 1
Direct temporary lighting away from suitable habitat during the active season.

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

This key was last updated in IPaC on July 27, 2023. Keys are subject to periodic revision.

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

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

IPAC USER CONTACT INFORMATION

Agency: Indiana Department of Transportation
Name: Cassie Wahl
Address: 315 East Boyd Blvd
City: LaPorte
State: IN
Zip: 46350
Email cwahl@indot.in.gov
Phone: 2193257509

United States Department of the Interior

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

In Reply Refer To: August 16, 2023
Project Code: 2023-0095256
Project Name: Des. 2003098, Intersection Improvement Project, US 41 at 151st Avenue, Lake County, Indiana

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

To Whom It May Concern:

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

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

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

Please use the species list provided and visit the U.S. Fish and Wildlife Service's Region 3 Section 7 Technical Assistance website at - http://www.fws.gov/midwest/endangered/section7/

s7process/index.html. This website contains step-by-step instructions which will help you determine if your project will have an adverse effect on listed species and will help lead you through the Section 7 process. For all **wind energy projects** and **projects that include installing towers that use guy wires or are over 200 feet in height**, please contact this field office directly for assistance, even if no federally listed plants, animals or critical habitat are present within your proposed project or may be affected by your proposed project.

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

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

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

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

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

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

migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

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

Attachment(s):

- Official Species List
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

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

This species list is provided by:

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

PROJECT SUMMARY

Project Code: 2023-0095256

Project Name: Des. 2003098, Intersection Improvement Project, US 41 at 151st Avenue, Lake County, Indiana

Project Type: Road/Hwy - Maintenance/Modification

Project Description: The Indiana Department of Transportation (INDOT), with partial funding and oversight from the Federal Highway Administration (FHWA), intends to proceed with an intersection improvement project located at United States (US) 41 and 151st Avenue, in Lake County, Indiana (Des. No. 2003098).

This proposed project is located at the US 41 intersection with 151st Avenue, approximately 3.8 miles north of State Route (SR) 2, Lake County, Indiana. US 41 provides two travel lanes in each direction. The travel lanes are separated by a grass median. The posted speed limit on US 41 is 60 miles per hour. 151st Avenue provides one travel lane in each direction. The intersection is currently controlled with stop signs on 151st Avenue, with traffic on US 41 having the right-of-way. Land use in the project area is a combination of residential, commercial, and agricultural.

The current project scope includes the reconstruction of the existing junction to a reduced-conflict intersection, using slotted turn lanes to retain the mainline left-turn movement while installing a center island to restrict traffic entering from 151st Avenue to right-turn-only. Median U-turn crossovers will be added approximately 800 feet north and south of the intersection to allow traffic from 151st Avenue access to the opposing lane.

In order to construct the proposed project, it will be necessary to relocate existing overhead utilities and associated poles. FHWA has recently requested that State DOTS begin to consider the foreseeable environmental impacts associated with utility relocations as a result of federally funded transportation projects. FHWA has furthermore requested that these impacts be incorporated into the environmental document produced for the project under the regulations of the NEPA process. INDOT has selected this test project to work through how best to incorporate foreseeable utility relocation impacts into the overall environmental documentation process.

New permanent lighting will be installed as part of the proposed improvements. There is no existing lighting currently located at the project site. The lighting will extend throughout the project limits and no further. The standard cobra head style LED lights with downward facing will be used. Temporary lighting may be utilized during construction.

There is suitable summer habitat located within the project area. It is anticipated that 11 trees totaling approximately 0.99 acre (11 trees x 0.09 acre/tree) will be removed; one (1) black walnut (Juglans nigra) and 10 eastern redcedar (Juniperus virginiana). Of these 11 trees, nine (9) of these (0.81 acre) are directly associated with the proposed intersection improvement. The remaining two (2) trees (0.18 acre) will be removed to accommodate the utility relocation work associated with the project. These two trees are both eastern redcedar and are identified with purple circles on the attached plan excerpt. All tree impacts described above will occur during the 2025 inactive season and will be conducted by an INDOT contractor. If further tree removal should be required for utility relocation needs, this will be coordinated by the utility provider. No tree mitigation is anticipated.

Maintenance of traffic will utilize phased construction, with traffic being maintained on US 41 using single lane closures. The project is anticipated to require approximately 0.34 acre of additional permanent Right-of-Way (ROW). No temporary ROW is anticipated.

Based on consultation with INDOT LaPorte District, a November 21, 2022, review of the U.S. Fish and Wildlife Service database did not indicate the presence of endangered bat species within 0.5 mile of the project area.

The project is scheduled to begin in fall 2025 and be completed by fall 2026.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.344588599999994,-87.46981658518675,14z

Counties: Lake County, Indiana

ENDANGERED SPECIES ACT SPECIES

There is a total of 6 threatened, endangered, or candidate species on this species list.

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

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

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

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

MAMMALS

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

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

INSECTS

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

FLOWERING PLANTS

NAME	STATUS
Mead's Milkweed *Asclepias meadii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8204	Threatened

CRITICAL HABITATS

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

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

MIGRATORY BIRDS

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

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

---

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

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your

migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Prothonotary Warbler *Protonotaria citrea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

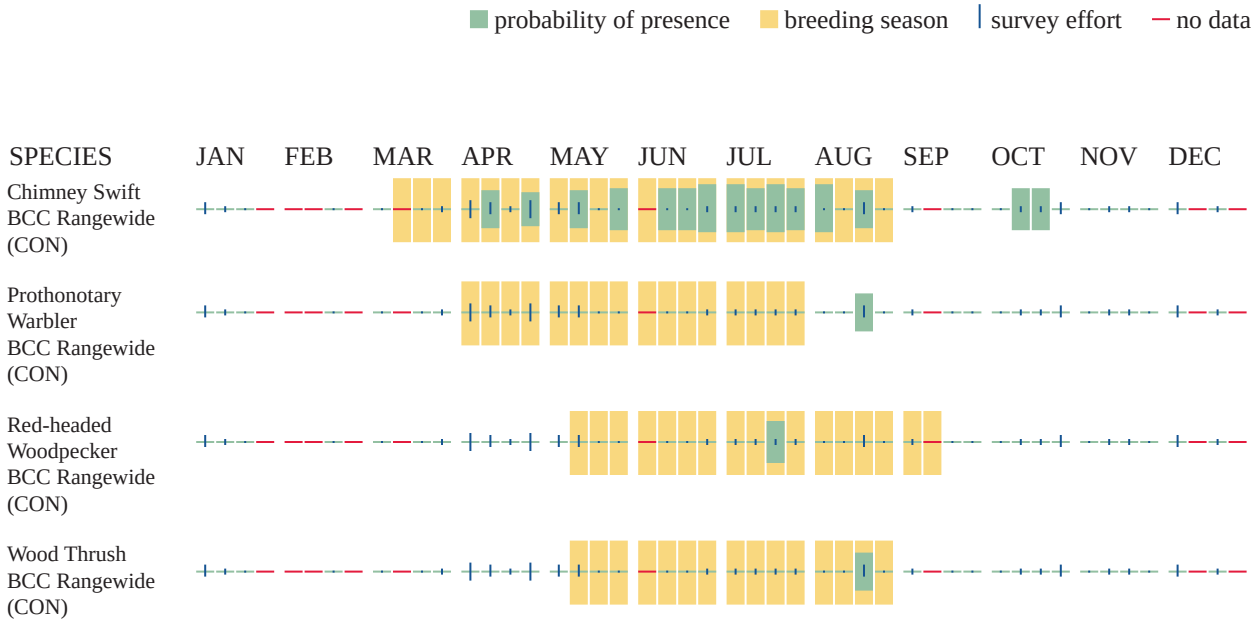
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

MIGRATORY BIRDS FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and

how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

WETLANDS

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

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

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

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

IPAC USER CONTACT INFORMATION

Agency: Indiana Department of Transportation
Name: elayna stoner
Address: 6958 Hillsdale Court
City: Indianapolis
State: IN
Zip: 46250
Email elaynas@metricenv.com
Phone: 3173153322

From: McCloskey, Elizabeth
To: Elayna Stoner
Subject: Re: [EXTERNAL] Des No. 2003098 _ Early Coordination Letter _ US 41 at 151st Avenue_ Lake County, IN
Date: Thursday, November 17, 2022 4:14:13 PM
Attachments: image001.png

Good afternoon, because the proposed project will have minor impacts on natural resources, and no Federally listed endangered species are known to be present, the U.S. Fish and Wildlife Service will not be providing a comment letter.

Elizabeth McCloskey
U.S. Fish and Wildlife Service
Northern Indiana Suboffice
Ecological Services
Chesterton, Indiana

From: Elayna Stoner <elaynas@metricenv.com>
Sent: Thursday, November 17, 2022 12:41 PM
To: DNR Environmental Review <environmentalreview@dnr.IN.gov>; MWRO Compliance, NPS <MWRO_Compliance@nps.gov>; twarner@nirpc.org <twarner@nirpc.org>; Juan Lopez <lopezjx@lakecountyin.org>; ppetrice@lakecountyin.org <ppetrice@lakecountyin.org>; Michels, Stewart <SMichels@indot.IN.gov>; Handzlik, Glenn <GHandzlik@indot.IN.gov>
Cc: k.carmanygeorge@dot.gov <k.carmanygeorge@dot.gov>; Erik.r.sandstedt@hud.gov <Erik.r.sandstedt@hud.gov>; Courtade, Julian <JCourtade@indot.IN.gov>; alverda@lakecounty.in.org <alverda@lakecounty.in.org>; Dan Delgado <ddelgado@lawson-fisher.com>; McCloskey, Elizabeth <elizabeth_mccloskey@fws.gov>; chicagorequests@usace.army.mil <chicagorequests@usace.army.mil>
Subject: [EXTERNAL] Des No. 2003098 _ Early Coordination Letter _ US 41 at 151st Avenue_ Lake County, IN

Please see the attached early coordination letter for Des No. 2003098, a State Project located in Lake County, IN.

The project proposes improvements to the intersection of US 41 and 151st Avenue.

Please let me know if you have questions or require additional information.

Thank you

Organization and Project Information

Project ID:
Des. ID: Des No. 2003098
Project Title: Intersection Improvement Project
Name of Organization: Metric Environmental
Requested by: Elayna Stoner

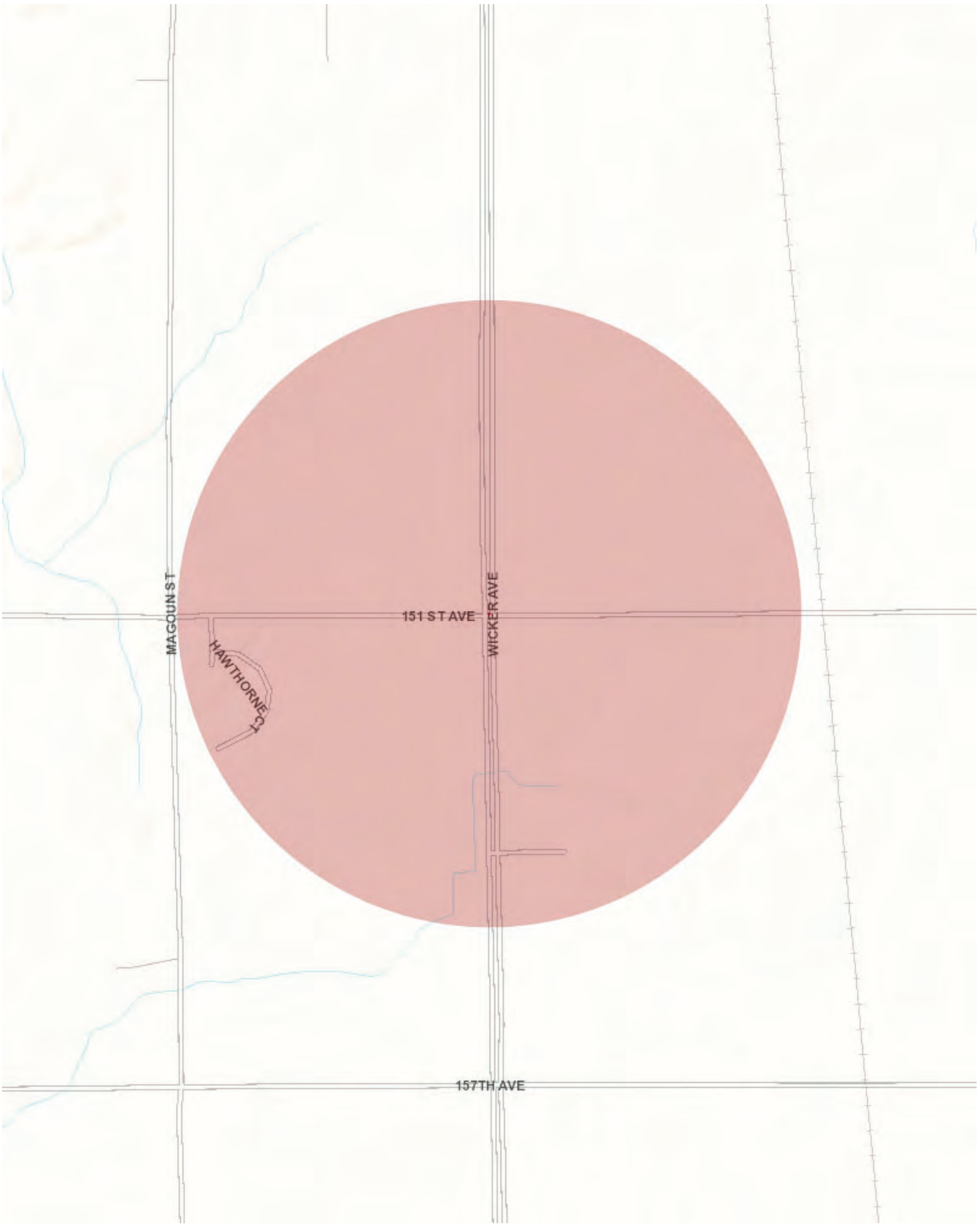
Environmental Assessment Report

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

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

This information was furnished by Indiana Geological Survey
Address: 1001 E. 10th St., Bloomington, IN 47405
Email: IGSEnvir@indiana.edu
Phone: 812 855-7428

Date: June 22, 2023



United States Department of Agriculture

Farm Production and Conservation

Natural Resources Conservation Service

Indiana State Office
6013 Lakeside Boulevard
Indianapolis, Indiana 46278
317-295-5800

June 26, 2023

Elayna Stoner
Metric Environmental
6958 Hillsdale Court
Indianapolis, Indiana 46250

Dear Ms. Stoner:

The proposed intersection improvement project. US 41 at 151st Avenue, 3.8 miles north of SR 2 in Lake County, Indiana (Des. No. 2003098), as referred to in your letter received on June 22, 2023, will cause a conversion of prime farmland.

The attached packet of information is for your use competing Parts VI and VII of the AD-1006. After completion, the federal funding agency needs to forward one copy to NRCS for our records.

If you need additional information, please contact John Allen at 317-295-5859 or john.allen@usda.gov.

Sincerely,

JOHN ALLEN

Digitally signed by JOHN ALLEN
Date: 2023.06.26 12:36:43 -04'00'

JOHN ALLEN
State Soil Scientist

Enclosers

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request	
Name of Project DES2003098 Intersec Improv US41 15	Federal Agency Involved	
Proposed Land Use	County and State Lake County, Indiana	
PART II *(To be completed by NRCS)*	Date Request Received By NRCS	Person Completing Form: JRA

Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☑	NO ☐	Acres Irrigated	Average Farm Size
				293 ac

Major Crop(s)	Farmable Land In Govt. Jurisdiction	Amount of Farmland As Defined in FPPA	Name of Land Evaluation System Used	Name of State or Local Site Assessment System	Date Land Evaluation Returned by NRCS
Corn	Acres: 266576 % 82	Acres: 23103 % 71	LESA		6/27/23

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly				
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site				
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	0.23			
B. Total Acres Statewide Important or Local Important Farmland	0.00			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	<0.001			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	50			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	84			

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	**Maximum Points**	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)	10			
2. Perimeter In Non-urban Use	(10)	2			
3. Percent Of Site Being Farmed	(20)	2			
4. Protection Provided By State and Local Government	(20)	0			
5. Distance From Urban Built-up Area	(15)	10			
6. Distance To Urban Support Services	(15)	10			
7. Size Of Present Farm Unit Compared To Average	(10)	5			
8. Creation Of Non-farmable Farmland	(10)	2			
9. Availability Of Farm Support Services	(5)	3			
10. On-Farm Investments	(20)	0			
11. Effects Of Conversion On Farm Support Services	(10)	0			
12. Compatibility With Existing Agricultural Use	(10)	10			
TOTAL SITE ASSESSMENT POINTS	160	54	0	0	0
PART VII ***(To be completed by Federal Agency)***					
Relative Value Of Farmland *(From Part V)*	100	84	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	54	0	0	0
TOTAL POINTS ***(Total of above 2 lines)***	260	138	0	0	0

Site Selected: Site A	Date Of Selection 10/28/2023	Was A Local Site Assessment Used? YES ☑ NO ☐

Reason For Selection:

The proposed reconstruction of the intersection at US 41 and 151st Avenue will have no significant impact on use of prime farmland. The NRCS will be notified if there is a change in the preferred alternative as currently proposed.

Name of Federal agency representative completing this form:	Date:

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

From:	Lewandowski, Tyler
To:	Elayna Stoner
Subject:	RE: Des No. 2003098 _ Early Coordination Letter _ US 41 at 151st Avenue_ Lake County, IN
Date:	Friday, June 23, 2023 1:10:36 PM
Attachments:	image002.png image003.png

Good afternoon Elayna,

Yes, Julian transitioned out in late October.

After review, no tall structure permit is required for the project if all equipment being used is under 200 feet in height. Please let our office know if you have any further questions.

Thank you,

Tyler Lewandowski
Project Manager
INDOT Office of Aviation
(317) 495-4875
tlewandowski@indot.in.gov
www.aviation.indot.in.gov

From: Elayna Stoner <elaynas@metricenv.com>
Sent: Wednesday, June 21, 2023 2:59 PM
To: Lewandowski, Tyler <TLewandowski@indot.IN.gov>
Subject: FW: Des No. 2003098 _ Early Coordination Letter _ US 41 at 151st Avenue_ Lake County, IN

Tyler

Hi there, hope all is well. I'm putting the CE together for Des No. 2003098 (Lake County) and noticed I didn't receive a response from INDOT Aviation.
The early coordination letter for this project was sent to Julian last November. Maybe this was during the time of transition and it got lost in the shuffle.

If you wouldn't mind reviewing the letter and providing a response, I would appreciate it.
Please let me know if you have any questions.

Thank you!

Office of the Lake County Surveyor

Lake County Government Center • 2293 North Main Street • Crown Point, Indiana 46307
Phone: (219) 755-3745 • Fax: (219) 755-3750

Bill Emerson, Jr., P.E.
County Surveyor

November 17, 2022

Elayna Stoner, Project Manager, Metric Environmental, LLC

RE: US 41 at 151st Ave.,
Lake County, Indiana
Des. No.: 2003098

Dear Ms. Stoner,

The Lake County Surveyor's Office has received and reviewed the letter sent to our office on the above referenced project.

It is the understanding of the Lake County Surveyor's Office that INDOT has plans for an Intersection improvement at US 41 & 151st Ave. There do not appear to be any Bench Marks and/or Section Corners within your project. If you do happen to encounter anything else (undocumented perpetuated section corners or bench mark) please adheres to the following.

Be advised that any monumentation that is directly or indirectly impacted with the proposed project, must be replaced/ restored to its original condition or better by you or your contractor, and is subject to conditions set forth by the Lake County Surveyor's Office or its agents. Indiana Code 36-2-12-1 et. seq. and other applicable statutes and/or ordinances.

Any Section Corner disturbed or removed must be re-established by an Indiana Registered Land Surveyor and/or Professional Engineer. All witness references must be tied to the newly established Section Corner, and ALL documentation immediately forwarded to the Lake County Surveyor's Office for its records.

Any Benchmark in danger of disturbance must be replaced with a Brass Monument and must have an elevation established by an Indiana Registered Land Surveyor and/or Professional Engineer. The

elevation must be tied to an existing USC&GS benchmark, and ALL documentation immediately forwarded to the Lake County Surveyor's Office for its records.

PROCEDURE: All visible stamped or tagged survey monuments found in rights-of-way that may be destroyed by construction or maintenance activities must be perpetuated under the supervision of a licensed Indiana Professional Land Surveyor. This will be achieved for each found monument by the following:

A. Prior to the development of all construction or major maintenance contracts;

(1) The Design Engineer shall request the Lake County Surveyor to verify the presence of any Survey Corners within the construction zone.

(2) The Lake County Surveyor will conduct an in-house record search to determine if there are any Survey Corners within the right-of-way. If so, they will be verified in the field.

(3) All found Survey Corners will be listed in the contract by the Design Engineer for perpetuation;

(a) They must be perpetuated according to Indiana Code 36-2-12-1 Et. Seq. by an Indiana Licensed Professional Land Surveyor then tied to three (3) reference monuments. A copy of the recorded Corner Record for each monument with a written report identifying the character, location, description and ties of the new monument and Reference Monuments shall be sent by the land surveyor to the Lake County Surveyor's Office 2293 North Main Street, Crown Point, Indiana 46307.

(4) At the discretion of the Lake County Surveyor, any Survey Corner found in the roadway will be tied to three (3) Reference Monuments set by a licensed Indiana Professional Land Surveyor. A Corner Record will be sent to the Lake County Surveyor to be recorded.

