

Indiana Department of Transportation

County Knox

Route SR 159

Des. No. 1700149

Streams, Rivers Watercourses & Jurisdictional Ditches

AI #2 documented that there would be 91 linear feet of permanent stream impact and 125 linear feet of temporary stream impact due to replacement of the bridge, placement of riprap, construction access and installation of temporary dewatering measures.

The changes in the project design increased the anticipated permanent stream impacts from approximately 91 linear feet to approximately 116 linear feet and the anticipated temporary stream impacts from approximately 125 linear feet to approximately 166 linear feet.

The initial IDNR-DFW early coordination response on December 9, 2019 included recommendations to minimize impacts to fish, wildlife, and botanical resources to the greatest extent possible and compensate for the impacts (Appendix A, pages 98 to 101). A re-coordination e-mail was sent on September 14, 2020 to the IDNR-DFW. In a September 15, 2020 response, IDNR-DFW stated that the increase in right-of-way does not change any of the recommendations from the initial letter and that all recommendation in the initial letter still apply (Appendix C, page 1).

The applicable recommendations included in the Environmental Commitments section of AI approved March 30, 2020 remain valid.

Terrestrial Habitat

AI# 2 documented that there would be 0.47 acres of habitat disturbance and that the removal of four trees would be necessary for the project.

The changes in the project design and revised right-of-way acreages increased potential habitat disturbance 1.37 acres to 1.84 acres. The removal of four trees documented in AI#2 will remain unchanged. This tree removal will occur outside the active season for bats. Avoidance alternatives would not be practical as project limits have been constrained to the smallest area possible to complete the project. Mitigation is not anticipated for tree removal.

The initial IDNR-DFW early coordination response on December 9, 2019 included recommendations to minimize impacts to fish, wildlife, and botanical resources (Appendix A, pages 98 to 101). A re-coordination e-mail was sent on September 14, 2020 to the IDNR-DFW. In a September 15, 2020 response, IDNR-DFW stated that the increase in right-of-way does not change any of the recommendations from the initial letter and that all recommendation in the initial letter still apply (Appendix C, page 1).

The applicable recommendations included in the Environmental Commitments section of AI#2 remain valid.

Farmland

AI#2 indicated that the project would convert prime farmland, and a score of 155 was obtained through the NRCS AD 1006 Form (Appendix A, pages 106 to 107).

Based on a desktop review, a review of photos taken during the site visit on September 12, 2019 by KEG, the aerial map of the project area and a review of the revised project plans the project will convert 0.78 acre of farmland as defined by the Farmland Protection Policy Act (FPPA). A re-coordination e-mail was

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sent on September 18, 2020 to the NRCS. Coordination with NRCS resulted in a score of 153 on the NRCS-AD-1006 form (Appendix C, page 4).

NRCS’s threshold score for significant impacts to farmland that result in the consideration of alternatives is 160. Since this project score is less than the threshold, no significant loss of prime, unique, statewide, or local important farmland will result from this project.

No alternatives other than those previously discussed in this document will be investigated without reevaluating impacts to prime farmland.

Environmental Justice

Environmental Justice (EJ) (Presidential EO 12898)

During the development of the project were EJ issues identified?

Yes	No
X	
X	

Does the project require an EJ analysis?

If YES, then:

Are any EJ populations located within the project area?

	X
	X

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

Under FHWA Order 6640.23A, FHWA and INDOT, as a recipient of funding from FHWA, are responsible to ensure that their programs, policies, and activities do not have a disproportionately high and adverse effect on minority or low-income populations. Per the current INDOT Categorical Exclusion Manual, an Environmental Justice (EJ) Analysis is required for any project that has two or more relocations or 0.5 acre of additional permanent right-of-way. The project will require 1.66 acre of new permanent right-of-way. Therefore, an EJ Analysis is required.

Potential EJ impacts are detected by locating minority and low-income populations relative to a reference population to determine if populations of EJ concern exists and whether there could be disproportionately high and adverse impacts to them. The reference population may be a county, city, or town and is called the community of comparison (COC). In this project, the COC is Knox County. The community that overlaps the project limits is called the affected community (AC). In this project, the AC includes Census Tract 9551. An AC has a population of concern for EJ if the population is more than 50% minority or low-income or if the low-income or minority population is 125% of the COC. Data from the 2014-2018 American Community Survey was obtained from the US Census Bureau Website <https://data.census.gov/cedsci> on September 14, 2020 by HNTB (Appendix E, pages 4 to 10). The data collected for minority and low-income populations within the AC are summarized in the below table.

Table 4: Minority and Low-Income Data (US Census Bureau - 2018)

	COC: Knox County	AC: Census Tract 9551, Knox County, Indiana
Percent Minority	7.2%	1.4%
125 percent of COC	9.0%	
EJ Population of Concern		No
Percent Low-Income	17.2%	6.8%
125 percent of COC	21.5%	
EJ Population of Concern		No

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Census Tract 9551 has a percent minority of 1.4% which is below 50% and is below the 125% COC threshold. Therefore, the AC does not contain minority populations of EJ concern.

Census Tract 9551 has a percent low-income of 6.8% which is below 50% and is below the 125% COC threshold. Therefore, the AC does not contain low-income populations of EJ concern.

The census data sheets, map, and calculations can be found in Appendix E, pages 4-10. No further environmental justice analysis is warranted.

Hazardous Materials

Based on a review of GIS and available public records, a Red Flag Investigation (RFI) was completed on December 20, 2019 by KEG (Appendix A, pages 139 to 150). One National Pollutant Discharge Elimination System (NPDES) Facility and two NPDES pipes are located within 0.5 mile of the project area, and none are located within the project area; however, no hazmat sites were identified in or within 0.5 mile of the project area that will impact the project. The NPDES facility is located approximately 0.12 mile from the project area. The nearest NPDES Pipe Location is located 0.13 mile from the project area. In an e-mail dated September 15, 2020 INDOT SAM stated an addendum is not warranted. No impacts are expected. Further investigation for hazardous material concerns is not required at this time.

Commitments

The applicable recommendations included in the Environmental Commitments section of AI#2 remain valid (Appendix A, pages 13 to 15).

Conclusion

This AI was prepared to address revisions in design and the corresponding increase in the right-of-way acquisition for the project. There are no additional impacts to environmental features, other than those outlined in this document. Unless specifically discussed and addressed in this AI, all information provided, and statements made in AI #2 remain valid.

SR 159 over Wells Ditch Bridge Replacement
Knox County, Indiana
Des. No. 1700149

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Knox County, Indiana
Des. No. 1700149

Appendix A: INDOT Supporting Documentation

Categorical Exclusion Level Thresholds

	PCE	Level 1	Level 2	Level 3	Level 4 ¹
Section 106	Falls within guidelines of Minor Projects PA	"No Historic Properties Affected"	"No Adverse Effect"	-	"Adverse Effect" Or Historic Bridge involvement ²
Stream Impacts	No construction in waterways or water bodies	< 300 linear feet of stream impacts	≥ 300 linear feet of stream impacts	-	Individual 404 Permit
Wetland Impacts	No adverse impacts to wetlands	< 0.1 acre	-	< 1 acre	≥ 1 acre
Right-of-way³	Property acquisition for preservation only or none	< 0.5 acre	≥ 0.5 acre	-	-
Relocations	None	-	-	< 5	≥ 5
Threatened/Endangered Species (Species Specific Programmatic for Indiana bat & northern long eared bat)	"No Effect", "Not likely to Adversely Affect" (Without AMMs ⁴ or with AMMs required for all projects ⁵)	"Not likely to Adversely Affect" (With any other AMMs)	-	"Likely to Adversely Affect"	Project does not fall under Species Specific Programmatic
Threatened/Endangered Species (Any other species)	Falls within guidelines of USFWS 2013 Interim Policy	"No Effect", "Not likely to Adversely Affect"	-	-	"Likely to Adversely Affect"
Environmental Justice	No disproportionately high and adverse impacts	-	-	-	Potential ⁶
Sole Source Aquifer	Detailed Assessment Not Required	-	-	-	Detailed Assessment
Floodplain	No Substantial Impacts	-	-	-	Substantial Impacts
Coastal Zone Consistency	Consistent	-	-	-	Not Consistent
National Wild and Scenic River	Not Present	-	-	-	Present
New Alignment	None	-	-	-	Any
Section 4(f) Impacts	None	-	-	-	Any
Section 6(f) Impacts	None	-	-	-	Any
Added Through Lane	None	-	-	-	Any
Permanent Traffic Alteration	None	-	-	-	Any
Coast Guard Permit	None	-	-	-	Any
Noise Analysis Required	No	-	-	-	Yes
Air Quality Analysis Required	No	-	-	-	Yes ⁷
Approval Level	Concurrence by INDOT District Environmental or Environmental Services	Yes	Yes	Yes	Yes
<ul style="list-style-type: none"> • District Env. Supervisor • Env. Services Division • FHWA 					Yes

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

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

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

⁴AMMs = Avoidance and Mitigation Measures.

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

⁶Potential for causing a disproportionately high and adverse impact.

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

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

Indiana Department of Transportation

County Knox Route SR 159 Des. No. 0015070 Project No. STP-4942

**FHWA-Indiana Environmental Document
CATEGORICAL EXCLUSION DOCUMENT FORM
GENERAL PROJECT INFORMATION**

Road No./County:	SR 159 / Knox County
Designation Number:	0015070
Project Description/Termini:	Bridge Over Wells Ditch, 2.49 miles North of SR 67

Document Approval

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

X	Categorical Exclusion, Level 2 – The proposed action meets the criteria for Categorical Exclusion Manual Level 2 - table 1, CE Level Thresholds. Additional research and documentation is necessary to determine the effects on the environment. Categorical Exclusion Form to be prepared. Projects that do not meet the criteria for CE Level 2 shall be processed at the appropriate higher level. Required Signatories: ESM, District Planning Director (DPD).
	Categorical Exclusion, Level 3 – The proposed action meets the criteria for Categorical Exclusion Manual Level 3 - table 1, CE Level Thresholds. Additional research and documentation is necessary to determine the effects on the environment. Categorical Exclusion Form to be prepared. Projects that do not meet the criteria for CE Level 3 shall be processed at the appropriate higher level. Required Signatories: ESM, DPD, OES.
	Categorical Exclusion, Level 4 – The proposed action meets the criteria for Categorical Exclusion Manual Level 4 - table 1, CE Level Thresholds. Additional research and documentation is necessary to determine the effects on the environment. Categorical Exclusion Form to be prepared. Projects that do not meet the criteria for CE Level 4 shall be processed at the appropriate higher level. Required Signatories: ESM, DPD, OES, FHWA.
	Environmental Assessment (EA) – EAs require a separate FONSI. Additional research and documentation is necessary to determine the effects on the environment.

Approval Wayne Dittelberg 6/18/07 John W. Curry 6/18/07
 ESM Signature Date DPD Signature Date

 OES Signature Date FHWA Signature Date

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

Name and organization of CE Preparer: Brittney Smith, INDOT

This is page 1 of 18, which is part of: SR 159 Bridge over Wells Ditch, Des # 0015070 Date: 6/13/07

Additional Information (AI) to CE Level 2 Dated 6/18/07
SR 159 Bridge Replacement over Wells Ditch
Des # 0015070

The original Environmental Document is a CE Level 2. It was completed 6/18/07. This AI is being written due to the change in the Maintenance of Traffic (MOT) scheme. The original MOT consisted of closing the road. The MOT was changed to a temporary runaround. The temporary runaround will be built to the west of the existing structure.

A lesser amount of permanent right-of-way is required for the project as compared to what was stated in the Environmental Document, while an increased amount of temporary right-of-way is required. Total permanent right-of-way required will be 0.53 acres compared to 1.2 acres assumed in the Environmental Document. Total temporary right-of-way required will be 3.0 acres, where the Environmental document estimated 0.07 acres.

Coordination was done with the INDOT Office of Environmental Services to ensure that the additional right-of-way due to the runaround would not add additional environmental affects. Joshua Mott from the ecology section confirmed the will be no additional biological effects (wetlands, stream impacts, etc.) due to the additional right-of-way. An updated biological assessment was prepared to reflect the new right-of-way amounts. See Attachment 1 for the updated biological assessment.

Further archaeology was required on the west side of SR 159 because of the addition of the temporary right-of-way. David Moffat with the Office of Environmental Services archaeology section conducted the additional fieldwork. No additional affects were found.

Section 106 coordination was completed with the State Historic Preservation Office (SHPO). After a 30-day review period, they agreed with the "no historic properties affected" finding of the INDOT Office of Environmental Services. See Attachment 2 for the letter from SHPO.

All permit conditions will have to be followed to minimize environmental impacts as stated in the Environmental Document.

AI Prepared by: Environmental/Scoping Engineer, Brittney Smith, E.I.

Signature: Brittney Smith Date: 8/14/08

AI Reviewed by: Environmental/Scoping Manager, Wayne Dittelberger, P.E.

Signature: Wayne Dittelberger Date: 8/18/08

CATEGORICAL EXCLUSION LEVEL 1 FORM

Date: March 24, 2020

Initial Version

Additional Information to CE Level 1 Dated:

CE-2 (Des. No. 0015070),
6/18/2007,
AI #1 (Des. No. 0015070),
8/18/2008

Purpose of this document:

CE Level 1 documentation for exempted projects

State-funded categorical exemption documentation

Ryan Falls

Digitally signed by
Ryan Falls
Date: 2020.03.30
13:08:50 -04'00'

Approval CE Level 1 or State-Funded CE:

Environmental Scoping Manager or
Environmental Policy Manager

Date

PROJECT INFORMATION			
County, Route	Knox County, SR 159	Des Number	1700149
Purpose and Need:	<p>Need: The need for this project is due to the hydraulic inadequacy, substandard clear structure roadway, and deterioration of the existing single-span prestressed concrete box beam bridge (159-42-06350B; NBI 028050), as documented in the Indiana Department of Transportation (INDOT) Bridge Inspection Report, dated June 20, 2019. According to the inspection report, several full length, longitudinal cracks are visible on the topside of the deck. Minor efflorescence is visible along underside joints between beams in a few local areas. Approximately 250 square feet of surface delamination is present along the full width at ends of the wearing surface. The superstructure has longitudinal cracking, with efflorescence present in some cracks. Varying amounts of spalling are present on beams. The substructure is concrete vertical abutments with timber planks for the wingwalls. The timber planks and widened caps are in poor condition. The channel at the bridge site has heavy aggregation/deposition along the north abutment. The channel is not well aligned with the bridge opening. Continued deterioration of the structure will result in lower facility performance and potential closure of the roadway, thus maintenance or replacement of the structure is required.</p> <p>Purpose: The purpose of the INDOT project is to maintain the crossing of SR 159 over Wells Ditch (also known as Tilley Ditch) for continued safe travel, and to maintain hydraulic function at the crossing.</p>		
Project Description:	<p>Location: The project is located on SR 159, 2.49 miles north of SR 67 (Appendix B, page 1). The total project length is approximately 750 feet. The project is located in Section 5, Township 4 North, Range 8 West, in Washington Township, Knox County, Indiana.</p>		

	<p><u>Existing Conditions:</u> This section of SR 159 is classified as a Major Collector and consists of two 12-foot lanes with 2-foot shoulders. The road crosses over Wells Ditch via a prestressed concrete box beam bridge that is approximately 54 feet long and 28 feet wide (curb-to-curb) (Appendix B, pages 2 to 9). The roadway is surrounded by agricultural fields, tree lines, and a residential structure. The existing bridge has various deficiencies in regards to hydraulics, clear structure roadway, and general deterioration. Continued deterioration of the bridge will result in lower facility performance and present a potential travel hazard.</p> <p><u>Preferred Alternative:</u> INDOT and the Federal Highway Administration (FHWA) intend to proceed with the following project. The preferred alternative includes removing the existing structure and replacing it with a single-span pre-cast reinforced concrete 3-sided box that is 50-foot long and 40-foot wide. Revetment riprap will be installed along both banks of the stream for the length of the bridge as scour protection. Guardrail will be replaced. Approach pavement will be replaced. Preliminary project plans are included in Appendix B (pages 10 to 22). The project limits have been constrained to the smallest area possible to minimize impacts to the environment. If required, stream impacts may be mitigated through the IDNR In-Lieu Fee Program. Replacing the existing structure will address the current structure deficiencies, therefore maintaining the ability for traffic to cross over Wells Ditch and maintaining the hydraulic function. This meets the purpose and need.</p> <p>The proposed maintenance of traffic (MOT) for the project is a full road closure of SR 159 with an official state detour route. Preliminary project plans are included in Appendix B, page 10. The closure will pose a temporary inconvenience to traveling motorists (including school buses and emergency services); however, no significant delays are anticipated, and all inconveniences will cease upon project completion. Utility coordination is being conducted by a consultant, HNTB.</p> <p>The new roadway surface will begin approximately 350 feet south and end approximately 350 feet north of the new bridge, which are logical termini for the project. This project demonstrates independent utility because it will improve the function of the structure as an independent project and does not depend on any other planned projects.</p>
<p>Other Alternatives Considered:</p>	<p><u>Rehabilitating the Existing Structure:</u> Rehabilitating the existing bridge would address the deteriorating condition and hydraulic deficiencies, therefore ensuring future safe travel and hydraulic function, meeting the purpose and need. However, the bridge has deteriorated beyond the point of cost-effective rehabilitation, and would result in environmental impacts similar to replacement of the structure. Therefore, this alternative is not recommended.</p> <p><u>Replacement with a 3-Sided Arch Top Structure:</u> Replacing the existing structure would address the deteriorating condition and hydraulic deficiencies, therefore ensuring future safe travel and hydraulic function, meeting the purpose and need. However, this specific replacement has similar environmental impacts but is not as cost-effective. Therefore, this alternative is not recommended.</p> <p><u>Replacement with a Single-span Prestressed Concrete HN 54x49 Bulb-Tee beam bridge with spill through integral abutments supported on piles:</u> Replacing the existing structure would address the deteriorating condition and hydraulic deficiencies, therefore ensuring future safe travel and hydraulic function, meeting the purpose and need. However, this specific replacement would require channel clearing and would have higher long-term maintenance requirements, resulting in greater environmental impacts and higher costs. Therefore, this alternative is not recommended.</p>

	No Build: The no build alternative does not address the deteriorating condition and hydraulic deficiencies of the current structure. If no action is taken, the structure would continue to deteriorate and eventually become unsafe for travel and removed from service. This alternative does not meet the purpose and the need. Therefore, this alternative is not recommended.		
Project Termini:	The project is located on SR 159, approximately 2.49 miles north of SR 67.		
Funding Source(s):	<input checked="" type="checkbox"/> Federal	<input checked="" type="checkbox"/> State	<input type="checkbox"/> Local <input type="checkbox"/> Other
Project Sponsor:	Indiana Department of Transportation	Estimated Cost	\$ 5,255,233
		Project Length	750 feet

Name and organization of CE Level 1 Preparer: Virginia Flynn, Kaskaskia Engineering Group, LLC.

INDOT ES/District Env. Reviewer Signature:  Date: 03/30/2020
INDOT Environmental Manager II

SCOPE OF THE PROPOSED ACTION			
Public Involvement*		No: <input checked="" type="checkbox"/>	Yes: <input type="checkbox"/> Possible: <input type="checkbox"/>
Comments:	<p>Notice of Entry letters were mailed to potentially affected property owners near the project area on June 14, 2019 notifying them about the project and that individuals responsible for land surveying and field activities may be seen in the area. A sample copy of the Notice of Entry letter is included in Appendix C, page 26.</p> <p>The project does not meet any of the conditions set by the current <i>Indiana Department of Transportation (INDOT) Public Involvement Manual</i> that require formal public involvement. Therefore, the project sponsor is not required to offer the public an opportunity to request a public hearing. The project is not anticipated to cause any public controversy. This does not preclude the need for public involvement or public information meeting in the future.</p>		
Right-of-way (permanent and temporary, in acres)		No: <input type="checkbox"/>	Yes: <input checked="" type="checkbox"/> Possible: <input type="checkbox"/>
Comments:	<p>The existing right-of-way (ROW) extends from edge of pavement to a maximum of 50 feet from roadway centerline west of SR 159 and is at the edge of pavement on the east side of SR 159. The project requires 0.47 acre of permanent ROW, primarily on the east side of the roadway (0.4 acre), for installation of riprap for scour protection, and expansion of grading limits. This land is currently agricultural land and maintained grass. No temporary right-of-way is required.</p> <p>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.</p>		
Disruption to public facilities/services (such as schools, emergency service)		No: <input type="checkbox"/>	Yes: <input checked="" type="checkbox"/> Possible: <input type="checkbox"/>
Comments:	<p>Based on a desktop review, a site visit on September 12, 2019 by Kaskaskia Engineering Group (KEG), the aerial map of the project area (Appendix B, page 1), Google Earth, and the Red Flag Investigation (RFI) report (Appendix E, pages 1 to 12), there are no public facilities within the 0.5 mile search radius. There are no public facilities within or adjacent to the project area. There is one school (North Knox Junior/Senior High School) located 1.35 miles north of the project. The main access from the south to the school is via SR 159.</p>		

SCOPE OF THE PROPOSED ACTION			
	<p>The MOT for the project will require a full closure of SR 159 with an official state detour route consisting of SR 67 and SR 58. Maintenance of traffic plans can be found in Appendix B (pages 13-14) for a total length of 17 miles. The official state detour route will take approximately 22 minutes.</p> <p>The road closure will take place when school is out of session to accommodate North Knox Junior/Senior High School and access to all properties will be maintained during construction. Therefore, no impacts are expected.</p> <p>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.</p>		
Involvement with existing bridge(s) (Include structure number(s))		No:	Yes: <input checked="" type="checkbox"/> Possible:
Comments:	<p>This project involves the bridge over Wells Ditch (159-42-06350B; NBI 028050), located on SR 159, 2.49 miles north of SR 67. The existing bridge is a prestressed concrete box beam bridge, 54 feet long and 28 feet wide. The bridge will be replaced with a single-span pre-cast reinforced concrete 3-sided box that is 50-foot long and 40-foot wide.</p>		

** Limited public involvement, CE-1 level projects will typically have no public hearing opportunity offered.*

INVOLVEMENT WITH RESOURCES			
Streams, Rivers, and Watercourses Impacted (linear feet)		No:	Yes: <input checked="" type="checkbox"/> Possible:
Comments:	<p>Based on a desktop review, a site visit on September 12, 2019 by KEG, the aerial map of the project area (Appendix B, page 1), and the water resources map in the RFI report (Appendix E, page 7), there are four rivers and streams located within the 0.5 mile search radius. There is one stream present within or adjacent to the project area. A <i>Waters of the U.S. Determination/Wetland Delineation Report</i> was INDOT Ecology and Waterway Permitting Office approved on December 6, 2019. Please refer to Appendix F, page 2 for the <i>Waters of the U.S. Determination/Wetland Delineation Report</i>. It was determined that one likely jurisdictional stream (Wells Ditch) is located within the investigated area. The U.S. Army Corps of Engineers (USACE) makes all final determinations regarding jurisdiction.</p> <p>Wells Ditch is a perennial stream. Wells Ditch flows into Maria Creek approximately 3.32 miles northwest of the project area. During a site visit conducted on September 12, 2019 by KEG, a defined ordinary high water mark (OHWM) was observed that was approximately 15 feet wide and 18 inches deep. Wells Ditch has an upstream drainage area of two square miles and is approximately 130 feet in length within the project area. Impacts are expected to this stream and are discussed below.</p> <p>Temporary and permanent impacts are expected to Waters of the U.S streams (Wells Ditch), due to replacement of the bridge and the placement of riprap. There will be approximately 91 linear feet (LFT) (0.04 acre) of permanent impacts and 125 LFT (0.06 acre) of temporary impacts. Due to the impacts to a Waters of the U.S., a USACE Section 404 Permit and an Indiana Department of Environmental Management (IDEM) Section 401 Water Quality Certification will be required. Mitigation, if required for stream impacts, will be through the IDNR In-Lieu Fee Program.</p> <p>Early coordination letters were sent to USACE, U.S. Fish and Wildlife Service (USFWS), IDEM, and Indiana Department of Natural Resources, Division of Fish and Wildlife (IDNR-DFW) on November 6, 2019. USACE did not respond to the early coordination letter. The USFWS early coordination response on November 6, 2019 included standard recommendations for natural resources (Appendix C, pages 22 to 23). The IDEM auto-generated letter was signed on February 21, 2020 and included standard</p>		

INVOLVEMENT WITH RESOURCES			
	<p>recommendations (Appendix C, pages 7 to 14). In a December 6, 2019 early coordination response, the IDNR-DFW provided a list of recommendations for consideration to minimize impacts to fish, wildlife, and botanical resources to the greatest extent possible and compensate for the impacts (Appendix C, pages 17 to 19). The applicable recommendations are included in the Environmental Commitments section of this CE document.</p>		
Wetlands (acres)		No: <input checked="" type="checkbox"/>	Yes: <input type="checkbox"/> Possible: <input type="checkbox"/>
Comments:	<p>Based on a review of the National Wetlands Inventory (NWI) online mapper (https://www.fws.gov/wetlands/data/Mapper.html), a site visit on September 12, 2019 by KEG, the USGS topographic map (Appendix B, pages 1), and the RFI report (Appendix E, pages 1 to 12), there are eight wetlands mapped within the 0.5 mile search radius. No wetlands are present within or adjacent to the project area, therefore, no impacts are expected.</p> <p>A <i>Waters of the U.S. Determination/Wetland Delineation Report</i> was INDOT Ecology and Waterway Permitting Office approved on December 6, 2019. Please refer to Appendix F, page 2 for the <i>Waters of the U.S. Determination/Wetland Delineation Report</i>. It was determined that there are no wetlands located within the project area. The USACE makes all final determinations regarding jurisdiction.</p> <p>Early coordination letters were sent to USACE, USFWS, IDEM, and IDNR-DFW on November 6, 2019. The USACE did not respond to the early coordination letter. The USFWS early coordination response on November 6, 2019 included standard recommendations for natural resources (Appendix C, pages 22 to 23). An auto-generated letter from IDEM was signed on February 21, 2020 and contained various recommendations (Appendix C, pages 7 to 14). The IDNR-DFW early coordination response on December 6, 2019 include recommendations to minimize impacts to fish, wildlife, and botanical resources (Appendix C, pages 17 to 19). All applicable recommendations are included in the Environmental Commitments section of this CE document.</p>		
Disturbance of Terrestrial Habitat (acres)		No: <input type="checkbox"/>	Yes: <input checked="" type="checkbox"/> Possible: <input type="checkbox"/>
Comments:	<p>Based on a desktop review, a site visit on September 12, 2019 by KEG, and the aerial map of the project area (Appendix B, page 1), open agricultural fields and maintained turf grass areas surround the project area, with forested acreage to the east along Wells Ditch. The roadside slopes contain mowed grass. Dominant vegetation within the project area included silver maple (<i>Acer saccharinum</i>), giant ragweed (<i>Ambrosia trifida</i>), Johnson grass (<i>Sorghum halepense</i>), reed canary grass (<i>Phalaris arundinacea</i>), green foxtail (<i>Setaria viridis</i>), Virginia wild rye (<i>Elymus virginicus</i>), common milkweed (<i>Asclepias syriaca</i>), and barnyard grass (<i>Echinochloa crus-gallii</i>). Soil and associated vegetation will be disturbed due to grading of side slopes, the installation of the structure, and work around the structure (approximately 0.47 acres). Additionally, four (4) trees will be removed, outside the active season for bats. Avoidance alternatives would not be practical as project limits have been constrained to the smallest area possible to complete the project. Mitigation is not anticipated for tree removal.</p> <p>Early coordination letters were sent to USFWS, IDEM, and IDNR-DFW on November 6, 2019. The USFWS early coordination response on November 6, 2019 included standard recommendations for natural resources (Appendix C, pages 22 to 23). The IDEM auto-generated letter was signed on February 21, 2020 and contained standard recommendations (Appendix C, pages 7 to 14). The IDNR-DFW early coordination response on December 6, 2019 include recommendations to minimize impacts to fish, wildlife, and botanical resources (Appendix C, pages 17 to 19). All applicable recommendations are included in the Environmental Commitments section of this CE document.</p>		

INVOLVEMENT WITH RESOURCES			
Karst Features	No: X	Yes:	Possible:
Comments:	<p>Based on a desktop review, the project is located outside the designated karst region of Indiana as outlined in the October 13, 1993 Memorandum of Understanding (MOU). According to the topo map of the project area (Appendix B, page 1), and the RFI report (Appendix E, pages 1 to 12), there are no karst features identified within or adjacent to the project area. In the early coordination response, the Indiana Geological Survey (IGS) did not indicate that karst features exist in the project area (Appendix C, pages 4 to 6). The report also indicated: potential mine subsidence, high liquefaction potential, high potential bedrock resource, and low potential sand and gravel resource. The following active or abandoned mineral resources extraction sites are present within 0.5 mile of the project area: petroleum exploration wells, underground coal mines, and surface coal mines. Response from IGS has been communicated with the designer on February 26, 2020. No impacts are expected.</p>		
Threatened and Endangered Species	No:	Yes:	Possible: X
Comments:	<p>Based on a desktop review and the RFI report (Appendix E, pages 1 to 12), completed by KEG on December 20, 2019, the IDNR Knox County Endangered, Threatened and Rare (ETR) Species List has been checked and is included in Appendix E, pages 10 to 12. The highlighted species on the list reflect the federal and state identified ETR species located within the county. According to the IDNR-DFW early coordination response letter dated December 6, 2019 (Appendix C, pages 17 to 19), the Natural Heritage Program’s Database has been checked and no plant or animal species listed as state or federally threatened, endangered, or rare have been reported to occur in the vicinity of this project.</p> <p><u>Indiana Bat and Northern Long-Eared Bat:</u> Project information was submitted through the USFWS’s Information for Planning and Consultation (IPaC) portal, and an official species list was generated (Appendix C, pages 27 to 32). The project is within range of the federally endangered Indiana bat (<i>Myotis sodalis</i>) and the federally threatened northern long-eared bat (NLEB) (<i>Myotis septentrionalis</i>). No additional species were found within or adjacent to the project area other than the Indiana bat and northern long-eared bat.</p> <p>The project qualifies for the <i>Range-wide Programmatic Informal Consultation for the Indiana bat and northern long-eared bat (NLEB)</i>, dated May 2016 (revised February 2018), between FHWA, Federal Railroad Administration (FRA), Federal Transit Administration (FTA), and USFWS. An effect determination key was completed on November 8, 2019, and based on the responses provided, the project was found to “may affect, but not likely to adversely affect” the Indiana bat and/or the NLEB. INDOT reviewed and verified the effect finding on November 8, 2019, and requested USFWS’s review of the finding (Appendix C, pages 35 to 49). No response was received from USFWS within the 14-day review period; therefore, it was concluded they concur with the finding. Avoidance and Mitigation Measures (AMMs) are included as firm commitments in the Environmental Commitments section of this document.</p> <p><u>Migratory Birds:</u> Structure 159-42-06350B, located 2.49 miles north of SR 67, has shown evidence of use (i.e. nests) by a bird species protected under the Migratory Bird Treaty Act (MBTA) during the June 20, 2019 inspection. Avoidance and minimization measures must be implemented prior to the start of and during the nesting season. Nests without eggs or young should be removed prior to construction during the non-nesting season (September 8 - April 30) and during the nesting season if no eggs or young are present. Nests with eggs or young cannot be removed or disturbed during the nesting season (May 1 - September 7). Nests with eggs or young should be screened or buffered from active construction. Details of the required procedures are outlined in the “Potential Migratory Bird on Structure Unique Special Provision.” This firm commitment is included in the <i>Environmental Commitments</i> of this document.</p> <p>This precludes the need for further consultation on this project as required under Section 7 of the</p>		

INVOLVEMENT WITH RESOURCES			
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.			
Drinking Water Resources		No: <input checked="" type="checkbox"/>	Yes: <input type="checkbox"/> Possible: <input type="checkbox"/>
Comments:	<p><u>Sole Source Aquifer:</u> The project is located in Knox County, which is not located within the area of the St. Joseph Sole Source Aquifer, the only legally designated sole source aquifer in the state of Indiana. Therefore, the FHWA/EPA Sole Source Aquifer Memorandum of Understanding (MOU) is not applicable to this project. Therefore, a detailed groundwater assessment is not needed and no impacts are expected.</p> <p><u>Wellhead Protection Area and Source Water:</u> The Indiana Department of Environmental Management’s Wellhead Proximity Determinator website (http://www.in.gov/idem/cleanwater/pages/wellhead/) was accessed on November 4, 2019 by KEG. This project is located within a Wellhead Protection Area. In an early coordination response letter dated November 27, 2019, IDEM stated the project is located within a Wellhead Protection Area (Appendix C, page 15). An early coordination letter was sent to the Freelandville Water Association on December 2, 2019. No response was received. This project will not adversely impact the wellhead protection area as all fuel storage and/or hazardous materials are properly stored and used. Fuel and other chemical storage at the site would be equipped with secondary containment and spill prevention protocols followed. If a spill of petroleum or hazardous material occurs at the site, the contractor should report this to the authorities (911) immediately so that the water department can be involved to assure appropriate cleanup response.</p> <p><u>Water Wells:</u> The Indiana Department of Natural Resources Water Well Record Database website (https://www.in.gov/dnr/water/3595.htm) was accessed on November 4, 2019 by KEG. No wells are located near this project. Therefore, no impacts are expected.</p> <p><u>Urban Area Boundary:</u> Based on a desktop review of the INDOT MS4 website (https://entapps.indot.in.gov/MS4/) by KEG on November 4, 2019, and the RFI report; this project is not located in an Urban Area Boundary location. No impacts are expected.</p> <p><u>Public Water System:</u> Based on a desktop review, a site visit on September 12, 2019 by KEG and the aerial map of the project area (Appendix B, page 1), no public water systems were identified. Therefore, no impacts are expected.</p>		
Flood Plains (note transverse or longitudinal impact)		No: <input type="checkbox"/>	Yes: <input checked="" type="checkbox"/> Possible: <input type="checkbox"/>
Comments:	<p>Based on a desktop review of the IDNR Floodway Information Portal website (http://dnrmaps.dnr.in.gov/appsphp/fdms/) by KEG on November 4, 2019, and the Waters Determination Report; this project is located in a regulatory floodplain as determined from approved IDNR floodplain maps (Appendix F, page 16). An early coordination letter was sent on February 4, 2020 to the local Floodplain Administrator. The floodplain administrator did not respond within the 30-day time frame.</p> <p>This project qualifies as a Category 3 per the INDOT CE Manual, which states the modifications to drainage structures included in this project will result in an insubstantial change in their capacity to carry flood water. This change could cause a minimal increase in flood heights and flood limits. These minimal increases will not result in any substantial adverse impacts on the natural and beneficial floodplain values; they will not result in substantial change in flood risks or damage; and they do not have substantial potential for interruption or termination of emergency service or emergency routes; therefore, it has been determined that this encroachment is not substantial.</p>		