(5) The Lake County Surveyor will maintain a record of all perpetuated Survey Corners.

B. Prior to staking a construction project;

(1) The Engineer, under the direction of the Lake County Surveyor, will follow the provisions in Indiana Code 36-2-12-1 Et. Seq. and field verify the presence of all visible monuments.

(2) Any Survey Corners found and which are not listed in the contract plans for perpetuation will be added to the contract for perpetuation as defined the Procedure (3)(a).

(3) The Engineer will tie all visible stamped or tagged Survey Corners or Benchmarks that may be disturbed. The ties will be to three (3) existing visible Reference Monuments or three (3) set visible Reference Monuments, which will not be disturbed during construction activities. Instruction on procedures used to tie a Survey Corner or Benchmark or to construct a Reference Monument will be available from the Lake County Surveyor.

(4) Found monuments will be noted in the as-built construction plans and written report identifying the character, location, description and ties of the monument and Reference Monuments will be sent to the Lake County Surveyor 2293 North Main Street, Crown Point, Indiana 46307.

(5) After review and acceptance of the written report, monuments used to reference a Survey Corner or Benchmark shall be approved to be stamped by an Indiana Licensed Professional Land Surveyor with the registration number by memo from the Surveyor to the Lake County Surveyor.

(6) INDOT will maintain a record of all tied Survey Corners or Benchmarks and a Record will be sent by INDOT to the Lake County Surveyor for its record.

C. Prior to maintenance activities that will cover or destroy monuments;

(1) INDOT, under the direction of the Lake County Surveyor, will follow the provision in Indiana Code 36-2-12-1 Et. Seq., and field verify the presence of any monuments.

(2) Any Survey Corners found will be reported to the Lake County Surveyor with a request that the monument be perpetuated prior to maintenance activities.

(3) INDOT will tie all visible stamped or tagged Survey Corners or Benchmarks that may be disturbed. Instruction on procedures used to tie Survey Corner or Benchmark or to construct a Reference Monument will be available from the Lake County Surveyor.

(4) Found and tied monuments will be noted in the latest as-built construction plans and a written report identifying the character, location, description and ties of the monument and reference monuments will be sent to the Lake County Surveyor, 2293 North Main Street, Crown Point, Indiana 46307.

(5) After review and acceptance of the written report, monuments used to reference Survey Corners or Benchmarks shall be approved to be stamped with the registration number of the licensed Indiana Professional Land Surveyor by memo from the Lake County Surveyor.

(6) The Lake County Surveyor will maintain a record of all tied Survey Corners or Benchmarks in the Office of the Lake County Surveyor.

Sincerely,

Juan J. Lopez
Surveying Administrator

cc: Bill Emerson, Jr, PE, Lake County Surveyor
Daniel V. Gossman, Drainage Administrator

APPENDIX D
Section 106 of the National Historic Preservation Act

SECTION 1

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

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

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

Original Submission Date: May 16, 2023 **Amended Submission Date*:** February 14, 2024

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

Submitted By (Provide Name and Firm/Organization):

Sydney Heidenreich
Metric Environmental, LLC
6958 Hillsdale Court
Indianapolis, IN 46250
sydneyh@metricenv.com

Project Designation Number: 2003098

Route Number: United States (US) 41, locally known as Indianapolis Ave., and 151st Avenue

Feature crossed (if applicable):

City/Township: West Creek Township

County: Lake County

Project Description: The project involves the improvement of the intersection of United States 41 (US 41) and 151st Avenue with construction of a median U-turn. The project limits are approximately 40 feet (ft.) from the edge of pavement for approximately 1000 ft. north and south of the intersection and 250 ft. east and west from the intersection.

The intersection of US 41 and 151st Avenue experienced six incapacitating injury crashes, four non-incapacitating injury crashes, and three crashes resulting only in property damage from 2017 to 2019. For the facility and the average amount of traffic, these totals are higher than expected. The severe (incapacitating) crashes are likely due to the right-angle of the collision, as those crashes more often result in severe injury. Eleven of 13 crashes were right-angle crashes, and eight crashes were attributed to eastbound vehicles on 151st Avenue failing to yield. The purpose of the project is to reduce crashes and injuries while maintaining or improving mobility.

The undertaking proposes to reconstruct the existing junction by introducing slotted turn lanes to retain the mainline left-turn movement, while installing a center island to restrict traffic entering from 151st Avenue to right-turn only. Median U-turn crossovers will be added approximately 800 feet north and south of the intersection to allow traffic from 151st Avenue access to the opposing lane.

The existing median access at this location will be removed. New overhead lighting will also be installed as part of the proposed improvements. Existing roadside ditches will be reconstructed to maintain existing drainage needs.

The existing roadside ditches will be reconstructed with "v" shaped channels with 3:1 side slopes and within the construction limits. There are nineteen existing corrugated metal storm water drainage pipes and inlets that convey roadside drainage throughout the project will be removed and replaced as part of the overall drainage design. Below is a table of the drainage structures being replaced. Please refer to the attached plans to find the structure location, some of which have been numbered on plans.

Station No.	Existing Small Drainage Pipes	Proposed Small Drainage Structure Type
429+75	No. 11A – inlet	Inlet Type N-12 w/65 LFt. of 18" Pipe
430+50	No. 11B – inlet	Inlet Type P-12 w/72 LFt. of 12" Pipe
431+15	Inlet with 15" CMP	Existing structure to be replaced with Struct. No. 11A and 11B
429+91	No. 12 – roadside drainage pipe	217 LFt. of 18" Pipe
430+67	18" CMP	Existing structure to be replaced with Struct. No. 12
435+29	No. 13 – roadside drainage pipe	39 LFt. of 15" Pipe
435+29	15" CMP	Existing structure to be replaced with Struct. No. 13
437+36	No. 14 – roadside drainage pipe	35 LFt. of 15" Pipe
437+36	12" CMP	Existing structure to be replaced with Struct. No. 14
439+26	No. 15 – roadside drainage pipe	154 LFt. of 15" Pipe
439+26	15" CMP	Existing structure to be replaced with Struct. No. 15
439+80	No. 16 – inlet	Inlet Type E-7 w/129 LFt. of 24" Pipe
439+80	15" CMP	Existing structure to be replaced with Struct. No. 16
440+30	No. 17 - inlet	Inlet Type E-7 w/49 LFt. of 24" Pipe
440+24	No. 18A - inlet	Inlet Type N-12 w/79 LFt. of 18" Pipe
441+00	No. 18B - inlet	Inlet Type P-12 w 75 LFt. of 12" Pipe
439+92	Inlet with 15" CMP	Existing structure to be replaced with Struct. No. 18A and 18B
442+50	No. 19 - inlet	Inlet Type E-7 w/217 LFt. of 15" Pipe
445+00	No. 20 - inlet	Inlet Type E-7 w/247 LFt. of 12" Pipe

Corrugated Metal Pipe (CMP) /Linear Feet (LFt.)

The Maintenance of Traffic (MOT) plan will utilize phased construction, with traffic being maintained on US 41 using alternating single lane closures~~. involves single lane closures on US 41. There will be short term closures of each local road approach.~~ Phase I will include the construction of outside shoulders, turn lanes and reconstruction of existing roadside ditches/storm drainage structures. Public road approaches will also be constructed during Phase I. There will be short term closures for the eastbound and westbound approaches of 151st Avenue. Phase II will include construction of median shoulders, turn lanes, raised median islands and reconstruction of existing drainage structures. Additional details are provided in the MOT Section of this document.

~~It is anticipated that 0.470 acres of permanent and 0.032 acres of temporary right-of-way, with a total of 0.502 acres in total, is needed to complete this project.~~

~~Right-of-way acquisition on the east side of US 41 will occur at:~~

- ~~15101/15115/15205 US 41 (SE intersection quadrant): 0.21 acres of permanent and 0.03 acres of temporary right-of-way.~~
- ~~11100 W 151st St (NE intersection quadrant): 0.03 acres of permanent right-of-way.~~

~~And on the west side of US 41:~~

- ~~12101 W 155th St (SW intersection quadrant): 0.11 acre of permanent right-of-way.~~
- ~~15080 US 41 (NW intersection quadrant): 0.04 acre of permanent right-of-way.~~
- ~~12100 W 151st St (NW intersection quadrant): 0.11 acre of permanent right-of-way.~~

Approximately 0.34 acre of additional permanent right-of-way will be required to complete the project. The proposed permanent right-of-way consists of approximately 0.25 acre of agricultural land, 0.09 acre of commercial land. No temporary right-of-way will be required.

The existing right-of-way widths along US 41 vary from approximately 86 ft. to 95 ft. from the center median. The existing right-of-way widths along 151st Avenue vary from approximately 20 ft. to 37 ft. from the center of the roadway. The proposed permanent right-of-way widths along US 41 will extend approximately 91 ft. to 100 ft. from the center median. The proposed permanent right-of-way widths along 151st Avenue will vary from approximately 25 ft. to 43 ft. from the centerline of the roadway on the west approach. No additional permanent right-of-way is required on the east approach of 151st Avenue.

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

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

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

☐ **Yes** ☐ **No**

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

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

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

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

~~It is anticipated that 0.470 acres of permanent and 0.032 acres of temporary right-of-way, totaling 0.502 acres, is needed to complete this project.~~

~~Right-of-way acquisition on the east side of US 41 will occur at:~~

- ~~15101/15115/15205 US 41 (SE intersection quadrant): 0.21 acres of permanent and 0.03 acres of temporary right-of-way.~~
- ~~11100 W 151st St (NE intersection quadrant): 0.03 acres of permanent right-of-way.~~

~~And on the west side of US 41:~~

- ~~12101 W 155th St (SW intersection quadrant): 0.11 acre of permanent right-of-way.~~
- ~~15080 US 41 (NW intersection quadrant): 0.04 acre of permanent right-of-way.~~
- ~~12100 W 151st St (NW intersection quadrant): 0.11 acre of permanent right-of-way.~~

Approximately 0.34 acre of additional permanent right-of-way will be required to complete the project. The proposed permanent right-of-way consists of approximately 0.25 acre of agricultural land, 0.09 acre of commercial land. No temporary right-of-way will be required.

The existing right-of-way widths along US 41 vary from approximately 86 ft. to 95 ft. from the center median. The existing right-of-way widths along 151st Avenue vary from approximately 20 ft. to 37 ft. from the center of the roadway. The proposed permanent right-of-way widths along US 41 will extend approximately 91 ft. to 100 ft. from the center median. The proposed permanent right-of-way widths along 151st Avenue will vary from approximately 25 ft. to 43 ft. from the centerline of the roadway on the west approach. No additional permanent right-of-way is required on the east approach of 151st Avenue.

Is there *any* potential for additional temporary right-of-way to be needed later for purposes such as access, staging, etc.?

☐ **Yes** ☒ **No**

Archaeology (check one):

☐ **All proposed activities are presumed to occur in previously disturbed soils***

**INDOT-CRO will notify you if project area incudes undisturbed soils and requires an archaeological reconnaissance.*

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

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

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

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

~~**B-1**. Replacement, repair, or installation of curbs, curb ramps, or sidewalks, including when such projects are associated with roadway work such as surface replacement, reconstruction, rehabilitation, or resurfacing projects, including overlays, shoulder treatments, pavement repair, seal coating, pavement grinding, and pavement marking, under the following conditions ***[BOTH Condition A, which pertains to Archaeological Resources, and Condition B, which pertains to Above-Ground Resources, must be satisfied]***:~~

~~**Condition A (Archaeological Resources)**~~

~~One of the two conditions listed below must be satisfied *(EITHER Condition i or Condition ii must be satisfied)*:~~

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

~~ii. Work occurs in undisturbed soils and an archaeological investigation conducted by the applicant and reviewed by INDOT Cultural Resources Office determines that no National Register-listed or potentially National Register-eligible archaeological resources are present within the project area. If the archaeological investigation locates National Register-listed or potentially National Register-eligible archaeological resources, then full Section 106 review will be required. Copies of any archaeological reports prepared for the project will be provided to the Division of Historic Preservation and Archaeology~~

~~(DHPA) and any archaeological site form information will be entered directly into the State Historic Architectural and Archaeological Database (SHAARD) by the applicant. The archaeological reports will also be available for viewing (by Tribes only) on INSCOPE.~~

~~**Condition B (Above-Ground Resources)**~~

~~One of the two conditions listed below must be satisfied *(EITHER Condition i or Condition ii must be satisfied)*:~~

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

~~ii. Work occurs adjacent to or within a National Register-listed or National Register-eligible district or individual above-ground resource under one of the two additional conditions listed below *(EITHER Condition a OR Condition b must be met, and field work and documentation must be completed as described below)*:~~

~~a. No unusual features, including but not limited to historic brick or stone sidewalks, curbs, or curb ramps, stepped or elevated sidewalks and historic brick or stone retaining walls are present in the project area adjacent to or within a National Register-listed or National Register-eligible district or individual above-ground resource; OR~~

~~b. Unusual features, including but not limited to historic brick or stone sidewalks, curbs, or curb ramps, stepped or elevated sidewalks and historic brick or stone retaining walls are present in the project area adjacent to or within a National Register-listed or National Register-eligible individual above-ground resource or district and ANY ONE of the conditions *(1, 2, or 3)* listed below must be fulfilled:~~

~~1. Unusual features described above will not be impacted by the project. Firm commitments regarding the avoidance of these features must be listed in the MPPA determination form and the NEPA document and must be entered into the INDOT Project Commitments Database. These projects will also be flagged for quality assurance reviews by INDOT Cultural Resources Office during/after project construction.~~

~~2. Unusual features described above have been determined not to contribute to the significance of the historic resource by INDOT Cultural Resources Office in consultation with the SHPO based on an analysis and justification prepared by their staff or review of such information from other qualified professional historians.~~

~~3. Impacts to unusual features described above have been determined by INDOT Cultural Resources Office to be so minimal that they do not diminish any of the characteristics that contribute to the significance of the historic resource, based on an analysis and justification prepared by their staff or review of such information from other qualified professional historians.~~

B-2. Installation of new lighting, signals, signage, and other traffic control devices under the following conditions **[BOTH Condition A, which pertains to Archaeological Resources, and Condition B, which pertains to Above-Ground Resources, must be satisfied]:**

Condition A (Archaeological Resources)

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

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

ii. Work occurs in undisturbed soils and an archaeological investigation conducted by the applicant and reviewed by INDOT Cultural Resources Office determines that no National Register-listed or potentially National Register-eligible archaeological resources are present within the project area. If the archaeological investigation locates National Register-listed or potentially National Register- eligible archaeological resources, then full Section 106 review will be required. Copies of any archaeological

reports prepared for the project will be provided to the DHPA and any archaeological site form information will be entered directly into the SHAARD by the applicant. The archaeological reports will also be available for viewing (by Tribes only) on INSCOPE.

Condition B (Above-Ground Resources)
Work does not occur adjacent to or within a National Register-listed or National Register-eligible district or individual above-ground resource.

B-3. Construction of added travel, turning, or auxiliary lanes (e.g., bicycle, truck climbing, acceleration, and deceleration lanes) and shoulder widening under the following conditions ***[BOTH Condition A, which pertains to Archaeological Resources, and Condition B, which pertains to Above-Ground Resources, must be satisfied]***:

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

Condition B (Above-Ground Resources)
Work does not occur adjacent to or within a National Register-listed or National Register-eligible district or individual above-ground resource.

B-9 Installation, replacement, repair, lining, or extension of culverts and other drainage structures under the conditions listed below ***[BOTH Condition A, which pertains to Archaeological Resources, and Condition B, which pertains to Above-Ground Resources, must be satisfied]***:

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

Condition B (Above-Ground Resources)
One of the conditions below must be met *(EITHER Condition i or Condition ii must be satisfied)*:
i. Work does not involve installation of a new culvert and other drainage structure, and there are no impacts to unusual features, including but not limited to historic brick or stone sidewalks, curbs or curb ramps, stepped or elevated sidewalks and retaining walls, under one of the following conditions (Condition a, Condition b, or Condition c must be satisfied):

a. The structure exhibits no wood, stone, or brick structures or parts therein; OR
b. The structure exhibits only modern wood, stone, or brick structures or parts therein; OR
c. The structure exhibits non-modern wood, stone, or brick structures or parts therein and the following conditions are met (BOTH Condition 1 AND Condition 2 must be met):
    1. Work does not occur adjacent to or within a National Register-listed or National Register- eligible district or individual above-ground resource; AND
    2. The structure lacks sufficient integrity and/or a context that suggests it might have engineering or historical significance. Under this condition, a qualified professional (meeting the Secretary of Interior's Professional Qualification standards [48 Federal Register (FR) 44716]) must prepare an analysis and justification that the structure lacks sufficient integrity and/or a context that suggests it might have engineering or historical significance. This documentation must be reviewed and approved by INDOT Cultural Resources Office.

ii. Work involves the installation of a new culvert and other drainage structures AND/OR there may be impacts to unusual features, including historic brick or stone sidewalks, curbs or curb ramps, stepped or elevated sidewalks and retaining walls, under the following conditions *(BOTH Condition a and Condition b must be satisfied)*:
    a. Work does not occur adjacent to or within a National Register-listed or National Register-eligible district or individual above-ground resource; *AND*
    b. The subject structure exhibits one of the characteristics described below *(Condition 1, Condition 2 or Condition 3 must be satisfied)*.
        1. The structure exhibits no wood, stone, or brick structures or parts therein; *OR*
        2. The structure exhibits only modern wood, stone, or brick structures or parts therein; *OR*
        3. The structure exhibits non-modern wood, stone, or brick structures or parts therein but lacks sufficient integrity and/or a context that suggests it might have engineering or historical significance. Under this condition, a qualified professional (meeting the Secretary of Interior's Professional Qualification standards [48 Federal Register (FR) 44716]) must prepare an analysis and justification that the structure lacks sufficient integrity and/or a context that suggests it might have engineering or historical significance. This documentation must be reviewed and approved by INDOT Cultural Resources Office.

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

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

Part II: Completed by INDOT-CRO
Amendments will be shown in red font.

Information reviewed (please check all that apply):
General project location map ☒ USGS map ☒ Aerial photograph ☒ Soil survey data ☒

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

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

Bridge inspection information/BIAS ☐ Historic Bridge Inventory Database ☐

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

Other (please specify):

Stevenson, Christopher and Samuel P. Snell
2023 *Phase Ia Archaeological Reconnaissance Survey for the Proposed US 41 Median U-Turn Intersection Improvement Project, 3.8 Miles North of the SR 2 North Junction, West Creek Township, Lake County, Indiana (INDOT Des. No. 2003098).* Archaeological Short Report prepared by Metric Environmental, Indianapolis for Lawson-Fisher Associates P.C., South Bend. Document on file at INDOT-CRO.

O'Connor, Reganne and Samuel P. Snell
2024 *Addendum Phase Ia Archaeological Reconnaissance Survey for the Proposed US 41 Median U-Turn Intersection Improvement Project, 3.8 Miles North of the SR 2 North Junction, West Creek Township, Lake County, Indiana (INDOT Des. No. 2003098).* Archaeological Short Report prepared by Metric Environmental, Indianapolis for Lawson-Fisher Associates P.C., South Bend. Document on file at INDOT-CRO.

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

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

Additional Comments:

Above-ground Resources

An INDOT Cultural Resources historian who meets the Secretary of the Interior's Professional Qualification Standards as per 36 CFR Part 61 performed a desktop review, checking the Indiana Register of Historic Sites and Structures (State Register) and National Register of Historic Places (National Register) lists for Lake County. No listed resources are located immediately adjacent to the project area, a distance that serves as an adequate area of potential effects given the project scope and setting.

The Indiana Historic Sites and Structures Inventory (IHSSI) and National Register information for Lake County are available in the Indiana State Historic Architectural and Archaeological Research Database (SHAARD) and the Indiana Historic Buildings, Bridges, and Cemeteries Map (IHBBCM). The *Lake County Interim Report* (1996; West Creek Township) was also referenced. All sites were reviewed through the IHBBCM, which contains the most recently updated SHAARD information. No IHSSI documented resources rated higher than "Contributing" are located immediately adjacent to the project area.

According to the IHSSI rating system, generally properties rated "Contributing" do not possess the level of historical or architectural significance necessary to be considered individually National Register-eligible, although they would contribute to a historic district. If they retain material integrity, properties rated "Notable" might possess the necessary level of significance after further research. Properties rated "Outstanding" usually possess the necessary level of significance to be considered National Register eligible if they retain material integrity.

Because the location of the project is not adjacent to a National Register-listed or eligible resource, a field visit by a Qualified Professional historian is not required to review the curb replacement along the project area. The project area was reviewed by an INDOT-CRO historian through aerial photography, online street-view imagery, and the Lake County GIS website. The project area is located at an intersection with a two (2) lane divided highway running north and south and a two (2) lane city road running east and west. The intersection is located in an exurban setting surrounded by agricultural fields and both residential and commercial buildings. The surrounding structures immediately adjacent to the project area are primarily mid-twentieth century buildings. None of the resources immediately adjacent to the project area appear to possess the significance or integrity required to be considered NRHP-eligible.

February 2024 Update

In January/February, the project consultant notified INDOT-CRO of changes to the project scope of work that was not originally assessed in the October 2023 determination. This work includes removing the median, installation of new lighting, and reconstructing roadside ditches/small structures. ROW acquisition is now anticipated to consist of 0.34 acre of permanent ROW.