INVOLVEMENT WITH RESOURCES			
Farmland (acres)	No: <input checked="" type="checkbox"/>	Yes: <input type="checkbox"/>	Possible: <input type="checkbox"/>
Comments:	<p>Based on a desktop review, a site visit on September 12, 2019 by KEG, and the aerial map of the project area (Appendix B, page 1), the project will convert 0.47 acre of farmland as defined by the Farmland Protection Policy Act. An early coordination letter was sent on November 6, 2019 to Natural Resources Conservation Service (NRCS). Coordination with NRCS resulted in a score of 155 on the NRCS-AD-1006 Form (Appendix C, page 25). NRCS's threshold score for significant impacts to farmland that result in the consideration of alternatives is 160. Since this project score is less than the threshold, no significant loss of prime, unique, statewide, or local important farmland will result from this project. No alternatives other than those previously discussed in this document will be investigated without reevaluating impacts to prime farmland.</p>		
Cultural Resources	No: <input checked="" type="checkbox"/>	Yes: <input type="checkbox"/>	Possible: <input type="checkbox"/>
Comments:	<p>On January 17, 2020 the INDOT Cultural Resources Office (CRO) determined that this project falls within the guidelines of Category B, Type 12 under the Minor Projects Programmatic Agreement (Appendix D, pages 1 to 5). Category B, Type 12 covers replacement, widening, or raising the elevation of the superstructure on existing bridges, and bridge replacement projects. The project area was studied for archaeological resources in 2007 and 2008. A records check found no new archaeological sites or reconnaissance surveys conducted within or adjacent to the current project area. The area covered by the 2007 and 2008 reconnaissance is much larger than the current project; therefore, no new archeological investigation was required for the project. No further coordination is required. This completes the Section 106 process and the responsibilities of the FHWA under Section 106 have been fulfilled.</p>		
Section 4(f) and Section 6(f) Resources	No: <input checked="" type="checkbox"/>	Yes: <input type="checkbox"/>	Possible: <input type="checkbox"/>
Comments:	<p>Section 4(f): 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.</p> <p>Based on a desktop review, a site visit on September 12, 2019 by KEG, the aerial map of the project area (Appendix B, page 1), and the RFI report (Appendix E, pages 1 to 12), there are no Section 4(f) resources located within 0.5 mile search radius. There are no Section 4(f) resources within or adjacent to the project area. Therefore, no use is expected.</p> <p>Section 6(f): 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.</p> <p>A review of 6(f) properties on the Land and Water Conservation Fund (LWCF) website at https://www.lwcfcoalition.com/tools revealed a total of four properties in Knox County (Appendix H, page 1). None of these properties are located within or adjacent to the project area. Therefore, there will be no impacts to 6(f) resources as a result of this project.</p>		

INVOLVEMENT WITH RESOURCES			
Air Quality Impacts		No: <input checked="" type="checkbox"/>	Yes: <input type="checkbox"/>
Comments:	<p><u>STIP/TIP:</u> This project is included in the Fiscal Year (FY) 2020-2024 Statewide Transportation Improvement Program (STIP) (Appendix G, page 1). Knox County is not located within a Metropolitan Planning Organization.</p> <p><u>Attainment Status:</u> This project is located in Knox County, which is currently in attainment for all criteria pollutants according to IDEM. Therefore, the conformity procedures of 40 CFR Part 93 do not apply.</p> <p><u>MSAT:</u> 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.</p>		
Community/Economic Impacts		No: <input checked="" type="checkbox"/>	Yes: <input type="checkbox"/>
Comments:	<p><u>Indirect and Cumulative Impacts:</u> Indirect impacts are effects which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate. Cumulative impacts affect the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such actions.</p> <p>No indirect impacts or cumulative impacts are expected as the project result will not differ substantially from the pre-project existing conditions. The overall use of the surrounding land and bridge will remain the same upon completion of the project.</p> <p><u>Environmental Justice (EJ):</u> 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. This project will have no relocations and will require less than 0.5 acre of additional permanent right-of-way; therefore, an EJ analysis is not required per the current INDOT Categorical Exclusion Manual.</p>		
Hazardous Materials		No: <input checked="" type="checkbox"/>	Yes: <input type="checkbox"/>
Comments:	<p>Based on a review of GIS and available public records, a RFI was completed on December 20, 2019 by KEG (Appendix E, pages 1 to 12). One NPDES Facility and two NPDES pipes are located within 0.5 mile of the project area, and none are located within the project area; however, no hazmat sites were identified in or within 0.5 mile of the project area that will impact the project. The NPDES facility is located approximately 0.12 mile from the project area. The nearest NPDES Pipe Location is located 0.13 mile from the project area. No impacts are expected. Further investigation for hazardous material concerns is not required at this time.</p>		

INVOLVEMENT WITH RESOURCES			
Permits	No:	Yes: X	Possible:
<p>Comments:</p> <p>An IDEM 401 and USACE 404 Nationwide Permit will likely be required. INDOT Ecology and Waterway Permitting has determined this project would qualify for a rural bridge exemption, therefore, the project will not require completion of an IDNR Construction in a Floodway (CIF) permit.</p> <p>Applicable recommendations provided by IDEM, USACE, USFWS, and IDNR 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.</p> <p>It is the responsibility of the project sponsor to identify and obtain all required permits.</p>			

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 District)
2. It is the responsibility of the project sponsor to notify school corporations and emergency services at least two weeks prior to any construction that would block or limit access. (INDOT ESD)
3. The road closure will take place when school is out of session to accommodate North Knox Junior/Senior High School. (INDOT ESD)
4. Any work in a wetland area within right-of-way or in borrow/waste areas is prohibited unless specifically allowed in the U.S. Army Corps of Engineers permit. (INDOT ESD)
5. General AMM 1. Ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable AMMs. (USFWS)
6. Lighting AMM 1. Direct temporary lighting away from suitable habitat during the active season. (USFWS)
7. Tree Removal AMM 1. Modify all phases/aspects of the project (e.g., temporary work areas, alignments) to avoid tree removal. (USFWS)
8. Tree Removal AMM 2. Apply time of year restrictions for tree removal when bats are not likely to be present, or limit tree removal to 10 or fewer trees per project at any time of year within 100 feet of existing road/rail surface and **outside of documented** roosting/foraging habitat or travel corridors; visual emergence survey must be conducted with no bats observed. (USFWS)
9. Tree Removal AMM 3. Ensure tree removal is limited to that specified in project plans and ensure that contractors understand clearing limit and how they are marked in the field (e.g., install bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits). (USFWS)
10. Tree Removal AMM 4. Do not remove **documented** Indiana bat or NLEB roosts that are still suitable for roosting, or trees within 0.25 miles of roosts, or **documented** foraging habitat any time of year. (USFWS)
11. A USFWS Bridge/Structure Assessment shall take place no earlier than two (2) years prior to the start of construction. If construction will begin after September 12, 2021, an inspection of the structure by a qualified individual, must be performed. Inspection of the structure should check for presence of bats/bat indicators and/or presence of birds. The results of the inspection must indicate no signs of bats or birds. If signs of bats or birds are documented during this inspection, the INDOT District Environmental Manager must be contacted immediately. (INDOT ES)
12. Structure 159-42-06350B, located 2.49 miles north of SR 67, has shown evidence of use (i.e. nests) by a bird species protected under the Migratory Bird Treaty Act (MBTA) during the June 20, 2019 inspection. Avoidance and minimization measures must be implemented prior to the start of and during the nesting season. Nests without eggs or young should be removed prior to construction during the non-nesting season (September 8 - April 30) and during the nesting season if no eggs or young are present. Nests with eggs or young cannot be removed or disturbed during the nesting season (May 1 - September 7). Nests with eggs or young should be

ENVIRONMENTAL COMMITMENTS:

screened or buffered from active construction. Details of the required procedures are outlined in the "Potential Migratory Bird on Structure Unique Special Provision." This firm commitment is included in the *Environmental Commitments* of this document.

For Further Consideration:

1. If box or pipe culverts are used, the bottoms should be buried a minimum of 6 inches (or 20 percent of the culvert height/pipe diameter, whichever is greater up to a maximum of 2 feet) below the stream bed elevation to allow a natural streambed to form within or under the crossing structure. Crossing should: span the entire channel width (a minimum of 1.2 times the OHWM width); maintain the natural stream substrate within the structure; have a minimum openness ratio (height x width / length) of 0.25; and have stream depth, channel width, and water velocities during low-flow conditions that are approximately to those in the natural stream channel. Banklines should be restored within box and pipe structures to allow for wildlife passage above the ordinary high water mark. (IDNR-DFW)
2. The new, replacement, or rehabbed structure, and any bank stabilization under the structure, should not create conditions that are less favorable for wildlife passage under the structure compared to current conditions. A level area of natural ground under the structure is ideal for wildlife passage. If channel clearing will result in a flat bench area above the normal water level under the structure, this area should allow wildlife passage and should remain free of riprap and other similar materials that can impair wildlife passage. (IDNR-DFW)
3. Minimize the use of riprap and use alternative erosion protection materials whenever possible. Riprap must not be placed in the active thalweg channel or placed in the streambed in a manner that precludes fish or aquatic organism passage (riprap must not be placed above the existing streambed elevation). When riprap must be used, IDNR-DFW recommend placing only enough riprap to provide stream bank toe protection, such as from the toe of the bank up to the OHWM. The banks above the OHWM must be restored, stabilized, and revegetated using geotextiles and a mixture of grasses, sedges, wildflowers, shrubs, and trees native to the area and specifically for stream bank/floodway stabilization purposed as soon as possible upon completion. (IDNR-DFW)
4. While hard armoring alone (e.g. riprap or glacial stone) may be needed in certain instances, soft armoring and bioengineering techniques should be considered first. In many instances, one or more methods are necessary to increase the likelihood of vegetation establishment. Combining vegetation with most bank stabilization methods can provide additional bank protection and help reduce impacts upon fish and wildlife. If hard armoring is needed, wildlife passage can be facilitated by using a smooth-surfaced armoring material instead of riprap, such as articulated concrete block mats, fabric-formed concrete mats, or other similar smooth-surfaced material. (IDNR-DFW)
5. Impacts to non-wetland forest of one (1) acre or more should be mitigated at a minimum 2:1 ratio. If less than one acre of non-wetland forest is removed in a rural setting, replacement should be at a 1:1 ratio based on area. Impacts to non-wetland forest under one (1) acre in an urban setting should be mitigated by planting five trees, at least 2 inches in diameter-at-breast height (dbh), for each tree which is removed that is 10 inches dbh or greater (5:1 mitigation based on the number of large trees). (IDNR-DFW)
6. Do not cut any trees suitable for Indiana bat or Northern Long-eared bat roosting (greater than 5 inches dbh, living or dead, with loose hanging bark, or with cracks, crevices, or cavities) from April 1 through September 30. (IDNR-DFW)
7. Do not excavate in the low flow area except for the placement of piers, foundations, and riprap, or removal of the old structure (IDNR-DFW)
8. Do not construct any temporary runarounds, access bridges, causeways, cofferdams, diversions, or pumpharounds. (IDNR-DFW)
9. Use minimum average 6 inch graded riprap stone extended below the normal water level to provide habitat for aquatic organisms in the voids. (IDNR-DFW)
10. Plant native hardwood trees along the top of the bank and right-of-way to replace vegetation destroyed during construction. (IDNR-DFW)
11. Restrict below low-water work in streams to placement of culverts, piers, pilings and/or footings, shaping of the spill slopes around the bridge abutments, and placement of riprap. (USFWS)
12. Culverts should span the active stream channel, should be either embedded or a 3-sided or open-arch culvert, and be installed where practicable on an essentially flat slope. When an open-bottomed culvert or arch is used in a stream, which has a good natural bottom substrate, such as gravel, cobbles and boulders, the existing substrate should be left undisturbed beneath the culvert to provide natural habitat for the aquatic community. (USFWS)

ENVIRONMENTAL COMMITMENTS:

- 13. Minimize the extent of hard armor (riprap) in bank stabilization by using bioengineering techniques whenever possible. If riprap is utilized for bank stabilization, extend it below low-water elevation to provide aquatic habitat. (USFWS)
- 14. Avoid all work within the inundated part of the stream channel (in perennial streams and larger intermittent streams) during the fish spawning season (April 1 through June 30), except for work within sealed structures such as caissons or cofferdams that were installed prior to the spawning season. No equipment shall be operated below OHWM during this time unless the machinery is within the caissons or on the cofferdams. (USFWS)
- 15. Evaluate wildlife crossings under the bridge/culverts projects in appropriate situations. Suitable crossings include flat areas below bridge abutments with suitable ground cover, high water shelves in culverts, amphibian tunnels and diversion fencing. (USFWS)

THE CATEGORICAL EXCLUSION CANNOT BE PROCESSED AS A LEVEL ONE IF YES IS SELECTED FOR ANY OF THE FOLLOWING ITEMS*:

Formal noise analysis required?	No: <input checked="" type="checkbox"/>	Yes: <input type="checkbox"/>
Environmental Justice analysis required?	No: <input checked="" type="checkbox"/>	Yes: <input type="checkbox"/>
Right-of-Way acquisition greater than 0.5 acre?	No: <input checked="" type="checkbox"/>	Yes: <input type="checkbox"/>
Relocation of residences/businesses/etc.?	No: <input checked="" type="checkbox"/>	Yes: <input type="checkbox"/>
Added through-traffic lanes?	No: <input checked="" type="checkbox"/>	Yes: <input type="checkbox"/>
Facility on new location or realignment?	No: <input checked="" type="checkbox"/>	Yes: <input type="checkbox"/>
Permanent alteration of local traffic pattern?	No: <input checked="" type="checkbox"/>	Yes: <input type="checkbox"/>
Section 4(f) and Section 6(f) resource impacts?	No: <input checked="" type="checkbox"/>	Yes: <input type="checkbox"/>
Sole Source Aquifer Groundwater Assessment required?	No: <input checked="" type="checkbox"/>	Yes: <input type="checkbox"/>
Is the project "Likely to Adversely Affect" Threatened and Endangered Species?	No: <input checked="" type="checkbox"/>	Yes: <input type="checkbox"/>
Stream impacts greater than 300 linear feet, or work beyond 75 feet from pavement?	No: <input checked="" type="checkbox"/>	Yes: <input type="checkbox"/>
Wetland impacts greater than 0.1 acre?	No: <input checked="" type="checkbox"/>	Yes: <input type="checkbox"/>
Does the project have historic bridge involvement, or a Section 106 finding of No Adverse Effect / Adverse Effect?	No: <input checked="" type="checkbox"/>	Yes: <input type="checkbox"/>

* Please note, this table is not applicable for state funded CE's.

Appendix A of the AI approved March 30, 2020

Categorical Exclusion Level Thresholds

	PCE	Level 1	Level 2	Level 3	Level 4 ¹
Section 106	Falls within guidelines of Minor Projects PA	“No Historic Properties Affected”	“No Adverse Effect”	-	“Adverse Effect” Or Historic Bridge involvement ²
Stream Impacts	No construction in waterways or water bodies	< 300 linear feet of stream impacts	≥ 300 linear feet of stream impacts	-	Individual 404 Permit
Wetland Impacts	No adverse impacts to wetlands	< 0.1 acre	-	< 1 acre	≥ 1 acre
Right-of-way³	Property acquisition for preservation only or none	< 0.5 acre	≥ 0.5 acre	-	-
Relocations	None	-	-	< 5	≥ 5
Threatened/Endangered Species (Species Specific Programmatic for Indiana bat & northern long eared bat)	“No Effect”, “Not likely to Adversely Affect” (Without AMMs ⁴ or with AMMs required for all projects ⁵)	“Not likely to Adversely Affect” (With any other AMMs)	-	“Likely to Adversely Affect”	Project does not fall under Species Specific Programmatic
Threatened/Endangered Species (Any other species)	Falls within guidelines of USFWS 2013 Interim Policy	“No Effect”, “Not likely to Adversely Affect”	-	-	“Likely to Adversely Affect”
Environmental Justice	No disproportionately high and adverse impacts	-	-	-	Potential ⁶
Sole Source Aquifer	Detailed Assessment Not Required	-	-	-	Detailed Assessment
Floodplain	No Substantial Impacts	-	-	-	Substantial Impacts
Coastal Zone Consistency	Consistent	-	-	-	Not Consistent
National Wild and Scenic River	Not Present	-	-	-	Present
New Alignment	None	-	-	-	Any
Section 4(f) Impacts	None	-	-	-	Any
Section 6(f) Impacts	None	-	-	-	Any
Added Through Lane	None	-	-	-	Any
Permanent Traffic Alteration	None	-	-	-	Any
Coast Guard Permit	None	-	-	-	Any
Noise Analysis Required	No	-	-	-	Yes
Air Quality Analysis Required	No	-	-	-	Yes ⁷
Approval Level	Concurrence by INDOT District Environmental or Environmental Services	Yes	Yes	Yes	Yes
<ul style="list-style-type: none"> • District Env. Supervisor • Env. Services Division • FHWA 				Yes	Yes

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

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

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

⁴AMMs = Avoidance and Mitigation Measures.

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

⁶Potential for causing a disproportionately high and adverse impact.

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

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

Indiana Department of Transportation

County Knox Route SR 159 Des. No. 0015070 Project No. STP-4942

**FHWA-Indiana Environmental Document
CATEGORICAL EXCLUSION DOCUMENT FORM
GENERAL PROJECT INFORMATION**

Road No./County:	SR 159 / Knox County
Designation Number:	0015070
Project Description/Termini:	Bridge Over Wells Ditch, 2.49 miles North of SR 67

Document Approval

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

X	Categorical Exclusion, Level 2 – The proposed action meets the criteria for Categorical Exclusion Manual Level 2 - table 1, CE Level Thresholds. Additional research and documentation is necessary to determine the effects on the environment. Categorical Exclusion Form to be prepared. Projects that do not meet the criteria for CE Level 2 shall be processed at the appropriate higher level. Required Signatories: ESM, District Planning Director (DPD).
	Categorical Exclusion, Level 3 – The proposed action meets the criteria for Categorical Exclusion Manual Level 3 - table 1, CE Level Thresholds. Additional research and documentation is necessary to determine the effects on the environment. Categorical Exclusion Form to be prepared. Projects that do not meet the criteria for CE Level 3 shall be processed at the appropriate higher level. Required Signatories: ESM, DPD, OES.
	Categorical Exclusion, Level 4 – The proposed action meets the criteria for Categorical Exclusion Manual Level 4 - table 1, CE Level Thresholds. Additional research and documentation is necessary to determine the effects on the environment. Categorical Exclusion Form to be prepared. Projects that do not meet the criteria for CE Level 4 shall be processed at the appropriate higher level. Required Signatories: ESM, DPD, OES, FHWA.
	Environmental Assessment (EA) – EAs require a separate FONSI. Additional research and documentation is necessary to determine the effects on the environment.

Approval Wayne Dittelberg 6/18/07 John W. Curry 6/18/07
 ESM Signature Date DPD Signature Date

OES Signature _____ Date _____ FHWA Signature _____ Date _____

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

Name and organization of CE Preparer: Brittney Smith, INDOT

Indiana Department of Transportation

County Knox Route SR 159 Des. No. 0015070 Project No. STP-4942

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Indiana Department of Transportation

County Knox Route SR 159 Des. No. 0015070 Project No. STP-4942

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

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

Funding Source: Federal State Local Private

PROJECT DESCRIPTION (PREFERRED ALTERNATIVE):

County: Knox
 Municipality: Freelandville

Limits of Proposed Work: Over Wells Ditch, 2.49 miles North of SR 67
 Total Work Length: N/A mi

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

Yes ¹	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>
Date: <input type="text"/>	

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

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

The bridge replacement project is located on SR 159 over Wells Ditch (also referenced as Tilley Ditch), 2.49 miles North of SR 67 in Knox County at RP 2+49. The project lies within the Vincennes District. The bridge is currently hydraulically inadequate. The site experiences road overflow during 25 year storm events. The total existing R/W width along SR 159 is indicated as 45 feet each side of center line. The project will require 1.195 acres of Permanent R/W and 0.07 acres of Temporary R/W be taken. The existing bridge will be removed and replaced with a new structure with clear roadway width consisting of 39.4 feet from face to face of the guardrail across the structure.

Indiana Department of Transportation

County Knox Route SR 159 Des. No. 0015070 Project No. STP-4942

PURPOSE AND NEED FOR THE PROJECT:

Describe the problem that the project will address.

The project need is primarily due to its hydraulic inadequacy, substandard clear structure roadway, and deterioration of selected elements of the structure. The site experiences road overflow during 25 year storm events. The timber wingwalls are crushed and deteriorated. The overall bridge sufficiency rating is 28.3.

The purpose of the project is to provide a structurally and functionally adequate structure with adequate hydraulics and suitable clear roadway width.

OTHER ALTERNATIVES CONSIDERED:

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

Do-Nothing Alternative; not selected due to the fact that the bridge is deteriorating and needs to be replaced for the traveling public's safety.

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

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

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ROADWAY CHARACTER:

Functional Classification: Rural Major Collector, 3R
 Current ADT: 2,360 VPD 20(05) Design Year ADT: 3,090 VPD 20 (25)
 Current Year DHV 71 Trucks (%) 3 Design Year DHV 340 Trucks (%) 11
 Designed Speed (mph): 60 Legal Speed (mph): 55

	Existing	Proposed
Number of Lanes:	<u> 2 </u>	<u> 2 </u>
Type of Lanes:	<u> Through </u>	<u> Through </u>
Pavement Width:	<u> 36 </u> ft.	<u> 36 </u> ft.
Shoulder Width:	<u> 7 </u> ft.	<u> 7 </u> ft.
Median Width:	<u> N/A </u> ft.	<u> N/A </u> ft.
Sidewalk Width:	<u> N/A </u> ft.	<u> N/A </u> ft.

Setting: Urban Suburban Rural
 Topography: Level Rolling Hilly

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

DESIGN CRITERIA FOR BRIDGES:

Structure Number(s): 159-42-06350B Sufficiency Rating: 28.3

	Existing	Proposed
Bridge Type:	Prestressed Concrete Box	Pre-cast Reinforced Concrete 3-sided Box
Number of Spans:	Single	Single
Weight Restrictions:	None ton	None ton
Height Restrictions:	None ft.	None ft.
Curb to Curb Width:	N/A ft.	N/A ft.
Outside to Outside Width:	51 ft.	51 ft.
Shoulder Width:	7 ft.	7 ft.
Length of Channel Work:	N/A ft.	N/A ft.

Describe bridges and structures; provide specific location information for small structures.
 Remarks: The bridge over SR 159 will be replaced as the project. Bridge Number 159-42-06350B.

Will the structure be rehabilitated or replaced as part of the project? Yes No
If the proposed action has multiple bridges or small structures, this section should be filled out for each structure.

Indiana Department of Transportation

County Knox Route SR 159 Des. No. 0015070 Project No. STP-4942

MAINTENANCE OF TRAFFIC (MOT) DURING CONSTRUCTION:

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

Remarks: The official detour route will use SR 58 and SR 67, which will increase the travel distance by 7.3 miles. The traffic maintenance plan will be refined in the design stage. The designer should look at bridge construction during the summer due to the school.

ESTIMATED PROJECT COST AND SCHEDULE:

Engineering: \$ 25,000 Right-of-Way: \$ 25,000 Construction: \$ 610,000
 Anticipated Start Date of Construction: Not Known

RIGHT OF WAY AND UTILITY INVOLVEMENT:

Land Use Impacts	Amount (acres)		
	Permanent	Temporary	
Residential	0.18	0.07	
Commercial	0.00	0.00	
Agricultural	0.96	0.00	
Forest	0.06	0.00	
Wetlands	0.00	0.00	
Other:			
Other:			
Other:			
TOTAL	1.20	0.07	

	Yes	No	Unknown
Are large scale transmission facilities located within the project area? If Yes, explain.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Are there any private utility easements within the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If YES, will it be impacted by the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If unknown, explain in remarks.

Remarks: The additional right-of-way is necessary to bring the bridge crossing up to current road standards according the INDOT Design Manual. It is unknown as to whether any private utility easements exist within the project limits.

Indiana Department of Transportation

County Knox Route SR 159 Des. No. 0015070 Project No. STP-4942

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

SECTION A – ECOLOGICAL RESOURCES

	<u>Presence</u>		<u>Impacts</u>	
	Yes	No*	Yes***	No**
Streams, Rivers, Watercourses & Jurisdictional Ditches	X			X
State Wild, Scenic or Recreational River		X		X

Remarks: The bridge to be replaced is located over Tilley Ditch. The existing stream will have minimal to no work done. Therefore, there will be no impact.

No wild, scenic or recreational rivers are within the project limits.

	<u>Presence</u>		<u>Impacts</u>	
	Yes	No*	Yes***	No**
Other Surface Waters		X		X
Reservoirs		X		X
Lakes		X		X
Farm Ponds		X		X
Detention Basins		X		X
Storm Water Management Facilities		X		X
Other:				

Remarks: No surface waters are located in or near the project area.

Wetlands	<u>Presence</u>		<u>Impacts</u>	
	Yes	No****	Yes***	No**
		X		X

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

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Wetland No.	Classification	Total Size (Acres)	Impacted Acres	Comments
1				
2				

Wetlands*****

- Wetland Determination
- Wetland Delineation Report
- Individual Wetland Finding

Documentation

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

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

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

- USACE Isolated Waters Determination
- Mitigation Plan

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

Remarks: No wetlands were identified on the National Wetlands Inventory map. No wetlands or potential wetland areas were observed in or near the project area during field investigation by the Office of Environmental Services on 12/4/06.

**If the resource is not present, the remainder of this subject section will not be completed*
***If the resource is present but no impacts are anticipated, the reason why is described under Remarks.*
****Any impacts, mitigation, and agency coordination are described under Remarks and coordination letters are attached.*
*****If "no", discuss in the Remarks details how this determination was made.*
******If the proposed action has multiple wetlands, this section should be filled out for each wetland.*

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	<u>Presence</u>		<u>Impacts</u>	
	<u>Yes</u>	<u>No****</u>	<u>Yes***</u>	<u>No**</u>
Terrestrial Habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

Remarks: The project is located in the Southwestern Lowlands Natural Region Glaciated Section. Trees that are common include hackberry, red maple, silver maple and green ash. Faunal species that are characteristic of this section include prairie kingsnake and the crawfish frog. The Northeast quadrant is mostly residential and the northwest and southwest quadrants are row crops. The southeast quadrant is mown grass.

The bridge replacement project will provide no impact to the terrestrial habitat.

	<u>Presence</u>		<u>Impacts</u>	
	<u>Yes</u>	<u>No****</u>	<u>Yes***</u>	<u>No**</u>
Karst				
Does the proposed project involve the Karst Region of Indiana?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Use the remarks table to identify any karst features within the project area. (Karst investigation must comply with the Karst MOU, dated October 13, 1998)

Remarks: The project is located out of the designated karst area of the state as identified in the October 13, 1993 MOU. No karst features were observed or are known to exist within or adjacent to the proposed project area.

	<u>Presence</u>		<u>Impacts</u>	
	<u>Yes</u>	<u>No****</u>	<u>Yes***</u>	<u>No</u>
Threatened or Endangered Species				
Within the known range of any federal species?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Any critical habitat identified within project area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Federal species found in project area (based upon informal consultation)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
State species found in project area (based upon consultation with IDNR)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is Section 7 formal consultation required for this action?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Remarks: The project is within the range of two federally endangered species and one federally threatened species, but there were no indicators of the species or critical habitat at the site when the biological assessment was completed (12/4/06).

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SECTION B – OTHER RESOURCES

	<u>Presence</u>		<u>Impacts</u>	
	<u>Yes</u>	<u>No*</u>	<u>Yes</u>	<u>No</u>
Drinking Water Resources				
Sole Source Aquifer (SSA)		X		X
Is the Project in the St. Joseph Aquifer System?		X		X
Is the FHWA/EPA SSA MOU Applicable?		X		X
Initial Groundwater Assessment Required?		X		X
Detailed Groundwater Assessment Required?		X		X
Source Water Protection Area(s)		X		X
Public Water System(s)	X			X
Residential Well(s)		X		X

Remarks: This project is not located within the legally designated St. Joseph Aquifer System.

	<u>Presence</u>		<u>Impacts</u>	
	<u>Yes</u>	<u>No*</u>	<u>Yes</u>	<u>No</u>
Flood Plains				
Longitudinal Encroachment		X		X
Transverse Encroachment		X		X
Is the project located in a FEMA designated floodplain?		X		X
Homes located in floodplain within 1000' up/downstream from project.		X		X

Discuss impacts according to classification system described in the "Procedural Manual for Preparing Environmental Studies".
 Remarks: The project does not encroach upon the HUD Special Flood Hazard Area. The project is not located in a regulatory floodplain as determined from FEMA flood plain maps.

	<u>Presence</u>		<u>Impacts</u>	
	<u>Yes</u>	<u>No*</u>	<u>Yes</u>	<u>No</u>
Farmland				
Agricultural Lands	X		X	
NRCS-CPA-106 Form scored ≥ 160?		X		

Provide the NRCS score and state whether there is a significant loss of farmland as a result of the project in the remarks section.
 Remarks: Approximately 1.2 acres of statewide and local important farmland currently or previously used for agricultural purposes will be converted as a result of this project. As is required by the Farmland Protection Policy Act, coordination with the NRCS has been completed and the Form NRCS-CPA-106 has been completed. Since this project received a total point value of less than 160 points, this site will receive no further consideration for farmland protection. This project will not have a significant impact to farmland.

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SECTION C – CULTURAL RESOURCES

Minor Projects PA Clearance – N/A

Category	Type	SHPO/OES/FHWA Approval Dates

Results of Research
Eligible and/or Listed
Resource Present

Project Effect

- Archaeology
- History/Architecture
- NRHP Buildings/Site(s)
- NRHP District(s)
- NRHP Bridge(s)

Yes	No	No Historic Properties Affected	No Adverse Effect	Adverse Effect
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Documentation Prepared

Documentation

Yes Not Applicable

SHPO/OES/FHWA Approval Dates

Historic Properties Short Report	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4/23/07 - OES
Historic Property Report	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Archaeological Records Check/ Review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Archaeological Phase Ia Survey Report	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3/15/07 - OES
Archaeological Phase Ic Survey Report	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Archaeological Phase II Investigation Report	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Archaeological Phase III Data Recovery	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
APE, Eligibility and Effect Determination	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4/3/07 - OES
800.11 Documentation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5/16/07 - SHPO
Memorandum of Agreement	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

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

Remarks:

A finding of "no adverse effect" was issued by INDOT's Cultural Resources Section. A letter informing consulting parties of the finding, including the SHPO, was sent on March 16, 2007. A notice informing the public of the finding and opportunity to comment on the finding was published in the Vincennes Sun-Commercial on April 26, 2007. Two responses were received by the end of the 30-day comment period. The SHPO responded April 3, 2007 that no historic buildings, structures, districts, objects or archaeological resources listed in or eligible for listing in the National Register were identified within the APE. Historic Landmarks Foundation of Indiana-Western Regional Office also applied in a letter date April 3, 2007 that their organization had no objection to the proposed project.

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

	Presence		Use		FHWA / OES Approval/dates
	Yes	No****	Yes***	No**	
Parks & Other Recreational Land					
Publicly owned park	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Publicly owned recreation area	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Programmatic Section 4(f) Evaluation	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Individual Section 4(f)	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Other (school, state/national forest, bikeway, etc.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
"De minimis" Impact	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

	Presence		Use		FHWA / OES Approval/dates
	Yes	No****	Yes***	No**	
Wildlife & Waterfowl Refuges					
Federal	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
National Wildlife Refuge	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
State	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
State Fish & Wildlife Area -- recreation or refuge areas only	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Programmatic Section 4(f)	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Individual Section 4(f) Evaluation	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
"De minimis" Impact	<input type="checkbox"/>	<input checked="" type="checkbox"/>			

	Yes	No**	Yes***	No**	FHWA / OES approval/dates
	Historic Properties				
Sites eligible and/or listed on the NRHP	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Programmatic Section 4(f)	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Individual Section 4(f) Evaluation	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
"De minimis" Impact	<input type="checkbox"/>	<input checked="" type="checkbox"/>			

	Yes	No	Yes	No
Section 6(f) Involvement	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discuss Programmatic Section 4 (f) impacts in the remarks section below. Individual Section 4(f) documentation must be separate Draft and Final documents. For further discussions on Programmatic and Individual Section 4(f) documents please refer to the "Procedural Manual for the Preparation of Environmental Studies". Discuss proposed alternatives that satisfy the requirements of Section 4(f) and Section 6(f). Discuss any Section 6(f) involvement.

Remarks: There are no Section 4(f) resources located in or near the project area.

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SECTION E – AIR QUALITY

Air Quality

Yes No

Conformity Status of the Project

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

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

Is this project in the INSTIP?

Is the current design for this project in the most current MPO air quality conforming TIP/TP?

If NO, is this project exempt from conformity analysis?

Project-Level Analysis and Impacts

Yes No

Is this a project of air quality concern?

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

If yes, is a hot spot analysis required for CO or PM?

Remarks: This project is located in Knox County. This county is currently in attainment for all criteria pollutants and this project is of no regional significance. Therefore, the conformity procedures of 40 CFR Part 93 do not apply.

SECTION F - NOISE

Noise

Yes No

Is a noise analysis required in accordance with FHWA regulations and INDOT's noise policy?