To account for the new lighting, a review buffer of 0.25 mile from the project area was utilized. No National Register-listed or IHSSI documented resources rated higher than "Contributing" were noted within that 0.25-mile buffer. The building stock within the 0.25-mile buffer consists primarily of mid-twentieth century residential and commercial buildings as well as one (1) cemetery that dates to the mid-nineteenth century. None of these resources appear to possess the significance or integrity necessary to be considered National Register-eligible.

Regarding the small structure replacements, none were identified in a review of the IHBBCM. The structures were reviewed through photographs provided by the consultant that demonstrate that none exhibited any wood, stone, or brick structures or parts therein. Additionally, the structures do not appear to possess any historical or engineering significance.

Based on the available information, as summarized above, no above-ground concerns exist.

Archaeological Resources

An INDOT-CRO archaeologist who meets the Secretary of the Interior's Professional Qualification Standards as per 36 CFR Part 61 reviewed the Phase Ia field reconnaissance report completed for the project by Metric Environmental (Stevenson and Snell 2023). No archaeological sites were previously recorded within or adjacent to the project area.

An area measuring 3.7 ha (9.2 ac) was surveyed via a combination of systematic shovel testing (n=42) and visual walkover. The archaeological reconnaissance did not locate any archaeological resources within the survey area and no further work is recommended (Stevenson and Snell 2023).

February 2024 Update

Metric Environmental completed an addendum Phase Ia archaeological investigation for 0.9 ha (0.2 ac) of additional ROW that appeared to contain undisturbed soils and had not been previously surveyed (O'Connor and Snell 2024).

A review of SHAARD identified no archaeological sites were previously recorded within or adjacent to the addendum project area.

An area measuring 0.9 ha (0.2 ac) was surveyed via systematic shovel testing (*n*=12). The archaeological reconnaissance did not locate any archaeological resources within the survey area and no further work is recommended (O'Connor and Snell 2024).

Therefore, there are no archaeological concerns provided that the project scope and footprint do not change.

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

INDOT-CRO staff reviewers: Clint Kelly and Dawn Alexander

INDOT Approval Date: October 17, 2023

Amendment Approval Date (if applicable): April 15, 2024

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

ARCHAEOLOGICAL SHORT REPORT

ADDENDUM TO THE PHASE IA ARCHAEOLOGICAL RECONNAISSANCE SURVEY FOR THE PROPOSED US 41 MEDIAN U-TURN INTERSECTION IMPROVEMENT PROJECT, 3.8 MILES NORTH OF THE SR 2 NORTH JUNCTION, WEST CREEK TOWNSHIP, LAKE COUNTY, INDIANA (INDOT DES. NO 2003098)

PREPARED FOR:

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LEAD AGENCY:

FEDERAL HIGHWAY ADMINISTRATION

Prepared by:
Reganne O'Connor

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Samuel P. Snell

Samuel P. Snell, MS, RPA
Archaeological Principal Investigator
sams@metricenv.com

April 15, 2024

INDIANA ARCHAEOLOGICAL SHORT REPORT

State Form 54566 (R3 / 3-22)

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

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

Name(s) of author(s)	Date *(month, day, year)*
Reganne O'Connor	April 15, 2024

Title of project
Addendum to the Phase Ia Archaeological Reconnaissance Survey for the Proposed US 41 Median U-Turn Intersection Improvement Project, 3.8 Miles North of the SR 2 North Junction, West Creek Township, Lake County, Indiana (INDOT Des. No. 2003098)

This document is being used to report on the results of:
☐ Records check only ☐ Records check and Phase 1a archaeological reconnaissance
☒ An addendum to a previous archaeological report. *For an addendum, provide the following information.*

Name(s) of author(s) of previous report
Christopher Stevenson, MS, RPA

Title of previous report
Phase Ia Archaeological Reconaissance Survey for the Proposed US 41 Median U-Turn Intersection Improvement Project, 3.8 Miles North of the SR 2 North Junction, West Creek Township, Lake County, Indiana (INDOT Des. No. 2003098)

Date of previous report *(month, day, year)*	DHPA number
October 18, 2023	NA

PROJECT OVERVIEW

Description of project

The proposed project involves the improvement of the intersection of United States Route (US) 41 and the 151st Avenue with a median U-turn, approximately 601 kilometers (km) (3.8 miles [mi]) north of the State Route (SR) 2 North junction in West Creek Township, Lake County, Indiana (Figure 1). The project extends approximately 12.2 meters (m) (40 feet [ft]) from the edge of the pavement for approximately 304.9 m (1,000 ft) north and south from the intersection and 76.2 m (250 ft) east and west from the intersection. It is anticipated that more than 0.2 hectares (ha) (0.5 acres [ac]) of additional right-of-way (ROW) will be required to complete this project.

The undertaking proposes to reconstruct the existing junction by introducing slotted turn lanes to retain the mainline left-turn movement, while installing a center island to restrict traffic entering from 151st Avenue to right-turn only. Median U-turn crossovers will be added approximately 243.8 m (800 ft) north and south of the intersection to allow traffic from 151st Avenue access to the opposing lane.

In November 2022, a Phase Ia archaeological survey was completed for the project, which encompassed 3.7 ha (9.2 ac) (Stevenson 2023). Subsequent to the completion of the survey, the project design was altered enough to require additional fieldwork. The change was required to facilitate the accomodation of existing 2:1 slopes. The project was extended north along US 41 199.74 m (655.30 ft) and 4.48 m (14.70 ft) east. The revised area encompasses 0.9 ha (0.2 ac) and the total project now encompasses a total of 3.75 ha (9.26 ac).

The purpose of this project is to reduce crashes and injuries while maintaining or improving mobility. The need for this project is due to the high number of crashes at the intersection of US 41 and 151st Avenue.

INDOT designation number(s)	Project number	DHPA number	DHPA plan number
2003098	22-0002-2	31497	NA

Prepared for: *(Company / Institution / Agency)*
Lawson-Fisher Associates P.C.

Name of contact
Michael J. Guzik, P.E.

Address *(number and street, city, state, and ZIP code)*
525 W. Washington Avenue, South Bend, IN 46601

Telephone number	E-mail address
(574)232-3167	mguzik@lawson-fisher.com

Name of principal investigator
Samuel P. Snell, MS, RPA

Name of company / institution
Metric Environmental, LLC

Address *(number and street, city, state, and ZIP code)*
6958 Hillsdale Court, Indianapolis, IN 46250

Outside the Project Area

Distance from boundary *(Check one)*

☒ Area researched was a half (½) mile radius from the boundary of the project area.
☐ Area researched was a one (1) mile radius from the boundary of the project area.
☐ Area researched was a two (2) mile radius from the boundary of the project area.

Previously recorded archaeological sites *(Include citations)*

There are no previously recorded archaeological sites located within 0.8 km (0.5 mi) of the survey area.

Previous archaeological studies *(Include citations)*

McGowan and Wright (2003) conducted a Phase Ia archaeological reconaissance and architectural review for a proposed telecommunications tower project. The study was conducted in a 0.22 ha (0.56 ac) parcel east of US 41, approximately 0.58 km (0.36 mi) south of the survey area. The study recorded no archaeological sites nor outstanding historic structures and recommended that the project proceed without further assessment.

Stillwell (2002) conducted a Phase Ia archaeological reconaissance for a proposed cellular phone tower project. The study was conducted in a 0.12 ha (0.29 ac) parcel east of US 41, approximately 0.58 km (0.36 mi) south of the survey area. The study recorded no archaeological sites and recommended that the project proceed withot further assessment.

Stevenson (2023) conducted the orginal survey for the project which is adjacent to the current fieldwork. No archaeological sites were recorded and no further work was recommended.

Name(s) of previously recorded cemetery(ies)

German Methodist Episcopal Cemetery
Located on US 41 approximately 71 m (232.3 ft) north of the survey area.
Rated as "Contributing" (Indiana Department of Natural Resources 2019).

Cemetery registry number(s)

CR-45-27 (IHSSI No. 089-370-80044)

FIELD INVESTIGATION

Date(s) of field investigation *(month, day, year)*	Name of field supervisor
Februrary 20, 2024	Megan Copenhaver, MA, RPA

Names of field crew

Reganne O'Connor, Virginia Carter

Field Conditions

Surface visibility	Factors affecting visibility
0 percent	Grass
Slope	**Environmental (weather) conditions during the survey**
0-50 percent	Sunny, 50s

Methods

Surface survey *(Check all that apply)*

☐ Visual walkover Interval: ☐ Thirty (30) meters ☐ Other *(Describe below.)*
☐ Pedestrian survey Interval: ☐ Five (5) meters ☐ Ten (10) meters ☐ Other *(Describe below.)*

Describe methods.

NA

Shovel probes *(Check all that apply)*

☒ Shovel probes Interval: ☐ Five (5) meters ☐ Ten (10) meters ☒ Fifteen (15) meters ☐ Other *(Describe below)*

The standard is screened shovel probes using ¼" size mesh. If shovel probes were not screened, or a different size mesh was utilized, an explanation must be provided in the methods below.

Describe methods.

Shovel Test Probes (STP): In relatively level areas where the ground surface had less than 30 percent visibility and there was no obvious sign of disturbances, shovel probing was utilized. This method consisted of systematically digging shovel probes every 15 m (49.2 ft) and extending at least 5 cm (2.0 in) into the subsoil and screening the excavated soil through 0.62 cm (0.25 in) hardware cloth screen. A standard record was kept that includes soil profile, soil texture, soil color (Munsell), and presence/absence of cultural materials.

Cores / auger probes *(Check all that apply)*

☐ Cores / auger probes Interval: ☐ Five (5) meters ☐ Ten (10) meters ☐ Fifteen (15) meters ☐ Other *(Describe below)*

The standard is screened cores / auger probes using ¼" size mesh. If cores / auger probes were not screened, or a different size mesh was utilized, an explanation must be provided in the methods below.

Describe methods.

NA

Area 1 is the located along the southeastern edge of the project area, running along US 41 and the property of Uncle John's Flea Market. The area consists of a commercial yard with slope extending down into the ditch which was recorded in Stevenson (2023). Twelve negative STPs were excavated in Area 1. These STPs displayed soil profiles of very dark brown (10 YR 2/2) to brown (10 YR 4/3) silty loam extending to 15-20 cm (5.91-7.87 in) underlain by dark yellowish brown (10 YR 4/4) silty clay loam to yellowish brown (10 YR 5/6) silty clay loam, or yellowish brown (10 YR 5/4) clay loam.

No cultural material was encountered during this survey, and no further work is recommended.

RECOMMENDATIONS

Records check *(Check all that apply)*

- ☐ No archaeological investigation is recommended before the project is allowed to proceed because the records check has determined that the project area does not have the potential to contain archaeological resources.
- ☐ A Phase 1a archaeological reconnaissance is recommended.
- ☒ Based upon the records check results, a Phase 1a archaeological reconnaissance was recommended and has been conducted.
- ☐ A cemetery development plan may be required under Indiana Code 14-21-1-26.5 because project ground disturbance will be within 100 feet of a cemetery.

Phase 1a archaeological reconnaissance *(Check all that apply)*

- ☒ It is recommended that the project be allowed to proceed as planned because the Phase 1a archaeological reconnaissance has located no archaeological sites within the project area and/or previously recorded sites that were investigated warrant no additional investigation.
- ☐ It is recommended that Phase 1c archaeological subsurface reconnaissance be conducted before the project is allowed to proceed. The Phase 1a archaeological reconnaissance has determined that the project area includes landforms which have the potential to contain buried archaeological deposits.

Other recommendations / commitments

In the unlikely event that archaeological deposits or human remains are encountered during the construction phase of the project, all work must cease within 30 m (100 ft) of the find and archaeologists from the Indiana Division of Historic Preservation and Archaeology and the Indiana Department of Transportation-Cultural Resources Office will be notified.

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

REQUIRED ATTACHMENTS

- ☒ Figure showing project location within Indiana
- ☒ USGS topographic map showing the project area *(1:24,000 scale)*
- ☒ Aerial photograph showing the project area, land use and survey methods
- ☒ Photographs of the project area, including, if applicable, photographs documenting disturbances
- ☐ Project plans *(if available)*

Other attachments

References cited *(See short report instructions for required references to be consulted)*

Brownsten, Samuel E.
1958 Map of Lake County. County Surveyor's Office, Gary, IN.

Google Earth
2022 Google Earth Pro. Desktop software, <https://www.google.com/earth/versions/#earth-pro>, accessed February 19, 2024.

Indiana Department of Natural Resources
2019 Indiana Historic Buildings, Bridges, and Cemeteries Map, <https://indnr.maps.com/home/item.htmlid=1593429c17c34942a0d1d3fac03c4a80>, accessed February 19, 2024.

Indiana Department of Natural Resources, Division of Historic Preservation and Archaeology (INDR, DHPA)
2022 Guidebook for Indiana Historic Sites and Structures Inventory – Archaeological Sites. Manuscript on file, Division of Historic Preservation and Archaeology, Indiana Department of Natural Resources, Indianapolis.

2024 Indiana State Historic Architectural and Archaeological Research Database (SHAARD). Electronic document, <https://secure.in.gov/apps/dnr/shaard/welcome.html>, accessed February 19, 2024.

Indiana Department of Transportation, Cultural Resources Office (INDOT, CRO)
2024 Cultural Resources Manual https://www.in.gov/indot/crm/files/P2-Chapter-7-Identification-of-Historic-Properties-Archaeology.pdf, accessed February 19, 2024.

Category A consists of projects that, by their nature, have no effect on properties listed in or eligible for inclusion in the National Register of Historic Places (hereinafter referred to as the "National Register") and do not require review by INDOT Cultural Resources Office. All of the work under this Category must occur in previously disturbed soils, which are defined as soils that have been completely altered or displaced by earthmoving or other modern manipulation.

1. Any work on bridges limited to substructure or superstructure elements without replacing, widening, or elevating the superstructure under the conditions listed below ***(BOTH Conditions A and B must be met)*****.** This category **does not** include bridge replacement projects (when both superstructure and substructure are removed):

   A. The project takes place in previously disturbed soils; *AND*
   B. With regard to the bridges, at least one of the conditions (i, ii or iii) listed below must be satisfied:
      i. The latest Historic Bridge Inventory identified the bridge as non-historic (see http://www.in.gov/indot/2531.htm);
      ii. The bridge was built after 1945, and is a common type as defined in Section V. of the *Program Comment Issued for Streamlining Section 106 Review for Actions Affecting Post-1945 Concrete and Steel Bridges* issued by the Advisory Council on Historic Preservation on November 2, 2012 for so long as that Program Comment remains in effect AND the considerations listed in Section IV of the Program Comment do not apply;
      iii. The bridge is part of the Interstate system and was determined not eligible for the National Register under the Section 106 Exemption Regarding Effects to the Interstate Highway System adopted by the Advisory Council on Historic Preservation on March 10, 2005, for so long as that Exemption remains in effect.

2. All work within interchanges and within medians of divided highways in previously disturbed soils.

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

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

5. Repair, in-kind replacement or upgrade of existing lighting, signals, signage, and other traffic control devices in previously disturbed soils.

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

7. Repair or in-kind replacement of fencing and hardscape landscaping elements and/or replacement of existing plant materials in previously disturbed soils and installation of new fencing and hardscape landscaping elements and plant materials limited to locations within interstate right-of way within previously disturbed soils.

8. Installation of new or modification of existing traffic control devices and systems, including signs, signals, markings, illumination, other warning devices and their supports, to improve safety at railway crossings in previously disturbed soils.

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

APPENDIX E
Red Flag and Hazardous Materials

INDIANA DEPARTMENT OF TRANSPORTATION

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

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

Eric Holcomb, Governor
Michael Smith, Commissioner

Date: March 7, 2023

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

From: Colin Keith
Metric Environmental, LLC
6958 Hillsdale Court
Indianapolis, IN 46250
colink@metricenv.com

Re: RED FLAG INVESTIGATION
DES #2003098, State Project
Intersection Improvement Project
US 41 at 151st Avenue
Lake County, Indiana

PROJECT DESCRIPTION

Brief Description of Project: The project will improve safety by reconstructing the existing junction to a reduced-conflict intersection, using slotted turn lanes to retain the mainline left-turn movement while installing a center island to restrict traffic entering from 151st Avenue to right-turn-only. Median U-turn crossovers will be added approximately 800 feet north and south of the intersection to allow traffic from 151st Avenue access to the opposing lane.
Bridge Work Included in Project: Yes ☐ No ☒ Structure #(s) _____
Is the bridge Historical? Yes ☐ No ☐; Select ☐ Non-Select ☐
(Note: If the project involves a historical bridge, please include the bridge information in the Recommendations Section of the report).
Culvert Work Included in Project: Yes ☐ No ☒ Structure #(s) _____
Proposed right of way: Temporary ☒ #Acres _TBD_, Permanent ☒ #Acres _TBD_, Not Applicable (N/A) ☐
Type and proposed depth of excavation: Excavation up to five (5) feet below grade would be needed for roadway grading and center island construction.
Maintenance of traffic (MOT): Traffic to be maintained on US 41, with single-lane closures on US 41. Short-term closures of each local road approach, with detours to be worked out with local officials.
Work in waterway: Yes ☐ No ☒ Below ordinary high water mark: Yes ☐ No ☐
State Project: ☒ LPA: ☐
Any other factors influencing recommendations: N/A

INFRASTRUCTURE TABLE AND SUMMARY

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

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

Explanation:
Cemeteries: One (1) cemetery is located within the 0.5 mile search radius. German Cemetery (represented by two (2) map icons) is approximately 0.05 mile north of the project area. No impact is expected.

Railroads: One (1) railroad segment is located within the 0.5 mile search radius. Norfolk Southern RR is approximately 0.47 mile east of the project area. No impact is expected.

Managed Lands: Two (2) managed land polygons are located within the 0.5 mile search radius. German Methodist Cemetery and German Methodist Cemetery Nature Preserve are located approximately 0.05 mile north of the project area. No impact is expected.

WATER RESOURCES TABLE AND SUMMARY

Water Resources Indicate the number of items of concern found within the 0.5 mile search radius. If there are no items, please indicate N/A:			
NWI – Points	**N/A**	Canal Routes – Historic	**N/A**
Karst Springs	**N/A**	NWI – Wetlands	**16**
Canal Structures – Historic	**N/A**	Lakes	**4**
NPS NRI Listed	**N/A**	Floodplain – DFIRM	**N/A**
NWI – Lines	**1**	Cave Entrance Density	**N/A**
IDEM 303d Listed Streams and Lakes (Impaired)	**2**	Sinkhole Areas	**N/A**
Rivers and Streams	**3**	Sinking-Stream Basins	**N/A**

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

Explanation:
NWI Lines: One (1) NWI line segment is located within the 0.5 mile search radius. The segment is approximately 0.27 mile south/southeast of the project area. No impact is expected.

IDEM 303d Listed Streams and Lakes (Impaired): Two (2) 303d listed stream segments are located within the 0.5 mile search radius. An unnamed tributary (UNT) to West Creek is approximately 0.05 mile south of the project area. No impact is expected.

Rivers and Streams: Three (3) stream segments are located within the 0.5 mile search radius. The nearest segment, the UNT to West Creek, is approximately 0.05 mile south of the project area. No impact is expected.

NWI Wetlands: Sixteen (16) NWI wetland polygons are located within the 0.5 mile search radius. The nearest wetland is approximately 0.09 mile south/southeast of the project area. No impact is expected.

Lakes: Four (4) lakes are located within the 0.5 mile search radius. The nearest lake is approximately 0.09 mile south/southeast of the project area. No impact is expected.

MINING AND MINERAL EXPLORATION TABLE AND SUMMARY

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

Explanation:
No mining or mineral exploration features were identified within the 0.5 mile search radius.

HAZARDOUS MATERIAL CONCERNS TABLE AND SUMMARY

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

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

Explanation:
No hazardous material concerns were identified within the 0.5 mile search radius.

ECOLOGICAL INFORMATION SUMMARY

The Lake County listing of the Indiana Natural Heritage Data Center information on endangered, threatened, or rare (ETR) species and high-quality natural communities is provided at https://www.in.gov/dnr/nature-preserves/files/np_lake.pdf. A preliminary review of the Indiana Natural Heritage Database by INDOT ESD did indicate the presence of ETR species within the 0.5 mile search radius. Due to the nature of project activities, this project will fall under the guidelines set forth under USFWS Interim Policy for the Review of Highway Transportation Projects in Indiana dated May 29, 2013. No further coordination is necessary.

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

RECOMMENDATIONS SECTION

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

INFRASTRUCTURE: N/A

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

MINING/MINERAL EXPLORATION: N/A

HAZARDOUS MATERIAL CONCERNS: N/A

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

INDOT ESD concurrence: Nicole Fohey-Breting Digitally signed by Nicole Fohey-Breting Date: 2023.03.09 03:50:09 -05'00' (Signature)

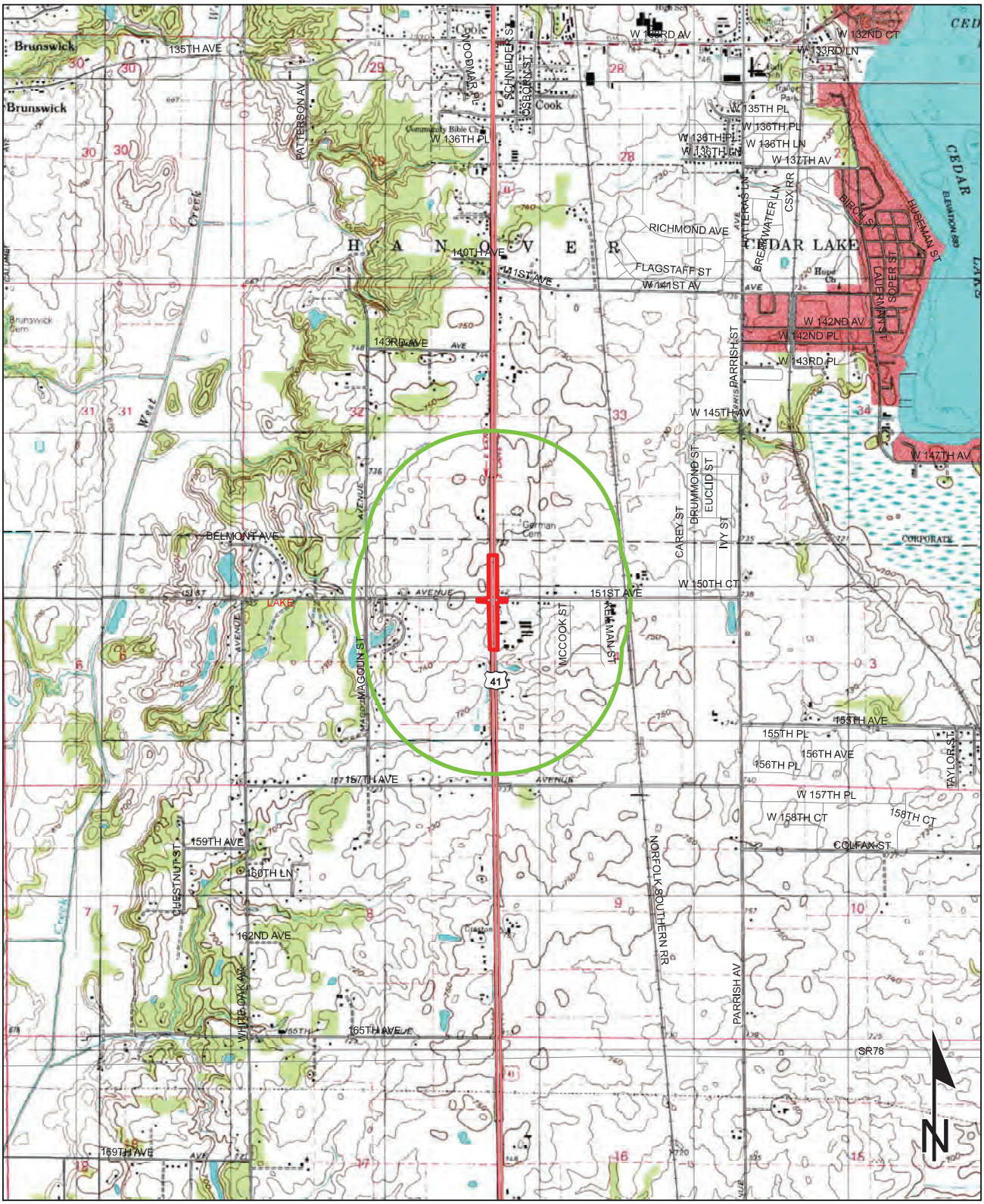
Prepared by:
Colin Keith
Project Scientist
Metric Environmental, LLC

Graphics:

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

SITE LOCATION: YES
INFRASTRUCTURE: YES
WATER RESOURCES: YES
MINING/MINERAL EXPLORATION: N/A
HAZARDOUS MATERIAL CONCERNS: N/A

Red Flag Investigation - Site Location
US 41 at 151st Avenue
Des. No. 2003098, Intersection Improvement Project
Lake County, Indiana



0.5 0.25 0 0.5 Miles

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

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

LOWELL QUADRANGLE
INDIANA
7.5 MINUTE SERIES
(TOPOGRAPHIC)

Red Flag Investigation - Infrastructure
US 41 at 151st Avenue
Des. No. 2003098, Intersection Improvement Project
Lake County, Indiana

0.1 0.05 0 0.1 Miles

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

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

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

Red Flag Investigation - Water Resources
US 41 at 151st Avenue
Des. No. 2003098, Intersection Improvement Project
Lake County, Indiana

0.1 0.05 0 0.1 Miles

Sources:

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

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

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

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

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

APPENDIX F
Water Resources

Wetland Determination Forms have Been Omitted

Joshua Long
1.3.2023

WATERS OF THE U.S. DETERMINATION REPORT
U.S. 41 at 151st Ave
Intersection Improvement
Lake County, Indiana
Des. No. 2003098
Prepared By: April Pape, Metric Environmental, LLC
December 15, 2022

Date of Waters Field Investigation: August 18, 2022

Location:
12-Digit HUC Watershed: 071200011309, (Klaasville – West Creek) (**Exhibit 1**)
Sections 4 and 5; Township 33 North; Range 9 West
Cedar Lake, IN 7.5 minute USGS Topographic Quadrangles (**Exhibit 2**)
West Creek Township, Lake County, Indiana
Latitude: 41.3446 Longitude: -87.46982

Project Description:
The proposed project (Des. 2003098) includes the improvement of the intersection of U.S. 41 and 151st Ave with a median U-turn in Lake County, Indiana. The Investigated Area (IA) was developed based on the proposed improvements. It is anticipated that more than 0.5 acre of additional right-of-way will be required to complete this project.

Indiana Department of Natural Resources (IDNR) Floodway:
No mapped IDNR Floodways are located within the IA. The nearest mapped floodway was located approximately 0.88 miles (mi.) southwest of the IA. The floodway map for this area is provided as **Exhibit 3**.

National Wetlands Inventory (NWI) Information:
No mapped NWI polygons are located within the IA. The nearest mapped NWI polygon is located approximately 470 ft. southeast of the IA. The NWI map is provided as **Exhibit 4**.

Karst Feature Information:
No mapped karst features were found within 0.5 mi. of the IA during the desktop review.

USGS National Hydrography Dataset (NHD) Information:
One mapped NHD flowline is located within the IA, listed in **Table 1** below. The NHD map is provided in **Exhibit 4**.

Table 1: NHD Summary Table

Corresponding Feature	NHD Flowline Classification	Photo Nos.	USGS Blue-line
Wetland B, Wetland C	Canal/Ditch (33600)	28-32, 35-37, 43-46, 50-51	No

Soils:
According to the Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) Database for Lake County, Indiana, the IA contained three mapped soil units, listed in **Table 2** below. The NRCS soil survey map is provided as **Exhibit 4**.

Table 2: NRCS Soil Summary Table

Soil Unit Symbol	Soil Unit Name	Hydric Soil Category	SSURGO Hydric Rating
El	Elliott silt loam, 0 to 2 percent slopes	Predominantly Nonhydric	4% Hydric
MaB2	Markham silt loam, 2 to 6 percent slopes, eroded	Predominantly Nonhydric	10% Hydric
Pc	Pewamo silty clay loam	Hydric	100% Hydric

Attached Documents:
Maps of the investigated area (**Exhibits 1-5**)
USGS StreamStats Map
Photo Location Map (**Exhibit 6**)
Site Photographs
Wetland Determination Data Form(s)
Preliminary Jurisdictional Determination Form

Field Reconnaissance:
The wetland determination field visit was conducted on August 18, 2022 by April Pape and Kristina Zuniga of Metric Environmental, LLC. The IA consists of the area that has the potential to be impacted, based on the provided design scenario. This area was evaluated for the presence of wetlands and Waters of the United States. This investigation was conducted in accordance with the *1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual* and the *August 2010 Midwest Regional Supplement (Version 2.0) Manual.*

A Location Map showing the investigated area location is provided as **Exhibit 1**. The proposed project is located in the southwest portion of Lake County, Indiana, on U.S.41 approximately 3.9 mi. north of SR 2 N JCT (151st Ave). The IA extended approximately 40 ft. from the edge of pavement for approximately 1000 ft. north and south from the intersection and 250 ft. east and

west from the intersection. An aerial map of sampling points and water features is provided as **Exhibit 5**. A photo location map is provided as **Exhibit 6** and site photographs are attached.

Streams:
No streams were observed within the IA during field reconnaissance due to lack of bed and bank characteristics and presence of OHWM.

Wetlands:
The site was investigated for evidence of hydrophytic vegetation, hydric soil, and wetland hydrology to determine if the project impacts wetlands and other Waters of U.S. The sampling point locations were chosen in possible wetland areas within the IA. The upland areas located within the IA consisted of roadside right-of-way (ROW). Upland areas where sampling points were not taken, were investigated and determined to be upland due to upward sloping topography and presence of dominant upland vegetation. Dominant upland species observed within these upland areas included tall false rye grass (*Schedonorus arundinaceus*, FACU) and red fescue (*Festuca rubr*a, FACU). Seven sampling points were taken and are identified in **Table 3** below. The sampling points, recorded on the USACE Wetland Determination Data Forms and shown on **Exhibit 5,** provided the following information (**Table 3**):

Table 3: Sampling Plot Data Summary Table

Plot #	Photo #s	Lat/Long	Hydrophytic Vegetation	Hydric Soils	Wetland Hydrology	Within Wetland
A1	15-17	41.34343 -87.46952	Yes	Yes	Yes	Yes, Wetland A
A2	18-20	41.34343 -87.4695	No	No*	No	No
B1	29-32	41.34228 -87.470009	Yes	Yes*	Yes	Yes, Wetland B
B2	33-34	41.34227 -87.47003	No	No*	No	No
C1	44-46	41.34498 -87.47006	Yes	Yes	Yes	Yes, Wetland C
C2	47-49	41.34498 -87.47009	No	No	No	No
UP1	5-7	41.34454 -87.46953	Yes	No	Yes	No

*Layer of gravel or riprap was encountered that prevented full excavation.

Three wetlands were observed within the IA. Descriptions of the wetlands and corresponding sampling points are provided in **Table 4** below.

Table 4: Wetland Summary Table

Wetland Name	Photo #s	Lat/Long	Cowardin Class	Total Area ac.	Quality	Likely Water of the U.S.?
Wetland A	13, 15-17, 22	41.34305 -87.46951	PEM1A	0.042	Poor	Yes
Wetland B	28-32, 35-37	41.34331 -87.47003	PEM1A	0.137	Poor	Yes
Wetland C	43-46, 50-51	41.34538 -87.47007	PEM1A	0.055	Poor	Yes

Wetland A (0.042 ac.) – PEM1A

Wetland A was classified as a Palustrine, Emergent, Persistent, Temporarily Flooded (PEM1A) wetland. This wetland is located in a ditch in the southeast quadrant of the IA. The boundaries of Wetland A were delineated by lack of wetland vegetation and increased elevation. Due to its location within a ditch, Wetland A likely receives drainage on a consistent basis during rain events. The wetland was not associated with an NWI polygon and was formed within the MaB2 mapped soil unit, which is listed as 10 percent hydric (predominantly nonhydric).The wetland is located adjacent to U.S. 41 and commercial lawn and likely receives run-off from the adjacent sources. The wetland exhibited poor plant species diversity. These factors contribute to the conclusion that Wetland A can support a limited amount of wildlife or aquatic habitat and therefore should be considered to be of poor quality. Based on topography, it can be deduced that water drains south from Wetland A into an unnamed tributary to West Creek, which flows into West Creek, which flows into Singleton Ditch, which flows into Kankakee River, a Section 10 Traditionally Navigable Waterway (TNW). Because Wetland A contributes flow to a TNW, it should be considered a jurisdictional Water of the U.S.

Sampling Point A1 (A1) – Wetland A

A1 was located in a ditch east of US 41 and south of 151st Ave. The dominant vegetation at this sampling point was large barnyard grass (*Echinochloa crus-galli*, FACW), chufa (*Cyperus esculentus*, FACW) and green foxtail (*Setaria viridis*, UPL) in the herb stratum. This passed the hydrophytic vegetation indicators of dominance test and prevalence index. The soil in the test pit met the hydric soil indicator of redox dark surface (F6). Indicators of wetland hydrology observed included oxidized rhizospheres on living roots (C3), geomorphic position (D2), and FAC-neutral test (D5). Since all three required wetland criteria were met, this area qualified as a wetland.

Sampling Point A2 (A2) – Wetland A Upland

A2 was located on a hillslope east of Wetland A. The dominant vegetation at this sampling point was red fescue (*Festuca rubra,* FACU) and green foxtail (*Setaria viridis,* UPL) in the

herb stratum. This did not meet any of the hydrophytic vegetation indicators. The soil in the test pit did not meet any hydric soil indicators. No indicators of wetland hydrology were observed. Since none of the three required wetland criteria were met, this area did not qualify as a wetland.

Wetland B (0.137 ac.) – PEM1A

Wetland B was classified as a PEM1A wetland. This wetland is located in a ditch in the southwest quadrant of the IA. The boundaries of Wetland B were delineated by lack of wetland vegetation and increased elevation. Due to its location within a ditch, Wetland B likely receives drainage on a consistent basis during rain events. The wetland was not associated with an NWI polygon and was formed within the MaB2 and Pc mapped soil units, which are listed as 10 percent hydric (predominantly nonhydric) and 100 percent hydric respectively. The wetland is located adjacent to U.S. 41 and likely receives run-off from adjacent sources. The wetland exhibited poor plant species diversity, and developed in a primarily riprap-bottom ditch. These factors contribute to the conclusion that Wetland B can support a limited amount of wildlife or aquatic habitat and therefore should be considered to be of poor quality. Based on topography, it can be deduced that water drains south from Wetland B into an unnamed tributary to West Creek, which flows into West Creek, which flows into Singleton Ditch, which flows into Kankakee River, a Section 10 TNW. Because Wetland B contributes flow to a TNW, it should be considered a jurisdictional Water of the U.S.

Sampling Point B1 (B1) – Wetland B

B1 was located in a ditch west of US 41 and south of 151st Ave. The dominant vegetation at this sampling point was reed canary grass (*Phalaris arundinacea*, FACW), spotted lady's-thumb (*Persicaria maculosa*, FACW) and large barnyard grass (*Echinocloa crus-galli*, FACW) in the herb stratum. This passed the hydrophytic vegetation indicators of rapid test for hydrophytic vegetation, dominance test and prevalence index. A layer of riprap at 0 in. prevented excavation despite multiple attempts (see photo #31). No other indicators of hydric soils were met. However, it can be assumed hydric soils are present or developing by the dominance of hydrophytic plants and wetland hydrology. Indicators of wetland hydrology observed included surface water (A1), geomorphic position (D2), and FAC-neutral test (D5). Since all three required wetland criteria were met, this area qualified as a wetland.

Sampling Point B2 (B2) – Wetland B upland

B2 was located on a hillslope west of Wetland B. The dominant vegetation at this sampling point was smooth brome (*Bromus inermis,* FACU) in the herb stratum. This did not meet any of the hydrophytic vegetation indicators. A layer of riprap at 0 in. prevented excavation despite multiple attempts (see photo #31). No other indicators of hydric soils

were met. No indicators of wetland hydrology were observed. Since none of the three required wetland criteria were met, this area did not qualify as a wetland.

Wetland C (0.055 ac.) – PEM1A

Wetland C was classified as a PEM1A wetland. This wetland is located in a ditch in the northwest quadrant of the IA. The boundaries of Wetland C were delineated by lack of wetland vegetation and increased elevation. Due to its location within a ditch, Wetland C likely receives drainage on a consistent basis during rain events. The wetland was not associated with an NWI polygon and was formed within the El mapped soil unit, which is listed as 4 percent hydric (predominantly nonhydric). The wetland is located adjacent to U.S. 41 and commercial lawn and likely receives run-off from the adjacent sources. The wetland exhibited poor plant species diversity. These factors contribute to the conclusion that Wetland C can support a limited amount of wildlife or aquatic habitat and therefore should be considered to be of poor quality. Based on topography, it can be deduced that water drains south via NHD flowline into Wetland B, a likely jurisdictional Water of the U.S. Because Wetland B also contributes flow to a TNW, it should be considered a jurisdictional Water of the U.S.

Sampling Point C1 (C1) – Wetland C

C1 was located in a ditch west of US 41 and north of 151st Ave. The dominant vegetation at this sampling point was rice cut grass (*Leersia oryzoides*, OBL) in the herb stratum. This passed the hydrophytic vegetation indicators of rapid test for hydrophytic vegetation, dominance test and prevalence index. The soil in the test pit met the hydric soil indicator of depleted below dark surface (A11) and depleted matrix (F3). Two secondary indicators of wetland hydrology observed included geomorphic position (D2) and FAC-neutral test (D5). This was enough to satisfy the criteria for wetland hydrology. Since all three required wetland criteria were met, this area qualified as a wetland.

Sampling Point C2 (C2) – Wetland C Upland

C2 was located on a hillslope west of Wetland C. The dominant vegetation at this sampling point was smooth brome (*Bromus inermis,* FACU) in the herb stratum. This did not meet any of the hydrophytic vegetation indicators. The soil in the test pit did not meet any hydric soil indicators. No indicators of wetland hydrology were observed. Since none of the three required wetland criteria were met, this area did not qualify as a wetland.

Additional Sampling Point(s):

An additional sampling point was taken in an area where a wetland was suspected but did not meet the three required wetland criteria. A description of this sampling point is included below.

Sampling Point 1 (UP1)

UP1 was located in a ditch east of US 41 and south of 151st Ave. The dominant vegetation at this sampling point was reed canary grass (*Phalaris arundinacea*, FACW) in the herb stratum. This passed the hydrophytic vegetation indicators of rapid test for hydrophytic vegetation, dominance test and prevalence index. The soil in the test pit did not meet any of the hydric soil indicators. No primary indicators of wetland hydrology were observed. Two secondary indicators of wetland hydrology, geomorphic position (D2) and FAC-neutral test (D5), was observed. This was enough to satisfy the criteria for wetland hydrology. Although the prevalence index was met, the hydric soil criteria was not met. Therefore, the criteria for prevalence index was also not met. Since only two of the three required wetland criteria were met, this area did not qualify as a wetland.

Roadside Ditches:

One roadside ditch (RSD) was identified within the IA. RSD 1 was located on the east side of U.S. 41 and ran parallel to U.S. 41 for 150 ft. within the IA. This ditch consisted of upland vegetation such as red fescue (*Festuca rubra*, FACU), and it was likely constructed along U.S. 41 to convey stormwater drainage from the surrounding areas. RSD 1 also lacked a continuous bed and bank and should not be considered jurisdictional Waters of the U.S.

Culverts and Drains:

Five corrugated metal culverts and one storm drain were identified within the IA as shown in **Table 5**. The culverts and storm drain served to aid in roadside drainage and stormwater conveyance. These culverts did not carry jurisdictional waters due to a lack of an OHWM, bed and bank, and lack of a significant nexus to any jurisdictional Waters of the U.S. Locations of these culverts are shown on **Exhibit 5, Exhibit 6**, and attached photosheet.

Table 5: Culverts and Drains Summary Table

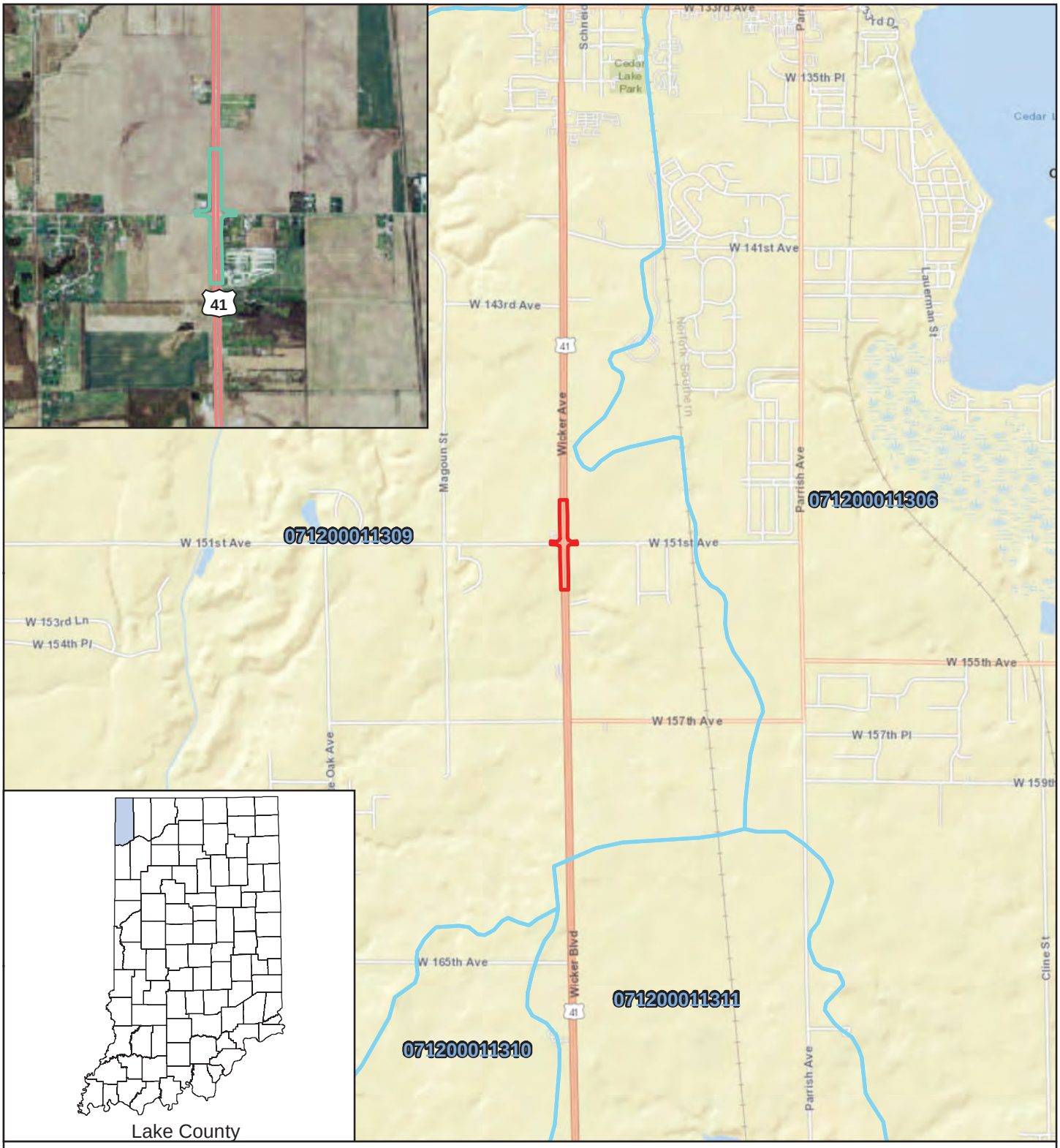
Culvert and Drain Number	Type	Purpose
CV1	Corrugated Metal Culvert	Roadside Drainage
CV2	Corrugated Metal Culvert	Roadside Drainage
CV3	Corrugated Metal Culvert	Roadside Drainage
CV4	Corrugated Metal Culvert	Roadside Drainage
CV5	Corrugated Metal Culvert	Roadside Drainage
SD1	Cast Iron	Stormwater Conveyance

Conclusion:
Three PEM1A wetlands, totaling 0.234 ac., and no streams were identified within the IA during the field reconnaissance. These wetlands are likely Waters of the U.S. Every effort should be taken to avoid and minimize impacts to the waterway and wetlands. If impacts are necessary, then mitigation may be required. The INDOT Environmental Services Division should be contacted immediately if impacts will occur. The final determination of jurisdictional waters is ultimately made by the U.S. Army Corps of Engineers. This report is our best judgment based on the guidelines set forth by the Corps.