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

Remarks: This project is not a Type 1 project. In accordance with 23 CFR 772 and the INDOT Traffic Noise Policy (FHWA concurrence on February 26, 2007), this action does not require formal noise analysis.

SECTION G – COMMUNITY IMPACTS

Regional, Community & Neighborhood Factors

Yes No

Will the proposed action comply with the local/regional development patterns for the area?

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

Will the proposed action result in substantial impacts to community cohesion?

Will the proposed action result in substantial impacts to local tax base or property values?

Will construction activities impact community events (festivals, fairs, etc.)?

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Remarks: This project will not have substantial community impacts.

Will the proposed action result in substantial indirect or cumulative impacts? Yes [] No [X]

Remarks: This project will not result in substantial indirect or cumulative impacts.

Public Facilities & Services Will the proposed action result in substantial impacts on health and educational facilities, public utilities, fire, police, emergency services, religious institutions, public transportation or pedestrian and bicycle facilities? Yes [] No [X]

Remarks: This project will not cause substantial impacts on public facilities and services. The impacts will be substantially reduced if the bridge is constructed during the summer due to the school.

Environmental Justice (EJ) (Presidential EO 12898) During the development of the project were EJ issues identified? Are any EJ populations located within the project area? Will the project result in adversely high or disproportionate impacts to the EJ population? Yes [] No [X]

Remarks: There are no low-income populations or minority populations known in the project area. There will be no disproportionately high adverse environmental or health impacts to low-income populations or minority populations as a result of this project.

Displacement of People, Businesses or Farms: Will the proposed action displace people, businesses or farms? Is a business needs survey required? Yes [] No [X]

Number of displacements: Residences: _____ Businesses: _____ Farms: _____ Other: _____

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If a Business Information Survey or Conceptual Stage Relocation Plan has been conducted, discuss the results in the Remarks section.

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

SECTION H – PUBLIC INVOLVEMENT

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

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

Remarks: *Section 106:* To meet the public involvement requirements of Section 106, FHWA's finding of "No Historic Properties Affected" was advertised in the Vincennes Sun-Commercial on April 26, 2007. The public comment period closed 30 days later. The text of the public notice and the affidavit of publication appear in Appendix (X).

Public Controversy on Environmental Grounds

Will the project involve substantial controversy concerning community and/or natural resource impacts? Yes No

Remarks: This project will not cause public controversy concerning community or natural resource impacts.

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SECTION I – HAZARDOUS MATERIALS & REGULATED SUBSTANCES

	Documentation	
	Yes	No
Red Flag Investigation	<input checked="" type="checkbox"/>	
Phase I Initial Site Assessment (ISA)		<input checked="" type="checkbox"/>
Phase II Preliminary Site Investigation (PSI)		<input checked="" type="checkbox"/>
Design/Specifications for Remediation required?		<input checked="" type="checkbox"/>

Include a summary of findings for each investigation.

Remarks: A red flag survey was completed on November 20, 2006 by Angela Kattmann with the Hazardous Materials Unit of OES. No potentially hazardous sites were identified in the project vicinity or in the project area. A site inspection did not show any evidence of hazardous materials within the permanent or temporary right of way for this project. Further investigation is not needed at this time.

SECTION J – PERMITS CHECKLIST

	<u>Required</u>	<u>Not Required</u>	<u>Complete</u>	
			<u>Yes</u>	<u>No</u>
OES Preliminary Permit Determination			<input type="checkbox"/>	<input checked="" type="checkbox"/>
Army Corps of Engineers (404/Section 10 Permit)				
Individual (IP)	<input type="checkbox"/>	<input type="checkbox"/>		?
Nationwide (NWP)	<input type="checkbox"/>	<input type="checkbox"/>		?
Regional General Permit (RGP)	<input type="checkbox"/>	<input type="checkbox"/>		?
Pre-Construction Notification (PCN)	<input type="checkbox"/>	<input type="checkbox"/>		?
Other	<input type="checkbox"/>	<input type="checkbox"/>		?
Wetland Mitigation required	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
IDEM				
Section 401 WQC	<input type="checkbox"/>	<input type="checkbox"/>		?
Isolated Wetlands determination	<input type="checkbox"/>	<input type="checkbox"/>		?
Rule 5	<input type="checkbox"/>	<input type="checkbox"/>		?
Other	<input type="checkbox"/>	<input type="checkbox"/>		?
Wetland Mitigation required	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Stream Mitigation required	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
IDNR				
Construction in a Floodway	<input type="checkbox"/>	<input type="checkbox"/>		?
Navigable Waterway Permit	<input type="checkbox"/>	<input type="checkbox"/>		?
Lake Preservation Permit	<input type="checkbox"/>	<input type="checkbox"/>		?
Other	<input type="checkbox"/>	<input type="checkbox"/>		?
Mitigation Required	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
US Coast Guard Section 9 Bridge Permit	<input type="checkbox"/>	<input type="checkbox"/>		?
Others (Please discuss in the Remarks section below)	<input type="checkbox"/>	<input type="checkbox"/>		?

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Remarks: Permits may be required for this project. It will be the responsibility of the designer to submit plans to OES to process permits. Please note that this stream is a Waters of the U.S. and the necessary permits will be required.

SECTION K- ENVIRONMENTAL COMMITMENTS MADE INCLUDING RESOURCES TO BE AVOIDED

Information below must be included on Commitments Summary Form. List all commitments, indicating which are firm and which are optional.

Remarks: If any archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, state law requires that the discovery must be reported to the Department of Natural Resources within two business days. Any further disturbance will cease until an INDOT, CRS archaeologist is contacted and mitigation is completed.

Erosion control measures will be taken as if this project had a Rule 5 Erosion Control Permit.

All permit regulations will be followed.

If hazardous materials are found, work will cease and the Hazardous Materials Department at the Office of Environmental Services will be contacted.

If any scope changes take place, the Vincennes District Planning and Programming Office shall be consulted. A scope change could cause this environmental document to no longer be valid.

Indiana Department of Transportation

County Knox Route SR 159 Des. No. 0015070 Project No. STP-4942

SECTION L- EARLY COORDINATION

Please list the date coordination was sent and all agencies that were contacted as a part of the development of this Environmental Study. Also, include the date of their response and if they failed to respond so indicate.

Remarks:

Agency	Sent Date	Response Date
US Fish & Wildlife	2/13/07	2/20/07 – Project falls under PA
NRCS	2/13/07	5/15/07 – Sent Farmland Conversion Impact Sheet (sent filled out copy back 4/26/07)
Indiana Geology Survey	2/13/07	4/24/07 – No resources impacted
INDOT Aeronautics	2/13/07	3/21/07 – No impact
National Park Service	2/13/07	No Response
Federal Highway Administration	2/13/07	No Response
Wayne-Hoosier National Forest	2/13/07	No Response
Department of Army	2/13/07	3/21/07 – No impacts
Second Coast Guard District	2/13/07	2/21/07 – No impacts
IDEM	2/13/07	2/13/07 – Auto Response has been incorporated to CE
SHPO	3/16/07	5/16/07 – No Historic Properties Affected
Historic Landmarks Foundation of Indiana	3/16/07	4/3/07 – No objections
Knox County Historian	3/16/07	No Response
Vincennes/Knox County Preservation Assoc.	3/16/07	No Response

No impacts are anticipated based on the Early Coordination Responses.

- *If the resource is not present, the remainder of this subject section will not be completed
- **If the resource is present but no impacts are anticipated, the reason why is described under Remarks.
- ***Any impacts, mitigation, and agency coordination are described under Remarks and coordination letters are attached.
- ****If "no", discuss in the Remarks details how this determination was made.
- *****If the proposed action has multiple wetlands, this section should be filled out for each wetland.

Additional Information (AI) to CE Level 2 Dated 6/18/07
SR 159 Bridge Replacement over Wells Ditch
Des # 0015070

The original Environmental Document is a CE Level 2. It was completed 6/18/07. This AI is being written due to the change in the Maintenance of Traffic (MOT) scheme. The original MOT consisted of closing the road. The MOT was changed to a temporary runaround. The temporary runaround will be built to the west of the existing structure.

A lesser amount of permanent right-of-way is required for the project as compared to what was stated in the Environmental Document, while an increased amount of temporary right-of-way is required. Total permanent right-of-way required will be 0.53 acres compared to 1.2 acres assumed in the Environmental Document. Total temporary right-of-way required will be 3.0 acres, where the Environmental document estimated 0.07 acres.

Coordination was done with the INDOT Office of Environmental Services to ensure that the additional right-of-way due to the runaround would not add additional environmental affects. Joshua Mott from the ecology section confirmed the will be no additional biological effects (wetlands, stream impacts, etc.) due to the additional right-of-way. An updated biological assessment was prepared to reflect the new right-of-way amounts. See Attachment 1 for the updated biological assessment.

Further archaeology was required on the west side of SR 159 because of the addition of the temporary right-of-way. David Moffat with the Office of Environmental Services archaeology section conducted the additional fieldwork. No additional affects were found.

Section 106 coordination was completed with the State Historic Preservation Office (SHPO). After a 30-day review period, they agreed with the "no historic properties affected" finding of the INDOT Office of Environmental Services. See Attachment 2 for the letter from SHPO.

All permit conditions will have to be followed to minimize environmental impacts as stated in the Environmental Document.

AI Prepared by: Environmental/Scoping Engineer, Brittney Smith, E.I.

Signature: Brittney Smith Date: 8/14/08

AI Reviewed by: Environmental/Scoping Manager, Wayne Dittelberger, P.E.

Signature: Wayne Dittelberger Date: 8/18/08

Attachment 1

Updated Biological Assessment

**Biological Assessment
SR 159 Bridge Replacement
Bridge over Tilley Ditch
Designation Number 0015070**

Prepared By: Joshua Mott, Environmental Scientist
December 4, 2006

A biological assessment was conducted by the Ecology Unit of the Office of Environmental Services of INDOT for the immediate area surrounding the bridge over Tilley Ditch in Knox County on November 15, 2006.

The project is located in the Southwestern Lowlands Natural Region Glaciated Section as described by Homoya *et al.* (1985). Natural communities in this section are commonly flatwoods communities dominated by *Carya spp.* and *Quercus spp.* Other trees that are common to these flatwood communities include *Celtis occidentalis* (hackberry), *Acer rubrum* (red maple), *A. saccharinum* (silver maple), and *Fraxinus pennsylvanica* (green ash). Faunal species that are characteristic of this section include *Lampropeltis* (prairie kingsnake) and *Rana areolata* (crawfish frog).

Fraxinus pennsylvanica was observed in the slim riparian zone along Tilley Ditch during the biological assessment suggesting that the area may have been a flatwood community at one time. No other species common with this community were observed. Other plant species observed were *Ulmus americana* (American elm), *Morus sp.* (mulberry), and *Festuca sp.* (fescue).

The project is within the range of two federally endangered species and one federally threatened species, but there were no indicators of the species or critical habitat at the site. The only faunal observations were *Procyon lotor* (raccoon) tracks along the stream.

The northeast quadrant was mostly residential with a drive that came to the road. The northwest and southwest quadrants were almost entirely row crops with the exception of the mown grass within the existing right-of-way. The southeast quadrant was mown grass that was the lawn to a small water works facility. The terrain throughout the landscape was gently rolling. No indicators of wetlands were observed.

The area surrounding the project is typical of that region of Indiana in that the area is primarily farmed due to the highly alluvial soils characteristic of the natural region that it is in. For the data sheets, maps of the project location and pictures of the project area see attached pages.

BIOLOGICAL ASSESSMENT FORM

Road: SR 159 Des. No: 0015070 Project No: STP-4942-003 County: Knox
 Project Description: Bridge Replacement
 Project Location: Bridge over Tilley Ditch, 2.49 miles north of SR 67

Natural Region and Section: Southwestern Lowlands -Glaciated
 8-Digit Watershed: 05120111 USGS Quadrangle: Bicknell Soil Survey Map Sheet 17

RIGHT-OF-WAY BY LAND USE TYPE

Permanent Right-of-way

Land Use Type	R/W (ha)	R/W (ac)
Commercial	0	0
Industrial	0	0
Residential	0	0
Agricultural	0.21	0.53
Wooded	0	0
Total Perm R/W	0.21	0.53

Temporary Right-of-way

Land Use Type	R/W (ha)	R/W (ac)
Commercial	0	0
Industrial	0	0
Residential	0	0
Agricultural	1.21	3
Wooded	0	0
Total Temp R/W	1.21	3.0

Is the project located in an urban or a rural setting? rural
 Is land use in the project changing? Yes No If yes, explain: N/A

QUADRANT DESCRIPTION

Northeast Mostly residential
 Northwest Agriculture and small riparian zone
 Southeast Mown grass
 Southwest Agriculture with small riparian zone

STREAM INFORMATION

Channel Width: 8 ft. Channel Depth: 1 ft. Maximum Water Depth in Channel: 3 ft.
 Substrate Material: (circle one) silt sand gravel loose rock bedrock
 Flow Velocity: (circle one) stagnant slow moderate swift rapid
 Does the stream contain riffle/pool complexes? Yes No
 Does the stream contain meanders within the proposed right-of-way? Yes No
 Is channel work proposed as part of this project? Yes No If yes, describe: _____

Is aquatic flora present? Yes No If yes, please list: algae

Is aquatic fauna present? Yes No If yes, please list: macroinvertebrate

Comments: _____

TERRAIN

Immediate Area: Depressed Flat Gently Rolling Rolling Hilly
 Extended Area: Depressed Flat Gently Rolling Rolling Hilly

ENDANGERED AND THREATENED SPECIES

Is this project located within the range of any Federally Endangered or Threatened Species? Yes No

If yes, please list below.

Common Name	Scientific Name	Status	Suitable Habitat Present	
Indiana Bat	<i>Myotis sodalist</i>	Endangered	Yes	No
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Threatened	Yes	No
Fat Pocketbook	<i>Potamilus capax</i>	Endangered	Yes	No
			Yes	No
			Yes	No

Will any of the above listed species be impacted by the planned improvements? Yes No

NATURAL AREAS

Are there any natural areas located within 5 miles of the project area? Yes No

If yes, please list below.

Property Name	Ownership	Proximity to Project
Yocum Woods Wildlife Mgmt. Area	State of Indiana	4.72 miles NW of project

Will any of the above listed properties be impacted by the planned improvements? Yes No

WETLAND INFORMATION

Are wetlands mapped within or adjacent to project limits? Yes No

If yes, please list below.

Wetland Type	Abbreviation	Location within Project	Confirmed in Field?		
			Yes	No	Undetermined
			Yes	No	Undetermined
			Yes	No	Undetermined
			Yes	No	Undetermined
			Yes	No	Undetermined
			Yes	No	Undetermined
			Yes	No	Undetermined
			Yes	No	Undetermined

Were any of the following wetland indicators observed in or adjacent to project limits?

	<u>Yes</u>	<u>No</u>	<u>Location within Project</u>
Standing Water	___	<u>X</u>	_____
Saturated Soil	___	<u>X</u>	_____
Depressional Areas	___	<u>X</u>	_____
Water Marks on Trees	___	<u>X</u>	_____
Drift Lines	___	<u>X</u>	_____
Fluted Tree Trunks/Roots	___	<u>X</u>	_____
Sediment Deposits	___	<u>X</u>	_____
Water Stained Leaves	___	<u>X</u>	_____
Other _____	___	<u>X</u>	_____

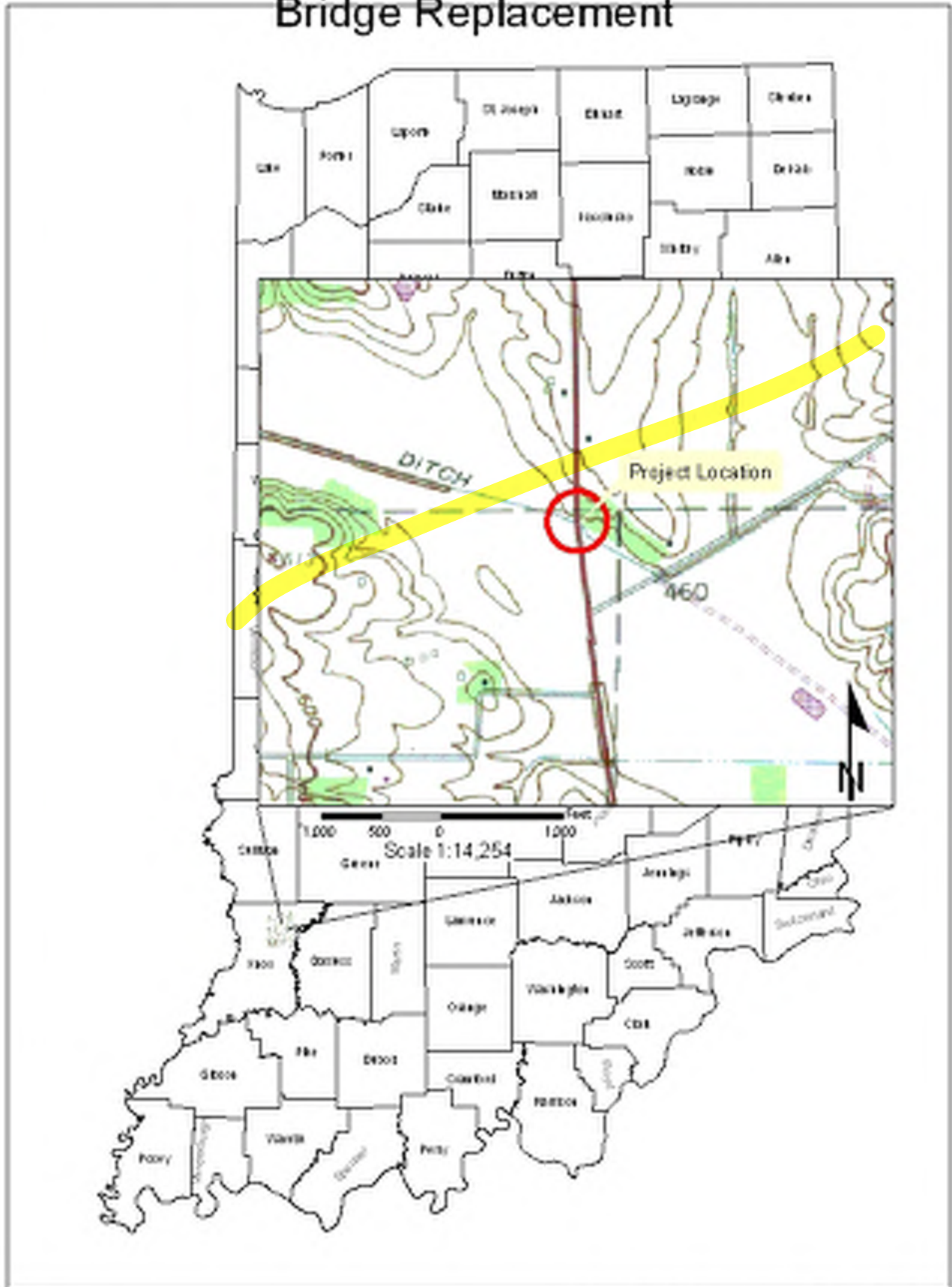
Is there a potential for impacts to jurisdictional wetlands as a result of the planned improvements? Yes No

Comments: _____

Project Location

SR 159 Bridge over Tilley Ditch

Bridge Replacement

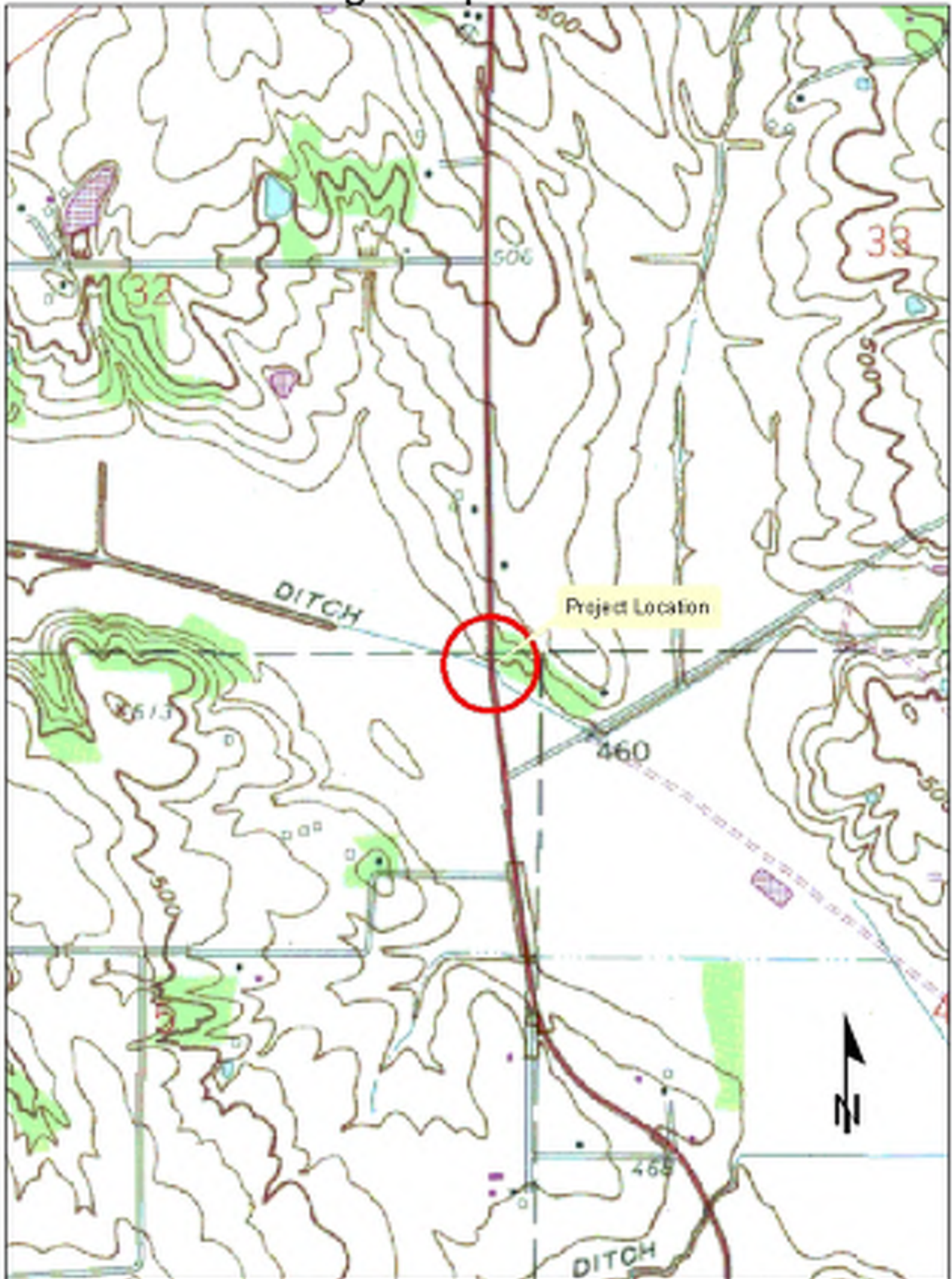


Bicknell, Indiana Quadrangle 1958, photorevised 1980
Town 4N, Range 9W, Section 5
Source: U.S.G.S. 7.5 Minute Series Topographic Map
Appendix A, Page 43 of 176

Site Location

SR 159 Bridge over Tilley Ditch

Bridge Replacement



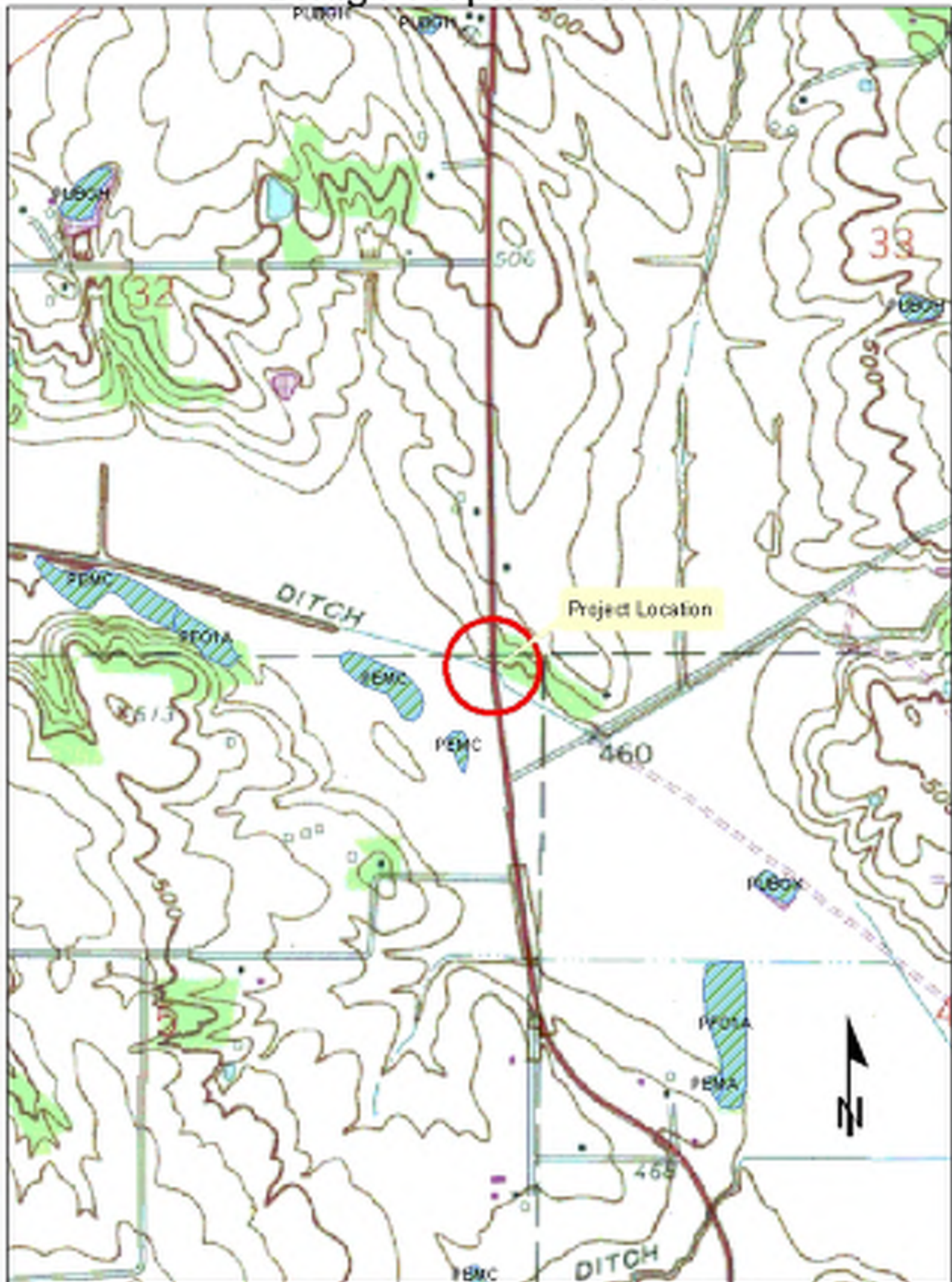
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Scale: 1:11,854

Bicknell, Indiana Quadrangle 1958 photorevised 1980
Town 4N, Range 9W, Section 5
Source: U.S.G.S. 7.5 Minute Series Topographic Map

Site Location

SR 159 Bridge over Tilley Ditch

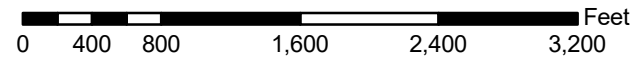
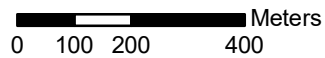
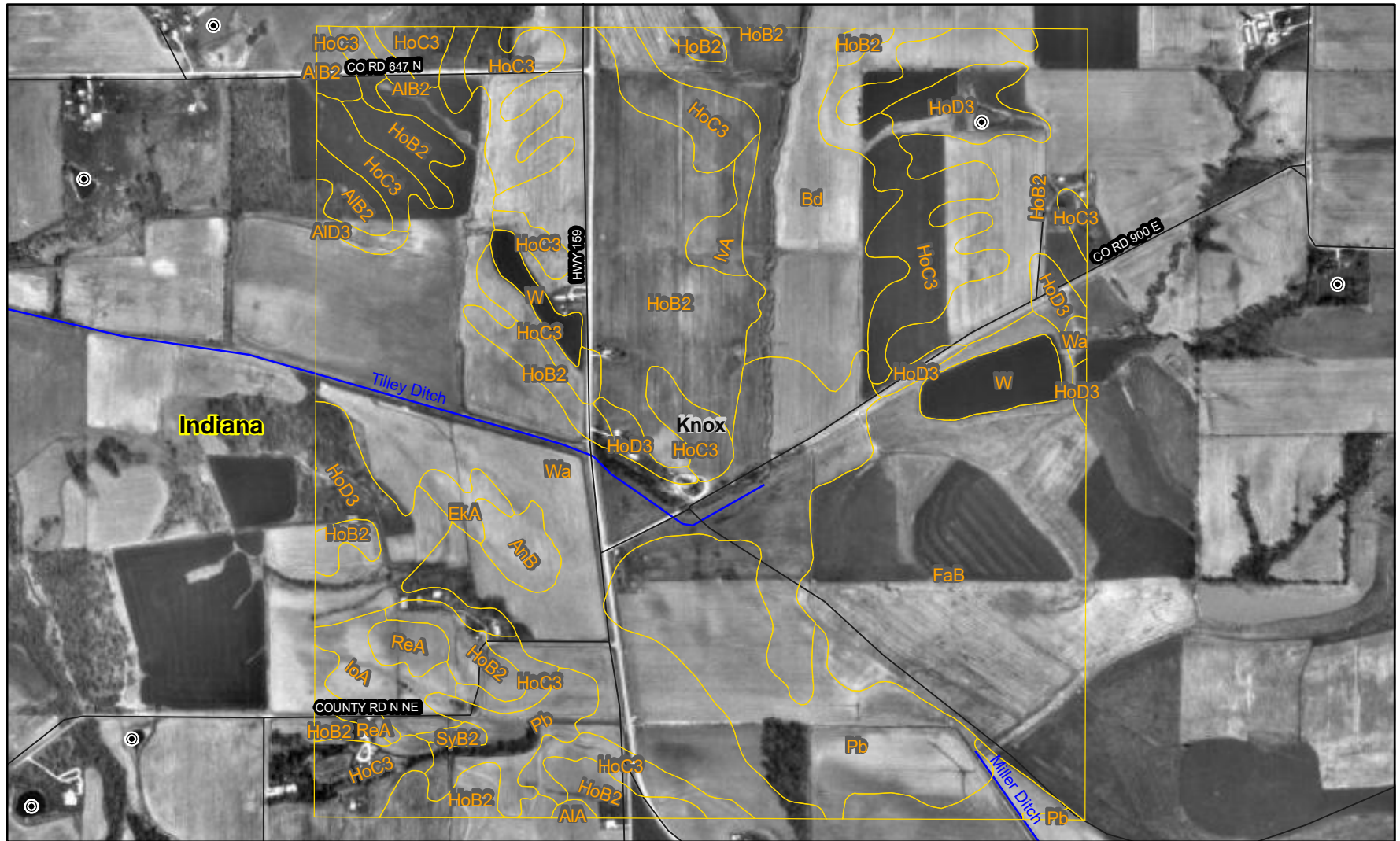
Bridge Replacement



1,000 500 0 1,000 Feet
Scale: 1:11,854

































U.S.G.S. 7.5 Minute Series Topographic Map
Bicknell, Indiana Quadrangle 1958 photorevised 1980
Town 4N, Range 9W, Section 5
Source: US Fish and Wildlife Service, National Wetland Inventory

SOIL SURVEY OF KNOX COUNTY, INDIANA



SOIL SURVEY OF KNOX COUNTY, INDIANA

MAP LEGEND

-  Soil Map Units
-  Cities
-  Detailed Counties
-  Detailed States
-  Interstate Highways
-  Roads
-  Rails
-  Water
-  Hydrography
-  Oceans
-  Escarpment, bedrock
-  Escarpment, non-bedrock
-  Gully
-  Levee
-  Slope
-  Blowout
-  Borrow Pit
-  Clay Spot
-  Depression, closed
-  Eroded Spot
-  Gravel Pit
-  Gravelly Spot
-  Gully
-  Lava Flow
-  Landfill
-  Marsh or Swamp
-  Miscellaneous Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Slide or Slip
-  Sinkhole
-  Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Perennial Water
- Wet Spot

MAP INFORMATION

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 16

Soil Survey Area: Knox County, Indiana
 Spatial Version of Data: 1
 Soil Map Compilation Scale: 1:15840

Map comprised of aerial images photographed on these dates:
 1998

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend Summary

Knox County, Indiana

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
A1A	Alford silt loam, 0 to 2 percent slopes	0.8	0.1
A1B2	Alford silt loam, 2 to 6 percent slopes, eroded	8.7	1.2
A1D3	Alford silt loam, 12 to 18 percent slopes, severely eroded	2.4	0.3
AnB	Alvin fine sandy loam, 2 to 6 percent slopes	6.3	0.8
Bd	Birds silt loam, rarely flooded	51.7	6.9
EkA	Elkinsville silt loam, 0 to 2 percent slopes	3.8	0.5
FaB	Fairpoint parachannery silt loam, 0 to 8 percent slopes	107.6	14.3
HoB2	Hosmer silt loam, 2 to 6 percent slopes, eroded	155.9	20.7
HoC3	Hosmer silt loam, 6 to 12 percent slopes, severely eroded	99.0	13.1
HoD3	Hosmer silt loam, 12 to 18 percent slopes, severely eroded	40.0	5.3
IoA	Iona silt loam, 0 to 2 percent slopes	10.3	1.4
IvA	Iva silt loam, 0 to 2 percent slopes	5.0	0.7
Pb	Patton silt loam	69.4	9.2
ReA	Reesville silt loam, 0 to 2 percent slopes	7.0	0.9
SyB2	Sylvan silt loam, 2 to 6 percent slopes, eroded	1.4	0.2
W	Water	14.1	1.9
Wa	Wakeland silt loam, frequently flooded	170.5	22.6

Site Location

SR 159 Bridge over Tilley Ditch

Bridge Replacement



300 150 0 300 Feet
Scale: 1:2,813

Aerial Photograph 2005
Town 4N, Range 9W, Section 5
Source: 2005 Indiana Orthophotography (Indiana Map Framework Data www.indianamap.org)



Looking at downstream section of bridge over Tilley Ditch.