Acknowledgements:
This waters determination has been prepared based on the best available information, interpreted in light of the investigator's training, experience and professional judgement in conformance with the 1987 *Corps of Engineers Wetlands Delineation Manual*, the appropriate regional supplement, the USACE *Jurisdictional Determination Form Instructional Guidebook*, and other appropriate agency guidelines. See **Table 6** for a list of the associated Metric investigators.

Table 6: Acknowledgement Summary Table

Metric Environmental Staff	Position	Contributing Effort	Signature/Date
Alex Gray	Project Scientist 1	QAQC	Alex M. Gray 12/15/22
Juliana Clayton	Project Scientist 1	QAQC	Juliana Clayton 12/15/22
April Pape	Staff Scientist 2	Field Data Collection, Report Preparation	April Pape 12/15/22
Kristina Zuniga	Staff Scientist 1	Field Data Collection	Kristina Zuniga 12/15/22



Investigated Area 12-Digit HUC Watershed

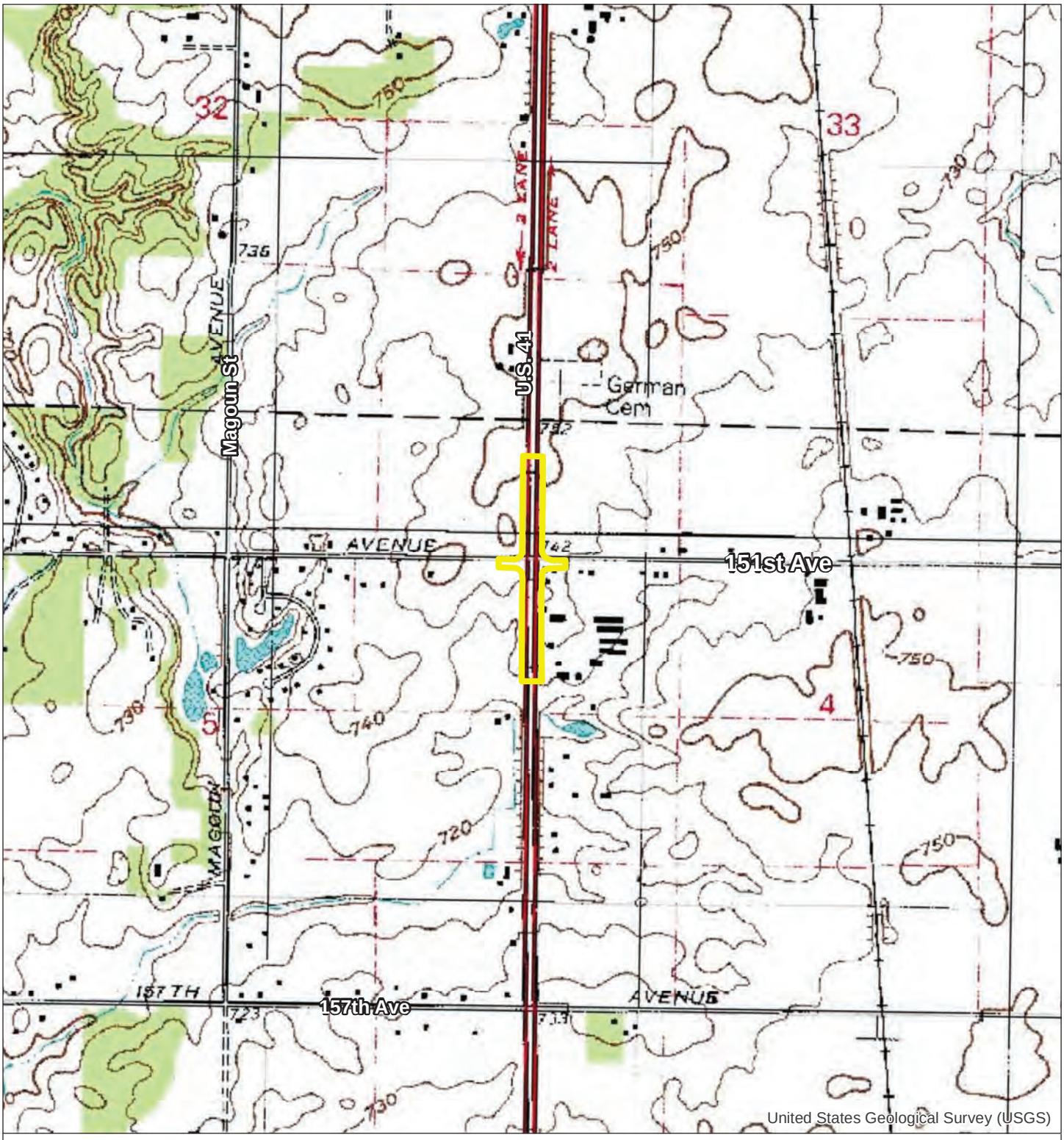
Exhibit 1 - Location Map
U.S. 41 at 151st Ave
Intersection Improvement
West Creek Township, Lake County, IN
Des. No. 2003098
Metric Project No. 22-0002-2
Map Date: 9/14/2022
Map Author: April Pape

All locations approximate
2018 Basemap
Latitude: 41.3446 Longitude: -87.46982

N
0 0.25 0.5 1
Miles

METRIC ENVIRONMENTAL

Exh. 1



United States Geological Survey (USGS)

Investigated Area

Exhibit 2A - USGS Topographic Map - Small Scale
Cedar Lake, IN 7.5 minute Quadrangle
U.S. 41 at 151st Ave
Intersection Improvement
West Creek Township, Lake County, IN
Des. No. 2003098
Metric Project No. 22-0002-2
Map Date: 9/14/2022
Map Author: April Pape

All locations approximate
Source: Indiana Spatial Data Portal (1996)

N

0 500 1,000 2,000
Feet

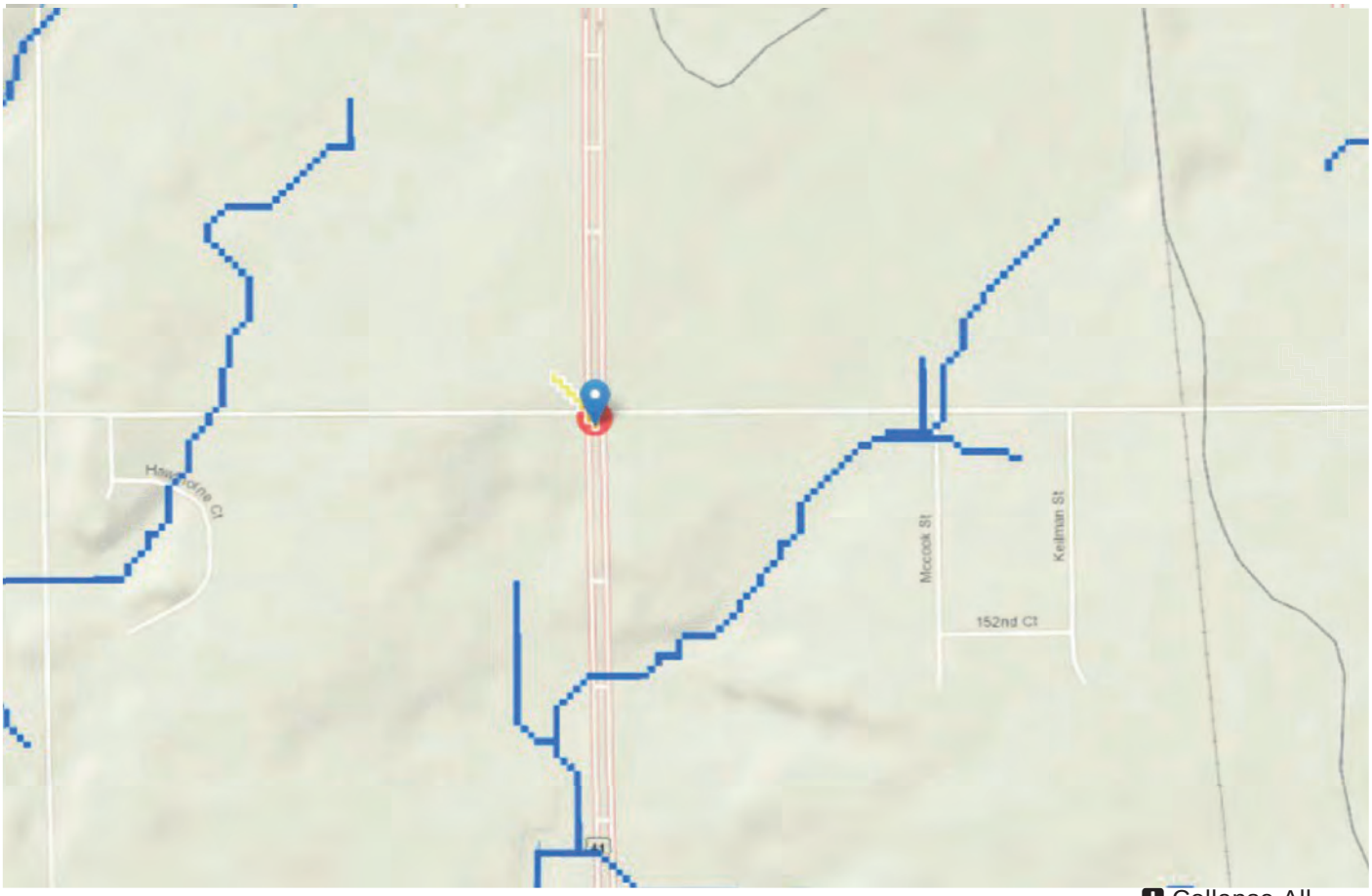
METRIC ENVIRONMENTAL

Exh. 2A

Des. No. 2003098
U.S. 41 at 151st Ave
Lake County, Indiana

StreamStats Report

Region ID: IN
Workspace ID: IN20221006133757450000
Clicked Point (Latitude, Longitude): 41.34452, -87.46986
Time: 2022-10-06 09:38:21 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CSL10_85	Change in elevation divided by length between points 10 and 85 percent of distance along main channel to basin divide - main channel method not known	130	feet per mi
DRNAREA	Area that drains to a point on a stream	0.001	square miles
K2INDNR	Average hydraulic conductivity (ft/d) for the full depth of unconsolidated deposits from InDNR well database.	0	ft per day

Investigated Area

IDNR Floodway

Exhibit 3 - IDNR Floodway Map
U.S. 41 at 151st Ave
Intersection Improvement
West Creek Township, Lake County, IN
Des. No. 2003098
Metric Project No. 22-0002-2
Map Date: 9/14/2022
Map Author: April Pape

All locations approximate

Source: Indiana Spatial Data Portal (2018)

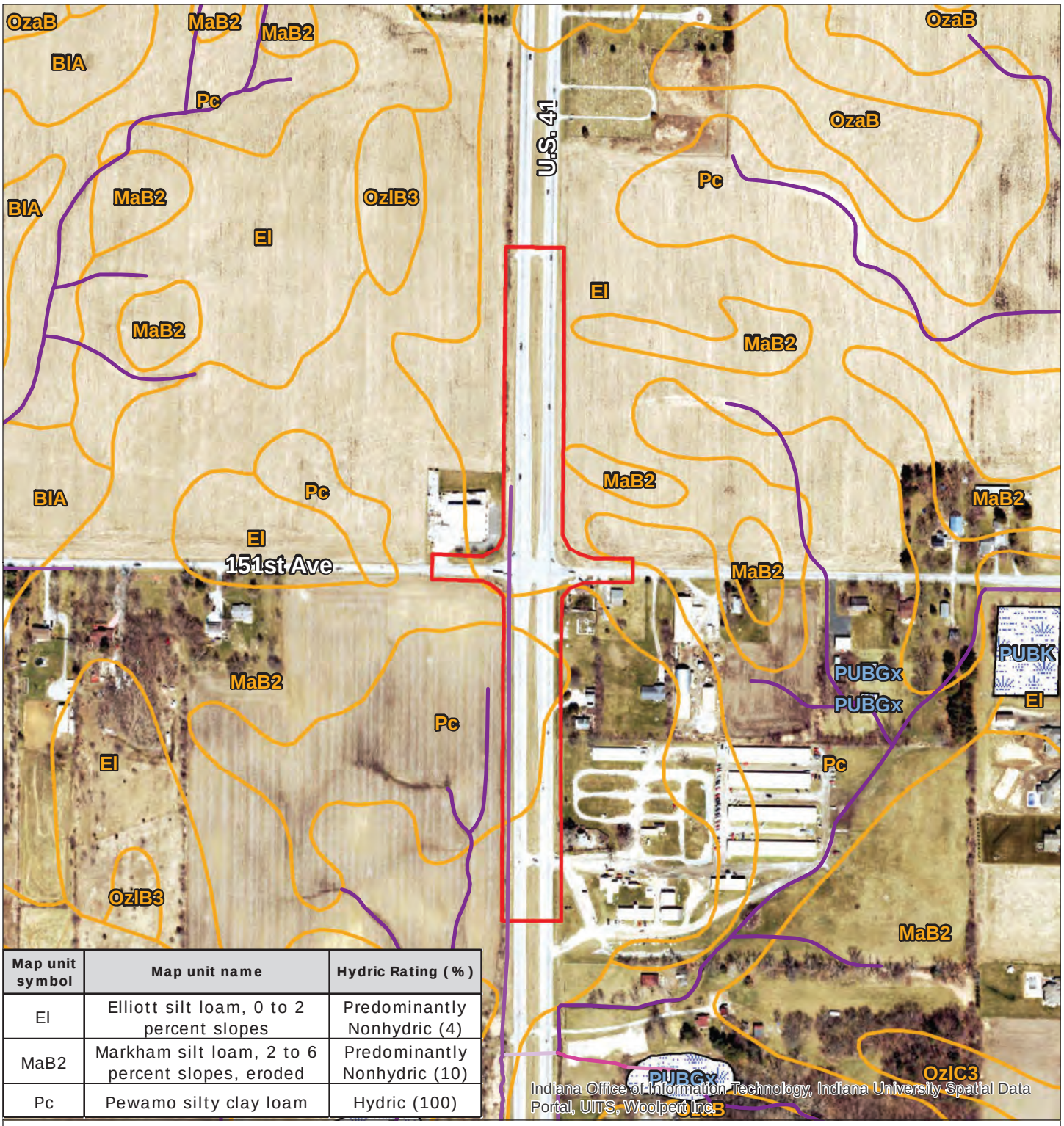
N

0 1,000 2,000 4,000

Feet

METRIC ENVIRONMENTAL

Exh. 3



Map unit symbol	Map unit name	Hydric Rating (%)
El	Elliott silt loam, 0 to 2 percent slopes	Predominantly Nonhydric (4)
MaB2	Markham silt loam, 2 to 6 percent slopes, eroded	Predominantly Nonhydric (10)
Pc	Pewamo silty clay loam	Hydric (100)

NHD Flowline (FCode)
- Connector (33400)
- Canal/Ditch (33600)
- Stream/River (46000)
- Stream/River (46003)
- Artificial Path (55800)
- NWI Wetland
- Investigated Area
- NRCS Soil Survey

Exhibit 4 - NWI Wetland, NHD Flowline, and Soil Map
U.S. 41 at 151st Ave
Intersection Improvement
West Creek Township, Lake County, IN
Des. No. 2003098
Metric Project No. 22-0002-2
Map Date: 9/14/2022
Map Author: April Pape

All locations approximate

Source: Indiana Spatial Data Portal (2018)

N

0 200 400 800
Feet

METRIC ENVIRONMENTAL

Exh. 4

Investigated Area
Sampling Point (SP)
Culvert (CV)
Culvert (CV) Opening/Storm Drain (SD)
Roadside Ditch (RSD)
Wetland

Exhibit 5 - Waters Delineation Map
U.S. 41 at 151st Ave
Intersection Improvement
West Creek Township, Lake County, IN
Des. No. 2003098
Metric Project No. 22-0002-2
Map Date: 8/11/2022
Map Author: Jaci Scherb

All locations approximate

Source: Indiana Spatial Data Portal (2018)

N

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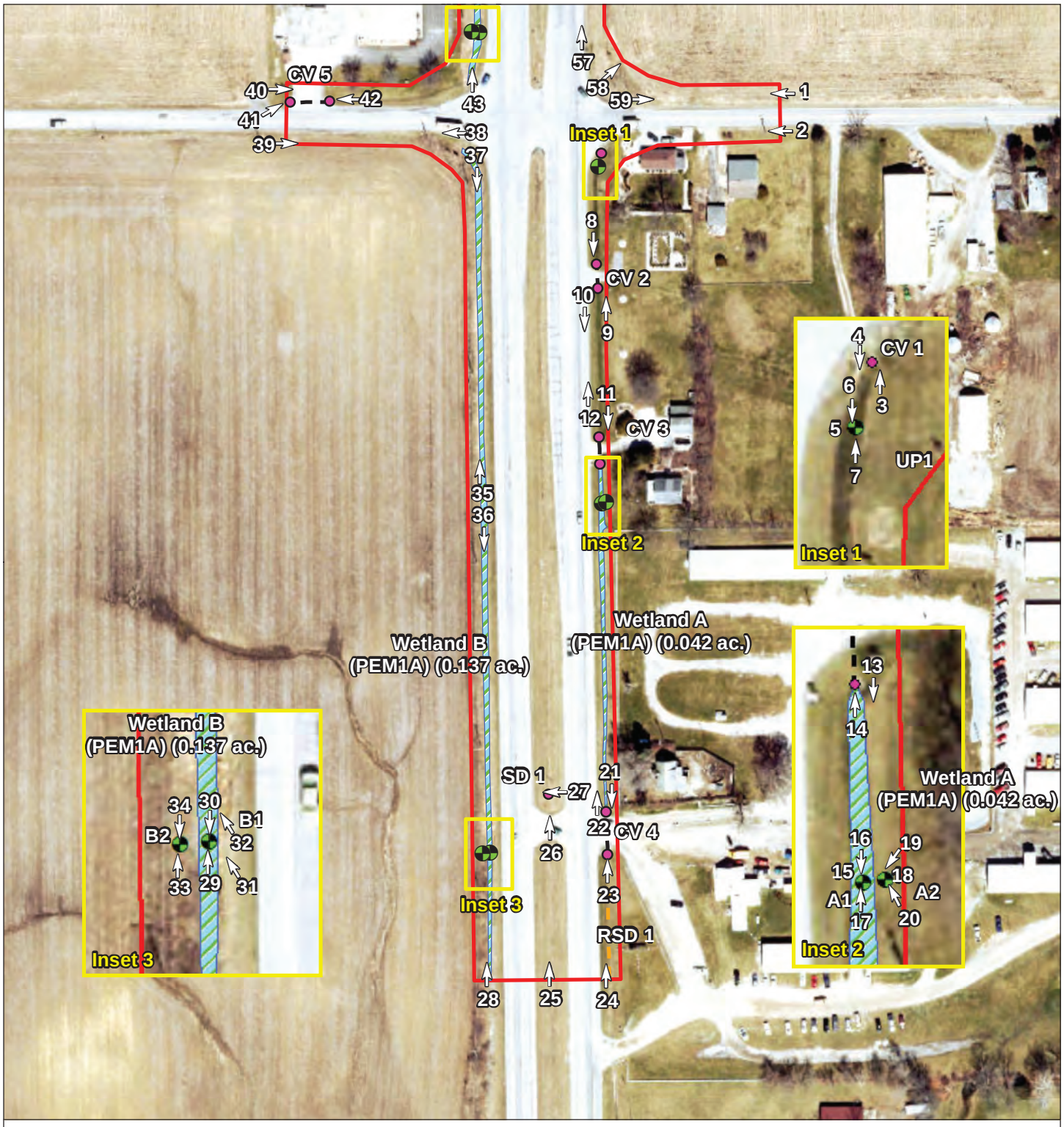
Feet

METRIC ENVIRONMENTAL

Exh. 5



Investigated Area | Sampling Point (SP) | Culvert (CV) | Wetland

Culvert (CV) Opening/Storm Drain (SD) | Roadside Ditch (RSD) | Stream

Exhibit 6 - Photo Location Map
U.S. 41 at 151st Ave
Intersection Improvement
West Creek Township, Lake County, IN
Des. No. 2003098
Metric Project No. 22-0002-2
Map Date: 8/11/2022
Map Author: Jaci Scherb

All locations approximate

Source: Indiana Spatial Data Portal (2018)

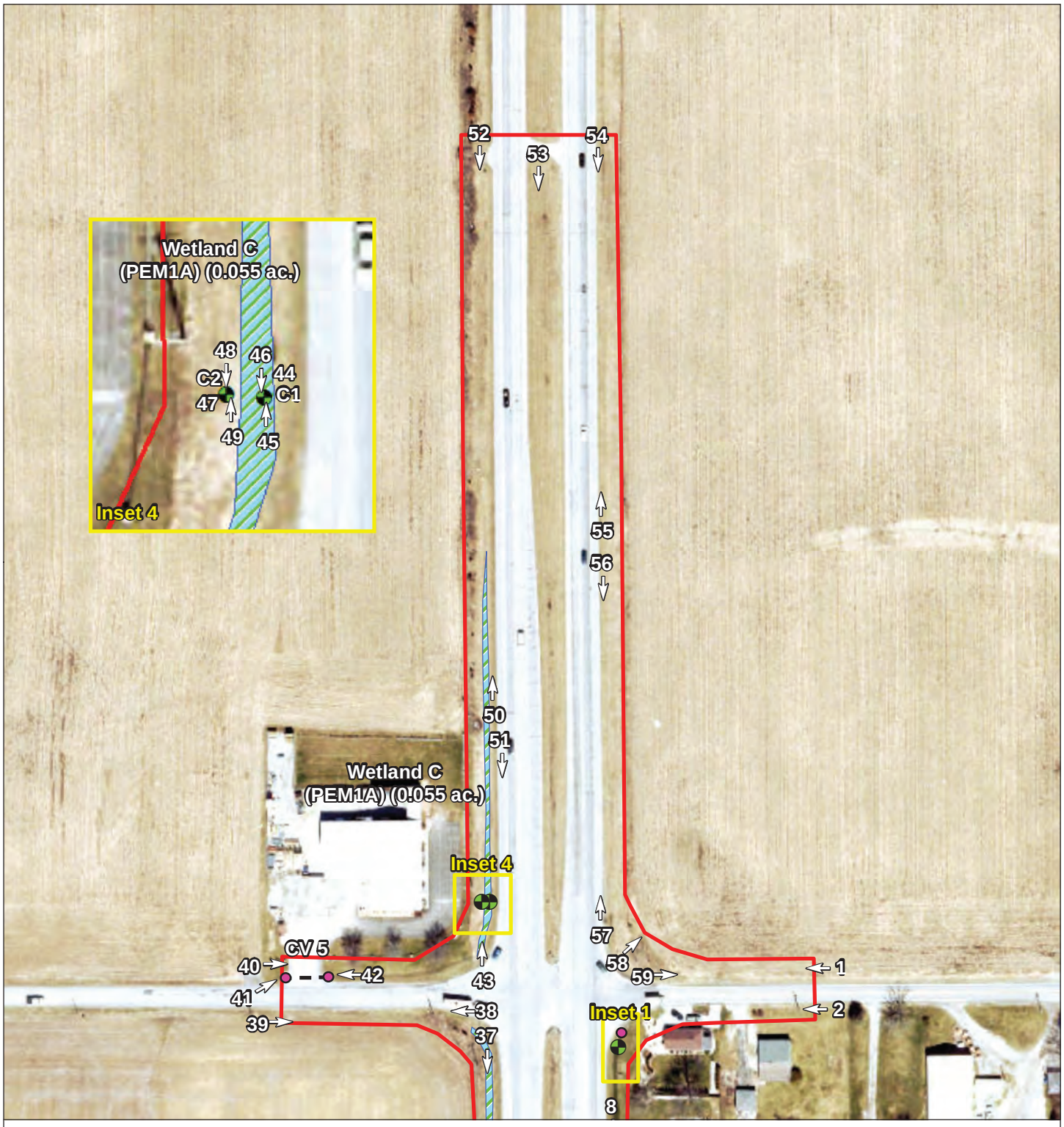
N

0 75 150 300

Feet

METRIC ENVIRONMENTAL

Exh. 6
Page 1 of 2



Investigated Area
Sampling Point (SP)
Culvert (CV)
Wetland
Culvert (CV) Opening/Storm Drain (SD)
Roadside Ditch (RSD)
Stream

Exhibit 6 - Photo Location Map
U.S. 41 at 151st Ave
Intersection Improvement
West Creek Township, Lake County, IN
Des. No. 2003098
Metric Project No. 22-0002-2
Map Date: 8/11/2022
Map Author: Jaci Scherb

All locations approximate

Source: Indiana Spatial Data Portal (2018)

N

0 70 140 280
Feet

METRIC ENVIRONMENTAL

Exh. 6
Page 2 of 2

1. View of 151st Ave right-of-way (ROW) north of 151st Ave and east of U.S. 41, looking west.

2. View of 151st Ave ROW south of 151st Ave and east of U.S. 41, looking west.

3. View of Culvert (CV) 1, south of 151st Ave and east of U.S. 41, looking north.

4. View of U.S. 41 ROW from CV 1 south of 151st Ave and east of U.S. 41, looking south.

SITE PHOTOGRAPHS—8/18/2022
U.S. 41 at 151st Ave
Intersection Improvement
West Creek Township, Lake County, Indiana
Des. No. 2003098

METRIC ENVIRONMENTAL

5. View of UP1, Upland Sampling Point 1, soil profile.

6. View of UP1, looking south.

7. View of UP1, looking north.

8. View of CV 2 on east side of U.S. 41, looking south.

SITE PHOTOGRAPHS—8/18/2022
U.S. 41 at 151st Ave
Intersection Improvement
West Creek Township, Lake County, Indiana
Des. No. 2003098

METRIC ENVIRONMENTAL

9. View of CV 2 on east side of U.S. 41, looking north.

10. View of U.S. 41 ROW, looking south.

11. View of CV 3, looking south.

12. View of U.S. 41 ROW on east side of U.S. 41, looking north.

SITE PHOTOGRAPHS—8/18/2022
U.S. 41 at 151st Ave
Intersection Improvement
West Creek Township, Lake County, Indiana
Des. No. 2003098

METRIC ENVIRONMENTAL

13. View of Wetland A from CV 3 on east side of U.S. 41, looking south.

14. View of CV 3 outlet, looking north.

15. View of A1, Wetland A sampling point, soil profile.

16. View of A1, looking south.

SITE PHOTOGRAPHS—8/18/2022
U.S. 41 at 151st Ave
Intersection Improvement
West Creek Township, Lake County, Indiana
Des. No. 2003098

METRIC ENVIRONMENTAL

17. View of A1, looking north.

18. View of A2, Wetland A upland sampling point, soil profile.

19. View of A2, looking southwest.

20. View of A2, looking northwest.

SITE PHOTOGRAPHS—8/18/2022
U.S. 41 at 151st Ave
Intersection Improvement
West Creek Township, Lake County, Indiana
Des. No. 2003098

METRIC ENVIRONMENTAL

21. View of CV 4 on east side of U.S. 41, looking south.

22. View of Wetland A from CV 4, looking north.

23. View of CV 4, looking north.

24. View of U.S. 41 ROW and roadside ditch (RSD) 1 on east side of U.S. 41, looking north.

SITE PHOTOGRAPHS—8/18/2022
U.S. 41 at 151st Ave
Intersection Improvement
West Creek Township, Lake County, Indiana
Des. No. 2003098

METRIC ENVIRONMENTAL

25. View of U.S. 41 median from southern limits of Investigated Area (IA), looking north.

26. View of U.S. 41 median and Storm Drain (SD) 1, looking north.

27. View of SD 1 in median of U.S. 41, looking west.

28. View of Wetland B and U.S. 41 ROW from west side of U.S. 41, looking north.

SITE PHOTOGRAPHS—8/18/2022
U.S. 41 at 151st Ave
Intersection Improvement
West Creek Township, Lake County, Indiana
Des. No. 2003098

METRIC ENVIRONMENTAL

29. View of B1, Wetland B sampling point, looking north.

30. View of B1, looking south.

31. View of riprap in Wetland B and surrounding area, looking northwest.

32. View of surface water and algae in Wetland B, looking northwest.

SITE PHOTOGRAPHS—8/18/2022
U.S. 41 at 151st Ave
Intersection Improvement
West Creek Township, Lake County, Indiana
Des. No. 2003098

METRIC ENVIRONMENTAL

33. View of B2, Wetland B upland sampling point, looking north.

34. View of B2, looking south.

35. View of Wetland B on west side of U.S. 41, looking north.

36. View of Wetland B on west side of U.S. 41, looking south.

SITE PHOTOGRAPHS—8/18/2022
U.S. 41 at 151st Ave
Intersection Improvement
West Creek Township, Lake County, Indiana
Des. No. 2003098

METRIC ENVIRONMENTAL

37. View of U.S. 41 ROW and Wetland B from intersection with 151st Ave, looking south.

38. View of 151st Ave ROW from intersection with U.S. 41, looking west.

39. View of 151st Ave ROW from south side of 151st Ave and west side of U.S. 41, looking east.

40. View of 151st Ave ROW from north side of 151st Ave and west side of U.S. 41, looking east.

SITE PHOTOGRAPHS—8/18/2022
U.S. 41 at 151st Ave
Intersection Improvement
West Creek Township, Lake County, Indiana
Des. No. 2003098

METRIC ENVIRONMENTAL

41. View of CV 5 on north side of 151st Ave, looking northeast.

42. View of CV 5 on north side of 151st Ave, looking west.

43. View of Wetland C north of 151st Ave and west of U.S. 41, looking north.

44. View of C1, Wetland C sampling point, soil profile.

SITE PHOTOGRAPHS—8/18/2022
U.S. 41 at 151st Ave
Intersection Improvement
West Creek Township, Lake County, Indiana
Des. No. 2003098

METRIC ENVIRONMENTAL

45. View of C1, looking north.

46. View of C1, looking south.

47. View of C2, Wetland C upland sampling point, soil profile.

48. View of C2, looking south.

SITE PHOTOGRAPHS—8/18/2022
U.S. 41 at 151st Ave
Intersection Improvement
West Creek Township, Lake County, Indiana
Des. No. 2003098

METRIC ENVIRONMENTAL

49. View of C2, looking north.

50. View of Wetland C and U.S. 41 ROW on west side of U.S. 41, looking north.

51. View of Wetland C and U.S. 41 ROW on west side of U.S. 41, looking south.

52. View of U.S. 41 ROW from northern limits of IA on west side of U.S. 41, looking south.

SITE PHOTOGRAPHS—8/18/2022
U.S. 41 at 151st Ave
Intersection Improvement
West Creek Township, Lake County, Indiana
Des. No. 2003098

METRIC ENVIRONMENTAL

53. View of U.S. 41 median from northern limits of IA, looking south.

54. View of U.S. 41 ROW from northern limits of IA on east side of U.S. 41, looking south.

55. View of U.S. 41 ROW on east side of U.S. 41, looking north.

56. View of U.S. 41 ROW on east side of U.S. 41, looking south.

SITE PHOTOGRAPHS—8/18/2022
U.S. 41 at 151st Ave
Intersection Improvement
West Creek Township, Lake County, Indiana
Des. No. 2003098

METRIC ENVIRONMENTAL

57. View of U.S. 41 ROW from intersection with 151st Ave on east side of U.S. 41, looking north.

58. View of upland vegetation at northeast side of intersection of U.S. 41 and 151st Ave, looking northeast.

59. View of 151st Ave ROW from intersection with U.S. 41, looking east.

SITE PHOTOGRAPHS—8/18/2022
U.S. 41 at 151st Ave
Intersection Improvement
West Creek Township, Lake County, Indiana
Des. No. 2003098

METRIC ENVIRONMENTAL

Appendix 2 - PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PJD: December 15, 2022

B. NAME AND ADDRESS OF PERSON REQUESTING PJD:

April Pape
Metric Environmental, LLC
6958 Hillsdale Court
Indianapolis, IN 46250
317-608-2762
aprilp@metricenv.com

C. DISTRICT OFFICE, FILE NAME, AND NUMBER:

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:

The proposed project (Des. 2003098) includes the improvement of the intersection of U.S. 41 and 151st Ave with a median U-turn in Lake County, Indiana. The IA was developed based on the proposed improvements. It is anticipated that more than 0.5 acre of additional right-of-way will be required to complete this project.

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

State: IN County/parish/borough: Lake County City: Cedar Lake
Center coordinates of site (lat/long in degree decimal format):
Lat.: 41.3446°
Long: -87.46982°
Universal Transverse Mercator: 16 T 460693.87 E 4577118.54 N
Name of Nearest Waterbody: West Creek

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

☐ Office (Desk) Determination. Date:

☐ Field Determination. Date(s):

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

Site number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)
Wetland A	41.34305	-87.46951	0.042 acre	**Wetland**	**Section 404**
Wetland B	41.34331	-87.47003	0.137 acre	**Wetland**	**Section 404**
Wetland C	41.34538	-87.47007	0.055 acre	**Wetland**	**Section 404**

1) The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.

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

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

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

- [x] Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:
  Map: Dated 9/14/2022 & 8/11/2022
- [x] Data sheets prepared/submitted by or on behalf of the PJD requestor.
  - [ ] Office concurs with data sheets/delineation report.
  - [ ] Office does not concur with data sheets/delineation report. Rationale:_____.
- [ ] Data sheets prepared by the Corps:_____.
- [ ] Corps navigable waters' study:_____.
- [ ] U.S. Geological Survey Hydrologic Atlas:_____.
  - [x] USGS NHD data.
  - [x] USGS 8- and 12-digit HUC maps.
- [x] U.S. Geological Survey map(s). Cite scale & quad name: Cedar Lake, IN 7.5 min, 1980
- [x] Natural Resources Conservation Service Soil Survey. Citation: SSURGO Lake County
- [x] National wetlands inventory map(s). Cite name: http://www.fws.gov/wetlands/ .
- [ ] State/local wetland inventory map(s):_____.

  FEMA/FIRM maps: Effective 2018
- [ ] 100-year Floodplain Elevation is:_____.(National Geodetic Vertical Datum of 1929)
- [x] Photographs: [x] Aerial (Name & Date): Indiana Aerial Photograph, 2016 .

  or [x] Other (Name & Date): Site Photographs, 8/18/2022.
- [ ] Previous determination(s). File no. and date of response letter:_____.
- [ ] Other information (please specify):_____.

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

_____	April Pape 12/15/2022
Signature and date of Regulatory staff member completing PJD	Signature and date of person requesting PJD (REQUIRED, unless obtaining the signature is impracticable)[1]

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

Long, Joshua A

From: Wrin, Graham C
Sent: Friday, December 1, 2023 10:23 AM
To: Long, Joshua A
Cc: Rehder, Crystal
Subject: Re: Des. 2003098 Isolated Wetland Exemption Request

Hello Josh,

Based on the assessment made by Jason Randolph on 10/11/2023, and per your request on 11/9/2023 the following changes have been to made to the exempt State Isolated Wetland selection for Des.2003098.

Wetland A(0.042) is exempt under IC 13-11-2-74.5(a)(6).

Wetland B(0.137) is regulated under IC 13-18-22.

Wetland C(0.055) is exempt under IC 13-11-2-74.5(a)(6).

Thanks,

Graham Wrin, Wetland Project Manager
Wetlands Section, Office of Water Quality
100 North Senate Avenue, Room 1255
Indianapolis Indiana 46204
Phone: (317) 605-4105
Fax: (317) 234-4145
GCWrin@idem.IN.gov

Section 401 Water Quality Certification and Isolated Wetlands
Program: http://www.in.gov/idem/wetlands
Stormwater Program: http://www.in.gov/idem/stormwater
Indiana Stormwater Quality Manual: http://www.in.gov/idem/stormwater/2363.htm

Indiana Department of Environmental Management

IDEM values your feedback.
Please take two minutes and complete this brief survey.

From: Long, Joshua A <JLong1@indot.IN.gov>
Sent: Thursday, November 9, 2023 9:48 AM
To: Wrin, Graham C <GCWrin@idem.IN.gov>
Cc: Rehder, Crystal <CRehder@indot.IN.gov>
Subject: FW: Des. 2003098 Isolated Wetland Exemption Request

Hi Graham,

Here are the attachments and my initial request email.

Thanks a lot,

Josh Long
Ecology and Waterway Permitting Specialist
INDOT Environmental Services Division
100 N Senate Ave IGCN 758-ES
Indianapolis, IN 46204
(463) 271-6043

From: Long, Joshua A
Sent: Friday, September 22, 2023 2:36 PM
To: RANDOLPH, JASON <JRANDOLP@idem.IN.gov>
Cc: Rehder, Crystal <CRehder@indot.IN.gov>
Subject: Des. 2003098 Isolated Wetland Exemption Request

Hi Jason,

We sent out an AJD request to USACE- Chicago in March 2023. This week we received an AJD for the project. This wasn't run by IDEM prior to the AJD being acquired. I wanted to forward you the information for this project. USACE is **not accepting jurisdiction of any** of the wetlands delineated in the waters report.

I was hoping you would be able to provide more guidance on if this is the information you will need to make your determination. Please let me know if you need anything from me.

Attached are the:
Waters Report
Approved JD
State Regulated Wetland Class Worksheets

Thanks,
Josh Long
Ecology and Waterway Permitting Specialist
INDOT Environmental Services Division
100 N Senate Ave IGCN 758-ES
Indianapolis, IN 46204
(463) 271-6043

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, CHICAGO DISTRICT
231 SOUTH LA SALLE STREET, SUITE 1500
CHICAGO IL 60604-1437

September 19, 2023

Regulatory Branch (LRC-2022-00753)

SUBJECT: Approved Jurisdictional Determination for US 41 and 151st Avenue Project in Cedar Lake, Lake County, Indiana (Latitude 41.344701°N, Longitude -87.469812°W)

Glenn Handzlik
Indiana Department of Transportation
100 North Senate Avenue
Indianapolis, Indiana 46204

Dear Mr. Handzlik:

This is in response to your request that the U.S. Army Corps of Engineers complete a jurisdictional determination for the above-referenced site submitted on your behalf by Metric Environmental, LLC. The subject project has been assigned number LRC-2022-00753. Please reference this number in all future correspondence concerning this project.

Following a review of the report titled “Waters of the U.S. Determination Report” dated December 15, 2022, prepared by Metric Environmental, LLC, this office has determined that there are no waterways, wetlands or other areas considered "waters of the United States" under Corps of Engineers jurisdiction at the site at the site, including Wetland A, Wetland B, and Wetland C as identified in the enclosed exhibit.

This determination has been conducted to identify the limits of the Corps Clean Water Act jurisdiction for the particular site identified in this request. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

This determination is valid for a period of five (5) years from the date of the letter, unless new information warrants revision of the determination before the expiration date or a District Commander has identified, after public notice and comment, that specific geographic areas with rapidly changing environmental conditions merit re-verification on a more frequent basis.

It is your responsibility to obtain any required state, county, or local approvals for impacts to wetland areas not under the Department of the Army jurisdiction. For projects in Indiana, please contact the Indiana Department of Environmental Management at (317) 233-2471.

Pursuant to Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers regulates the discharge of dredged or fill material into waters of the United States, including wetlands. A Department of the Army permit is required for any proposed work involving the discharge of dredged or fill material within the jurisdiction of this office. To initiate the permit process, please submit a joint permit application form along with detailed plans of the proposed work. Information concerning our program, including the application form and an application checklist, can be found at and downloaded from our website: https://www.lrc.usace.army.mil/Missions/Regulatory.aspx

If you have any questions, please contact Mr. Michael J. Machalek of this office by telephone at (312) 846-5534 or email at Mike.J.Machalek@usace.army.mil.

Sincerely,

Michael J Machalek

Michael J. Machalek
Senior Project Manager
Regulatory Branch

Enclosure

Copies Furnished:

IDEM (Marty Maupin)
Metric Environmental, LLC (April Pape)

APPENDIX G
Public Involvement

LAWSON-FISHER ASSOCIATES P.C.

PAUL A. HUMMEL, PE
PIPER C. TITTLE, PE
MICHAEL J. GUZIK, PE

202222.10

JON E. RIEMKE, PE
CHRISTOPHER J. JETER, PE
DAN G. DELGADO, PE
JARED M. HUSS, PE
AARON W. BLANK, PS, PE
KEVIN J. SIEDLECKI, PE
CHRISTOPHER M. VANHULLE, PE
MICHELLE M.G. SLACK, PS
DMITRI G. ADAMS, PE
AMANDA R. BUDREAU, PE
JOSEPH D. DUNBAR, PE
ETHAN L. ZARTMAN, PE
PAULIN HAKIZIMANA, PE, PTOE
MARK H. FOSTER, PE
EASA KHAN, PhD, PE, PMP, PTOE
BLAKE R. WARNER, PE
REBECCA L. HINKLE, PS, EI

June 6, 2022

15205 Wicker Avenue LLC
2842 45th Street, Ste B
Highland, Indiana 46322

RE: INDOT Des. No. 2003098
U.S. 41 at 151st Avenue Intersection Improvement
Notice of Survey
State Parcel ID No.: 45-19-04-151-011.000-037
Property Address: 15205 Wicker
Cedar Lake, Indiana 46303

Dear Property Owner:

Lawson-Fisher Associates P.C. has been retained by the Indiana Department of Transportation to perform a survey for an intersection improvement project located at U.S. 41 and 151st Avenue, 3.8 miles north of S.R. 2 in Lake County, Indiana.