Looking downstream from bridge.



Looking at southwestern quadrant of project area.



Looking upstream of bridge to be replaced.



Looking at northeastern quadrant of project.



Looking at southeastern quadrant of project.



Looking at upstream side of bridge over Tilley Ditch.



Looking at upstream side of bridge over Tilley Ditch.



Looking at northwestern quadrant of project.

Attachment 2

SHPO Coordination



Division of Historic Preservation & Archaeology • 402 W. Washington Street, W274 • Indianapolis, IN 46204-2739
Phone 317-232-1646 • Fax 317-232-0693 • dhpa@dnr.IN.gov



July 14, 2008

Christopher Koepfel
Cultural Resources Section
Office of Environmental Services
Indiana Department of Transportation
100 North Senate Avenue, Room N642
Indianapolis, Indiana 46204

Federal Agency: Federal Highway Administration ("FHWA")

Re: Notification of the INDOT's finding of "no historic properties affected," on behalf of the FHWA, concerning the replacement of Bridge #159-42-6350B carrying SR 159 over Wells Ditch (Tilley Ditch) (Designation #0015070; DHPA #1862)

Dear Mr. Koepfel:

Pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f), 36 C.F.R. Part 800, and the "Programmatic Agreement among the Federal Highway Administration, the Indiana Department of Transportation, the Advisory Council on Historic Preservation, the Indiana State Historic Preservation Officer regarding the implementation of the Federal Aid Highway Program in the State of Indiana," the staff of the Indiana State Historic Preservation Officer has conducted an analysis of the materials dated July 8, 2008 and received on July 10, 2008, for the above indicated project in Widner Township, Knox County, Indiana.

As previously indicated, we have not identified any historic buildings, structures, districts, objects, or archaeological resources listed in or eligible for inclusion in the National Register of Historic Places within the probable area of potential effects.

Therefore, we concur with the INDOT's July 8, 2008 finding, on behalf of the FHWA, that there are no historic buildings, structures, districts, objects, or archaeological resources within the area of potential effects that will be affected by the above indicated project.

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. Be advised that adherence to Indiana Code 14-21-1-27 and 29 does not obviate the need to adhere to applicable federal statutes and regulations.

If you have questions about archaeological issues please contact Amy L. Johnson at (317) 232-6982 or ajohnson@dnr.IN.gov. If you have questions about buildings or structures please contact Shana Kelso at (317) 232-3491 or skelso@dnr.IN.gov.

Very truly yours,

James A. Glass, Ph.D.
Deputy State Historic Preservation Officer

JAG:SNK:snk

Appendix B of the AI approved March 30, 2020

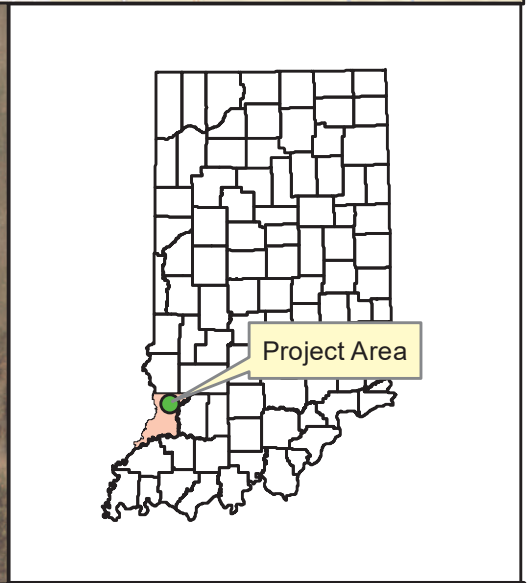
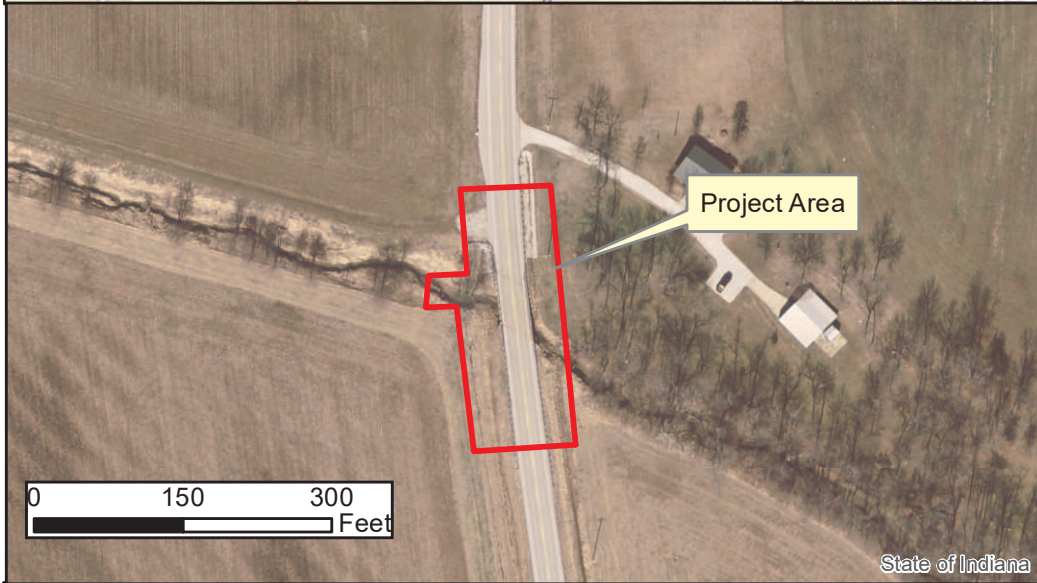


Figure 1
Location Map
SR 159, Bridge Replacement
Knox County, IN
Des. 1700149

Photo Log

DES 1700149: SR 159 over Wells Ditch, Bridge Replacement, Knox County
Photos Taken: 09/12/19



1. Looking southeast from bridge towards upstream of Wells Ditch.



2. Looking northwest from bridge towards downstream of Wells Ditch.



3. Wells Ditch on east side of bridge.



4. Looking southeast upstream along Wells Ditch.

Photo Log

DES 1700149: SR 159 over Wells Ditch, Bridge Replacement, Knox County
Photos Taken: 09/12/19



5. Looking at north bank on east side of the bridge.



6. Looking at south bank on east side of the bridge.



7. Looking southeast on the west side of the bridge, looking upstream of Wells Ditch.



8. Looking northwest on the west side of the bridge, downstream in Wells Ditch. Note in-stream vegetation.

Photo Log

DES 1700149: SR 159 over Wells Ditch, Bridge Replacement, Knox County
Photos Taken: 09/12/19



9. Looking along the south bank, on the west side of the bridge.



10. Looking north in roadside ditch (RSD) 1, riprap portion.



11. Looking south in RSD 1, concrete lined portion.



12. Looking at outfall point of RSD 1 into Wells Ditch.

Photo Log

DES 1700149: SR 159 over Wells Ditch, Bridge Replacement, Knox County
Photos Taken: 09/12/19



13. Looking north at concrete lined ditch in RSD 1.



14. Looking north towards Wells Ditch from RSD 2.



15. Looking south in RSD 2.



16. Looking north towards Wells Ditch from RSD 2.

Photo Log

DES 1700149: SR 159 over Wells Ditch, Bridge Replacement, Knox County
Photos Taken: 09/12/19



17. Outfall point of RSD 2 into Wells Ditch.



18. Looking south in RSD 3.



19. Looking north in RSD 3.



20. Looking northeast in RSD 4.

Photo Log

DES 1700149: SR 159 over Wells Ditch, Bridge Replacement, Knox County
Photos Taken: 09/12/19



21. Looking south in RSD 4.



22. Looking south in RSD 4, towards Wells Ditch.



23. Looking southwest in the northeast quadrant of the investigated area.



24. Looking northeast towards northeast quadrant of investigated area.

Photo Log

DES 1700149: SR 159 over Wells Ditch, Bridge Replacement, Knox County
Photos Taken: 09/12/19



25. Looking southeast towards the southeast quadrant of the investigated area. RSD 3 in background.



26. Looking northwest in the southwest quadrant of the investigated area.



27. Looking northwest into the northwest quadrant of the investigated area.



28. Looking southeast at drain inlet to underground culvert draining RSD 1 (Google Earth, Image Date: 09/2012).

Photo Log

DES 1700149: SR 159 over Wells Ditch, Bridge Replacement, Knox County
Photos Taken: 09/12/19



29. Looking northeast at outlet from underground culvert draining RSD 1 (Google Earth, Image Date: 09/2012).



30. Looking southwest at inlet to underground culvert draining concrete lined portion of RSD 4 (Google Earth, Image Date: 09/2012).



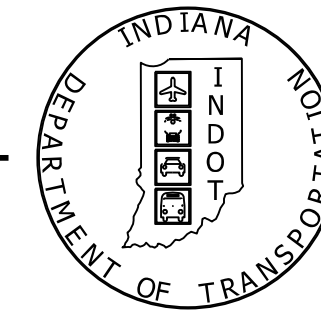
31. Facing north on SR 159 near southern limits of investigated area. RSD 2 on right and RSD 3 on left (Google Earth, Image Date: 09/2012).

PROJECT	DESIGNATION
1700149	1700149
CONTRACT	BRIDGE FILE
B-40554	159-42-10339

STRUCTURE INFORMATION				
STRUCTURE	TYPE	SPAN AND SKEW	OVER	STATION
159-42-10339	PRECAST REINFORCED CONCRETE THREE-SIDED FLAT TOP STRUCTURE	SPAN: 40'-0" RISE: 8'-0" SKEW: 37°00'00" RT.	WELLS DITCH	131+85.00 LINE "A"

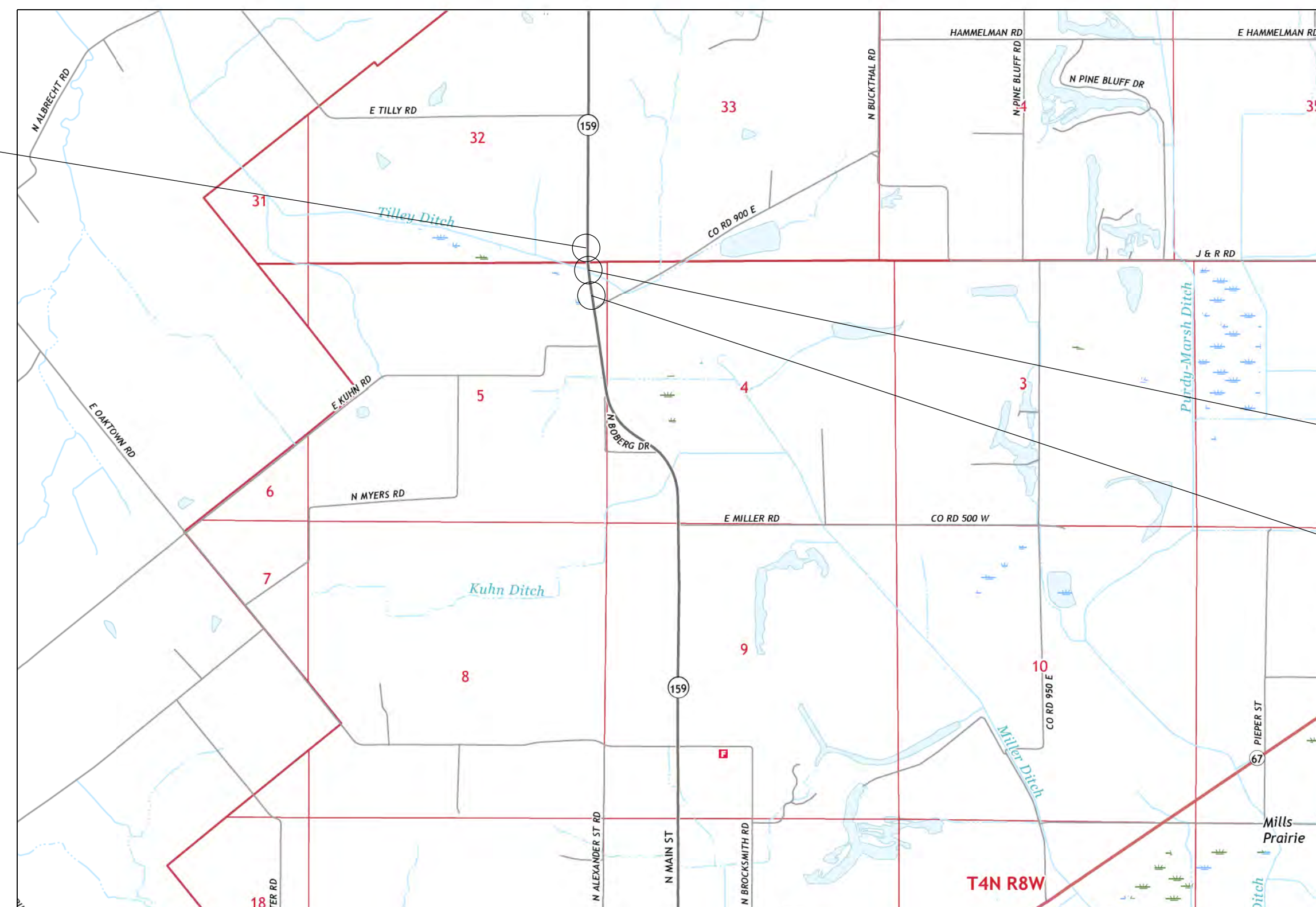
KIN PROJECT INFORMATION		
DESIGNATION	PROJECT DESCRIPTION	LEAD DES
1700149	SR 159 OVER WELLS DITCH	
1700156	SR 58 OVER POLLARD DITCH	
1700159	SR 58 OVER POLLARD DITCH	

INDIANA DEPARTMENT OF TRANSPORTATION

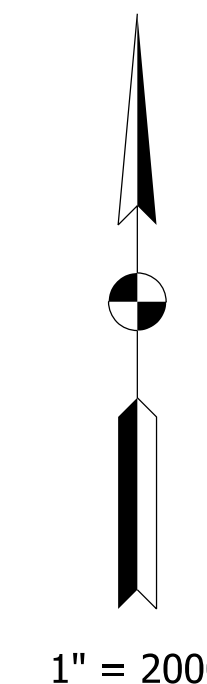


BRIDGE PLANS FOR SPANS OVER 20 FEET ROUTE: SR 159 AT: RP 2+49 PROJECT NO. 1700149 (P.E., R/W, CONST.)

BRIDGE REPLACEMENT ON SR 159 OVER WELLS DITCH
LOCATED APPROXIMATELY 2.49 MILES NORTH OF SR 67
IN SECTION 5, T-4-N, R-8-W, VIGO TOWNSHIP, KNOX COUNTY, INDIANA



LOCATION MAP
(KNOX COUNTY)



1" = 2000'

TRAFFIC DATA			
A.A.D.T.	(2022)	1,965	V.P.D.
A.A.D.T.	(2042)	1,1974	V.P.D.
D.H.V.	(2042)	294	V.P.H.
DIRECTIONAL DISTRIBUTION		49.44	%
TRUCKS		4.38	% A.A.D.T.
		5.82	% D.H.V.

DESIGN DATA		
DESIGN SPEED	55	M.P.H.
PROJECT DESIGN CRITERIA	4R (NON-FREEWAY)	
FUNCTIONAL CLASSIFICATION	RURAL MAJOR COLLECTOR	
RURAL/URBAN	RURAL	
TERRAIN	LEVEL	
ACCESS CONTROL	NONE	



PROJECT LOCATION SHOWN BY —

LATITUDE: 38° 48' 54" LONGITUDE: -87° 18' 57"

BRIDGE LENGTH:	0.010	MI.
ROADWAY LENGTH:	0.132	MI.
TOTAL LENGTH:	0.142	MI.
MAX. GRADE:	2.71	%

HUC: 05120202070030

NOTE TO REVIEWER

PLEASE SEE
CORRESPONDENCE FILE
FOR DOCUMENTATION OF
DESIGN DECISIONS

STAGE 1 PLANS
OCTOBER 29, 2019

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



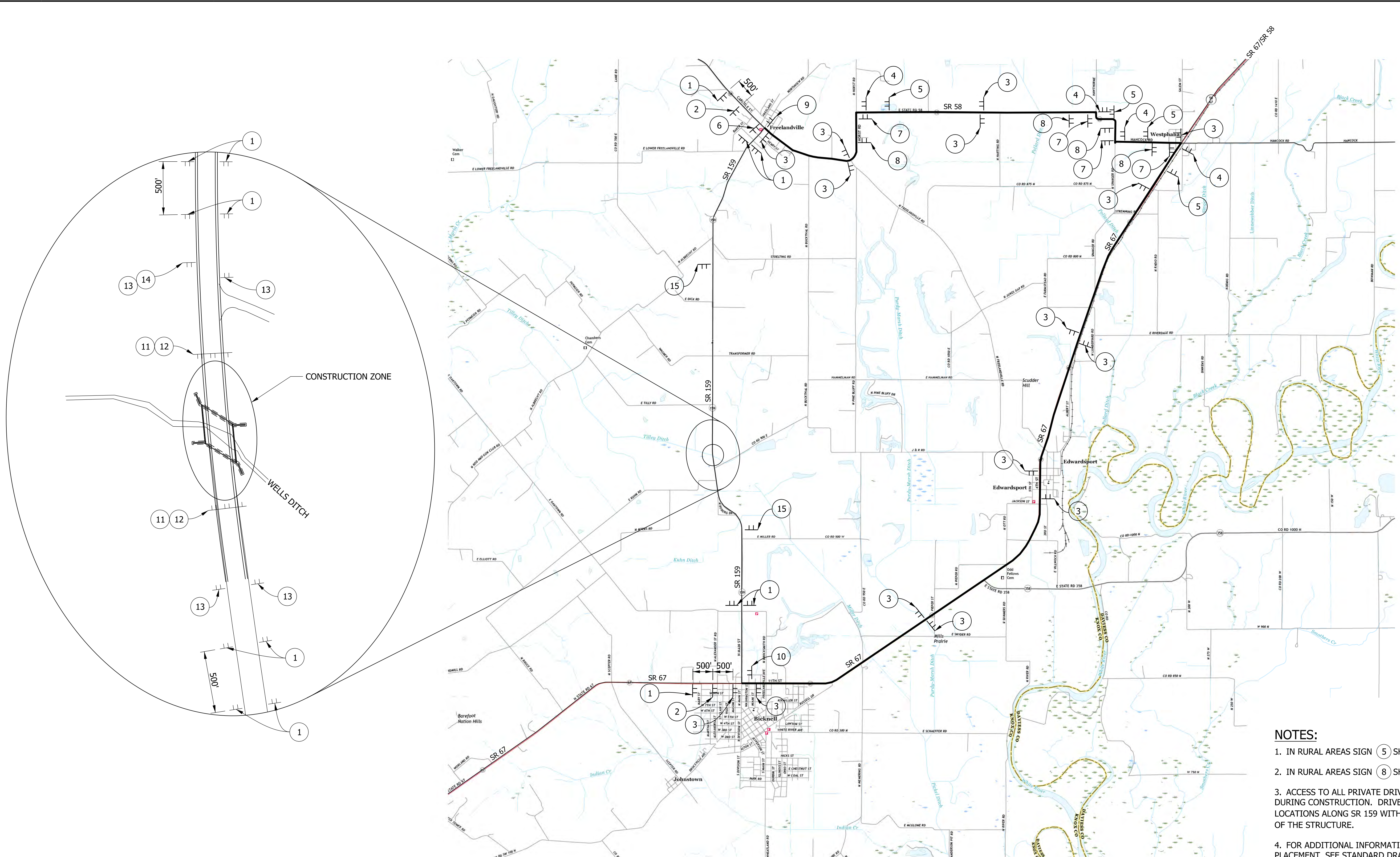
HNTB Indiana, Inc.
The HNTB Companies
Infrastructure Solutions
111 Monument Circle
Suite 1200
Indianapolis, IN 46204

DRAFT
NOT FOR CONSTRUCTION

PLANS PREPARED BY: HNTB Indiana, Inc. (317) 636-4682
PHONE NUMBER
CERTIFIED BY: _____ DATE
APPROVED FOR LETTING: _____ DATE
INDIANA DEPARTMENT OF TRANSPORTATION

BRIDGE FILE	
159-42-10339	
DESIGNATION	
1700149	
SURVEY BOOK	SHEETS
ELECTRONIC	1 of 15
CONTRACT	PROJECT
B-40554	1700149

mwallace
2/26/2020 9:22:05 am
model: Maintenance of traffic details
file: \\indiv001\289projects\1700149\cadd\cadd\1700149-s-mot01.dgn



- NOTES:**
1. IN RURAL AREAS SIGN (5) SHALL BE PLACED 500' PRIOR TO SIGN (4).
 2. IN RURAL AREAS SIGN (8) SHALL BE PLACED 500' PRIOR TO SIGN (7).
 3. ACCESS TO ALL PRIVATE DRIVES SHALL BE MAINTAINED DURING CONSTRUCTION. DRIVES ARE LOCATED AT VARIOUS LOCATIONS ALONG SR 159 WITHIN 1/2 MILE NORTH AND SOUTH OF THE STRUCTURE.
 4. FOR ADDITIONAL INFORMATION ON DETOUR SIGN PLACEMENT, SEE STANDARD DRAWING E 801-TCDD-01 THRU E 801-TCDD-04.
 5. FOR DETOUR ROUTE MARKER ASSEMBLIES AND SIGN DETAILS (1) THRU (15), SEE NEXT SHEET.

DRAFT
NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL _____	DESIGN ENGINEER _____	DATE _____
DESIGNED: CLF	DRAWN: CLF	
CHECKED: MEW	CHECKED: MEW	

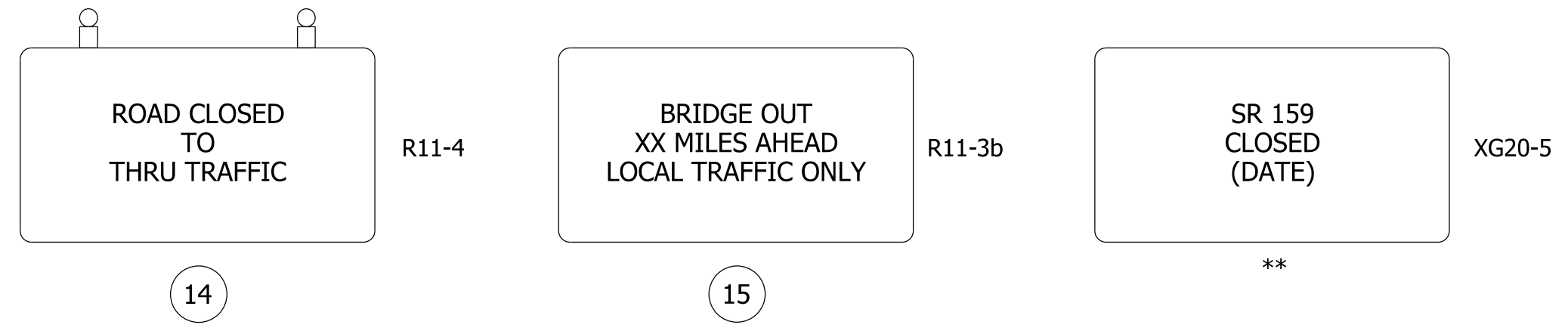
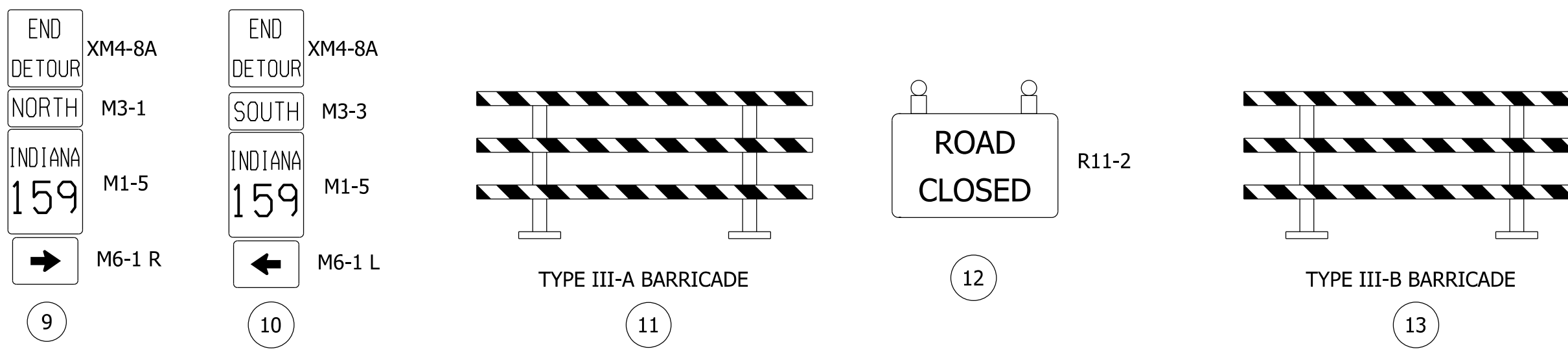
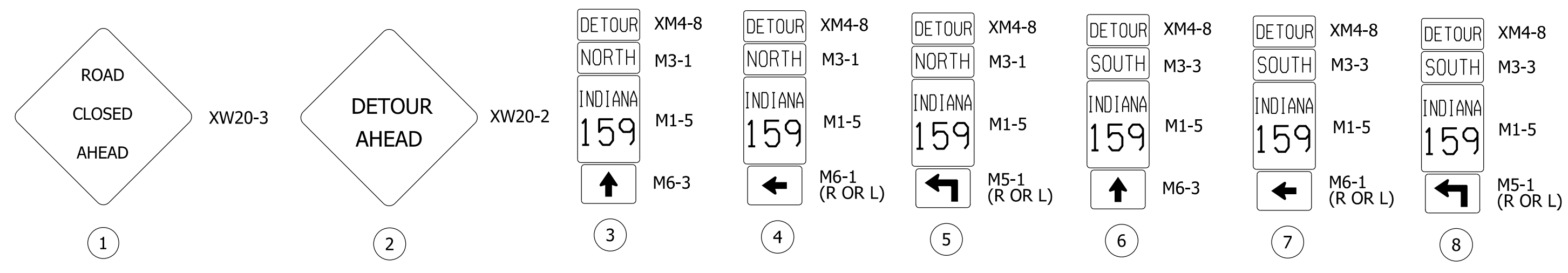
INDIANA
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC DETAILS

HORIZONTAL SCALE	BRIDGE FILE
NOT TO SCALE	159-42-10339
VERTICAL SCALE	DESIGNATION
NOT TO SCALE	1700149
SURVEY BOOK	SHEETS
ELECTRONIC	3 of 15
CONTRACT	PROJECT
B-40554	1700149

MOT SUMMARY		
ITEM	UNITS	TOTALS
DETOUR ROUTE MARKER ASSEMBLIES	EA	34
CONSTRUCTION SIGN, A	EA	18
CONSTRUCTION SIGN, B	EA	3
ROAD CLOSURE SIGN ASSEMBLY	EA	2
BARRICADE, III-A	LF	2
BARRICADE, III-B	LF	4

** INCLUDES 2 XG20-5 ROUTE CLOSURE NOTICE SIGNS TO BE FIELD LOCATED BY ENGINEER.



mwallace
 2/26/2020 9:29:15 am
 model: Mot_02
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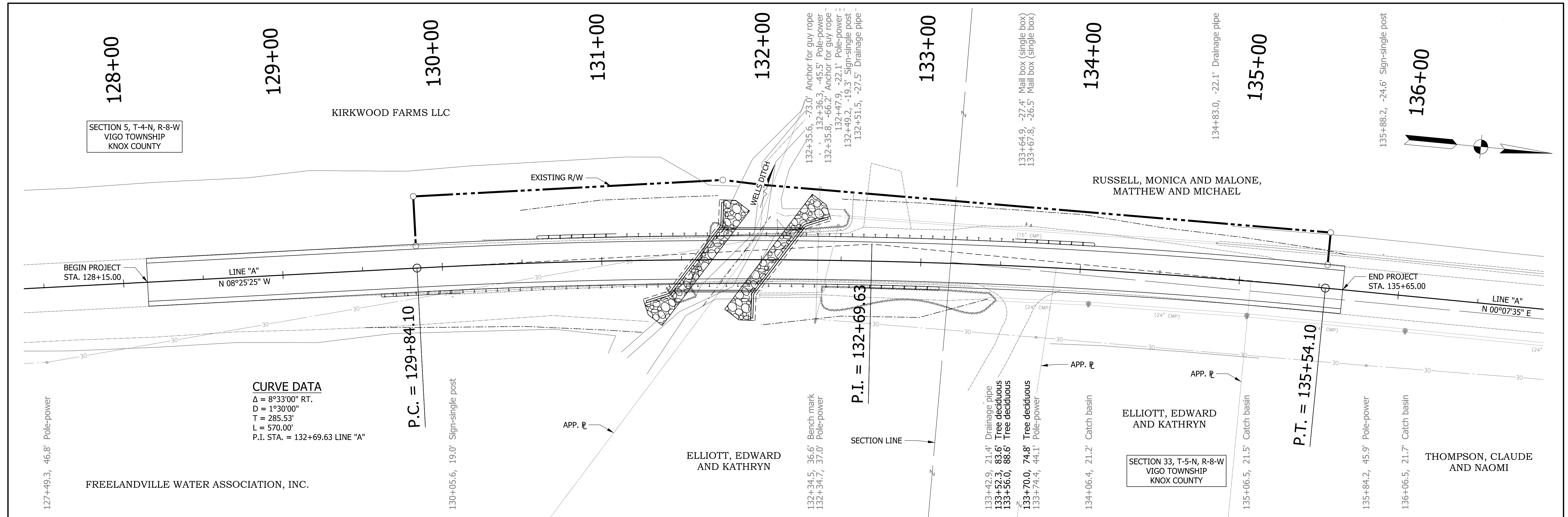
DRAFT
NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL _____	DESIGN ENGINEER _____	DATE _____
DESIGNED: _____ CLF	DRAWN: _____ CLF	
CHECKED: _____ MEW	CHECKED: _____ MEW	

INDIANA
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC DETAILS

HORIZONTAL SCALE	BRIDGE FILE
N/A	159-42-10339
VERTICAL SCALE	DESIGNATION
N/A	1700149
SURVEY BOOK	SHEETS
ELECTRONIC	4 of 15
CONTRACT	PROJECT
B-40554	1700149

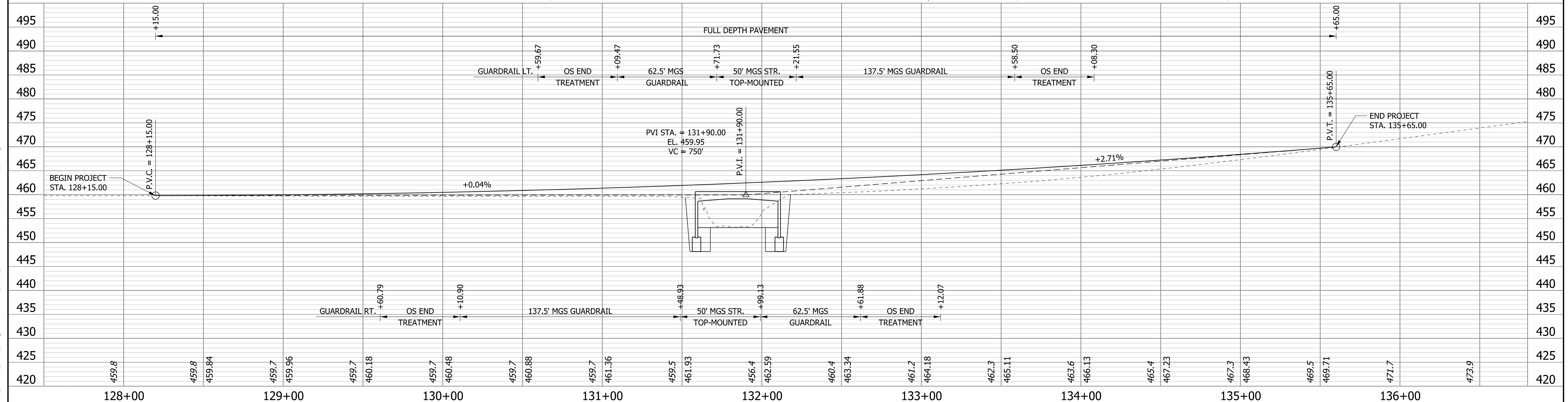


CURVE DATA
 $\Delta = 8^{\circ}33'00''$ RT.
 $D = 1^{\circ}30'00''$
 $T = 285.53'$
 $L = 570.00'$
 P.I. STA. = 132+69.63 LINE "A"

P.C. = 129+84.10
 Sign-single post

P.I. = 132+69.63

P.T. = 135+54.10



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 NOT FOR CONSTRUCTION

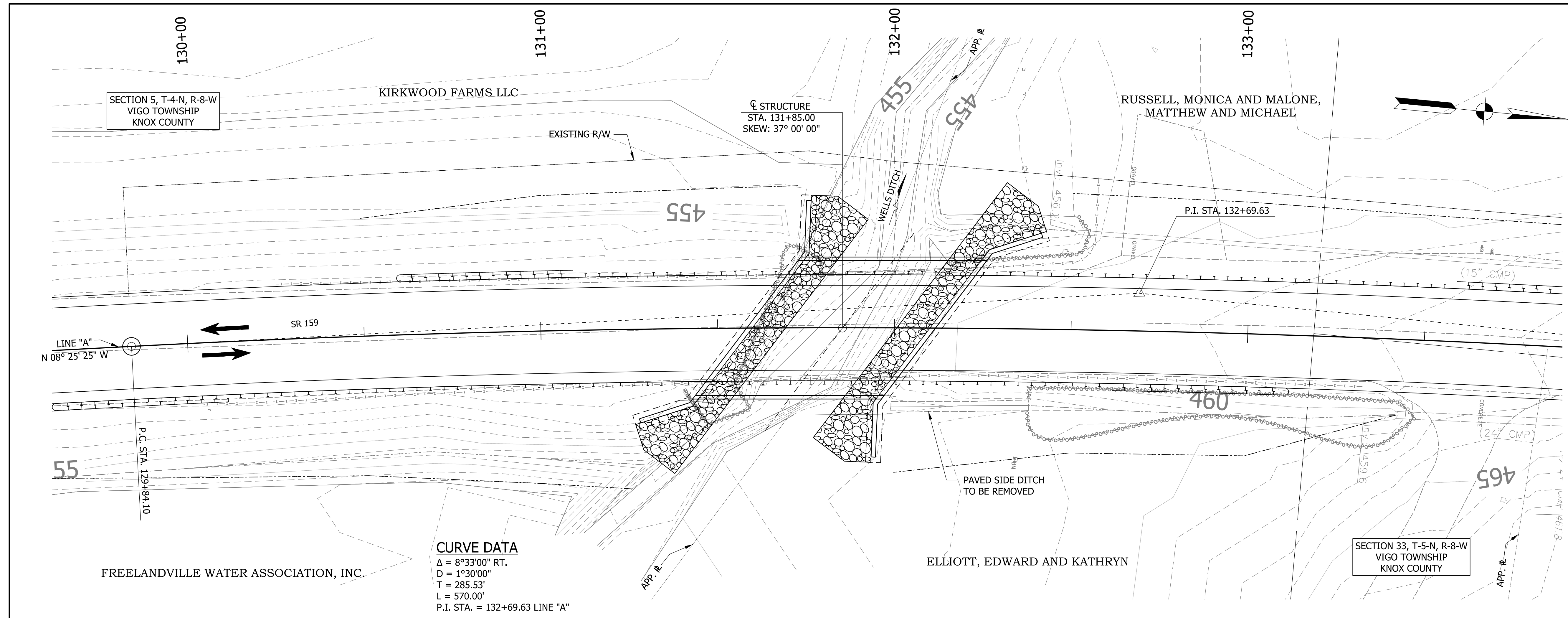
RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: MR	DRAWN: MR	
CHECKED: AMK	CHECKED: AMK	

INDIANA
 DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE

HORIZONTAL SCALE 1" = 30'-0"	BRIDGE FILE 159-42-10339
VERTICAL SCALE 1" = 10'-0"	DESIGNATION 1700149
SURVEY BOOK ELECTRONIC	SHEETS 6 of 15
CONTRACT B-40554	PROJECT 1700149

rmalice
 2/26/2020 9:26:15 am
 mdel:Plan and profile
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EXISTING STRUCTURE

THE EXISTING STRUCTURE WAS BUILT IN 1925 AS A PRESTRESSED CONCRETE BOX BEAM BRIDGE BUILT ON CONCRETE ABUTMENTS. IN 1980 THE STRUCTURE WAS REHABILITATED. THE CONCRETE ABUTMENTS WERE WIDENED, AND ADDITIONAL BOX BEAMS WERE INSTALLED. A NEW DECK WAS PLACED, WITH VARIABLE DEPTH FROM 5" AT THE CURB TO 7" ALONG THE BRIDGE CENTERLINE.