Our information indicates you own or occupy property near the subject project. Our employees will be conducting a survey of the project area in the near future. It may be necessary for them to come onto your property to complete this work. This is allowed by law by Indiana Code IC 8-23-7-26. They will show you their identification, if you are available, before coming onto your property. If you have sold this property or it is occupied by someone else, please let us know the name and address of the new owner or current occupant so we can contact them about the survey.

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

The survey work will include mapping the location of features such as trees, fences, drainage features, pavement, driveways, utilities, and obtaining ground elevations. We will also be required to locate evidence of property and right-of-way limits, which may involve digging for property irons along the front of your property. The survey is needed for the proper planning and design of this intersection improvement project. Please be assured of our sincere desire to cause you as little inconvenience as possible during this survey. If problems do occur, please contact our field crew or contact me at the phone number or address shown below.

Very truly yours,

LAWSON-FISHER ASSOCIATES P.C.

Aaron W. Blank, PS, PE
Survey Director

AWB/cas
c: Dmitri G. Adams, PE

APPENDIX H
Air Quality

Federal Transit Administration
Region V
200 West Adams St., Suite 320
Chicago, IL 60606-5253

U.S. Department of Transportation

Federal Highway Administration
Indiana Division
575 N. Pennsylvania St., Rm 254
Indianapolis, IN 46204-1576

September 1, 2023

Mr. Michael Smith
Commissioner
Indiana Department of Transportation
100 N Senate Ave. N955
Indianapolis, IN 46204

SUBJECT: Indiana FY2024-2028 STIP Approval and Associated Federal Planning Finding

Dear Mr. Smith:

The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have completed our review of the FY2024-2028 Indiana Statewide Transportation Improvement Program (INSTIP), which was submitted by the Indiana Department of Transportation (INDOT) request letter dated August 23, 2023.

Based on our review of the information provided, certifications of the Statewide and Metropolitan transportation planning processes for and within the state of Indiana, and our participation in those transportation planning processes (including planning certification reviews conducted in Transportation Management Areas), FHWA and FTA are jointly approving the FY2024-2028 STIP, including the Metropolitan Planning Organization (MPO) Transportation Improvement Programs (TIPs) incorporated into the STIP by reference, subject to the corrective actions identified in the attached Federal Planning Finding (FPF) report. FHWA and FTA consider the projects in the 5th year for informational purposes only, and our approval does not exceed four years per 23 CFR 450.220(c).

FHWA and FTA are required under 23 CFR 450.220(b) to document and issue an FPF in conjunction with the approval of the FY2024-2028 STIP. At a minimum, the FPF verifies that the development of the STIP is consistent with the provisions of both the Statewide and Metropolitan transportation planning requirements. FHWA and FTA find that the Indiana FY2024-2028 STIP substantially meets the transportation planning requirements and are approving the STIP subject to the corrective actions outlined in the FPF. This approval is effective September 1, 2023 and is given with the understanding that an eligibility determination of individual projects for funding must be met, and INDOT must ensure the satisfaction of all administrative and statutory requirements, as well as address the corrective actions outlined in the attached report.

If you have questions or need additional information concerning our approval and the FPF, please contact Ms. Erica Tait of the FHWA Indiana Division at (317) 226-7481, or by email at erica.tait@dot.gov, or Mr. Tony Greep of the FTA Region 5 Office at (312) 353-1646, or by email at anthony.greep@dot.gov.

Sincerely,

KELLEY BROOKINS
Digitally signed by KELLEY BROOKINS
Date: 2023.08.31 17:33:15 -05'00'

Kelley Brookins
Regional Administrator
FTA Region V

Sincerely,

JERMAINE R HANNON
Digitally signed by JERMAINE R HANNON
Date: 2023.09.01 11:46:31 -04'00'

Jermaine R. Hannon
Division Administrator
FHWA Indiana Division

INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N758-Executive Office
Indianapolis, Indiana 46204

PHONE: (855) 463-6848

Eric Holcomb, Governor
Michael Smith, Commissioner

August 28, 2023

Mr. Jermaine R. Hannon, Division Administrator
FHWA Indiana Division
575 North Pennsylvania St., Room 254
Indianapolis, IN 46204

Ms. Kelley Brookins, Regional Administrator
FTA Region 5
200 West Adams St.
Suite 320
Chicago, IL 60606-5253

Dear Mr. Hannon /Ms. Brookins:

The Indiana Department of Transportation is pleased to submit its FY 2024-2028 Statewide Transportation Improvement Program (STIP) for review and approval by your offices.

Included in the final submitted document is a listing of the state's expansion/preservation and local small urban and rural and rural transit projects. The following Metropolitan Planning Organization TIPs will be included in the FY 2024-2028 STIP by reference.

Area Plan Commission of Tippecanoe County (APCTC) FY 2024-2028
- https://www.tippecanoe.in.gov/DocumentCenter/View/40728/FY-2024-2028-TIP-including-0-amendments

Bloomington-Monroe County Metropolitan Planning Organization (BMCMPO) FY 2024-2028
- https://bloomington.in.gov/sites/default/files/2023-08/BMCMPO%20FY%202024%20-%202028%20TIP%20-%2006-30-23%20-%20ADOPTED%20FINAL.pdf

Columbus Area Metropolitan Planning Organization (CAMPO) FY 2024-2028
- https://www.columbus.in.gov/planning/tip/

Delaware-Muncie Metropolitan Plan Commission (DMMPC) FY 2022-2025
- *Including Amendments/modifications through 2/14/23*
- https://www.co.delaware.in.us/egov/documents/1692987897_47263.pdf

Evansville Metropolitan Planning Organization (EMPO) FY 2024-2028
- http://www.evansvillempo.com/Docs/TIP/TIP_2024-2028/TIP_2024-2028.pdf

Kokomo-Howard County Governmental Coordinating Council (KHCGCC) FY 2022-2026
- *Including Amendments/modification through 7/28/23*
- https://www.kokomompo.com/project/tip-2020-2024/

Kentuckiana Regional Planning and Development Agency (KIPDA) FY 2023-2026
- https://www.kipda.org/wp-content/uploads/2023/05/FY2023-TIP-FINAL-5-25.pdf

Indianapolis Metropolitan Planning Organization (IMPO) FY 2024-2027
- https://www.indympo.org/whats-underway/irtip

Michiana Area Council of Governments (MACOG) FY 2024-2028
- http://www.macog.com/docs/transportation/tip/approved/fy2028tip_projects.pdf

Madison County Council of Governments (MCCOG) FY 2022-2026
- *Including Amendments/modifications through 7/28/23*
- https://irp.cdn-website.com/65a760a0/files/uploaded/TIP%202022-2026%20-%20updated%205-1-23.pdf

Northeastern Indiana Regional Coordinating Council (NIRCC) FY 2024-2028
- https://www.nircc.com/uploads/1/2/9/8/129837621/final_2024-2028_tip_5-25-23.pdf

Northwestern Indiana Regional Planning Commission (NIRPC) FY 2022-2026
- *Including Amendments/modifications through 7/25/23*
- https://nirpc.org/2040-plan/mobility/transportation-improvement-program/

Ohio-Kentucky-Indiana Regional Council of Governments (OKI) FY 2024-2027
- https://www.oki.org/transportation-planning/transportation-improvement-program-tip/

Terre Haute Area Metropolitan Planning Organization (THAMPO) FY 2024-2028
- https://www.terrehautempo.com/images/THAMPO_2024_2028_AdoptionTIP.pdf

In addition, INDOT has expanded our public involvement process by taking advantage of virtual meeting techniques and allowing accessibility to online documents, materials, virtual meeting registration, recorded virtual meetings, and comment forms. INDOT also leveraged our planning partner contacts (MPOs, RPOs, LTAP), social media, and notifications sent to local libraries, housing authorities, senior aging centers, and local newspapers across the state.

We greatly appreciate FHWA/FTA support in the development of the STIP 2024-2028 and look forward to working together to achieve our mutual goals. Should you have any questions pertaining to this amendment, please contact April Leckie, STIP Administration at 317-232-5466 or at aleckie@indot.in.gov.

Sincerely,

Michael Smith, Commissioner
Indiana Department of Transportation

cc: (w/enclosure): Angelica Salgado, FTA
Cecilia Crenshaw, FTA
Erica Tait, FHWA
Lyndsay Quist, INDOT
Kristin Brier, INDOT
Kathy Eaton-McKalip, INDOT
Louis Feagans, INDOT
April Leckie, INDOT
Roy Nunnally, INDOT
Larry Buckel, INDOT
Jay Mitchell, INDOT
Jason Casteel, INDOT
Michael McNeil, INDOT

Transportation Improvement Program Fiscal Year 2022-2026 Admin Mod #22-70

5 Projects Listed

2003098 (Ver 2) 22-70 STATUS **Programmed** **FEDERAL**

Title: District Intersection Improvement Project **Route:** N/A

Description: Intersection Improvement, Median U-Turn on US 41, 3.8 mi north of SR2 N JCT (151st Ave)

Project Type: Intersection Improvement, Median U-Tu **AQ Exempt:** Exempt **District:** LaPorte

County: Lake **Limits:**

Narrative: Add FY24 PE $15,000.

FED FY	REVENUE SOURCE	PE	RW	CN	CE	TOTAL
2022	NHPP Non Interstate	$260,000	$0	$0	$0	**$260,000**
2023	NHPP Non Interstate	$0	$40,000	$0	$0	**$40,000**
2024	NHPP Non Interstate	$0	$15,000	$10,000	$0	**$25,000**
2026	NHPP Non Interstate	$0	$0	$1,359,332	$0	**$1,359,332**
	2022-2026 TOTAL	**$260,000**	**$55,000**	**$1,369,332**	**$0**	**$1,684,332**
	ALL YEARS TOTAL	**$260,000**	**$55,000**	**$1,369,332**	**$0**	**$1,684,332**

Region: **Northwestern MPO** **Lead Agency:** INDOT

Previously Approved Version

2003098 (Ver 1) 22-01

Title: District Intersection Improvement Project **Route:** N/A

Description: Intersection Improvement, Median U-Turn on US 41, 3.8 mi north of SR2 N JCT (151st Ave)

Project Type: Intersection Improvement, Median U-Tu **AQ Exempt:** Exempt **District:** LaPorte

County: Lake **Limits:**

Narrative: Amend FY22 PE, FY23 RW, FY24 CN and FY26 CN.

FED FY	REVENUE SOURCE	PE	RW	CN	CE	TOTAL
2022	NHPP Non Interstate	$260,000	$0	$0	$0	**$260,000**
2023	NHPP Non Interstate	$0	$40,000	$0	$0	**$40,000**
2024	NHPP Non Interstate	$0	$0	$10,000	$0	**$10,000**
2026	NHPP Non Interstate	$0	$0	$1,359,332	$0	**$1,359,332**
2022-2026 TOTAL		**$260,000**	**$40,000**	**$1,369,332**	**$0**	**$1,669,332**
ALL YEARS TOTAL		**$260,000**	**$40,000**	**$1,369,332**	**$0**	**$1,669,332**

Region: **Northwestern MPO** **Lead Agency:** INDOT

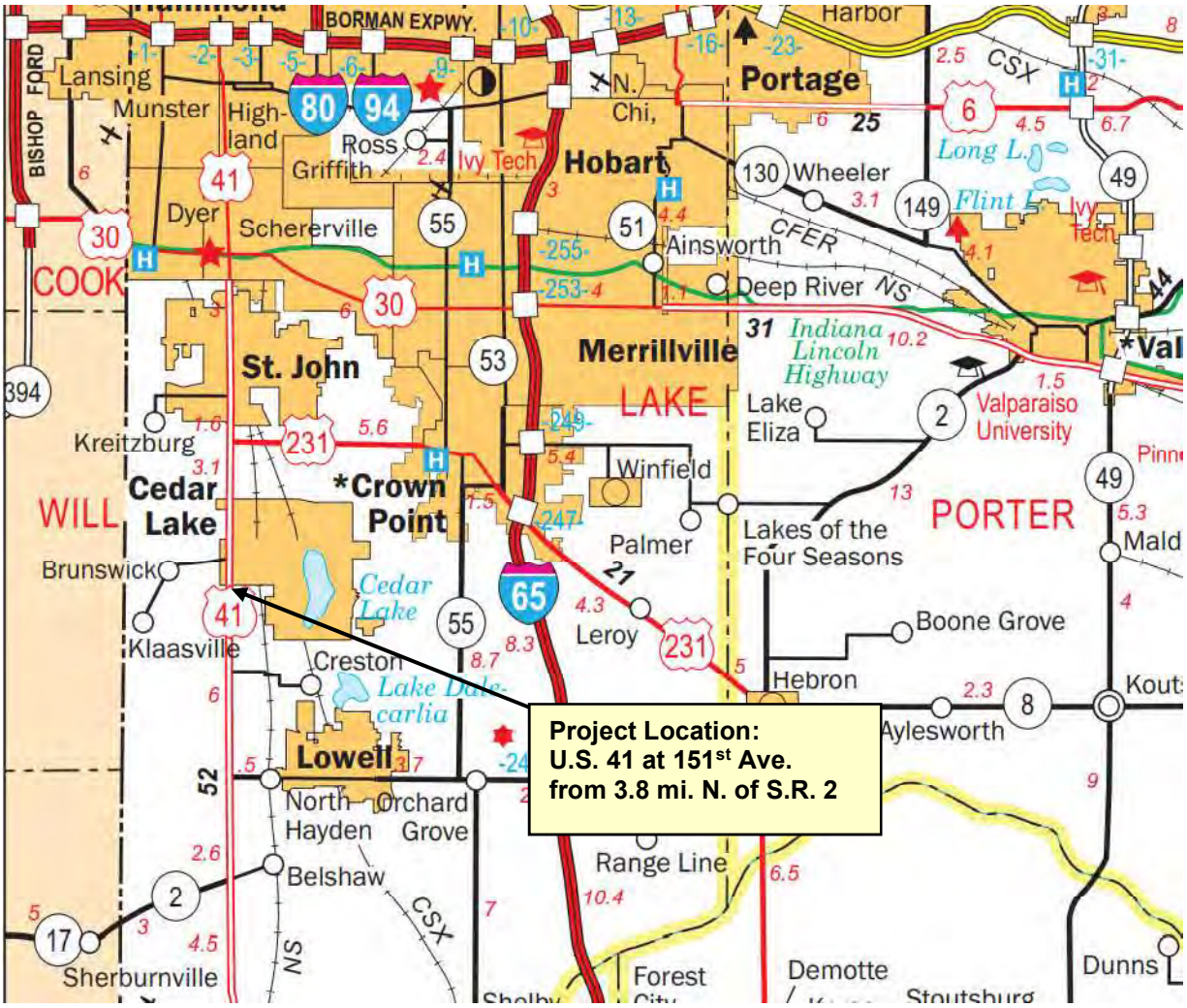
APPENDIX I
Additional Studies

Land and Water Conservation Fund (LWCF) County Property List for Indiana (Last Updated March 2022)

ProjectNumber	SubProjectCode	County	Property
1800005	1800005	Lake	Dowling Park
1800011	1800011	Lake	Tolleston Park
1800012	1800012	Lake	Washington Park
1800040	1800040	Lake	Homestead Park
1800055	1800055	Lake	Sheppard Memorial Park
1800059	1800059	Lake	Cheever Park
1800062	1800062	Lake	Leroy Township Park
1800063	1800063	Lake	Markley Memorial ParkEllendale Park
1800071	1800071	Lake	Cheever Park
1800087	1800087	Lake	Sheppard Memorial Park
1800102	1800102	Lake	Grand Boulevard Lake Recreation Area
1800108	1800108	Lake	Riverview Park
1800137	1800137	Lake	Northgate Park
1800150	1800150	Lake	Meadows Park
1800168	1800168	Lake	Sunnyside Park
1800170	1800170	Lake	Howe Park
1800189	1800189	Lake	Dowling Park
1800193	1800193	Lake	Harrison Park
1800194	1800194	Lake	Martin Luther King Jr. Park (Formerly Maywood Park
1800199	1800199	Lake	Ridgeway Park
1800202	1800202	Lake	Hatcher Park
1800206	1800206	Lake	Meadows Park
1800226	1800226	Lake	Hoosier Prairie Nature Preserve
1800227	1800227	Lake	Liberty Park
1800231	1800231	Lake	Pheasant Hills Community Park & Cherry Hill Tot-Lot
1800237	1800237	Lake	Wolf Lake Park (N & S)
1800239	1800239	Lake	Bluebird Park
1800253	1800253	Lake	Centennial Park
1800272	1800272	Lake	Wolf Lake Park (N & S)
1800273	1800273	Lake	Grand Kankakee Marsh County Park
1800302	1800302	Lake	Munster Community Park
1800329	1800329	Lake	Jackson Park
1800369	1800369H	Lake	Harrison Park
1800369	1800369D	Lake	Lemon Lake County Park
1800377	1800377	Lake	Main Square Park
1800386	1800386	Lake	Gibson Woods Nature Preserve & Tolleston Ridges Nature Preserve
1800405	1800405G	Lake	Clark and Pine Dune Swale Nature Preserve
1800414	1800414	Lake	Wolf Lake Park (N & S)
1800417	1800417	Lake	Centennial (Dan Rabin) Plaza & Trail
1800424	1800424	Lake	Lake Etta County Park
1800455	1800455	Lake	Deep River - Woods Mill County Park
1800464	1800464	Lake	Festival Park & Lakefront Park
1800473	1800473	Lake	Oak Ridge Prairie Co. Park
1800488	1800488	Lake	Marquette Park
1800489	1800489	Lake	Festival Park & Lakefront Park
1800522	1800522	Lake	Pavese Park
1800523	1800523	Lake	Lakewood Park
1800523.5	1800523.5	Lake	River Drive Park
1800528	1800528	Lake	Lowell Sports Park
1800533	1800533	Lake	Hobart City Ball Park
1800555	1800555	Lake	Scherwood Golf Course
1800580	1800580	Lake	Oak Ridge Park
1800586	1800586	Lake	Teibel Nature Park
1800586.1	1800586.1	Lake	Teibel Nature Park
1800590	1800590	Lake	Deep River County Park
1800622	1800622	Lake	Fireman's Park
1800636	1800636	Lake	Parrish Avenue Park

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

Indiana Department of Transportation
ENGINEERING ASSESSMENT
Des No: 2003098
U.S. 41 at 151st Avenue Intersection Improvement
Location: 3.8 mi. N. of S.R. 2
County: Lake



Prepared by:

Lawson-Fisher Associates P.C.
525 West Washington Avenue
South Bend, Indiana 46601

Date: November 22, 2022

A. PURPOSE OF THE REPORT

The purpose of this report is to document the engineering assessment phase of project development, including all coordination that has been completed in preparation for this road project. This document outlines the proposal and is intended to serve as a guide for subsequent survey, design, environmental right-of-way, and other project activities leading to construction. The preferred alternative identified in this document is considered pre-decisional, pending the outcome of environmental studies.

B. PROJECT LOCATION

The project is located at the intersection of U.S. 41 and 151st Avenue in Lake County (RP 253+001, U.S. 41). The latitude/longitude for this project is 41°20'34.77"N and 87°28'10.76"W. The project is in the Indiana Department of Transportation's LaPorte District, Gary Sub-District, West Creek Township. This location is within the Northwestern Indiana Regional Planning Commission (NIRPC). See the project limits exhibit in Appendix A for reference.

C. PROJECT NEED AND PURPOSE

The primary need for this project is to address a higher-than-expected crash rate, specifically right-angle crashes, resulting in incapacitating and non-incapacitating injuries with property damage.

The purpose of the project is to reduce the potential for crashes and injuries while maintaining or improving mobility.

D. EXISTING FACILITY

U.S. 41 is classified as Principal Arterial – Other with north side of the intersection classified as urban and south side classified as rural. U.S. 41 is also part of the U.S. National Highway System (NHS) and National Truck Network with Partial Access Control. 151st Avenue is classified as a Rural Major Collector on the west approach and Urban Major Collector on the east approach. The posted speed limit on U.S. 41 is 60 mph. The posted speed limit on 151st Avenue is 30 mph on the west approach and 40 mph on the east approach.

Roadway Cross Section

The existing roadway of U.S. 41 is a 4-lane divided highway separated by a 40 ft grass median along with left turn lanes at the intersection onto 151st Avenue. The existing shoulders on U.S. 41 consists of 4 ft inside and 9 ft outside paved shoulders.

The existing roadway of 151st Avenue has approximately 28 ft of asphalt pavement on the west approach and 24 ft of asphalt pavement on the east approach. The existing roadway consists of 2 – 10 ft lanes along with variable pavement shoulder. There is no curb or guardrail present at this intersection.