THE EXISTING STRUCTURE IS TO BE REMOVED AND REPLACED.

EXISTING PLANS ARE ON FILE WITH THE INDIANA DEPARTMENT OF TRANSPORTATION AS FILE NO. 159-42-6350 B.

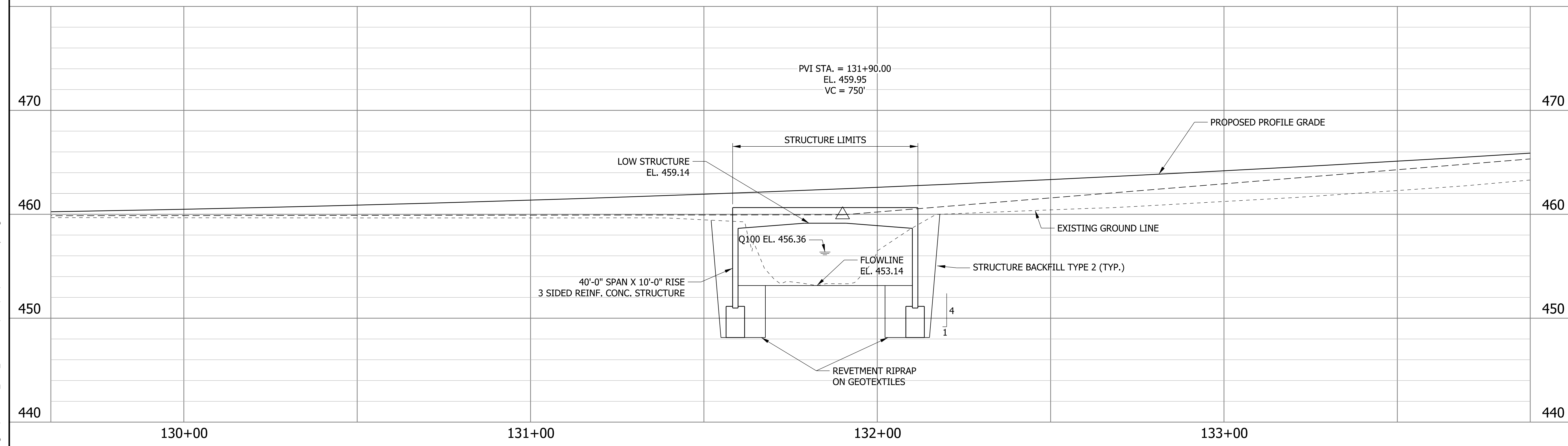
HYDRAULIC DATA

WATERWAY OPENING REQUIRED	128.8 SFT
WATERWAY OPENING PROVIDED	128.8 SFT
DRAINAGE AREA	2.01 SQ MI
DESIGN DISCHARGE, Q100	1,000 CFS
VELOCITY	4.61 FT/S
Q100 ELEV.	456.36 FT
BACKWATER AT Q100	2.07 FT
EXISTING WATERWAY OPENING	35.5 SFT
EXISTING BACKWATER	2.88 FT
MIN. LOW STRUCTURE ELEV. REQ.	459.14 FT
EXISTING LOW STRUCTURE ELEV.	459.10 FT

CURVE DATA
 $\Delta = 8^{\circ}33'00''$ RT.
 $D = 1^{\circ}30'00''$
 $T = 285.53'$
 $L = 570.00'$
 P.I. STA. = 132+69.63 LINE "A"

NOTE TO REVIEWER

UTILITY COORDINATION IS ONGOING, THEREFORE EXISTING AND PROPOSED UTILITIES WILL BE LABELED APPROPRIATELY WHEN COMPLETE



PRECAST REINFORCED CONCRETE 3-SIDED STRUCTURE
 40'-0" SPAN, 8'-0" RISE
 30'-0" CLEAR ROADWAY
 SKEW: 37°00'00" RT.
 SR 159 OVER WELLS DITCH
 KNOX COUNTY

rwallace
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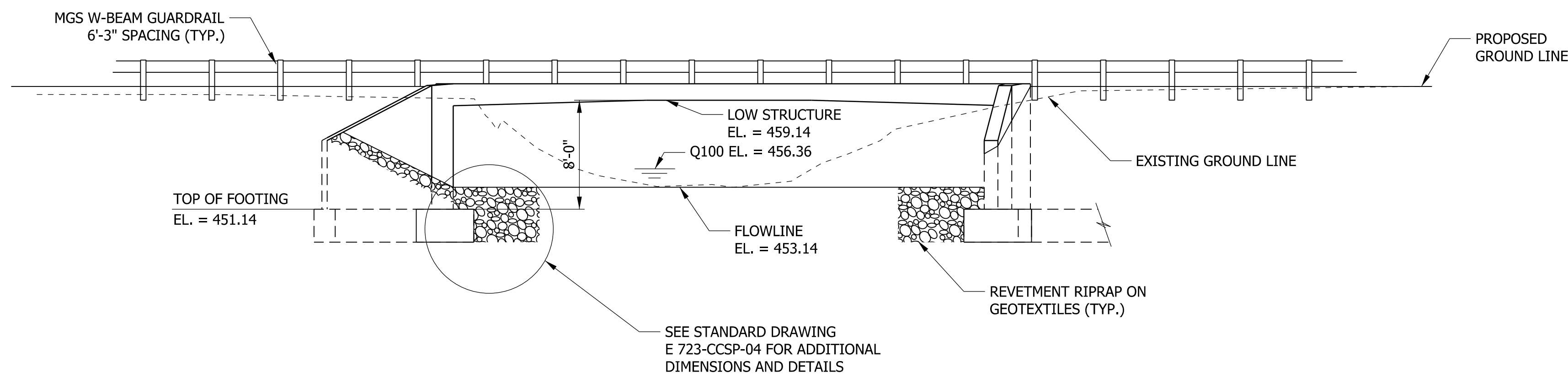
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 NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: MR	DRAWN: CLF	
CHECKED: AMK	CHECKED: AMK	

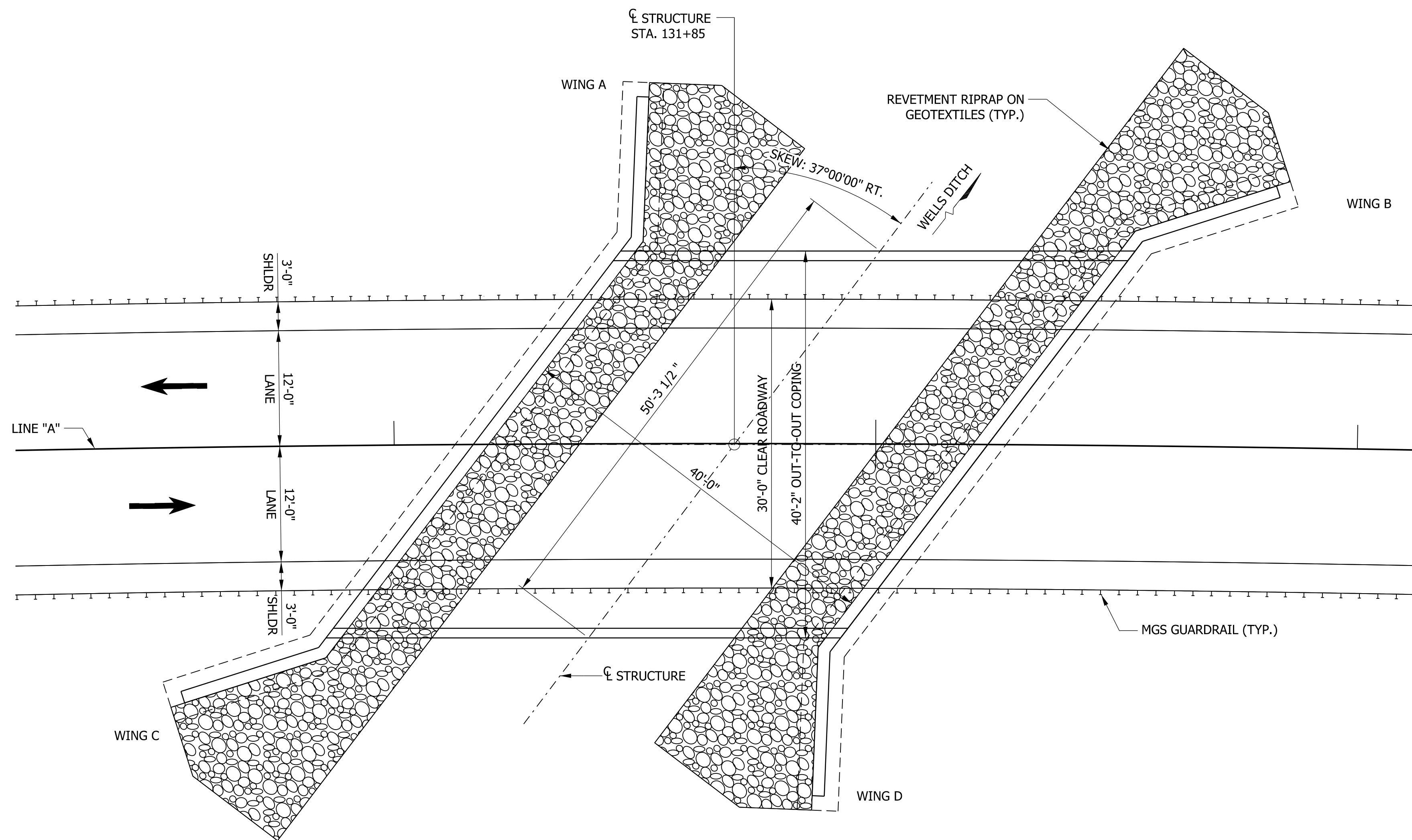
INDIANA
 DEPARTMENT OF TRANSPORTATION

LAYOUT

SCALE	BRIDGE FILE
1/2" = 1'-0"	159-10339
VERTICAL SCALE	DESIGNATION
3/8" = 1'-0"	1700149
SURVEY BOOK	SHEETS
ELECTRONIC	7 of 15
CONTRACT	PROJECT
B-40554	1700149



ELEVATION



PLAN

GENERAL NOTES

MODIFIED SURFACE SEAL SHALL BE APPLIED TO ALL EXPOSED FACES OF HEADWALLS, WINGWALLS, AND FACE OF STRUCTURE SECTIONS. MODIFIED SURFACE SEAL MAY BE APPLIED TO PRECAST CONCRETE MEMBERS IN THE SHOP OR IN THE FIELD

A THREE-SIDED ARCH-TOPPED OR TRUE-ARCH STRUCTURE WILL NOT BE PERMITTED AT THIS LOCATION.

FOOTING DIMENSIONS SHALL BE DETERMINED BY THE PRECAST UNIT MANUFACTURER.

ALL DIMENSIONS AND ELEVATIONS ARE IN FEET (FT.), EXCEPT AS NOTED.

MAXIMUM NOMINAL SOIL BEARING RESISTANCE = XXXX PSF.

DESIGN DATA

LIVE LOAD
STRUCTURE SHALL BE DESIGNED FOR HL-93 AND PEDESTRIAN LOADING, IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION, 2017 AND ITS SUBSEQUENT INTERIMS.

DEAD LOAD
DESIGN FOR ACTUAL WEIGHT PLUS 35 PSF FOR FUTURE WEARING SURFACE.

SEISMIC DESIGN DATA

SEISMIC PERFORMANCE ZONE = 1
ACCELERATION COEFFICIENT = XXXX
SEISMIC SOIL PROFILE TYPE = XXXX

DESIGN STRENGTHS

THE MINIMUM DESIGN CONCRETE COMPRESSIVE STRENGTH FOR STRUCTURE SECTIONS SHALL BE 5000 PSI. FOR WINGWALLS, HEADWALLS, AND SPANDREL WALLS, IT SHALL BE 4000 PSI. THE YIELD STRENGTH FOR REINFORCING BARS SHALL BE 60000 PSI.

REINFORCING BARS $f_y = 60,000$ PSI

NOTE TO REVIEWER

WINGWALL DESIGN
WILL BE FINALIZED
AFTER STAGE 1

PRECAST REINFORCED CONCRETE
3-SIDED STRUCTURE
40'-0" SPAN, 8'-0" RISE
30'-0" CLEAR ROADWAY
SKEW: 37°00'00" RT.
SR 159 OVER WELLS DITCH
KNOX COUNTY

rwallace
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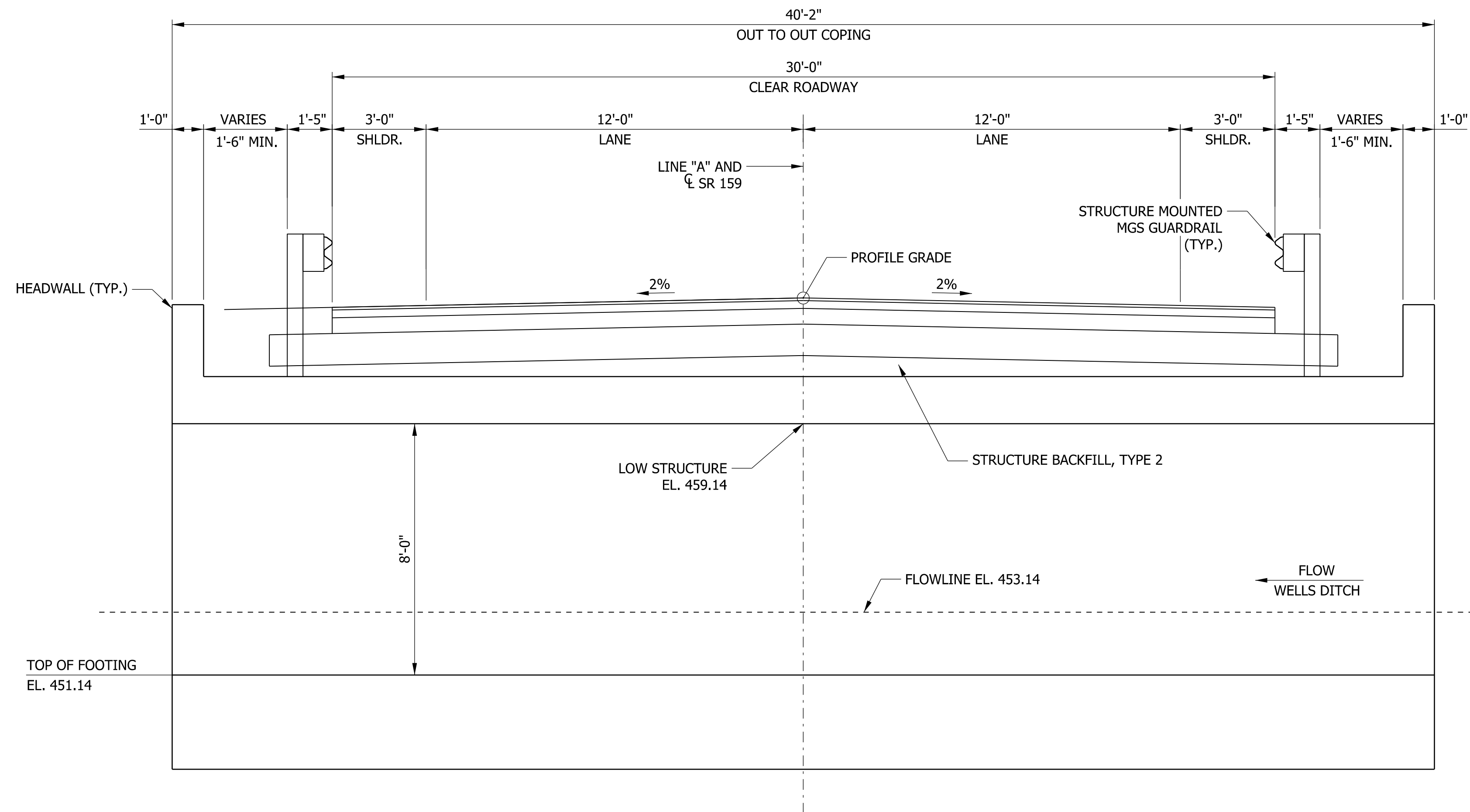
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NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: MR	DRAWN: CLF	
CHECKED: AMK	CHECKED: AMK	

INDIANA
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN

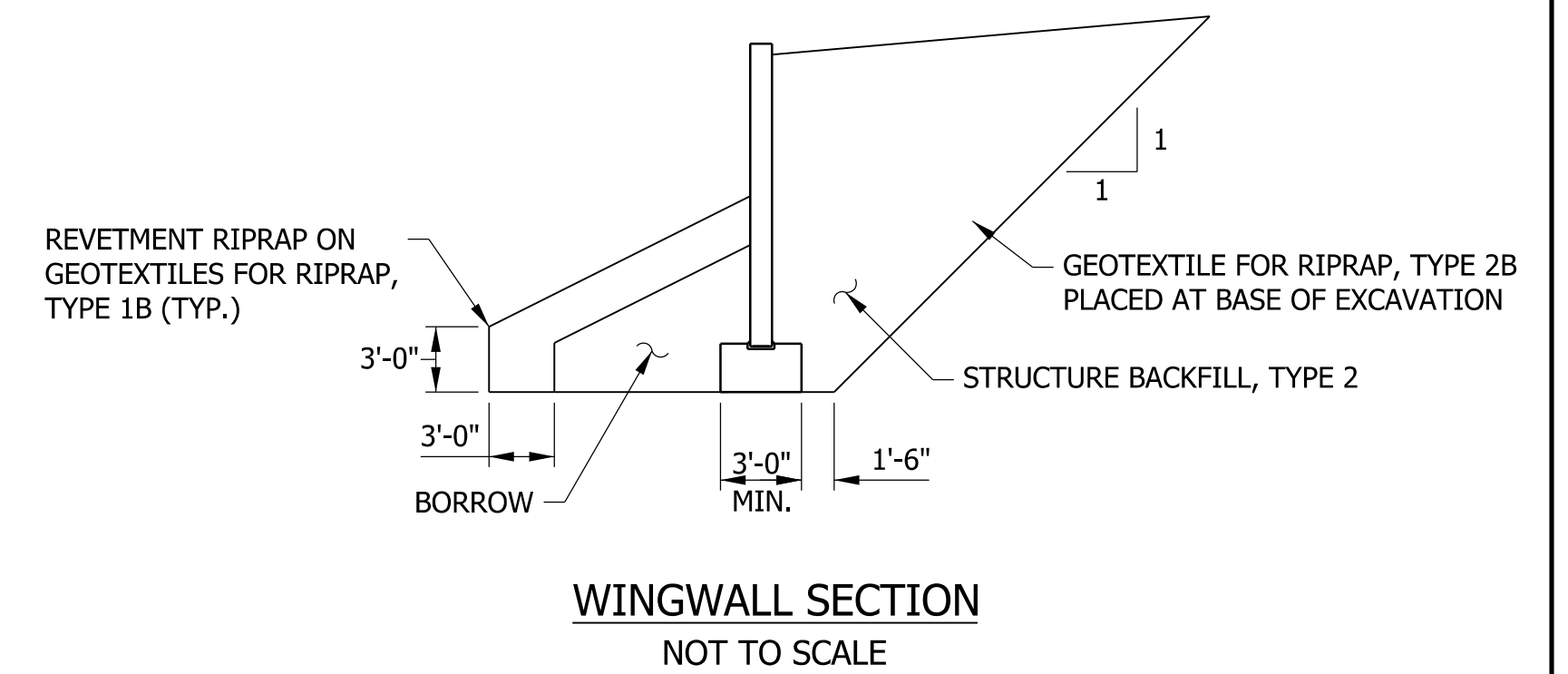
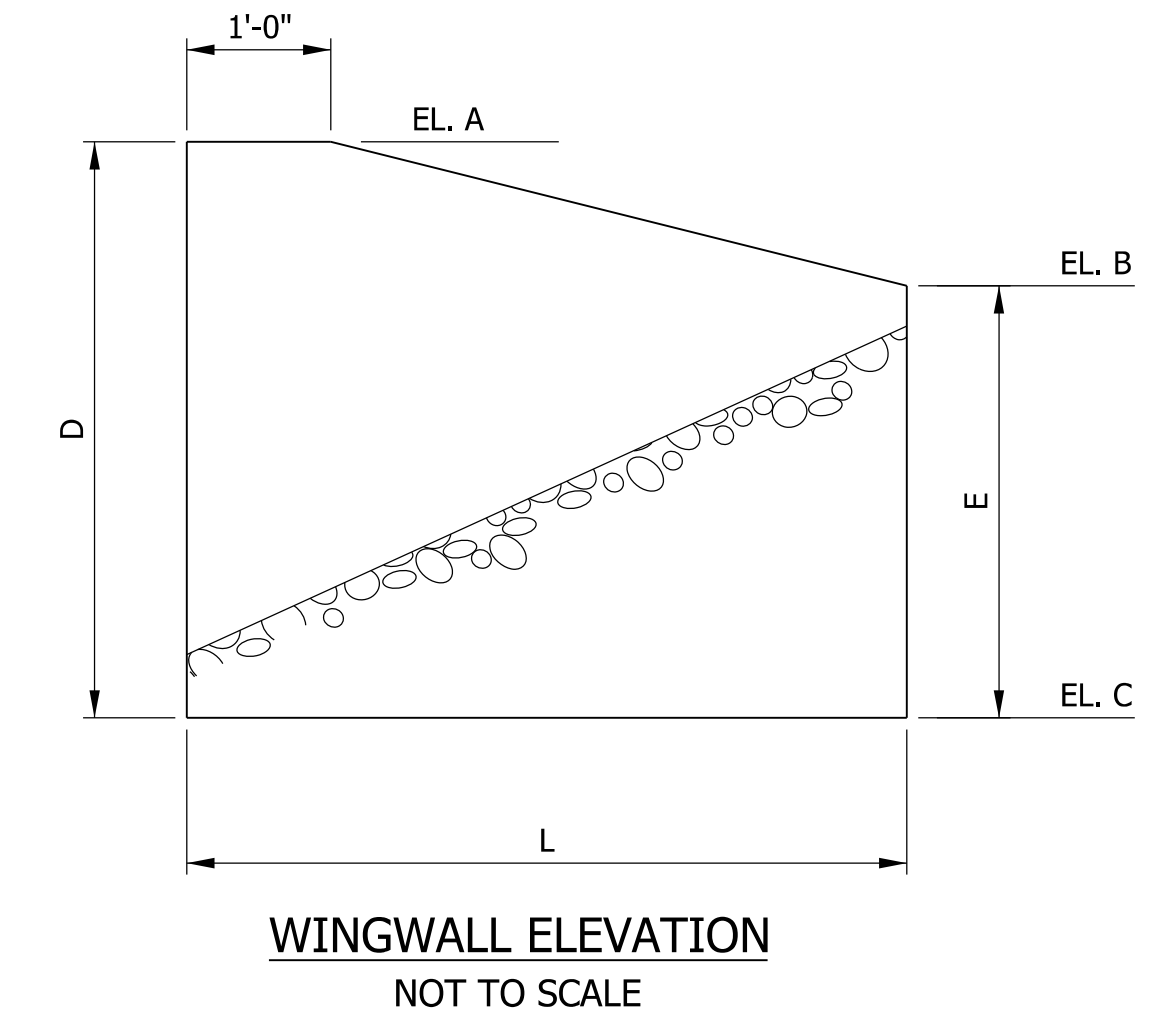
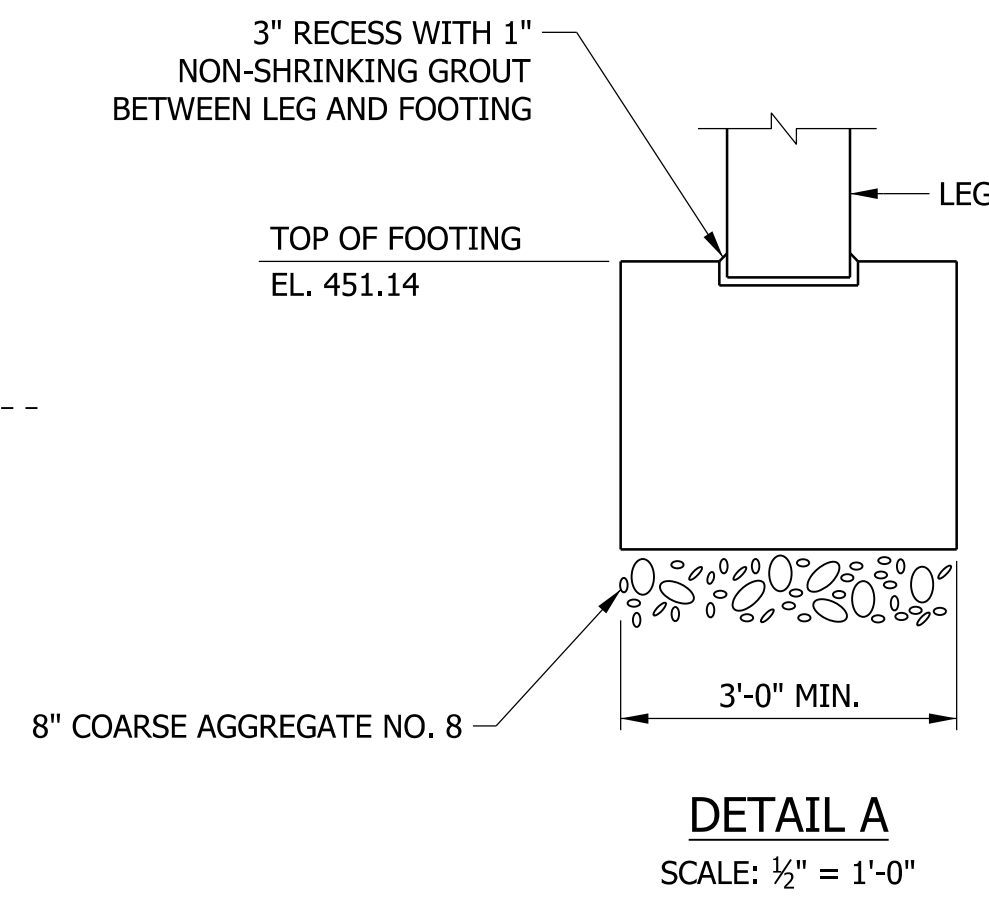
HORIZONTAL SCALE	BRIDGE FILE
1/8" = 1'-0"	159-42-10339
VERTICAL SCALE	DESIGNATION
1/8" = 1'-0"	1700149
SURVEY BOOK	SHEETS
ELECTRONIC	8 of 15
CONTRACT	PROJECT
B-40554	1700149



PROPOSED TYPICAL SECTION
SCALE: 3/8" = 1'-0"

NOTE TO REVIEWER
WINGWALL DESIGN
WILL BE FINALIZED
AFTER STAGE 1

WINGWALL DATA TABLE					
WINGWALL	A	B	C	D	
EL. A	-	-	-	-	
EL. B	-	-	-	-	
EL. C	-	-	-	-	
D	-	-	-	-	
E	-	-	-	-	
L	-	-	-	-	
AREA (SFT.)	-	-	-	-	TOTAL



**PRECAST REINFORCED CONCRETE
3-SIDED STRUCTURE
40'-0" SPAN, 8'-0" RISE
30'-0" CLEAR ROADWAY
SKEW: 37°00'00" RT.
SR 159 OVER WELLS DITCH
KNOX COUNTY**

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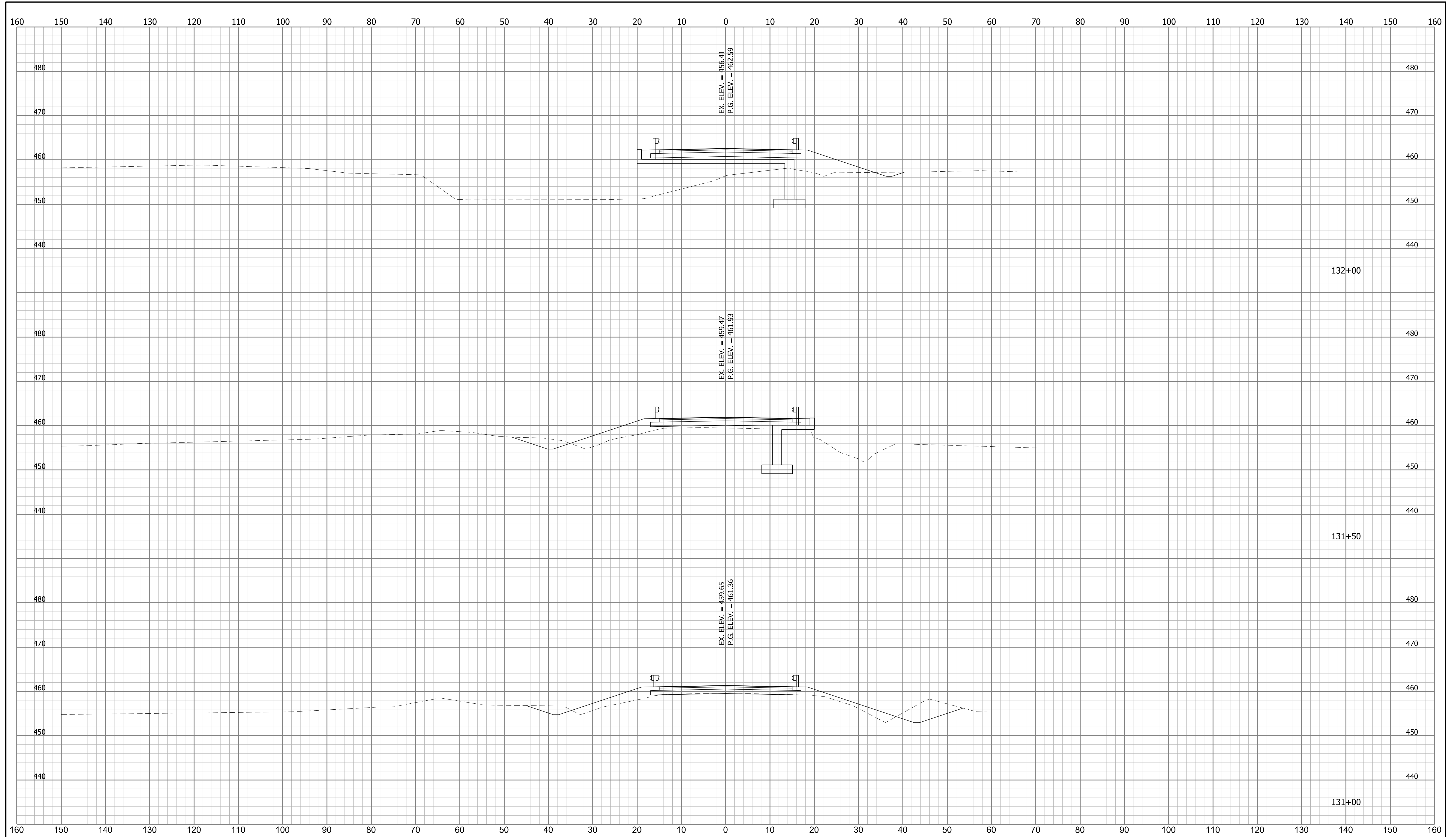
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NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL _____	DESIGN ENGINEER _____	DATE _____
DESIGNED: MR _____	DRAWN: CLF _____	
CHECKED: AMK _____	CHECKED: AMK _____	

**INDIANA
DEPARTMENT OF TRANSPORTATION**

GENERAL PLAN

HORIZONTAL SCALE	BRIDGE FILE
AS SHOWN	159-42-10339
VERTICAL SCALE	DESIGNATION
AS SHOWN	1700149
SURVEY BOOK	SHEETS
ELECTRONIC	9 of 15
CONTRACT	PROJECT
B-40554	1700149



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NOTE TO REVIEWER
 SIDESLOPE CALLOUTS TO BE INCLUDED
 IN A FUTURE SUBMITTAL, PENDING
 SPECIAL DITCH PROFILE DESIGN.