Roadway Information – U.S. 41			
Geometric Criteria			
Design Speed	60 mph	*Functional Class*	Rural Principal Arterial*
Design Criteria	3R, Non-Freeway	*Rural/Urban*	Rural, divided, (uncurbed)*
Terrain	Level	*Access Control*	Partial
Approach Cross Section			
IDM Figure Reference	IDM Fig. 55-3A (Multi-Lane divided)	*Travel Lane Count*	4
Travel Lane Width	12 ft (existing)	*Auxiliary Lanes*	N/A – Rt. Turn; 12 ft – Lt. Turn (existing)
	12 ft (proposed)		12 ft – Rt. Turn; 12 ft- Lt. Turn (proposed)
Shoulder Width/ (Usable)	9 ft (exist. Outside)	*Auxiliary Lane Shoulder Width (Paved)*	4 ft- Lt. Turn (proposed)
	4 ft (exist. Inside)		2 ft-Rt. Turn (proposed)
Mainline Pavement	HMA on Concrete (existing)	*Shoulder Pavement*	HMA (existing)
	HMA on Concrete (proposed)		HMA (proposed)
Alignment			
Horizontal	Within Curve (existing)	*Vertical*	crest curve (existing)
	Within Curve (proposed)		crest curve (proposed)

** Although part of the intersection lays within urban section, the design criteria for this project will be based on rural roadway classification.*

Roadway History

This section of U.S. 41 was constructed in 1945 with concrete at a width of 24 ft for northbound and southbound. Subsequent pavement history is listed below.

U. S. 41 Pavement History

Year	Mainline Width	Type of Work
1945	24 ft	Concrete Grading and Paving
1947	24 ft	Rock Asphalt on Old Concrete Road
1978	24 ft	6-in. HMA Shoulder Widening (9-ft outside, 4-ft inside) Added 12 ft wide Left turn lane (9.5-in. HMA pavement)

Pavement Condition

No pavement conditions available at this time.

Drainage

The general overland flow runs from north to the south through the roadside ditches along U.S. 41 following the existing profile of the road. The median ditches discharge into existing catch basins with outlet under U.S. 41 into the outside roadside ditches.

There are multiple crossing culverts from the median to outside roadside ditches. Additional culverts are present across 151st Avenue carrying overland flow from the north to the south.

Public Road Approaches, Private Drives and Median U-turns

U.S. 41 Intersection improvement project is located at 151st Avenue public road approaches. The nearest public road approaches on U.S. 41 are 144th Avenue to the north and 157th Avenue to the south. There are private drives along U.S. 41 with the nearest drive located approximately 200 ft south of the intersection. John's Flea Market is approximately 850 ft south of the intersection. The commercial business has multiple access drives and receives significant traffic on the weekends.

There are multiple existing U-turn median opening locations on U.S. 41 within the proposed project limits. The south U-Turn location is located directly across from the flea market and is used as a turning point to the market.

Pedestrian Traffic

There are no sidewalks or bicycle paths within the project limits. The Abbreviated Engineer's Report (Appendix B) cites bicycle activity crossing east – west through the intersection on 151st Avenue.

Railroads

There are no railroad crossings within the project limits. Norfolk Southern Railroad and CSX Railroad run generally parallel to U.S. 41 approximately 0.53 miles and 1.5 miles, respectively, to the east.

Land Use

The northeast and southwest quadrant of the intersection are primarily agricultural. FFC Fencing Company, a commercial business, is located in the northwest quadrant of the intersection. The flea market and a few residential properties are located in the southeast quadrant of the intersection.

E. FIELD CHECK

A site visit was conducted on July 21, 2022, by the survey crew. Ground level photographs are in Appendix C.

F. TRAFFIC DATA AND CAPACITY ANALYSIS

Intersection traffic turning movement data was furnished by INDOT LaPorte District Traffic. The results of turning movement breakdown, and future projections after intersection improvement are summarized in a table below and detailed in Appendix D.

	U.S. 41	151st Ave
2018 AADT (vpd)	14,711	2,375
2022 AADT (vpd)	15,466	2,418
2025 AADT (vpd)	16,062	2,453
2045 AADT (vpd)	20,726	2,720
2045 DHV (%)	8.0 %	10.3%
Commercial Vehicles (% AADT)	8.59 %	2.91 %
Commercial Vehicles (% DHV)	4.75 %	1.39 %
Directional Distribution	46.9 %	53.6 %

Intersection capacity analysis was done using Synchro 11 to evaluate Level of Service (LOS) of intersection approaches. For year 2018 existing condition, the intersection is operating as follows: U.S. 41 approaches are operating at a LOS A, eastbound movement (151st Avenue) is operating at an undesirable LOS of F, while westbound movement is operating at LOS C. See Appendix E for Synchro Analysis Report.

G. CRASH DATA AND ANALYSIS

Crash data for U.S. 41 and 151st Avenue intersection was provided by the LaPorte District for the three-year analysis period from January 2019 through December 2021. During this time, 20 crashes involving 36 vehicles occurred within the intersection and vicinity. Ten of the crashes resulted in 13 injuries. Crashes occurring in the three-year analysis period resulted in the following statistics with a full crash summary analysis provided in Appendix F:

- 16 of 20 crashes (80%) were caused by "Failure to Yield the Right of Way". 12 (60% of total) were right-angle and 4 (20% of total) were left turn crashes.
- The intersection Crash Rate, "R_S," is 1.02 crashes per million vehicles entering the intersection. It is important to note that 12 of 20 crashes (60%) took place in year 2021 alone, equivalent to the 1.84 crash rate (Rs).
- The intersection averaged 6.7 crashes per year during the three years of analysis.
- 13 of 20 crashes (65%) involved a vehicle traveling eastbound on 151st Avenue, as shown on intersection graphics of Appendix F, and realized in Abbreviated Engineer's Report. As demonstrated in the capacity analysis report, this approach is operating at a LOS of F.

In Addition to the most current crash data, a RoadHAT analysis was performed by the District during initial project scoping in 2020. RoadHAT compares historic crash frequency and severity against the expected crash and provides indices for both frequency and severity, indicating numbers of standard deviations above or below expected.

The Index of Crash Frequency (I_{CF}) does not consider severity, while the Index of Crash Cost (I_{CC}) does. Index values of 0 represent the average, while values greater than 1 indicate moderate crash locations (in the top 16% statistically). Values greater than 2 indicate high crash locations (in the top 2.5% statistically). Results of the RoadHAT analysis are included in Appendix G and are summarized below.

Location	I_{CF}	I_{CC}
U.S. 41 at 151st Avenue	1.67	2.42

The project scoping evaluation of crash data from 2017 through 2019 was conducted using RoadHAT 3, and it reported 13 crashes resulting in 6 incapacitating injury crashes, 4 non-incapacitating injury crashes, and 3 property damage only crashes. See the RoadHAT evaluation Report in Appendix G.

The Index of Crash Cost (Icc) greater than 2 meets the criteria for identification as a high crash location and should be considered for improvements.

Countermeasures to mitigate crashes at the intersection should seek to ease and improve driver's intersection navigation. Countermeasures should be infrastructure-based: Intersection redesign, more significant stop control, pavement markings, and signs to effectively address intersection navigational problems that cause failure to yield the right of way.

H. ALTERNATIVES AND RECOMMENDATIONS

The Intersection Improvement project shall be designed in compliance with Indiana Design Manual (IDM), Chapter 55 "Geometric Design of Existing Non-Freeways (3R)", Chapter 46 "Intersections At-Grade", Chapter 49 "Roadside Safety", and all other applicable standards. 3R Design Standards are applicable for this project due to its limited scope and U.S. 41 is not likely to be upgraded to 4R guidelines.

Alternative 1: Do Nothing:

This alternative would allow the existing intersection to remain in place with no improvements, which will result in the intersection not being able to safely accommodate additional traffic volumes. This alternative does not meet the need nor achieves the purpose of the project and will not be considered further.

Alternative 2: Traffic Signal:

This alternative would consist of installing a new traffic signal at the intersection. Traffic Signal Warrants 1 and 2 are not met, Signal Warrant 3 is only satisfied under the condition of 70% volume, due to the high speed of U.S. 41. Under 100% volume conditions, a traffic signal is not warranted at this intersection. The satisfaction of a traffic signal warrant(s) shall not in itself require the installation of a traffic signal. Engineer's judgement is required to deem a signal installation as a viable option. See Appendix H for Warrants analysis.

Site conditions, high speed on major street, and a significant difference in AADT on major and minor streets make a traffic signal an undesirable alternative. A traffic signal alternative does not reduce intersection conflict points.

Traffic signals are known to reduce some right-angle crash, but also increase rear-end crashes and create red-light running crashes. This alternative does not meet the need nor achieves the purpose of the project and will not be considered further.

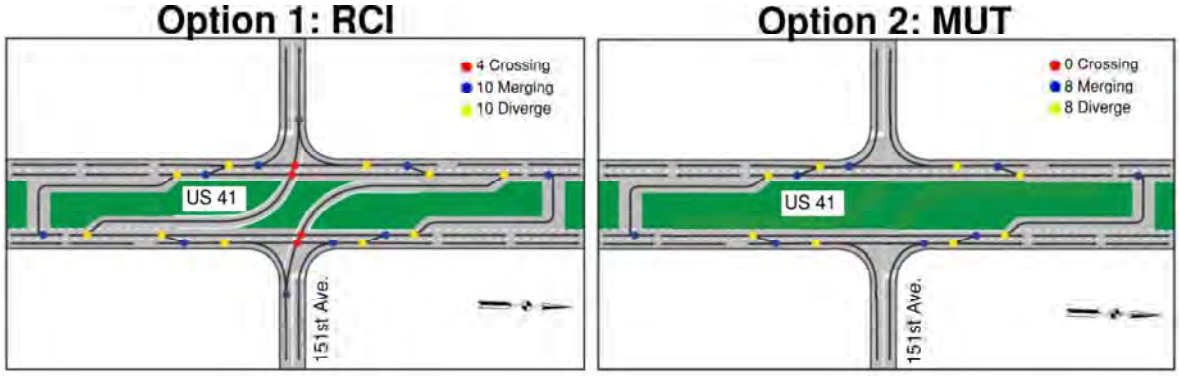
Alternative 3: Roundabout:

This alternative would consist of geometrically changing the intersection from a cross-intersection to a roundabout. Roundabouts have less points of conflict than regular intersections and are known to reduce the severity of crashes at intersections. Evaluation of vehicle turning movement at the intersection indicates that more than 75% of the traffic volume at the intersection is for U.S. 41 thru movement. This traffic pattern indicates an intersection with unbalanced traffic for approaches, making a roundabout intersection to be a less desirable solution. This alternative does not achieve the purpose of the project and will not be considered further.

Alternative 4: Reduced Conflict Intersection (Preferred):

This alternative consists of constructing a Reduced Conflict Intersection (RCI). RCIs are known to significantly reduce right-angle crashes and severity of crashes that occur at an intersection with unbalanced traffic volume between major and minor roadways. RCIs also address the intersection operation and allow the LOS to be maintained for the major roadway.

Two options of RCI are proposed under this alternative: a regular RCI and a Median U-Turn only (MUT).



The RCI intersection operation incorporates U-turns upstream and downstream of the intersection and re-routes minor street thru and left turn movements to make a U-turn on major street. 151st Avenue approaches become Right-Turn in and Right-Turn out only. The existing mainline left turn movements will be retained.

The MUT option is a variation of RCI, and it involves re-directing U.S. 41 left turn lanes to the U-turns upstream and downstream along with 151st Avenue left and thru re-routed movements. See Appendix A for geometric layout of this intersection option.

The safety performance of these two intersection options indicates that MUT has less points of conflict than RCI, therefore a safer option. The following table is a simple association of crash history with conflict points of each intersection option:

Conflict		Intersection Type		
		Existing	RIC	MUT
Crossing	points =	24	4	0
	crashes =	*15*	*4*	*0*
Merge	points =	10	10	8
	crashes =	*3*	*2*	*2*
Diverge	points =	8	10	8
	crashes =	*1*	*1*	*1*
TOTAL	**points =**	**42**	**24**	**16**
	crashes =	19	7	3

See crash data summary graphic in Appendix F for crash diagram

The relationship between geometric modification of a conventional intersection into a RCI or MUT intersection and reduction in crashes is not a linear function. Therefore, the data presented in the table above are not the only indication of potential safety improvement countermeasures.

Synchro (11) and SimTraffic analysis were conducted for Design Year 2045 PM-peak hour. For RCI and MUT intersection, total delay/vehicle obtained was a sum of stop time, yield time, and time spent being redirected to make a U-turn (for movements where it is applicable). See table below and Appendix E.

			Existing		RCI				MUT			
Intersection Movement		Traffic (Veh/hr)	Delay/Veh (sec.)		Delay/Veh (sec.)				Delay/Veh (sec.)			
			Stop at Intersection	Total	Stop at Intersection	Yeild at U-Turn	Redirected	Total	Stop at Intersection	Yeild at U-Turn	Redirected	Total
EB	LT	59	259.4	259.4	7.4	4.3	52	63.7	7	6.6	52	65.6
	TH	37	215.8	215.8	7.4	4.3	52	63.7	7	6.6	52	65.6
	RT	58	244.5	244.5	7.4	–	0	7.4	7	–	0	7
WB	LT	2	40.1	40.1	2.5	5.1	49.6	57.2	1.3	15.8	64.2	81.3
	TH	13	90.8	90.8	2.5	5.1	49.6	57.2	1.3	15.8	64.2	81.3
	RT	76	35.9	35.9	2.5	–	0	2.5	1.3	–	0	1.3
NB	LT	32	13.9	13.9	10.6	–	–	10.6	0.6	15.8	64.2	80.6
	TH	446	3.1	3.1	1	–	–	1	0.6	–	–	0.6
	RT	6	0.6	0.6	0.2	–	–	0.2	0.6	–	–	0.6
SB	LT	126	9	9	5.2	–	–	5.2	0.7	6.6	52	59.3
	TH	917	4.2	4.2	2.1	–	–	2.1	0.7	–	–	0.7
	RT	76	1.3	1.3	0.5	–	–	0.5	0.7	–	–	0.7
Total Control Delay =			806.24 min.	(13.4 hrs)		183.3 min.	(3.1 hrs)			317.32 min.	(5.3 hrs)	

To evaluate effectiveness of each intersection option, delay time was calculated, as time spent by a vehicle navigating intersection, and used as a measure of mobility of the intersection. Both RCI and MUT improve intersection capacity.

Operating a safe and efficient intersection ultimately entails creating a balance between safety and mobility. Although MUT provides less conflict points than RCI, the safety studies show no significant difference in safety improvement of the two. The RCI option provides greater mobility than the MUT option. The RCI option is recommended.

Details of RCI Option (Recommended):
Despite some added travel time to make a U-Turn, the Synchro analysis report indicates an RCI will improve the LOS of 151st Avenue eastbound from F to C, and westbound from C to B for the design year. U.S. 41 will remain at LOS of A and B.

The estimated construction cost for this alternative is $2,103,000.00 (see Appendix I).

RCI will include full depth widening for new U-turn and right turn lanes and 2-inch mill and overlay for existing U.S. 41 mainline as needed within the project limits. The existing mainline left turn lanes will be lengthened to provide proper deceleration and storage and reconstructed as directed by Geotechnical and Pavement Design findings. New U-turn lanes will be added with full depth pavement widening. The existing 6-inch shoulder pavement shall be removed where widening is required. Outside shoulder full depth pavement reconstruction and widening will be as appropriate to accommodate loons and right-turn movements. (See Appendix A)

Right-Turn Lane Options:
151st Avenue redirected thru traffic will make a U-turn on U.S. 41, then make a right-turn onto 151st Avenue. Considering high speed of U.S. 41, and WB-67 truck movements at the intersection, this movement may pose navigation challenges in merging, accelerating, and decelerating after the U-turn before turning right.

Right turn traffic volume is not high, and U.S. 41 right turn lane is only warranted for southbound. Three options are proposed for right-turn lane:

Option 1 – No Right-Turn Lanes: This option leaves current right turn movement in place, allowing vehicles to turn right from the right thru lane. This option minimizes widening on the outside of roadway. This option does not provide a refuge space for U-turned vehicles that are susceptible to be caught up by fast moving thru traffic.

Option 2: Standard Right-Turn Lanes (Recommended): This option proposes a right turn lane for both U.S. 41 southbound and northbound (even though not warranted for northbound). The right-turn lanes will mirror left turn lanes in lengths for both capacity and intersection symmetry. This option requires widening on the outside of roadway. This option provides a refuge space for U-turned vehicles to clear path for fast moving thru traffic.

South U-turn location Options (for preferred alternative):
John's Flea Market located south of the intersection has multiple access drives. One drive is located approximately 850 ft from the intersection. The other drive is located 270 ft farther south. There is an existing median access from U.S. 41 southbound to the Flea Market.

INDOT design guidelines recommend 800 ft maximum distance between the intersection and U-turn for rural design conditions. The guidelines also recommend 100 ft minimum separation between a U-turn and the closest drive. The existing conditions of the flea market access poses a design constraint. Two options are proposed:

Option 1: Place the U-turn at the existing median access and reconstruct the flea market approach to restrict left turns and have a right turn only exit from this approach. This option places the U-turn at 800 ft from the intersection but does not provide the minimum 100 ft drive access separation.

Option 2 (Recommended): Place the U-turn south of existing median access and between the two flea market approaches. Reconstruct the north flea market approach to include a exclusive right turn lane with a right in – right out operation. Remove existing median access. This option places the U-turn at 950 ft from the intersection and provides the minimum 100 ft drive access separation.

See Appendix J for geometric layout of these two options.

Design standards used for this project shall be as follows:

Design Standard:	Multi-Lane, 3R Project, Divided (IDM Fig. 55-3A)
Design Speed	Posted, 60 mph
Lane Width(Mainline):	12 ft (match existing)
Lane Width(Aux. Lane):	12 ft.
Paved Shoulder Width:	Rt: 8 ft; Lt: 4 ft.
Usable Shoulder Width:	Rt: 9 ft; Lt: 5 ft.
Side Slopes:	4:1 or flatter
Obstruction Free Zone:	20 ft (IDM Chap. 55-5.02 #1, Arterial with Shoulders)
Clear Zone:	36 ft for 4:1 side slope (IDM Fig. 49-2A, 60 mph, > 6000 AADT)

No Level 1, 2, and 3 Design Exceptions are anticipated.

I. MAINTENANCE OF TRAFFIC DURING CONSTRUCTION

This project is considered a mobility significant project per consultation with INDOT District Traffic. The following is the temporary traffic control plan concept that shall be used for this project:

Construction year AADT (projected 2025) through U.S. 41 segment (0.35 mile) is 16,062 vpd. The construction year AADT for 151st Avenue is 2,453 vpd.

The Abbreviated Engineer's Report stated U.S. 41 shall remain open with phased construction. Traffic shall be maintained with single lane closures on U.S. 41 and short-term closures of each 151st Avenue approach. When construction is not taking place, the full roadway will be open and both lanes maintained. The maintenance of traffic plan will need to be reviewed and further coordinated with LaPorte District.

INDOT's Next Level Roads website lists an Added Travel Lanes project (Des. No. 1700025) to the north on U.S. 41 with an estimated start of Q3 of 2025. Contract coordination shall be done between the projects.

J. COST ESTIMATE

The project development cost for the preferred alternative is as follows:

Construction Cost (CN)	$ 2,861,000.00
Preliminary Engineering (PE)	$ 363,510.00
Right-of-Way (RW) Cost	$ 40,000.00
Total Project Cost	$ 3,264,510.00

K. ENVIRONMENTAL ISSUES

The Categorical Exclusion (CE) will be prepared in accordance with the National Environmental Policy Act, National Historic Preservation Act, and other relevant laws. A Waters Report will be prepared, if needed, to confirm the jurisdictional status of any waterway and presence of wetlands for CE level determination. Section 401 and 404 permits are not anticipated but will be prepared if required. A Construction Stormwater General Permit (CSGP) may be required depending on the total acreage impacted. No archaeological or historical resources are mapped in the project area. MPPA Category B is expected for added turn lanes. Hazard material concerns or bat impacts arising from this project shall be verified.

L. SURVEY REQUIREMENTS

A full topographic survey was performed in July 2022.

A geotechnical survey and report are anticipated. A pavement survey will be completed by the Pavement Designer for severely distressed roadway sections where full depth and partial depth patching may be required. The pavement survey should determine necessary length, width, and limits of the patching. Further geotechnical investigation and cores should be obtained within these locations.

M. RIGHT-OF-WAY IMPACT

The existing right-of-way is valid from the original plat of the Town of Cedar Lake. The existing apparent right-of-way is estimated to be 86 ft on east side of U.S. 41, 86 ft in southwest quadrant of intersection, and 95 ft in northwest quadrant of intersection.
The project is expected to require approximately 0.5 acres of permanent right of way. The right-of-way total is conservatively calculated based on the maximum estimated affected parcels and are subject to change during project development.

N. RAILROAD IMPACT

No impacts to railroads are anticipated.

O. UTILITY IMPACT

The U.S. 41 corridor contains the following overhead facilities: electric, cable and telecommunications. The corridor also contains underground gas and telecommunications facilities. Some utilities may be present both underground and overhead.

Refer to Appendix K for the 811 locate report listing utility companies within the limits of the project. Utility coordination procedures shall be in accordance with the design manual.

P. RELATED PROEJCTS

Below are other projects to be constructed in the vicinity of the Intersection improvement project.

Owner	Des. No.	Route	Location	Work	Targeted Construction
INDOT	1700025	U.S. 41	U.S. 41: From 3.25 mi S of U.S. 231 to US 231	Auxiliary Lanes, Two-way Left Turn Lanes	2025 (Q3)

Q. COORDINATION, MEETINGS, CONCURRENCE

A Scoping Meeting was conducted at the INDOT LaPorte District on March 7, 2022. Site visits were conducted by the survey crew on July 22, August 3, and September 19, 2022. Coordination was conducted with INDOT District Traffic on various scope issues including existing traffic counts and crash history.

This document was prepared by:

Date: November 22, 2022

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