NOTE TO REVIEWER
 BENCHING, PROPOSED AND
 EXISTING ROW, AND DRIVES WILL
 BE ADDED IN FUTURE SUBMITTALS.

NOTE TO REVIEWER
 CUT AND FILL AREAS
 AND VOLUMES WILL BE ADDED
 IN FUTURE SUBMITTALS.

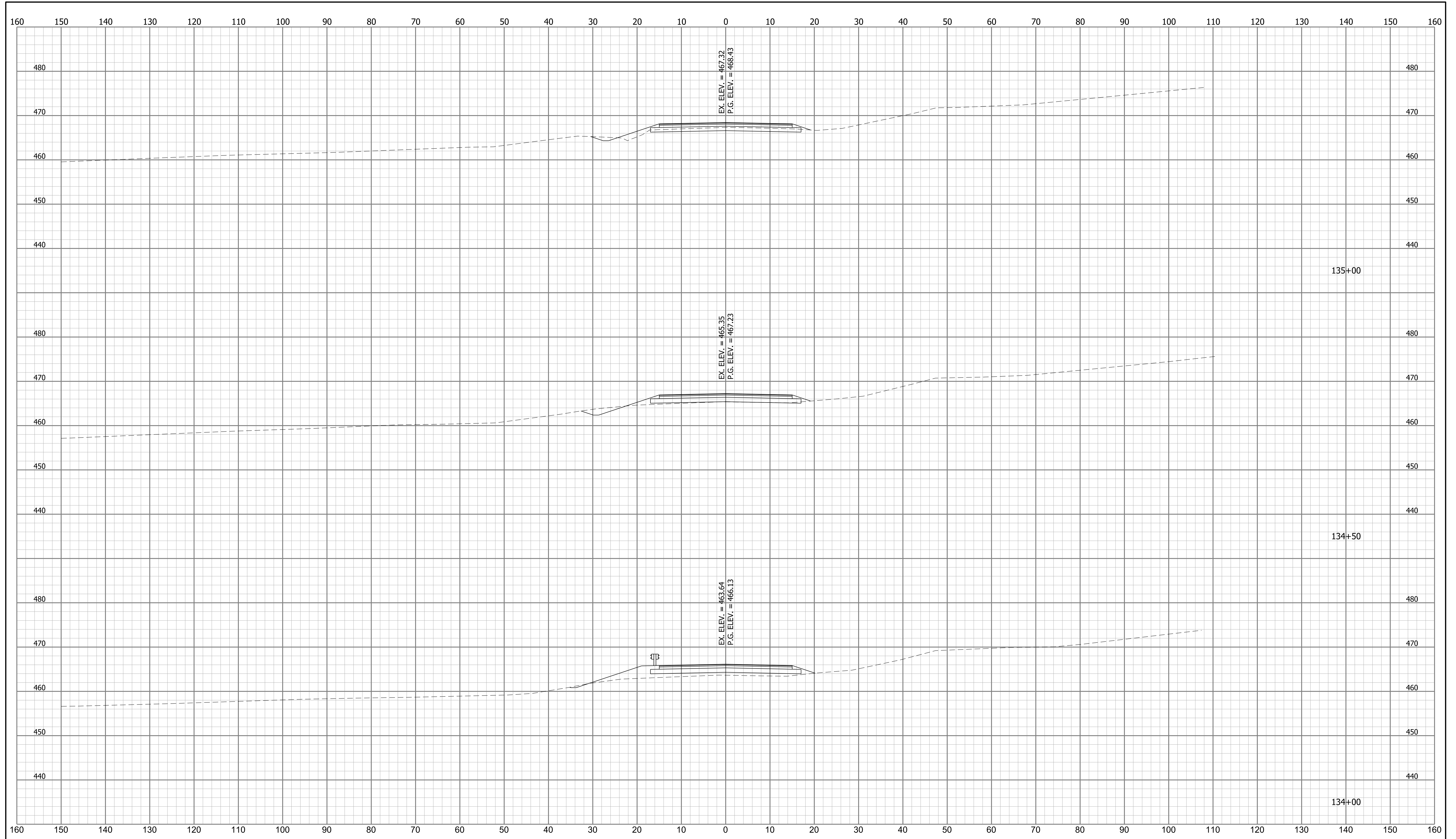
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RECOMMENDED FOR APPROVAL _____	DESIGN ENGINEER _____	DATE _____
DESIGNED: MR _____	DRAWN: MR _____	
CHECKED: AMK _____	CHECKED: AMK _____	

INDIANA
 DEPARTMENT OF TRANSPORTATION

**CROSS SECTIONS
 LINE "A"**

HORIZONTAL SCALE 1" = 10'-0"	BRIDGE FILE 159-42-10339
VERTICAL SCALE 1" = 10'-0"	DESIGNATION 1700149
SURVEY BOOK ELECTRONIC	SHEETS 12 of 15
CONTRACT B-40554	PROJECT 1700149



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 AND VOLUMES WILL BE ADDED
 IN FUTURE SUBMITTALS.

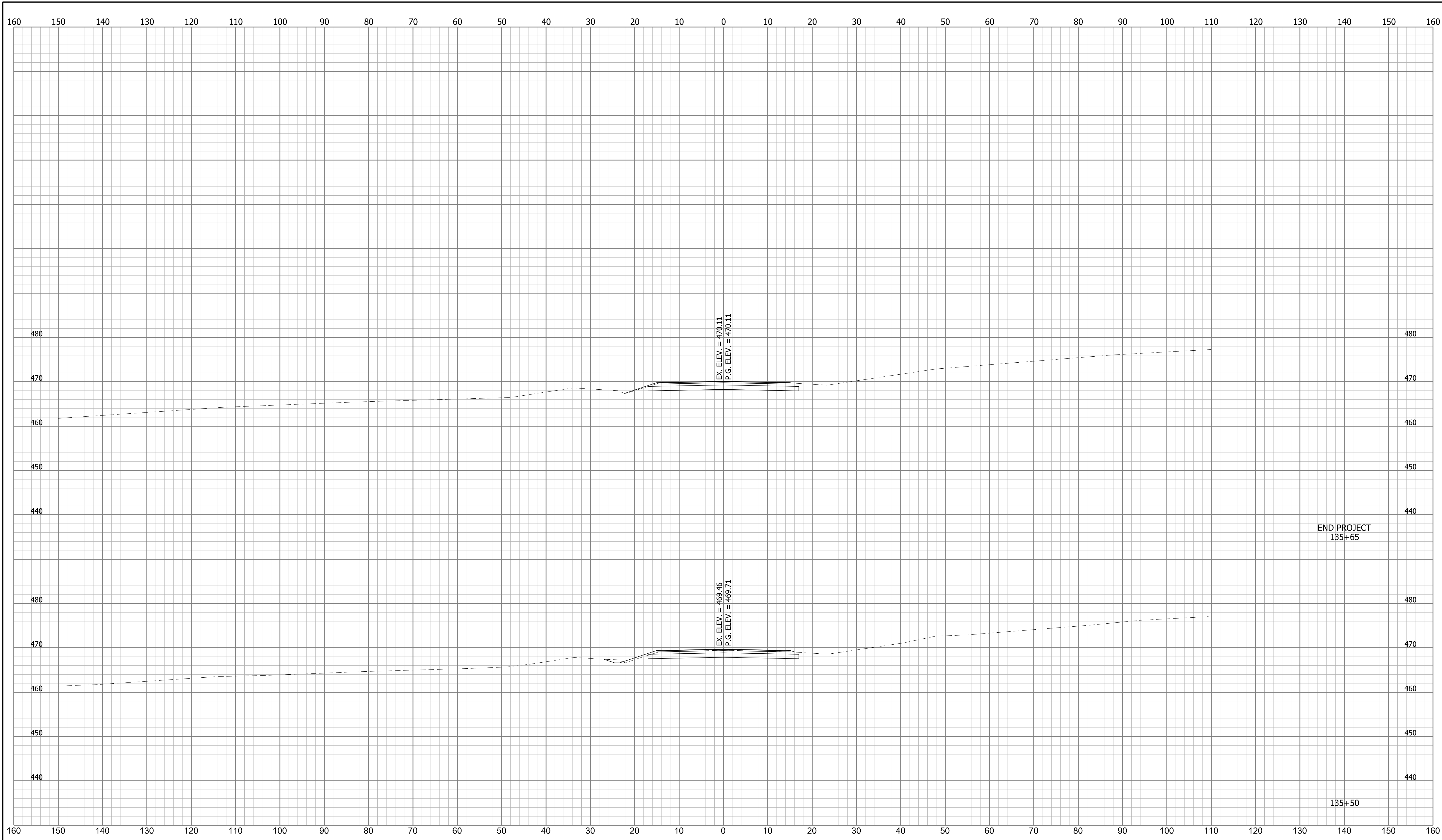
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 NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL _____	DESIGN ENGINEER _____	DATE _____
DESIGNED: MR _____	DRAWN: MR _____	
CHECKED: AMK _____	CHECKED: AMK _____	

INDIANA
 DEPARTMENT OF TRANSPORTATION

**CROSS SECTIONS
 LINE "A"**

HORIZONTAL SCALE 1" = 10'-0"	BRIDGE FILE 159-42-10339
VERTICAL SCALE 1" = 10'-0"	DESIGNATION 1700149
SURVEY BOOK ELECTRONIC	SHEETS 14 of 15
CONTRACT B-40554	PROJECT 1700149



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NOTE TO REVIEWER
 SIDESLOPE CALLOUTS TO BE INCLUDED
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 IN FUTURE SUBMITTALS.

DRAFT
 NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL _____	DESIGN ENGINEER _____	DATE _____
DESIGNED: MR _____	DRAWN: MR _____	
CHECKED: AMK _____	CHECKED: AMK _____	

INDIANA
 DEPARTMENT OF TRANSPORTATION

**CROSS SECTIONS
 LINE "A"**

HORIZONTAL SCALE 1" = 10'-0"	BRIDGE FILE 159-42-10339
VERTICAL SCALE 1" = 10'-0"	DESIGNATION 1700149
SURVEY BOOK ELECTRONIC	SHEETS 15 of 15
CONTRACT B-40554	PROJECT 1700149

Appendix C of the AI approved March 30, 2020

The following lists the date coordination was sent and all agencies that were contacted as part of the development of this Environmental Study. Also included below is the date of their response, or an indication that no response was received.

Agency/Party	Response Date(s)
Federal and State Natural Resource/Regulatory Agencies – Sent 11/6/19	
Federal Highway Administration	No Response
Indiana Geological Survey	11/6/19
Indiana Department of Environmental Management, Auto-Generated	Signed 02/21/20
Indiana Department of Environmental Management, Wellhead	11/27/19
Indiana Department of Natural Resources, Division of Fish and Wildlife	12/6/19
Indiana Department of Transportation, Public Hearings	11/7/19
U.S. Department of Housing and Urban Development	No Response
National Park Service	No Response
Indiana Department of Transportation, Vincennes District	11/8/19
U.S. Fish and Wildlife Service	11/6/19
Natural Resources Conservation Service	11/20/19
U.S. Army Corps of Engineers	No Response
Local and County Agencies – Sent 11/6/19	
Knox County Commissioners	No Response
Knox County Highway Department	No Response
Freelandville Water Association (sent 12/2/19)	No Response
Local Floodplain Administrator (sent 2/3/20)	No Response

Proceeding this list is an example of the Early Coordination Letter, as submitted, and the agency responses.



323 Main Street
Suite E
Evansville, Indiana 47708
812.314.7041 phone

November 6, 2019

Ms. Robin McWilliams, Field Supervisor
U.S. Fish and Wildlife Service
Bloomington Indiana Field Office
620 South Walker Street
Bloomington, Indiana 47403-2121

Sample Early Coordination Letter

Re: DES No: 1700149, Bridge Replacement Project over Wells Ditch
SR 159, 2.49 miles north of the SR 67 junction with SR 159
Knox County, Indiana.

Dear Interested Party:

The Indiana Department of Transportation (INDOT) and Federal Highway Administration (FHWA) intends to proceed with a project involving the aforementioned structure in Knox 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.

Project Location: This project is located on SR 159, 2.49 miles north of the SR 67 junction with SR 159, in Knox County.

Existing Conditions: This section of SR 159 is a two lane Rural Major Collector. The existing pre-stressed concrete box bridge (SN 159-42-06350 B; National Bridge Inventory [NBI] 028050) cross section consists of two 11-foot lanes bordered by 7-foot shoulders. The existing bridge is 54 feet in length, and 28 feet wide curb-to-curb. Per the INDOT Bridge Inspection Report (June 20, 2019), the bridge deck has several full length, longitudinal cracks visible on the topside ranging from 0.020 to 0.040 inches wide. Minor efflorescence visible along underside joints between beams in a few local areas. Surface delamination have been detected along full width at the ends of the bridge deck. On the superstructure, some pre-stressed concrete bridge beams exhibit longitudinal cracking up to 0.040 to 0.050 inches wide. Efflorescence, cracking, and spalling is visible on beams. On the substructure, the timber planks and widened caps are in poor condition. The stream channel has heavy aggregation/deposition along the north abutment. The approximate existing right-of-way is 45 feet on the west side of the roadway centerline throughout the project area and is the edge of pavement on the east side of the roadway. This bridge is not eligible for inclusion on the National Register.

Purpose and Need: The purpose of this project is to ensure safety to the traveling public on SR 159 over Wells Ditch while maintaining adequate hydraulic function within the project area. The need of the project is due to deteriorating condition of the bridge.

Proposed Project: The current proposed project would replace the existing bridge over Wells Ditch. The project would require the acquisition of 0.7 acre of permanent right-of-way. Proposed right-of-way widths along SR 159 would be 50 feet maximum to the west and 55 feet maximum to the east from centerline. The project limits would be approximately 750 feet in length. The method of traffic maintenance would be a full road closure with an official state detour. It is estimated that four trees will be removed. Construction is anticipated to begin in spring of 2022.

Surrounding Resources: Land use in the vicinity of the project is agricultural and open pasture, with nearby residential structures. Wells Ditch flows beneath the bridge. A Waters of the U.S. Report will be completed. The INDOT Ecology & Waterway Permitting Office (EWPO) will review the report for ecological resources that may be present. All applicable permits will be obtained before construction begins. 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 USFWS's Information for Planning and Consultation (IPaC) separately. During the June 20, 2019 bridge inspection no evidence of bats was seen or heard at the bridge. Coordination with INDOT Cultural Resources will occur.

Should we not receive your response within thirty (30) calendar days from the date of this letter, it will be assumed that your agency feels that there will be no adverse effects incurred as a result of the proposed project. However, should you find that an extension to the response time is necessary; a reasonable amount may be granted upon request. If you have any questions regarding this matter, please feel free to contact me, at 812-314-7041 or VFlynn@kaskaskiaeng.com, or Troy Arnold, INDOT-ES, at 812-895-7348 or Tarnold1@indot.in.gov. Thank you in advance for your input.

Respectfully,

KASKASKIA ENGINEERING GROUP, LLC



Virginia Flynn
Senior Environmental Scientist

Enclosures

- Early Coordination Letter Recipient List
- Maps (Location, Aerial, Topographic)
- Photo Log

cc: Dan Thatcher, HNTB
Megan Wallace, HNTB



Organization and Project Information

Project ID: 18-1036.01
Des. ID: 1700149
Project Title: SR 159 Bridge Replacement
Name of Organization: Kaskaskia Engineering Group, LLC
Requested by: Virginia Flynn

Environmental Assessment Report

1. Geological Hazards:

- Potential Mine Subsidence ([CMIS](#))
- High liquefaction potential

2. Mineral Resources:

- Bedrock Resource: High Potential
- Sand and Gravel Resource: Low Potential

3. Active or abandoned mineral resources extraction sites:

- Petroleum Exploration Wells
- Underground Coal Mines
- Surface Coal Mines

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

DISCLAIMER:

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

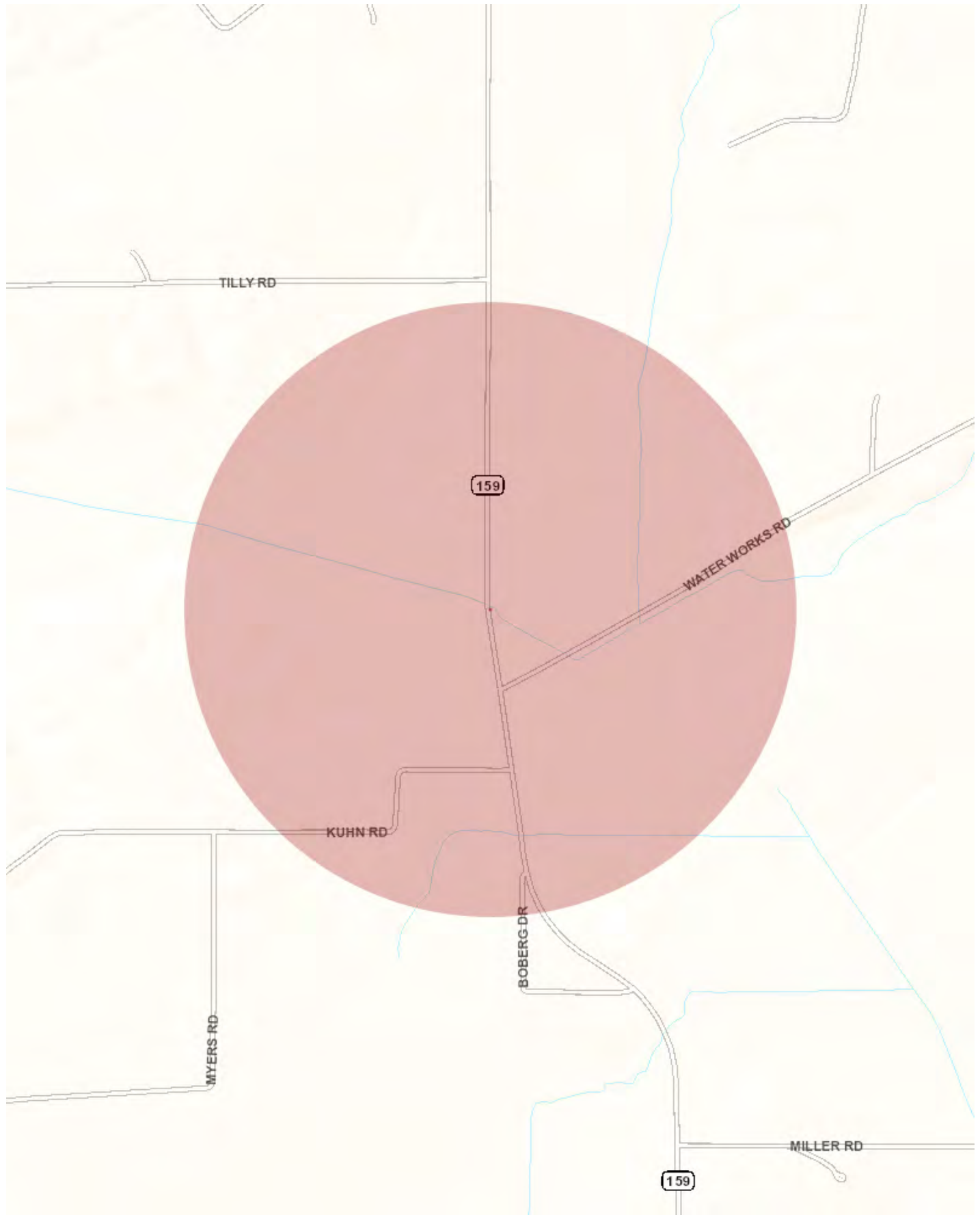
This information was furnished by Indiana Geological Survey

Address: 420 N. Walnut St., Bloomington, IN 47404

Email: IGSEnvir@indiana.edu

Phone: 812 855-7428

Date: November 06, 2019
Appendix A, Page 86 of 176





Metadata:

- https://maps.indiana.edu/metadata/Geology/Petroleum_Wells.html
- https://maps.indiana.edu/metadata/Geology/Coal_Mines_Underground.html
- https://maps.indiana.edu/metadata/Geology/Coal_Mines_Surface.html
- https://maps.indiana.edu/metadata/Geology/Seismic_Earthquake_Liquefaction_Potential.html
- https://maps.indiana.edu/metadata/Geology/Industrial_Minerals_Sand_Gravel_Resources.html
- https://maps.indiana.edu/metadata/Geology/Bedrock_Geology.html



Indiana Department of Environmental Management

We Protect Hoosiers and Our Environment.

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

INDOT
Troy Arnold
3650 SOUTH U.S. 41
Vincennes , IN 47591

Kaskaskia Engineering Group, LLC
Virginia Flynn
208 E. Main Street
Suite 100
Belleville , IN 62220

Date

To Engineers and Consultants Proposing Roadway Construction Projects:

RE: The current proposed project would replace the existing bridge over Wells Ditch. The project would require the acquisition of 0.7 acre of permanent right-of-way. Proposed right-of-way widths along SR 159 would be 50 feet maximum to the west and 55 feet maximum to the east from centerline. The project limits would be approximately 750 feet in length. The method of traffic maintenance would be a full road closure with an official state detour. It is estimated that four trees will be removed. Construction is anticipated to begin in spring of 2022. Land use in the vicinity of the project is agricultural and open pasture, with nearby residential structures. Wells Ditch flows beneath the bridge. A Waters of the U.S. Report will be completed. The INDOT Ecology & Waterway Permitting Office (EWPO) will review the report for ecological resources that may be present. All applicable permits will be obtained before construction begins. 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 USFWS's Information for Planning and Consultation (IPaC) separately. During the June 20, 2019 bridge inspection no evidence of bats was seen or heard at the bridge. Coordination with INDOT Cultural Resources will occur.

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

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

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

WATER AND BIOTIC QUALITY


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

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


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

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

2. In the event a Section 404 wetlands permit is required from the USACE, you also must obtain a Section 401 Water Quality Certification from the IDEM Office of Water Quality Wetlands Program. To learn more about the Wetlands Program, visit: <http://www.in.gov/idem/4384.htm> (<http://www.in.gov/idem/4384.htm>).
3. If the USACE determines that a wetland or other water body is isolated and not subject to Clean Water Act regulation, it is still regulated by the state of Indiana. A State Isolated Wetland permit from IDEM's Office of Water Quality (OWQ) is required for any activity that results in the discharge of dredged or fill

materials into isolated wetlands. To learn more about isolated wetlands, contact the OWQ Wetlands Program at 317-233-8488 .

4. If your project will involve over a 0.5 acre of wetland impact, stream relocation, or other large-scale alterations to water bodies such as the creation of a dam or a water diversion, you should seek additional input from the OWQ Wetlands Program staff. Consult the Web at: <http://www.in.gov/idem/4384.htm> (<http://www.in.gov/idem/4384.htm>) for the appropriate staff contact to further discuss your project.
5. Work within the one-hundred year floodway of a given water body is regulated by the Department of Natural Resources, Division of Water. The Division issues permits for activities regulated under the following statutes:
 - IC 14-26-2 Lakes Preservation Act 312 IAC 11
 - IC 14-26-5 Lowering of Ten Acre Lakes Act No related code
 - IC 14-28-1 Flood Control Act 310 IAC 6-1
 - IC 14-29-1 Navigable Waterways Act 312 IAC 6
 - IC 14-29-3 Sand and Gravel Permits Act 312 IAC 6
 - IC 14-29-4 Construction of Channels Act No related code

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

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

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

To obtain, and operate under, a Rule 5 permit you will first need to develop a Construction Plan (<http://www.in.gov/idem/4917.htm#constreq> (<http://www.in.gov/idem/4917.htm#constreq>)), and as described in 327 IAC 15-5-6.5 (<http://www.in.gov/legislative/iac/T03270/A00150> [PDF] (<http://www.in.gov/legislative/iac/T03270/A00150.PDF>), pages 16 through 19). Before you may apply for a Rule 5 Permit, or begin construction, you must submit your Construction Plan to your county Soil and Water Conservation District (SWCD) (<http://www.in.gov/isda/soil/contacts/map.html> (<http://www.in.gov/isda/soil/contacts/map.html>)).

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

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

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

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

7. For projects involving impacts to fish and botanical resources, contact the Department of Natural Resources - Division of Fish and Wildlife (317/232-4080) for addition project input.
8. For projects involving water main construction, water main extensions, and new public water supplies, contact the Office of Water Quality - Drinking Water Branch (317-308-3299) regarding the need for permits.
9. For projects involving effluent discharges to waters of the State of Indiana , contact the Office of Water Quality - Permits Branch (317-233-0468) regarding the need for a National Pollutant Discharge Elimination System (NPDES) permit.
10. For projects involving the construction of wastewater facilities and sewer lines, contact the Office of Water Quality - Permits Branch (317-232-8675) regarding the need for permits.

AIR QUALITY


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

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

However, IDEM generally recommends that you take vegetative wastes to a registered yard waste composting facility or that the waste be chipped or shredded with composting on site (you must register with IDEM if more than 2,000 pounds is to be composted; contact 317/232-0066). The finished compost can then be used as a mulch or soil amendment. You also may bury any vegetative wastes

(such as leaves, twigs, branches, limbs, tree trunks and stumps) onsite, although burying large quantities of such material can lead to subsidence problems, later on.

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

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

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

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

http://www.in.gov/isdh/regsvcs/radhealth/pdfs/radon_testers_mitigators_list.pdf

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

To learn more about radon, radon risks, and ways to reduce exposure visit:

<http://www.in.gov/isdh/regsvcs/radhealth/radon.htm>


(<http://www.in.gov/isdh/regsvcs/radhealth/radon.htm>), <http://www.in.gov/idem/4145.htm>

(<http://www.in.gov/idem/4145.htm>), or <http://www.epa.gov/radon/index.html>

(<http://www.epa.gov/radon/index.html>).

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


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

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

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


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

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

4. With respect to lead-based paint removal: IDEM encourages all efforts to minimize human exposure to lead-based paint chips and dust. IDEM is particularly concerned that young children exposed to lead can suffer from learning disabilities. Although lead-based paint abatement efforts are not mandatory, any abatement that is conducted within housing built before January 1, 1978 , or a child-occupied facility is required to comply with all lead-based paint work practice standards, licensing and notification requirements. For more information about lead-based paint removal visit: <http://www.in.gov/isdh/19131.htm> (<http://www.in.gov/isdh/19131.htm>).
5. Ensure that asphalt paving plants are permitted and operate properly. The use of cutback asphalt, or asphalt emulsion containing more than seven percent (7%) oil distillate, is prohibited during the months April through October. See 326 IAC 8-5-2 , Asphalt Paving Rule (<http://www.ai.org/legislative/iac/T03260/A00080.PDF> (<http://www.ai.org/legislative/iac/T03260/A00080.PDF>)).
6. If your project involves the construction of a new source of air emissions or the modification of an existing source of air emissions or air pollution control equipment, it will need to be reviewed by the IDEM Office of Air Quality (OAQ). A registration or permit may be required under 326 IAC 2 (View at: www.ai.org/legislative/iac/t03260/a00020.pdf (<http://www.ai.org/legislative/iac/t03260/a00020.pdf>)). New sources that use or emit hazardous air pollutants may be subject to Section 112 of the Clean Air Act and corresponding state air regulations governing hazardous air pollutants.
7. For more information on air permits visit: <http://www.in.gov/idem/4223.htm> (<http://www.in.gov/idem/4223.htm>), or to initiate the IDEM air permitting process, please contact the Office of Air Quality Permit Reviewer of the Day at (317) 233-0178  or OAMPROD atdem.state.in.us.

LAND QUALITY

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

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

2. All solid wastes generated by the project, or removed from the project site, need to be taken to a properly permitted solid waste processing or disposal facility. For more information, visit <http://www.in.gov/idem/4998.htm> (<http://www.in.gov/idem/4998.htm>).
3. If any contaminated soils are discovered during this project, they may be subject to disposal as hazardous waste. Please contact the OLQ at 317-308-3103 [☎](tel:317-308-3103) to obtain information on proper disposal procedures.
4. If PCBs are found at this site, please contact the Industrial Waste Section of OLQ at 317-308-3103 [☎](tel:317-308-3103) for information regarding management of any PCB wastes from this site.
5. If there are any asbestos disposal issues related to this site, please contact the Industrial Waste Section of OLQ at 317-308-3103 [☎](tel:317-308-3103) for information regarding the management of asbestos wastes (Asbestos removal is addressed above, under Air Quality).
6. If the project involves the installation or removal of an underground storage tank, or involves contamination from an underground storage tank, you must contact the IDEM Underground Storage Tank program at 317/308-3039. See: <http://www.in.gov/idem/4999.htm> (<http://www.in.gov/idem/4999.htm>).

FINAL REMARKS

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

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

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

Signature(s) of the Applicant

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

Project Description

The current proposed project would replace the existing bridge over Wells Ditch. The project would require the acquisition of 0.7 acre of permanent right-of-way. Proposed right-of-way widths along SR 159 would be 50 feet maximum to the west and 55 feet maximum to the east from centerline. The project limits would be

November 27, 2019

66-33
Kaskaskia Engineering Group
Attention: Virginia Flynn
323 Main Street, Suite E
Evansville, Indiana 47708

Dear Virginia Flynn,

RE: Wellhead Protection Area
Proximity Determination
Des No 1700149
Bridge Replacement Project over
Wells Ditch
SR 159, 2.49 miles north of the SR
67 junction with SR 159
Knox County, Indiana

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

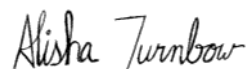
Note: The Drinking Water Branch has launched a self-service feature which allows one to determine source water proximity without submitting the application form. This tool will identify whether a site is located in a Source Water Susceptibility Area and/or Wellhead Protection Area. Use the following instructions:

1. Go to <http://idemmaps.idem.in.gov/whpa2/>
2. Use the search tool located in the upper left hand corner of the application to zoom to your site of interest by way of city, county, or address; or use the mouse to click on the site of interest displayed on the map.
3. Once the site of interest has been located and selected, move the map so that the point is in the center of the window, and use the print tool to create a .pdf of a source water proximity determination response.

In the future please use this self service feature if it suits your needs.

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

Sincerely,



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

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

DNR #: ER-21976

Request Received: November 6, 2019

Requestor: Kaskaskia Engineering Group, LLC
Virginia Flynn
323 Main Street, Suite E
Evansville, IN 47708

Project: SR 159 bridge (SN 159-42-06350 B) replacement over Tilley (Wells) Ditch, 2.49 miles north of SR 67; Des #1700149

County/Site info: Knox

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

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

Regulatory Assessment: This proposal will require the formal approval of our agency for construction in a floodway pursuant to the Flood Control Act (IC 14-28-1), unless it qualifies for a bridge exemption (see enclosure). Please include a copy of this letter with the permit application if the project does not meet the bridge exemption criteria.

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

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

1) Crossing Structure:

For purposes of maintaining fish and wildlife passage through a crossing structure, the Environmental Unit recommends bridges rather than culverts and bottomless culverts rather than box or pipe culverts. Wide culverts are better than narrow culverts, and culverts with shorter through lengths are better than culverts with longer through lengths. If box or pipe culverts are used, the bottoms should be buried a minimum of 6" (or 20% of the culvert height/pipe diameter, whichever is greater up to a maximum of 2') below the stream bed elevation to allow a natural streambed to form within or under the crossing structure. Crossings should: span the entire channel width (a minimum of 1.2 times the OHWM width); maintain the natural stream substrate within the structure; have a minimum openness ratio (height x width / length) of 0.25; and have stream depth, channel width, and water velocities during low-flow conditions that are approximate to those in the natural stream channel. Banklines should be restored within box and pipe structures to allow for wildlife passage above the ordinary highwater mark.

2) Bank Stabilization & Wildlife Passage:

The new, replacement, or rehabbed structure, and any bank stabilization under the structure, should not create conditions that are less favorable for wildlife passage under the structure compared to current conditions. A level area of natural ground under the structure is ideal for wildlife passage. If channel clearing will result in a flat bench area above the normal water level under the structure, this area should allow wildlife

Attachments: A - Bridge Exemption Criteria

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passage and should remain free of riprap and other similar materials that can impair wildlife passage.

Minimize the use of riprap and use alternative erosion protection materials whenever possible. Riprap must not be placed in the active thalweg channel or placed in the streambed in a manner that precludes fish or aquatic organism passage (riprap must not be placed above the existing streambed elevation). Where riprap must be used, we recommend placing only enough riprap to provide stream bank toe protection, such as from the toe of the bank up to the ordinary high water mark (OHWM). The banks above the OHWM must be restored, stabilized, and revegetated using geotextiles and a mixture of grasses, sedges, wildflowers, shrubs, and trees native to the area and specifically for stream bank/floodway stabilization purposes as soon as possible upon completion.

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

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

3) Riparian Habitat:

We recommend a mitigation plan be developed (and submitted with the permit application, if required) for any unavoidable habitat impacts that will occur. The DNR's Floodway Habitat Mitigation guidelines (and plant lists) can be found online at: <http://www.in.gov/legislative/iac/20190130-IR-312190041NRA.xml.pdf>.

Impacts to non-wetland forest of one (1) acre or more should be mitigated at a minimum 2:1 ratio. If less than one acre of non-wetland forest is removed in a rural setting, replacement should be at a 1:1 ratio based on area. Impacts to non-wetland forest under one (1) acre in an urban setting should be mitigated by planting five trees, at least 2 inches in diameter-at-breast height (dbh), for each tree which is removed that is 10" dbh or greater (5:1 mitigation based on the number of large trees).

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 with a mixture of native grasses, sedges, wildflowers, and also native hardwood trees and shrubs if any woody plants are disturbed during construction as soon as possible upon completion. Do not use any varieties of Tall Fescue or other non-native plants, including prohibited invasive species (see 312 IAC 18-3-25).
2. Minimize and contain within the project limits inchannel disturbance and the clearing of trees and brush.
3. Do not work in the waterway from April 1 through June 30 without the prior written approval of the Division of Fish and Wildlife.
4. Do not cut any trees suitable for Indiana bat or Northern Long-eared bat roosting (greater than 5 inches dbh, living or dead, with loose hanging bark, or with cracks, crevices, or cavities) from April 1 through September 30.
5. Do not excavate in the low flow area except for the placement of piers, foundations,

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and riprap, or removal of the old structure.

6. Do not construct any temporary runarounds, access bridges, causeways, cofferdams, diversions, or pumparounds.

7. Use minimum average 6 inch graded riprap stone extended below the normal water level to provide habitat for aquatic organisms in the voids.

8. Plant native hardwood trees along the top of the bank and right-of-way to replace the vegetation destroyed during construction.

9. Appropriately designed measures for controlling erosion and sediment must be implemented to prevent sediment from entering the stream or leaving the construction site; maintain these measures until construction is complete and all disturbed areas are stabilized.

10. Seed and protect all disturbed streambanks and slopes not protected by other methods that are 3:1 or steeper with erosion control blankets that are heavy-duty, biodegradable, and net free or that use loose-woven / Leno-woven netting to minimize the entrapment and snaring of small-bodied wildlife such as snakes and turtles (follow manufacturer's recommendations for selection and installation); seed and apply mulch on all other disturbed areas.

Contact Staff:

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

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



Date: December 6, 2019

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

The Flood Control Act (IC 14-28-1) contains a provision (Section 22), which exempts certain bridge projects from its permitting requirement. Specifically, the Act states:

A permit is not required for "a construction or reconstruction project on a state or county highway bridge in a rural area that crosses a stream having an upstream drainage area of not more than fifty (50) square miles..."

Therefore, in order for a bridge project to be exempt, it must:

- be a state or county highway department project;
- be a bridge;
- be located in a rural area; and
- cross a stream having an upstream drainage area of less than 50 square miles.

The initial criterion is very specific - the structure must be a state or county highway department project.

The second requirement mandates that the project be a bridge (for this provision, the Department of Natural Resources considers a culvert to be a bridge). Projects such as bank protection, spoil disposal, borrow pits, etc. are not automatically exempt. Anyone proposing to undertake a non-bridge related activity should consult with the Division of Water's Technical Services Section staff at 317-232-4160 (or toll free at 1-877-928-3755) regarding the applicability of the exemption prior to initiating work.

The third criterion states that the project must be located in a rural area. The phrase "rural area" is defined as an area:

- where the lowest floor elevation, including a basement, of any residential, commercial, or industrial building impacted by the project is at least 2 feet above the 100 year flood elevation with the project in place;
- located outside the corporate boundaries of a consolidated or an incorporated city or town; and
- located outside of the territorial authority for comprehensive planning (generally, a 2 mile planning buffer around a city or town).

The final criterion limits the exemption to a project crossing a stream having an upstream drainage area of less than 50 square miles. The drainage area includes all land area contributing to runoff above the project site and is determined from the United States Geological Survey 7½ minute series quadrangle maps. The Department of Natural Resources will determine the drainage area upon written request.

This exemption has been grossly misunderstood and liberally applied in the past. As a result, the Department of Natural Resources is taking a firm stance on future violations. If challenged, it will be the responsibility of the person claiming the exemption to prove to the Department that all 4 criteria have been satisfied. Failure to do so will result in the Department initiating litigation with the potential for the imposition of fines in amounts up to \$10,000 per day.

Note: This exemption only applies to the Flood Control Act. If a bridge is to be constructed over a navigable waterway, or over or near a public freshwater lake, a permit will be required.

Virginia Flynn

From: Wright, Mary <MWRIGHT@indot.IN.gov>
Sent: Thursday, November 07, 2019 9:30 AM
To: Virginia Flynn
Subject: RE: Early Coordination, INDOT Project Des. No. 1700149, SR 159 Bridge Replacement, Knox County, Indiana

Early Coordination and Creating a Public Involvement Plan (PIP)

We have received your early coordination notification packet for the above referenced project(s). Our office prefers to be notified at the early coordination stage in order to encourage early and ongoing public involvement aside from the specific legal requirements as outlined in our Public Involvement Manual <http://www.in.gov/indot/2366.htm>. Seeking the public's understanding of transportation improvement projects early in the project development stage can allow the opportunity for the public to express their concerns, comments, and to seek buy-in. Early coordination is the perfect opportunity to examine the proposed project and its impacts to the community along with the many ways and or tools to inform the public of the improvements and seek engagement. A good public involvement plan, or PIP, should consider the type, scope, impacts, and the level of public awareness that should, or could, be implemented. In other words, although there are cases where no public involvement is legally required, sometimes it is simply the right thing to do in order to keep the public informed.

The public involvement office is always available to provide support and resources to bolster any public involvement activities you may wish to implement or discuss. Please feel free to contact our office anytime should you have any questions or concerns. Thank you for notifying our office about your proposed project. We trust you will not only analyze the appropriate public involvement required, but also consider the opportunity to do go above and beyond those requirements in creating a good PIP.

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

From: Virginia Flynn [mailto:VFlynn@kaskaskiaeng.com]
Sent: Wednesday, November 06, 2019 12:14 PM
To: Clark, Rickie <RCLARK@indot.IN.gov>
Cc: Wright, Mary <MWRIGHT@indot.IN.gov>
Subject: Early Coordination, INDOT Project Des. No. 1700149, SR 159 Bridge Replacement, Knox County, Indiana

**** This is an EXTERNAL email. Exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email. ****

Dear Mr. Clark,

Please find attached an early coordination letter and supporting exhibits for the above reference project.

Thank you,



Virginia Flynn

From: Falls, Ryan G <RFalls@indot.IN.gov>
Sent: Friday, November 08, 2019 9:15 AM
To: Virginia Flynn
Subject: Vincennes Env Early Coordination Response INDOT Project Des. No. 1700149

Virginia Flynn,

Please use a more general subject line in future early coordination letters (i.e. Bridge Project rather than Bridge Replacement). This was mentioned in the last NEPA refresher I attended.

Thank you for the opportunity to respond to early coordination.

Ryan Falls

Capital Program Management-Senior Environmental Manager Supervisor

Indiana Department of Transportation

3650 South US Highway 41

Vincennes, IN 47591

Office: 812-895-7326

Cell: 812-582-1387

Fax: 812-895-7474

Cisco: 14605

Email: rfalls@indot.IN.gov



From: Virginia Flynn [mailto:VFlynn@kaskaskiaeng.com]

Sent: Wednesday, November 6, 2019 12:19 PM

To: Falls, Ryan G <RFalls@indot.IN.gov>

Subject: Early Coordination, INDOT Project Des. No. 1700149, SR 159 Bridge Replacement, Knox County, Indiana

****** This is an EXTERNAL email. Exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email. ******

Dear Mr. Falls,

Please find attached an early coordination letter and supporting exhibits for the above reference project.

Thank you,



Virginia Flynn

Senior Environmental Scientist, PWS

Certified: WBE/DBE/WOSB/EDWOSB

Virginia Flynn

From: McWilliams, Robin <robin_mcwilliams@fws.gov>
Sent: Wednesday, November 06, 2019 12:49 PM
To: Virginia Flynn
Subject: Re: [EXTERNAL] Early Coordination, INDOT Project Des. No. 1700149, SR 159 Bridge Replacement, Knox County, Indiana

Dear Virginia,

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

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (16 U.S.C. 661 et. seq.) and are consistent with the intent of the National Environmental Policy Act of 1969, the Endangered Species Act of 1973, and the U. S. Fish and Wildlife Service's Mitigation Policy.

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

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

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

Sincerely,
Robin McWilliams Munson

Standard Recommendations:

1. Do not clear trees or understory vegetation outside the construction zone boundaries. (**This restriction is not related to the “tree clearing” restriction for potential Indiana Bat habitat.**)
2. Restrict below low-water work in streams to placement of culverts, piers, pilings and/or footings, shaping of the spill slopes around the bridge abutments, and placement of riprap.

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

3. Restrict channel work and vegetation clearing to the minimum necessary for installation of the stream crossing structure.
4. Minimize the extent of hard armor (riprap) in bank stabilization by using bioengineering techniques whenever possible. If rip rap is utilized for bank stabilization, extend it below low-water elevation to provide aquatic habitat.

5. Implement temporary erosion and sediment control methods within areas of disturbed soil. All disturbed soil areas upon project completion will be vegetated following INDOT's standard specifications.
6. Avoid all work within the inundated part of the stream channel (in perennial streams and larger intermittent streams) during the fish spawning season (April 1 through June 30), except for work within sealed structures such as caissons or cofferdams that were installed prior to the spawning season. No equipment shall be operated below Ordinary High Water Mark during this time unless the machinery is within the caissons or on the cofferdams.
7. Evaluate wildlife crossings under bridge/culverts projects in appropriate situations. Suitable crossings include flat areas below bridge abutments with suitable ground cover, high water shelves in culverts, amphibian tunnels and diversion fencing.

Robin McWilliams Munson

U.S. Fish and Wildlife Service
620 South Walker Street
Bloomington, Indiana 46403
812-334-4261 x. 207 Fax: 812-334-4273

Monday, Tuesday - 7:30a-3:00p
Wednesday, Thursday - telework 8:30a-3:00p

On Wed, Nov 6, 2019 at 12:24 PM Virginia Flynn <VFlynn@kaskaskiaeng.com> wrote:

Dear Ms. McWilliams,

Please find attached an early coordination letter and supporting exhibits for the above reference project.

Thank you,



Virginia Flynn

Senior Environmental Scientist, PWS

November 20, 2019

Virginia Flynn
Kaskaski Engineering Group, LLC
323 Main Street, Suite E
Evansville, Indiana 47708

Dear Ms. Flynn:

The proposed project to replace the bridge that carries State Road 159 over Wells Ditch in Knox County, Indiana (Des No. 1700149), as referred to in your letter received November 6, 2019, will cause a conversion of prime farmland.

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

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

Sincerely,

JERRY RAYNOR Digitally signed by JERRY RAYNOR
Date: 2019.11.22 13:02:34 -05'00'

JERRY RAYNOR
State Conservationist

Enclosures



FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request 11/6/2019			
Name of Project DES1700149 Bridge Replacement		Federal Agency Involved IDOT-FHWA			
Proposed Land Use INDOT Right-of-Way for bridge		County and State Knox County, Indiana			
PART II (To be completed by NRCS)		Date Request Received By NRCS 11/6/2019		Person Completing Form: JRA	
Does the site contain Prime, Unique, Statewide or Local Important Farmland? <i>(If no, the FPPA does not apply - do not complete additional parts of this form)</i>		YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		Acres Irrigated _____ Average Farm Size 627	
Major Crop(s) Corn		Farmable Land In Govt. Jurisdiction Acres: 296184 % 88		Amount of Farmland As Defined in FPPA Acres: 25820⁹⁰% 77	
Name of Land Evaluation System Used LESA		Name of State or Local Site Assessment System		Date Land Evaluation Returned by NRCS 11/20/2019	
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		0.007			
B. Total Acres To Be Converted Indirectly		0.693			
C. Total Acres In Site		0.70			
PART IV (To be completed by NRCS) Land Evaluation Information					
A. Total Acres Prime And Unique Farmland		0.70			
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		80			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)		66			
PART VI (To be completed by Federal Agency) Site Assessment Criteria <i>(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)</i>		Maximum Points	Site A	Site B	Site C
1. Area In Non-urban Use		(15)	15		
2. Perimeter In Non-urban Use		(10)	10		
3. Percent Of Site Being Farmed		(20)	16		
4. Protection Provided By State and Local Government		(20)	0		
5. Distance From Urban Built-up Area		(15)	15		
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)	0		
9. Availability Of Farm Support Services		(5)	3		
10. On-Farm Investments		(20)	15		
11. Effects Of Conversion On Farm Support Services		(10)	0		
12. Compatibility With Existing Agricultural Use		(10)	0		
TOTAL SITE ASSESSMENT POINTS		160	89	0	0
PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)		100	66	0	0
Total Site Assessment (From Part VI above or local site assessment)		160	89	0	0
TOTAL POINTS (Total of above 2 lines)		260	155	0	0
Site Selected: A		Date Of Selection 11/25/19		Was A Local Site Assessment Used? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	
Reason For Selection:					
Name of Federal agency representative completing this form: Virginia Flynn					Date: 11/25/19

(See Instructions on reverse side)



VS ENGINEERING, INC.

Civil • Structural • Transportation • Environmental

NOTICE OF SURVEY

June 14, 2019

RE: SR 159 Small Structure Replacement
Knox County, Indiana

Dear Property Owner:

Our information indicates that you own or occupy property near this proposed highway project. Our employees will be doing a survey of the project area in the near future. It may be necessary for them to come onto your property to complete this work. 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 effect, if any, our project may eventually have on your property. If we determine later that your property is involved, we will contact you with additional information.

The survey work will include mapping the location of features such as trees, buildings, fences and drives, and obtaining ground elevations. The survey work may also include the identification and mapping of wetlands, archaeological investigations (which may include excavation of small shovel test probes), and various other environmental studies. The survey is needed for the proper planning and design of this highway project. Please be assured of our sincere desire to cause you as little inconvenience as possible during this survey. If any problems do occur, please contact our field crew or contact me at the phone number or address shown herein.

Sincerely,

VS Engineering, Inc.
Alex Daugherty, P.S.
Project Surveyor
812-401-0303

Des. No. 1700149



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Indiana Ecological Services Field Office

620 South Walker Street

Bloomington, IN 47403-2121

Phone: (812) 334-4261 Fax: (812) 334-4273

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

In Reply Refer To:

November 08, 2019

Consultation Code: 03E12000-2020-SLI-0211

Event Code: 03E12000-2020-E-00981

Project Name: SR 159, Bridge Replacement over Wells Ditch (Tilley Ditch), DES 1700149

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

To Whom It May Concern:

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

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

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

Please use the species list provided and visit the U.S. Fish and Wildlife Service's Region 3 Section 7 Technical Assistance website at - <http://www.fws.gov/midwest/endangered/section7/s7process/index.html>. This website contains step-by-step instructions which will help you

determine if your project will have an adverse effect on listed species and will help lead you through the Section 7 process.

For all **wind energy projects** and **projects that include installing towers that use guy wires or are over 200 feet in height**, please contact this field office directly for assistance, even if no federally listed plants, animals or critical habitat are present within your proposed project or may be affected by your proposed project.

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

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

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

This species list is provided by:

Indiana Ecological Services Field Office

620 South Walker Street

Bloomington, IN 47403-2121

(812) 334-4261

Project Summary

Consultation Code: 03E12000-2020-SLI-0211

Event Code: 03E12000-2020-E-00981

Project Name: SR 159, Bridge Replacement over Wells Ditch (Tilley Ditch), DES 1700149

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Description: This project is located on SR 159, 2.49 miles north of the SR 67 junction with SR 159 Knox County, Indiana. The existing pre-stressed concrete box bridge (SN 159-42-06350 B; National Bridge Inventory [NBI] 028050) cross section consists of two 11-foot lanes bordered by 7-foot shoulders. The existing bridge is 54 feet in length, and 28 feet wide curb-to-curb. The current proposed project would replace the existing bridge over Wells Ditch. The project would require the acquisition of 0.7 acre of permanent right-of-way. Proposed right-of-way widths along SR 159 would be 50 feet maximum to the west and 55 feet maximum to the east from centerline. The project limits would be approximately 750 feet in length. The method of traffic maintenance would be a full road closure with an official state detour. Installation of temporary or permanent lighting is not anticipated. Land use in the vicinity of the project is agricultural and open pasture, with nearby residential structures. Wells Ditch (Tilley Ditch) flows beneath the bridge. Suitable summer habitat is located adjacent to the project along Wells Ditch. The dominate species is silver maple. It is estimated that four trees will be removed during the inactive season. INDOT personnel from the Vincennes district indicated on September 17, 2019 that 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. A September 12, 2019 inspection by Kaskaskia Engineering Group, LLC did not indicate the presence of bats.

Construction is anticipated to begin in spring 2022.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/38.814995943289944N87.31582359370765W>



Counties: Knox, IN

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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

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

Mammals

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/1/office/31440.pdf	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: <ul style="list-style-type: none">▪ Incidental take of the NLEB is not prohibited here. Federal agencies may consult using the 4(d) rule streamlined process. Transportation projects may consult using the programmatic process. See www.fws.gov/midwest/endangered/mammals/nleb/index.html Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

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

APPENDIX D: Bridge/Structure Assessment Form

This form will be completed and submitted to the District Environmental Manager by the Contractor prior to conducting any work below the deck surface either from the underside; from activities above that bore down to the underside; from activities that could impact expansion joints; from deck removal on bridges; or from structure demolition for bridges/structures within 1000 feet of suitable bat habitat.

DOT Project # 1700149	Water Body Wells Ditch (Tilley Ditch)	Date/Time of Inspection Sept. 12, 2019 / 1:30 pm	Within 1,000ft of suitable bat habitat (circle one) Yes No
---------------------------------	---	--	--

Route SR 159	County Knox	Federal Structure ID NBI #: 028050 SN: 159-42-06350B
------------------------	-----------------------	--

If the bridge/structure is 1,000 feet or more from suitable bat habitat (e.g., an urban or agricultural area without suitable foraging habitat or corridors linking the bridge to suitable foraging habitat), check box and STOP HERE. No assessment required.

Please submit to the U.S. Fish and Wildlife Service.

Areas Inspected (Check all that apply)

Bridges		Culverts/Other Structures		Summary Info (circle all that apply)			
All vertical crevices sealed at the top and 0.5-1.25" wide & ≥4" deep	X	Crevices, rough surfaces or imperfections in concrete		Human disturbance or traffic under bridge/in culvert or at the structure	High	Low	None
All crevices >12" deep & not sealed	X	Spaces between walls, ceiling joists		Possible corridors for netting	None/poor	Marginal	Excellent
All guardrails	X						
All expansion joints	X						
Spaces between concrete end walls and the bridge deck	X						

Last Revised May 31, 2017

Vertical surfaces on concrete I-beams							
---------------------------------------	--	--	--	--	--	--	--

Evidence of Bats (Circle all that apply) Presence of one or more indicators is sufficient evidence that bats may be using the structure.

None

Visual (e.g. survey, thermal, emergent etc.) Guano Staining definitively from bats
 • Live __ number seen Odor Y/N Photo documentation Y/N
 • Dead __ number seen Photo documentation Y/N
 Photo documentation Y/N

Audible

Assessment Conducted By: <u>Krista Bollmann</u> Signature(s): <u><i>Krista Bollmann</i></u>
District Environmental Use Only: Date Received by District Environmental Manager: _____

DOT Bat Assessment Form Instructions

1. Assessments must be completed no more than 2 years prior to conducting any work below the deck surface on all bridges, regardless of whether assessments have been conducted in the past.
2. Any bridge/structure suspected of providing habitat for any species of bat will be removed from work schedules until such time that the DOT has coordinated with the USFWS. Additional studies may be undertaken by the DOT to determine what species may be utilizing each structure identified as supporting bats prior to allowing any work to proceed.
3. Any questions should be directed to the District Environmental Manager.



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Indiana Ecological Services Field Office

620 South Walker Street

Bloomington, IN 47403-2121

Phone: (812) 334-4261 Fax: (812) 334-4273

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

In Reply Refer To:

November 08, 2019

Consultation Code: 03E12000-2020-I-0211

Event Code: 03E12000-2020-E-00989

Project Name: SR 159, Bridge Replacement over Wells Ditch (Tilley Ditch), DES 1700149

Subject: Concurrence verification letter for the 'SR 159, Bridge Replacement over Wells Ditch (Tilley Ditch), DES 1700149' project under the revised February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat.

To whom it may concern:

The U.S. Fish and Wildlife Service (Service) has received your request dated to verify that the **SR 159, Bridge Replacement over Wells Ditch (Tilley Ditch), DES 1700149** (Proposed Action) may rely on the concurrence provided in the February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat (PBO) to satisfy requirements under Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C 1531 *et seq.*).

Based on the information you provided (Project Description shown below), you have determined that the Proposed Action is within the scope and adheres to the criteria of the PBO, including the adoption of applicable avoidance and minimization measures, may affect, but is not likely to adversely affect (NLAA) the endangered Indiana bat (*Myotis sodalis*) and/or the threatened Northern long-eared bat (*Myotis septentrionalis*).

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

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

If the Proposed Action is modified, or new information reveals that it may affect the Indiana bat and/or Northern long-eared bat in a manner or to an extent not considered in the PBO, further review to conclude the requirements of ESA Section 7(a)(2) may be required. If the Proposed Action may affect any other federally-listed or proposed species, and/or any designated critical habitat, additional consultation is required. If the proposed action has the potential to take bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act may also be required. In either of these circumstances, please contact this Service Office.

Project Description

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

Name

SR 159, Bridge Replacement over Wells Ditch (Tilley Ditch), DES 1700149

Description

This project is located on SR 159, 2.49 miles north of the SR 67 junction with SR 159 Knox County, Indiana. The existing pre-stressed concrete box bridge (SN 159-42-06350 B; National Bridge Inventory [NBI] 028050) cross section consists of two 11-foot lanes bordered by 7-foot shoulders. The existing bridge is 54 feet in length, and 28 feet wide curb-to-curb. The current proposed project would replace the existing bridge over Wells Ditch. The project would require the acquisition of 0.7 acre of permanent right-of-way. Proposed right-of-way widths along SR 159 would be 50 feet maximum to the west and 55 feet maximum to the east from centerline. The project limits would be approximately 750 feet in length. The method of traffic maintenance would be a full road closure with an official state detour. Installation of temporary or permanent lighting is not anticipated. Land use in the vicinity of the project is agricultural and open pasture, with nearby residential structures. Wells Ditch (Tilley Ditch) flows beneath the bridge. Suitable summer habitat is located adjacent to the project along Wells Ditch. The dominate species is silver maple. It is estimated that four trees will be removed during the inactive season. INDOT personnel from the Vincennes district indicated on September 17, 2019 that 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. A September 12, 2019 inspection by Kaskaskia Engineering Group, LLC did not indicate the presence of bats.

Construction is anticipated to begin in spring 2022.

Determination Key Result

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

Qualification Interview

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

[1] See [Indiana bat species profile](#)

Automatically answered

Yes

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

[1] See [Northern long-eared bat species profile](#)

Automatically answered

Yes

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

A) Federal Highway Administration (FHWA)

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

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

No

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

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

No

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

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

No

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

No

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

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

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

Yes

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

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

Yes

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

No

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

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

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

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

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

No

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

[1] Documented roosting or foraging habitat – for the purposes of this consultation, we are considering documented habitat as that where Indiana bats and/or NLEB have actually been captured and tracked using (1) radio telemetry to roosts; (2) radio telemetry triangulation/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 triangulation/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 the tree removal alter *any* **documented** Indiana bat or NLEB roosts and/or alter any surrounding summer habitat **within** 0.25 mile of a documented roost?

No

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

No

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

Yes

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

No

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

No

24. Does the project include slash pile burning?

No

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

Yes

26. Is there *any* suitable habitat^[1] for Indiana bat or NLEB **within** 1,000 feet of the bridge? (includes any trees suitable for maternity, roosting, foraging, or travelling habitat)

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

Yes

27. Has a bridge assessment^[1] been conducted **within** the last 24 months^[2] to determine if the bridge is being used by bats?

[1] See [User Guide Appendix D](#) for bridge/structure assessment guidance

[2] Assessments must be completed no more than 2 years prior to conducting any work below the deck surface on all bridges that meet the physical characteristics described in the Programmatic Consultation, regardless of whether assessments have been conducted in the past. Due to the transitory nature of bat use, a negative result in one year does not guarantee that bats will not use that bridge/structure in subsequent years.

Yes

SUBMITTED DOCUMENTS

- *BridgeStructureAssessmentFormDes1700149.pdf* <https://ecos.fws.gov/ipac/project/MZQK7FDGHZEOZJNQUIHOTM4JOI/projectDocuments/19028551>

28. Did the bridge assessment detect *any* signs of Indiana bats and/or NLEBs roosting in/under the bridge (bats, guano, etc.)^[1]?

[1] If bridge assessment detects signs of *any* species of bats, coordination with the local FWS office is needed to identify potential threatened or endangered bat species. Additional studies may be undertaken to try to identify which bat species may be utilizing the bridge prior to allowing *any* work to proceed.

Note: There is a small chance bridge assessments for bat occupancy do not detect bats. Should a small number of bats be observed roosting on a bridge just prior to or during construction, such that take is likely to occur or does occur in the form of harassment, injury or death, the PBO requires the action agency to report the take. Report all unanticipated take within 2 working days of the incident to the USFWS. Construction activities may continue without delay provided the take is reported to the USFWS and is limited to 5 bats per project.

No

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

No

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

No

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

No

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

No

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

Yes

34. Will the activities that use percussives (**not including tree removal/trimming or bridge/structure work**) and/or increase noise levels above existing traffic/background levels be conducted *during* the active season^[1]?

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

No

35. 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

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

No

37. Are the project activities that use percussives (not including tree removal/trimming or bridge/structure work) and/or increase noise levels above existing traffic/background levels consistent with a No Effect determination in this key?

Automatically answered

Yes, because the activities are within 300 feet of the existing road/rail surface, greater than 0.5 miles from a hibernacula, and conducted during the inactive season

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

Automatically answered

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

39. Is the 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 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

40. Is the bridge removal, replacement, or maintenance activities portion of this project consistent with a No Effect determination in this key?

Automatically answered

Yes, because the bridge has been assessed using the criteria documented in the BA and no signs of bats were detected

41. **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

42. **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

43. **Tree Removal AMM 2**

Can *all* tree removal activities be restricted to when Indiana bats are not likely to be present (e.g., the inactive season)^[1]?

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

Automatically answered

Yes

44. **Tree Removal AMM 2**

Can *all* tree removal activities be restricted to when Northern long-eared bats are not likely to be present (e.g., the inactive season)^[1]?

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

Automatically answered

Yes

45. **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

46. **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

47. **Lighting AMM 1**

Will *all* **temporary** lighting used during the removal of suitable habitat and/or the removal/trimming of trees within suitable habitat be directed away from suitable habitat during the active season?

Yes

Project Questionnaire

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

N/A

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

N/A

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

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

0.36

4. Please describe the proposed bridge work:

SR 159, Bridge Replacement over Wells Ditch (Tilley Ditch), DES 1700149

This project is located on SR 159, 2.49 miles north of the SR 67 junction with SR 159 Knox County, Indiana. The existing pre-stressed concrete box bridge (SN 159-42-06350 B; National Bridge Inventory [NBI] 028050) cross section consists of two 11-foot lanes bordered by 7-foot shoulders. The existing bridge is 54 feet in length, and 28 feet wide curb-to-curb. The current proposed project would replace the existing bridge over Wells Ditch. The project would require the acquisition of 0.7 acre of permanent right-of-way. Proposed right-of-way widths along SR 159 would be 50 feet maximum to the west and 55 feet maximum to the east from centerline. The project limits would be approximately 750 feet in length. The method of traffic maintenance would be a full road closure with an official state detour. Installation of temporary or permanent lighting is not anticipated. Land use in the vicinity of the project is agricultural and open pasture, with nearby residential structures. Wells Ditch (Tilley Ditch) flows beneath the bridge. Suitable summer habitat is located adjacent to the project along Wells Ditch. The dominate species is silver maple. It is estimated that four trees will be removed during the inactive season. INDOT personnel from the Vincennes district indicated on September 17, 2019 that 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. A September 12, 2019 inspection by Kaskaskia Engineering Group, LLC did not indicate the presence of bats.

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

Spring 2022

6. Please enter the date of the bridge assessment:

September 12, 2019

Avoidance And Minimization Measures (AMMs)

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

GENERAL AMM 1

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

LIGHTING AMM 1

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

TREE REMOVAL AMM 1

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

TREE REMOVAL AMM 2

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

TREE REMOVAL AMM 3

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

TREE REMOVAL AMM 4

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

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

This key was last updated in IPaC on March 16, 2018. 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 require consultation with the U.S. Fish and Wildlife Service (Service) under Section 7 of the Endangered Species Act (ESA) for the endangered **Indiana bat** (*Myotis sodalis*) and the threatened **Northern long-eared bat** (NLEB) (*Myotis septentrionalis*).

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

Appendix D of the AI approved March 30, 2020

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

Date: 1/17/2020

Project Designation Number: 1700149

Route Number: SR 159

Project Description: Bridge replacement over Wells Ditch, 2.49 miles north of SR 67

The purpose of the proposed project is to replace the existing bridge (Bridge No. 159-42-06350B; NBI No. 28050), which has deteriorated beyond the point of cost-effective rehabilitation efforts. Specifically, some of the box beams have minor cracks and spalling; in addition, the southeast timber wing wall is in poor condition. Cracking with efflorescence is present in the south abutment.

Approximately 0.70 acre of permanent right-of-way (ROW) will need to be required for the proposed project. Excavation, to a depth of approximately 15 feet, will be required at the ends of the structure for bridge replacement. A full road closure will be required during construction; an official state detour route will be identified.

Feature crossed (if applicable): Wells Ditch (also known as Tilley Ditch)

Township: Washington Township

City/County: Knox County

Information reviewed (please check all that apply):

General project location map USGS map Aerial photograph Interim Report

Written description of project area General project area photos Soil survey data

Previously completed historic property reports Previously completed archaeology reports

Bridge Inspection Information

Other (please specify): Bridge Inspection Assessment System (BIAS); SHAARD, SHAARD GIS, Indiana Historic Buildings, Bridges, and Cemeteries (IHBBC) map; *Knox County Interim Report* (1995; Washington Township); 2010 INDOT-sponsored *Historic Bridge Inventory* (HBI); online street-view imagery; County GIS data; project information provided by Kaskaskia Engineering Group, LLC, dated 11/20/2019 and on file at INDOT CRO.

Moffatt, Charles David

2007 An Archaeological Records Check and Phase Ia Reconnaissance: For the Bridge Replacement (Des. No. 0015070) Over Wells Ditch on SR 159, Knox County, Indiana. INDOT, CRO. Prepared for the INDOT Vincennes District.

2008 Reconnaissance of Additional Right of Way for the Bridge Replacement (Des. No. 0015070) Over Wells Ditch on SR 159, Knox County, Indiana. INDOT, CRO. Prepared for the INDOT Vincennes District.

Results of the Records Review for Above-Ground Resources:

With regard to 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 first performed a desktop review, checking the Indiana Register of Historic Sites and Structures (State Register) and National Register of Historic Places (National Register) lists for Knox County. No listed resources are present within 0.25 mile of the project area, a distance that would serve as an adequate area of potential effects (APE) given the scope of the project and the surrounding terrain.

The *Knox County Interim Report* (1995; Washington Township) of the Indiana Historic Sites and Structures Inventory (IHSSI) was also consulted. The National Register & IHSSI information is available in the Indiana State Historic Architectural and Archaeological Research Database (SHAARD) and the Indiana Historic Buildings, Bridges, and Cemeteries (IHBBC) map. The SHAARD information was checked against the Interim Report hard copy maps. No IHSSI sites are recorded within 0.25 mile of the project.

Land surrounding the project area is rural and is dominated by agricultural fields, wooded areas, and scattered residential housing; the typology is primarily flat. Two (2) late 20th/early 21st century properties are located within 0.25 mile of the project area, but neither will be 50 years old or older by time of the project letting in 2022. No other above-ground resources are present within 0.25 mile of the proposed project area.

The subject structure (Bridge No. 159-42-06350B; NBI No. 28050) Bridge No. 91-00095; NBI No. 91-00073) is a pre-stressed concrete box beam or girder structure built in 1925 and was reconstructed in 1980. Due to its post-1965 construction date, the bridge was not included in the 2010 INDOT-sponsored *Historic Bridge Inventory* (HBI). On November 12, 2012 the Advisory Council on Historic Preservation (ACHP) issued the *Program Comment for Streamlining Section 106 Review for Actions Affecting Post-1945 Concrete and Steel Bridges (Program Comment)*. The *Program Comment* relieves federal agencies from the Section 106 requirement to consider the effects of undertakings on most concrete and steel bridges built after 1945. On March 19, 2013, federal agencies were approved to use the *Program Comment*.

The *Program Comment* applies for Bridge No. 159-42-06350B; NBI No. 28050 because it has not been previously listed in or determined eligible for listing in the National Register of Historic Places and it is not located in or adjacent to a historic district (Section IV.A of the *Program Comment*). As an example of pre-stressed concrete box beam or girder bridges, this bridge is also not one of the types to which the *Program Comment* does not apply (arch bridges, truss bridges, bridges with moveable spans, suspension bridges, cable-stayed bridges, or covered bridges [Section IV.B]). Additionally, this bridge has not been identified as having exceptional significance for association with a person or event, being a very early or particularly important example of its type in the state or the nation, having distinctive engineering or architectural features that depart from standard designs, or displaying other elements that were engineered to respond to a unique environmental context (Section IV.C). The bridge also has not been identified as having some exceptional quality. Because the above criteria from the *Program Comment* have been met, no individual consideration under Section 106 is required for Bridge No. 159-42-06350B; NBI No. 28050.

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

Archaeology Report Author/Date: Moffatt/March 15, 2007

Summary of Archaeology Investigation Results:

With regard to archaeological resources, an INDOT Cultural Resources archaeologist who meets the Secretary of the Interior's Professional Qualification Standards as per 36 CFR Part 61 examined the entire project area (Moffatt 2007) under Des No 0015070, though the project was not completed at that time. An

adjacent area to the west of the current project was also examined (Moffatt 2008) as an addendum under Des No 0015070. In total, 3.1 ha (7.7 ac) were examined through a combination of pedestrian survey and screened shovel test probes (see the attached figure). No cultural materials were located and no additional archaeological was recommended.

A records check found that no new archaeological sites or reconnaissance surveys have been conducted within or adjacent to the current project area. The methods used in the 2007 and 2008 archaeological reconnaissances meet current standards and the area examined is much larger than the current project. No new archaeological investigated for this project.

Does the project appear to fall under the Minor Projects PA? yes no

If yes, please specify category and number (**applicable conditions are highlighted**):

B-12. Replacement, widening, or raising the elevation of the superstructure on existing bridges, and bridge replacement projects (when both the superstructure and substructure are removed), under the following conditions [**BOTH Condition A, which pertains to Archaeological Resources, and Condition B, which pertains to Above-Ground Resources, must be satisfied**]:

Condition A (Archaeological Resources)

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

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

Condition B (Above-Ground Resources)

The conditions listed below must be met (*BOTH Condition i and Condition ii must be satisfied*)

- i. Work does not occur adjacent to or within a National Register-listed or National Register-eligible district or individual above-ground resource; *AND*
- ii. With regard to the subject bridge, at least one of the conditions listed below is satisfied (*AT LEAST one of the conditions a, b or c, must be fulfilled*):
 - a. The latest Historic Bridge Inventory identified the bridge as non-historic (see <http://www.in.gov/indot/2531.htm>);
 - b. The bridge was built after 1945, and is a common type as defined in Section V. of the *Program Comment Issued for Streamlining Section 106 Review for Actions Affecting Post-1945 Concrete and Steel Bridges* issued by the Advisory Council on Historic Preservation on November 2, 2012 for so long as that *Program Comment* remains in effect *AND* the considerations listed in Section IV of the *Program Comment* do not apply;
 - c. The bridge is part of the Interstate system and was determined not eligible for the National Register under the Section 106 Exemption Regarding Effects to the Interstate Highway System adopted by the Advisory Council on Historic Preservation on March 10, 2005, for so long as that Exemption remains in effect.

If no, please explain:

Additional comments: If any archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, construction in the immediate area of the find will be



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

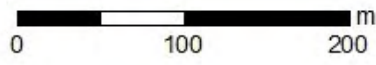
INDOT Cultural Resources staff reviewer(s): Susan Branigin and David Moffatt

****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.*



USGS, Indiana GIC

-  Project Boundary
-  Previously Surveyed Area



Location of the current project boundary for Des No 1700149 and the area previously surveyed under Des No 0015070.

Appendix E of the AI approved March 30, 2020



INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N642
Indianapolis, Indiana 46204

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

Eric Holcomb, Governor
Joe McGuinness,
Commissioner

Date: December 20, 2019

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

From: Virginia Flynn
Kaskaskia Engineering Group, LLC
323 Main Street, Suite E
Evansville, IN 47708
VFlynn@kaskaskiaeng.com

Re: RED FLAG INVESTIGATION
DES # 1700149, State Project
Bridge Replacement
SR 159, 159-42-06350B
Knox County, Indiana

PROJECT DESCRIPTION

Brief Description of Project: The proposed state project is located 2.49 miles north of SR 67 junction with SR 159, north of Bicknell, Indiana in the Indiana Department of Transportation (INDOT) Vincennes District. The location is in Knox County, Washington Township, Bicknell Quadrangle. The current proposed project would remove the existing 54-foot long prestressed concrete bridge over Wells Ditch and replace it with a precast reinforced concrete three-sided flat top structure (50-foot long by 8-foot rise) with wingwalls. Revetment riprap will be placed on both banks of Wells Ditch under the structure. Approach pavement and guardrail will be replaced.

Bridge and/or Culvert Project: Yes No Structure # 159-42-06350B (NBI 028050)

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

(Note: If the project involves a historical bridge, please include the bridge information in the Recommendations Section of the report).

Proposed right of way: Temporary # Acres Permanent # Acres 0.70, Not Applicable

Type of excavation: Excavation will be required at the ends of the new structure for the bridge replacement, approximately 15 feet deep. Excavation will be required for installing riprap along the channel banks, approximately 5 feet deep.

Maintenance of traffic: A full road closure will be required, with an official state detour route.

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	N/A	Railroads	N/A
Hospitals	N/A	Trails	N/A
Schools	N/A	Managed Lands	N/A

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

Explanation: No infrastructure features were identified within the 0.5 mile radius.

WATER RESOURCES TABLE AND SUMMARY

Water Resources			
Indicate the number of items of concern found within the 0.5 mile search radius. If there are no items, please indicate N/A:			
NWI - Points	2	Canal Routes - Historic	N/A
Karst Springs	N/A	NWI - Wetlands	8
Canal Structures - Historic	N/A	Lakes	2
NPS NRI Listed	N/A	Floodplain - DFIRM	N/A
NWI-Lines	3	Cave Entrance Density	N/A
IDEM 303d Listed Streams and Lakes (Impaired)	N/A	Sinkhole Areas	N/A
Rivers and Streams	4	Sinking-Stream Basins	N/A

Explanation:

NWI - Points - Two (2) NWI-Points are located within the 0.5 mile search radius. The nearest point is located approximately 0.48 mile southeast of the project area. No impact is expected.

NWI - Lines - Three (3) NWI-Line segments are located within the 0.5 mile search radius. One (1) segment, associated with Wells Ditch, is located within the project area. A Waters of the US Report will be prepared and coordination with INDOT ES Ecology and Waterway Permitting will occur.

Rivers and Streams - Four (4) river and stream segments are located within the 0.5 mile search radius. One (1) river and stream segment, Wells Ditch, runs through the project area. A Waters of the US Report will be prepared and coordination with INDOT Ecology and Waterway Permitting will occur.

NWI – Wetlands – Eight (8) NWI-Wetlands are located within the 0.5 mile search radius. The nearest NWI-Wetland is located approximately 0.06 mile south of the project area. No impact is expected.

Lakes – Two (2) lakes are located within the 0.5 mile search radius. The nearest lake is located approximately 0.41 mile northwest of the project area. No impact is expected.

URBANIZED AREA BOUNDARY SUMMARY

Explanation: The project area is not located within an Urbanized Area Boundary.

MINING AND MINERAL EXPLORATION TABLE AND SUMMARY

Mining/Mineral Exploration			
Indicate the number of items of concern found within the 0.5 mile search radius. If there are no items, please indicate N/A:			
Petroleum Wells	1	Mineral Resources	N/A
Mines - Surface	2	Mines - Underground	1

Explanation:

Petroleum Wells – One (1) petroleum well is located within the 0.5 mile search radius. The petroleum well is located approximately 0.35 mile southwest of the project area. No impact is expected.

Mines – Surface – Two (2) surface mine areas are located within the 0.5 mile search radius. The nearest area is located approximately 0.13 mile southeast of the project area. No impact is expected.

Mines – Underground – One (1) underground mine area is located within the 0.5 mile search radius. The underground mine area is located approximately 0.28 mile northeast of the project area. No impact is expected.

HAZARDOUS MATERIAL CONCERNS TABLE AND SUMMARY

Hazardous Material Concerns			
Indicate the number of items of concern found within the 0.5 mile search radius. If there are no items, please indicate N/A:			
Superfund	N/A	Manufactured Gas Plant Sites	N/A
RCRA Generator/ TSD	N/A	Open Dump Waste Sites	N/A
RCRA Corrective Action Sites	N/A	Restricted Waste Sites	N/A
State Cleanup Sites	N/A	Waste Transfer Stations	N/A
Septage Waste Sites	N/A	Tire Waste Sites	N/A
Underground Storage Tank (UST) Sites	N/A	Confined Feeding Operations (CFO)	N/A
Voluntary Remediation Program	N/A	Brownfields	N/A
Construction Demolition Waste	N/A	Institutional Controls	N/A
Solid Waste Landfill	N/A	NPDES Facilities	1
Infectious/Medical Waste Sites	N/A	NPDES Pipe Locations	2
Leaking Underground Storage (LUST) Sites	N/A	Notice of Contamination Sites	N/A

Explanation:

NPDES Facilities – One (1) NPDES Facility is located within the 0.5 mile search radius. The NPDES Facility, Freelandville Water Association (12135 East Water Works Road), is located approximately 0.12 mile south of the project area. No impact is expected.

NPDES Pipe Locations – Two (2) NPDES Pipe Locations are located within the 0.5 mile radius. The nearest NPDES pipe location, associated with Freelandville Water Association, is approximately 0.13 mile south of the project area. No impact is expected.

ECOLOGICAL INFORMATION SUMMARY

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

A review of the USFWS database did not indicate the presence of endangered bat species in or within 0.5 mile of the project area. The project is located in a rural area, surrounded by agricultural, open pastures, and sparse structures (residential). The June 20, 2019 inspection report for Bridge # 159-42-06350 B states that no evidence of bats was seen or heard at the bridge. The range-wide programmatic consultation for the Indiana Bat and Northern Long-eared Bat will be completed according to "Using the USFWS IPaC System for Listed Bat Consultation for INDOT Projects".

Rusty Patched Bumble Bee:

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

RECOMMENDATIONS SECTION

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

INFRASTRUCTURE: N/A

WATER RESOURCES: The following water resources require the completion and submittal of a Waters of the US Report to INDOT Ecology and Waterway Permitting:

- One (1) NWI line segment is located within the project area.
- One (1) river and/or stream segment, Wells Ditch, flows through the project area.

URBANIZED AREA BOUNDARY: N/A

MINING/MINERAL EXPLORATION: N/A

HAZARDOUS MATERIAL CONCERNS: N/A

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

INDOT Environmental Services concurrence:

Nicole Fohey
Breting

Digitally signed by
Nicole Fohey-Breting
Date: 2019.12.20
12:52:11 -05'00'

(Signature)

Prepared by:



Virginia Flynn
Senior Environmental Scientist
Kaskaskia Engineering Group, 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: N/A

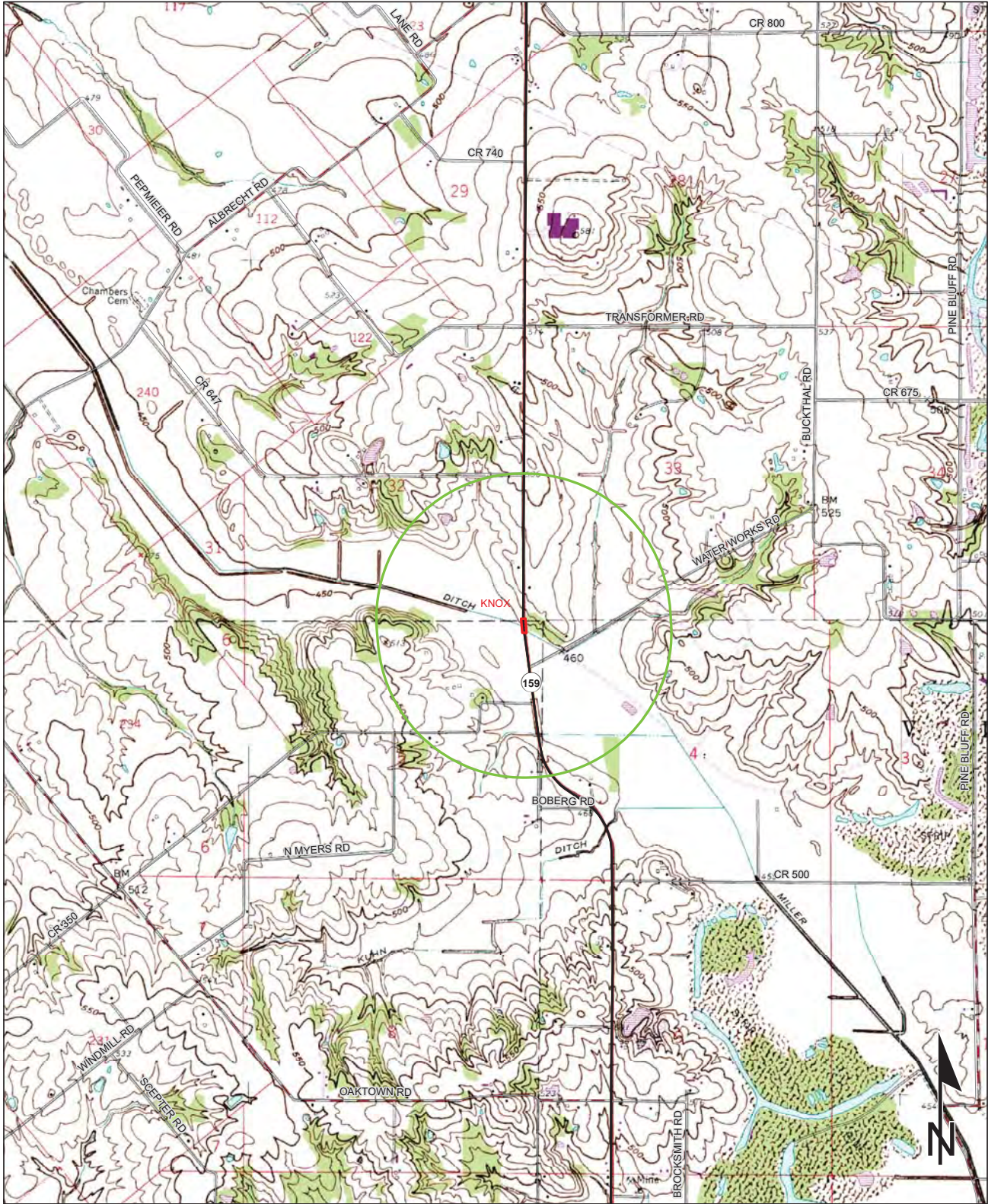
WATER RESOURCES: YES

URBANIZED AREA BOUNDARY: N/A

MINING/MINERAL EXPLORATION: YES

HAZARDOUS MATERIAL CONCERNS: YES

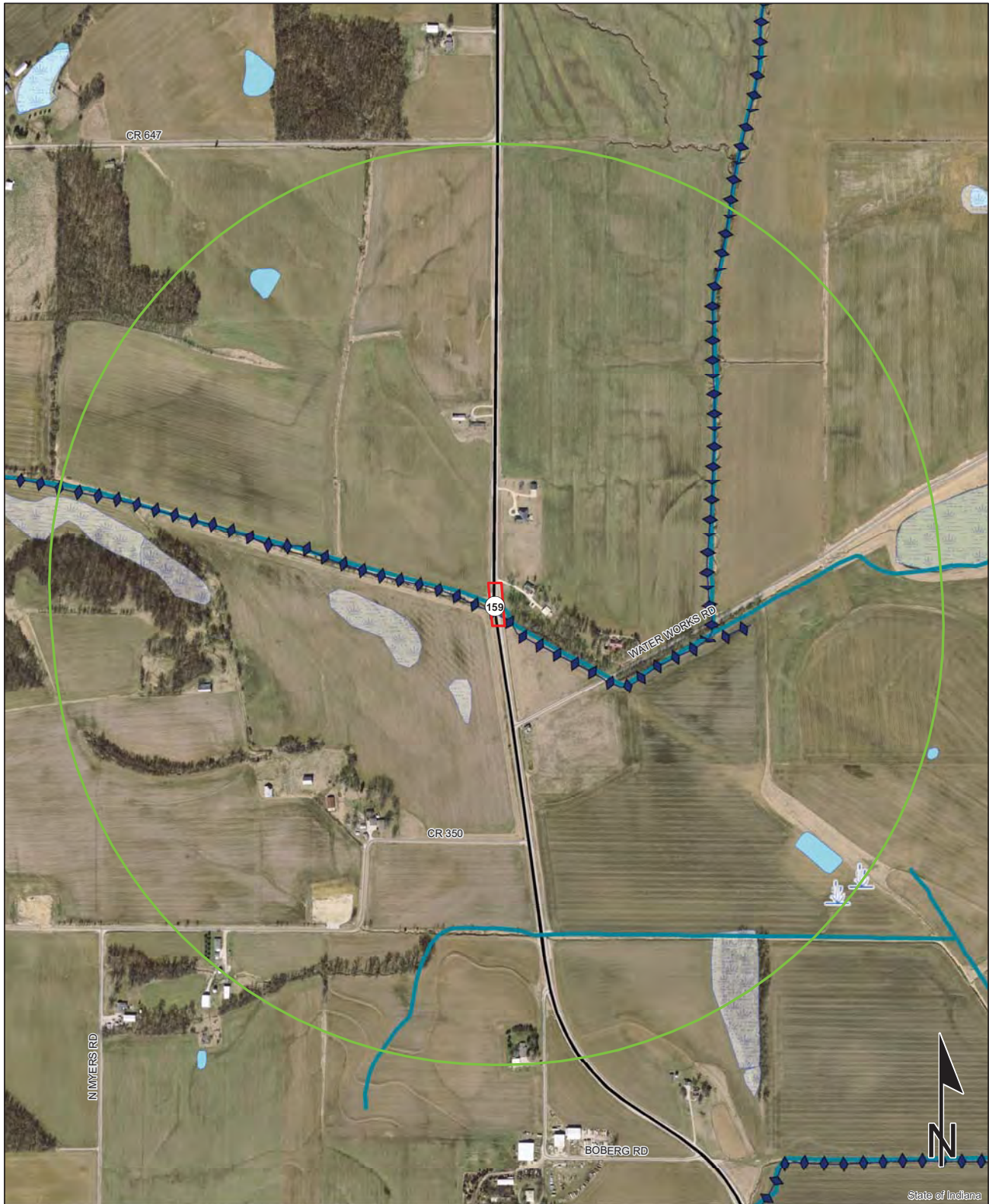
Red Flag Investigation - Site Location
 SR 159, 2.49 miles North of SR 67
 Des. No. 1700149 , Bridge Replacement
 Knox County, Indiana



Sources: 0.4 0.2 0 0.4 Miles
Non Orthophotography
Data - Obtained from the State of Indiana Geographical Information Office Library
Orthophotography - Obtained from Indiana Map Framework Data (www.indianamap.org)
Map Projection: UTM Zone 16 N **Map Datum:** NAD83
 This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.

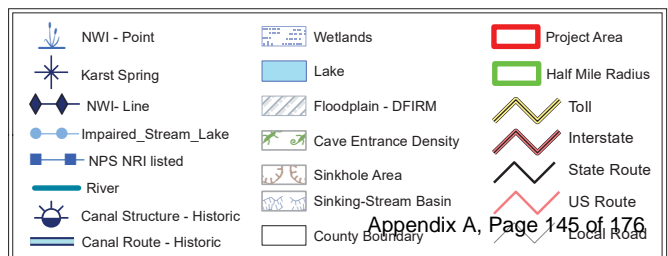
BICKNELL QUADRANGLE
INDIANA
7.5 MINUTE SERIES
(TOPOGRAPHIC)
 Appendix A, Page 144 of 176

Red Flag Investigation - Water Resources
 SR 159, 2.49 miles North of SR 67
 Des. No. 1700149 , Bridge Replacement
 Knox County, Indiana



State of Indiana

Sources: 0.1 0.05 0 0.1 Miles
Non Orthophotography
Data - Obtained from the State of Indiana Geographical Information Office Library
Orthophotography - Obtained from Indiana Map Framework Data (www.indianamap.org)
Map Projection: UTM Zone 16 N **Map Datum:** NAD83
 This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.



Red Flag Investigation - Mining and Mineral Exploration
 SR 159, 2.49 miles North of SR 67
 Des. No. 1700149 , Bridge Replacement
 Knox County, Indiana

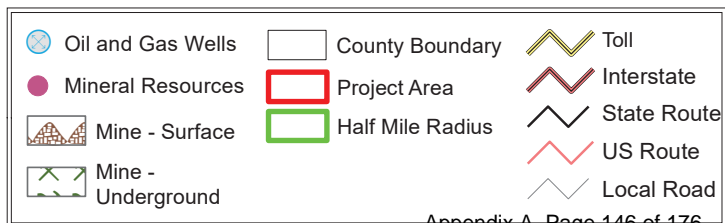


State of Indiana

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

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Red Flag Investigation - Hazardous Material Concerns
 SR 159, 2.49 miles North of SR 67
 Des. No. 1700149 , Bridge Replacement
 Knox County, Indiana



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

0.15 0.075 0 0.15
 Miles

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

Sources:
Non Orthophotography
 Data - Obtained from the State of Indiana Geographical Information System (GIS) Data
 Appendix A, Page 147 of 176
Orthophotography - Obtained from Indiana Map Framework Data (www.indianamap.org)
 Map Projection: UTM Zone 16 N Map Datum: NAD83

Indiana County Endangered, Threatened and Rare Species List

County: Knox

Species Name	Common Name	FED	STATE	GRANK	SRANK
Mollusk: Bivalvia (Mussels)					
Arcidens confragosus	Rock Pocketbook			G4	S2
Cyprogenia stegaria	Eastern Fanshell Pearlymussel	LE	SE	G1Q	S1
Epioblasma flexuosa	Leafshell		SX	GX	SX
Epioblasma propinqua	Tennessee Riffleshell		SX	GX	SX
Epioblasma rangiana	Northern Riffleshell	LE	SE	G2	S1
Epioblasma torulosa	Tubercled Blossom	LE	SX	GX	SX
Epioblasma triquetra	Snuffbox	LE	SE	G3	S1
Fusconaia subrotunda	Longsolid	C	SX	G3	SX
Hemistena lata	Cracking Pearlymussel	LE	SX	G1	SX
Lampsilis abrupta	Pink Mucket	LE	SX	G2	SX
Lampsilis ovata	Pocketbook			G5	S2
Obovaria retusa	Ring Pink	LE	SX	G1	SX
Obovaria subrotunda	Round Hickorynut	C	SE	G4	S1
Plethobasus cicatricosus	White Wartback	LE	SX	G1	SX
Plethobasus cyphus	Sheepnose	LE	SE	G3	S1
Pleurobema clava	Clubshell	LE	SE	G1G2	S1
Pleurobema cordatum	Ohio Pigtoe		SSC	G4	S2
Pleurobema plenum	Rough Pigtoe	LE	SE	G1	S1
Pleurobema rubrum	Pyramid Pigtoe		SX	G2G3	SX
Potamilus capax	Fat Pocketbook	LE	SE	G2	S1
Ptychobranchus fasciolaris	Kidneyshell		SSC	G4G5	S2
Quadrula cylindrica cylindrica	Rabbitsfoot	LT	SE	G3G4T3	S1
Insect: Coleoptera (Beetles)					
Nicrophorus americanus	American Burying Beetle	LE	SX	G2G3	SX
Insect: Ephemeroptera (Mayflies)					
Homoeoneuria ammophila	Sand-loving Brush-legged Mayfly		ST	G4	S2
Pseudiron centralis	White Crabwalker Mayfly		SE	G5	S1
Siphloplecton interlineatum	Flapless Cleft-footed Minnow Mayfly		ST	G5	S2
Insect: Odonata (Dragonflies & Damselflies)					
Enallagma divagans	Turquoise Bluet		SR	G5	S3
Fish					
Ammocrypta clara	Western Sand Darter		SSC	G3	S2
Crystallaria asprella	Crystal Darter			G3	SX
Elassoma zonatum	Banded Pygmy Sunfish		SSC	G5	S1
Etheostoma squamiceps	Spottail Darter			G4G5	S2S3
Percina evides	Gilt Darter		SE	G4	S1
Percina uranidea	Stargazing Darter			G3	SX

Amphibian

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

County: Knox

Species Name	Common Name	FED	STATE	GRANK	SRANK
<i>Cryptobranchus alleganiensis alleganiensis</i>	Eastern Hellbender	C	SE	G3G4T3T4	S1
Reptile					
<i>Farancia abacura reinwardtii</i>	Western Mud Snake		SSC	G5T5	SH
<i>Kinosternon subrubrum subrubrum</i>	Eastern Mud Turtle		SE	G5T5	S2
<i>Macrochelys temminckii</i>	Alligator Snapping Turtle	C	SE	G3G4	SH
<i>Nerodia erythrogaster neglecta</i>	Copperbelly Water Snake	PS:LT	SE	G5T3	S2
<i>Opheodrys vernalis</i>	Smooth Green Snake		SE	G5	S2
<i>Pseudemys concinna concinna</i>	Eastern River Cooter		SE	G5T5	S1
Bird					
<i>Aimophila aestivalis</i>	Bachman's Sparrow			G3	SXB
<i>Asio flammeus</i>	Short-eared Owl		SE	G5	S2
<i>Haliaeetus leucocephalus</i>	Bald Eagle		SSC	G5	S2
<i>Lanius ludovicianus</i>	Loggerhead Shrike		SE	G4	S3B
<i>Tyto alba</i>	Barn Owl		SE	G5	S2
Mammal					
<i>Myotis lucifugus</i>	Little Brown Bat	C	SE	G3	S2
<i>Myotis septentrionalis</i>	Northern Long Eared Bat	LT	SE	G1G2	S2S3
<i>Myotis sodalis</i>	Indiana Bat	LE	SE	G2	S1
<i>Nycticeius humeralis</i>	Evening Bat		SE	G5	S1
<i>Perimyotis subflavus</i>	Tricolored Bat		SE	G2G3	S2S3
<i>Sylvilagus aquaticus</i>	Swamp Rabbit		SE	G5	S1
<i>Taxidea taxus</i>	American Badger		SSC	G5	S2
Vascular Plant					
<i>Androsace occidentalis</i>	Western Rockjasmine		ST	G5	S2
<i>Azolla caroliniana</i>	Carolina Mosquito-fern		SR	G5	S3
<i>Bacopa rotundifolia</i>	Roundleaf Water-hyssop		ST	G5	S2
<i>Callirhoe triangulata</i>	Clustered Poppy-mallow		SE	G3	S1
<i>Carex gigantea</i>	Large Sedge		SE	G4	S1
<i>Carex gravida</i>	Heavy Sedge		SE	G5	S1
<i>Carya pallida</i>	Sand Hickory		SE	G5	S1
<i>Catalpa speciosa</i>	Northern Catalpa		SR	G4?	S3
<i>Chelone obliqua</i> var. <i>speciosa</i>	Rose Turtlehead		WL	G4T3	S3
<i>Clematis pitcheri</i>	Pitcher Leather-flower		SR	G4G5	S3
<i>Cyperus pseudovegetus</i>	Green Flatsedge		SR	G5	S2
<i>Echinodorus cordifolius</i>	Creeping Bur-head		SE	G5	S1
<i>Gentiana puberulenta</i>	Downy Gentian		SE	G4G5	S1
<i>Gleditsia aquatica</i>	Water-locust		SE	G5	S1
<i>Heterotheca camporum</i> var. <i>camporum</i>	Hairy Golden-aster		ST	G5TNR	S3
<i>Hibiscus moscheutos</i> ssp. <i>lasiocarpus</i>	Hairy-fruited Hibiscus		SE	G5T4	S1
<i>Hypericum adpressum</i>	Creeping St. John's-wort		SE	G3	S1

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Division of Nature Preserves
Indiana Department of Natural Resources
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Indiana County Endangered, Threatened and Rare Species List

County: Knox

Species Name	Common Name	FED	STATE	GRANK	SRANK
Iresine rhizomatosa	Eastern Bloodleaf		ST	G5	S3
Isoetes melanopoda	Blackfoot Quillwort		ST	G5	S2
Monarda bradburiana	Eastern Bee-balm		SE	G5	S1
Orobanche riparia	Bottomland Broomrape		SE	G4?	S1
Passiflora incarnata	Purple Passion-flower		WL	G5	S3
Penstemon tubaeiflorus	Tube Penstemon		SE	G5	S1
Phacelia ranunculacea	Blue Scorpion-weed		SE	G4	S1
Plantago cordata	Heart-leaved Plantain		SE	G4	S1
Prenanthes aspera	Rough Rattlesnake-root		SR	G4?	S3
Psoralidium tenuiflorum	Few-flowered Scurf-pea		SX	G5	SX
Pteridium aquilinum var. pseudocaudatum	Bracken Fern		SX	G5T5	SX
Rorippa aquatica	Lake Cress		SE	G4?	S1
Rudbeckia fulgida var. fulgida	Orange Coneflower		WL	G5T4?	S3
Silene regia	Royal Catchfly		SE	G3	S1
Strophostyles leioperma	Slick-seed Wild-bean		WL	G5	S3
Taxodium distichum var. distichum	Bald Cypress		ST	G5	S2
Trichostema dichotomum	Forked Bluecurl		WL	G5	S3
Vitis palmata	Catbird Grape		SR	G4	S3
High Quality Natural Community					
Barrens - sand	Sand Barrens		SG	G3	S2
Forest - floodplain wet-mesic	Wet-mesic Floodplain Forest		SG	G3?	S3
Forest - upland mesic Southwestern Lowlands	Southwestern Lowlands Mesic Upland Forest		SG	GNR	S1
Lake - pond	Pond		SG	GNR	SNR
Wetland - swamp forest	Forested Swamp		SG	G2?	S2
Other Significant Feature					
Geomorphic - Nonglacial Erosional Feature - Water Fall and Cascade	Water Fall and Cascade			GNR	SNR

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Appendix F of the AI approved March 30, 2020

From: [Cooper, Nicholas](#)
To: [Virginia Flynn](#)
Cc: [Arnold, Troy](#)
Subject: RE: Des. 1700149 - Revised Waters Report based on IDNR floodplain layers
Date: Friday, February 21, 2020 10:56
Attachments: [1700149 Revised Waters Report Approved 2.21.20.pdf](#)

Virginia,

This is approved and I have attached the signed version. Thanks!

Nick Cooper

Ecology and Waterway Permitting Specialist
Indiana Department of Transportation
Ph. (317) 233-3698

From: Virginia Flynn [mailto:VFlynn@kaskaskiaeng.com]
Sent: Wednesday, February 19, 2020 4:12 PM
To: Cooper, Nicholas <NCooper5@indot.IN.gov>
Subject: Des. 1700149 - Revised Waters Report based on IDNR floodplain layers

****** This is an EXTERNAL email. Exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email. ******

Nick,

Based on your response below, I am resubmitting a revised Waters Report for Des. 1700149 (SR 159 over Wells Ditch). I revised the discussion of floodplains based on the IDNR Best Available Data rather than the FEMA effective layer and updated the Figure 6 in the report accordingly. This will make it less confusing for our discussion of impacts in the CE and the discussion of the IDNR early coordination response and permits required.

Please review and let me know if you have any questions.

Thank you!

Virginia Flynn
Senior Environmental Scientist, PWS
Certified: WBE/DBE/WOSB/EDWOSB
618.233.5877 office
VFlynn@kaskaskiaeng.com

From: Cooper, Nicholas [mailto:NCooper5@indot.IN.gov]
Sent: Friday, February 07, 2020 7:37 AM
To: Virginia Flynn <VFlynn@kaskaskiaeng.com>
Cc: Bowman, Sandra A <SBowman@indot.IN.gov>
Subject: RE: Des. 1700149 - Waters Report uploaded via ERMS for INDOT EWPO review

See Appendix B for Photo Log

**WATERS OF THE U.S.
DETERMINATION REPORT**

**SR 159 over Wells Ditch (Tilley Ditch)
Bridge Replacement
Knox County, Indiana**

INDOT Des. No. 1700149

Authored By:

Krista Bollmann

And Virginia Flynn, PWS

Kaskaskia Engineering Group, LLC

208 East Main Street, Suite 100

Belleville, Illinois 62220

618-233-5877

Prepared for:

HNTB Corporation

111 Monument Circle, Suite 1200

Indianapolis, Indiana 46204

Original Report: October 30, 2019

Revised: December 4, 2019

2nd Revision: February 19, 2020



INDOT Approved: 2/21/2020



WATERS OF THE U.S. DETERMINATION REPORT

SR 159, Bridge Replacement
Knox County, Indiana
Des. No. 1700149

This report has been revised to discuss floodplain information based on the IDNR best available floodplain data layer, which is used to determine permitting requirements. The previous version of this report used the FEMA effective floodplain layer.

1.0 PROJECT INFORMATION

Date of Waters Field Investigation:

September 12, 2019

Project Location:

Bicknell, Indiana Quadrangle
Section 5, Township 4 N, Range 8 W
38.815 N, -87.31581 W
Washington Township
Knox County, Indiana

Project Description:

The proposed state project is located 2.49 miles north of the SR 67 junction with SR 159, north of Bicknell, Indiana in the Indiana Department of Transportation (INDOT) Vincennes District. The current proposed project includes replacing the existing single-span bridge (Structure No. 159-42-06350B; NBI No. 028050). Alternatives are still being analyzed for the type of bridge replacement.

2.0 OFFICE EVALUATION

Methodology:

A desktop review of the project area was conducted to identify areas likely to contain potential wetlands and Waters of the U.S. (streams, wetlands, ponds, etc.). This included a review of historic and recent aerial photography, National Wetland Inventory (NWI) mapping, United States Geological Survey (USGS) topographic maps (7.5'), and National Hydrography Dataset (NHD) mapping, which is a GIS-based database that interconnects and uniquely identifies the stream segments or reaches that make up the nation's surface water drainage system. The United States Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) Web Soil Survey was used to review the mapped soil units in the project area. The Indiana Department of Natural Resources (IDNR) best available floodplain data was used to review the mapped floodplains adjacent to and within the project area.

Results:

NWI Mapping

The NWI map was reviewed for the presence of potential wetlands in, or adjacent to, the investigated area (Figure 2). The nearest wetland, classified as riverine (R2UBHx), is located within the investigated area associated with Wells Ditch. Two other wetlands (PEM1A), are located approximately 0.03 and 0.09 mile southwest of the investigated area.

USGS Mapping

The USGS Bicknell, Indiana 7.5 minute topographic quadrangle map indicates that Wells Ditch (referred to as Tilley Ditch on the USGS map) is a perennial blue-line stream within the investigated area (Figures 3a and 3b).

Mapped Soil Units

According to the Web Soil Survey geographic database for Knox County, Indiana (USDA- NRCS 2019), the investigated area contains three map units (Figure 4, Table 1). Wakeland silt loam is considered 5% hydric, while Hosmer silt loams are considered non-hydric.

Table 1 - Soil Units within the Investigated Area

Soil Unit Symbol	Soil Unit Name	Hydric Rating
Wa	Wakeland silt loam, 0 to 2 percent slopes, frequently flooded	Hydric (5%)
HoB2	Hosmer silt loam, 2 to 5 percent slopes, eroded	Not Hydric (0%)
HoC3	Hosmer silt loam, 5 to 10 percent slopes, severely eroded	Not Hydric (0%)

Hydrology

Wells Ditch has an upstream drainage area of 2 square miles (USGS StreamStats). It is within USGS 12-Digit Hydrological Unit Code 051201111802. Wells Ditch drains into Maria Creek approximately 3.3 miles northwest of the investigated area.

According to the USGS NHD map (Figure 5), two flowlines are located in the investigated area. One flows northwest under SR 159, representing Wells Ditch. The other flows north into Wells Ditch, within the southeastern quadrant of the investigated area.

According to the IDNR best available floodplain data layer, DFIRM ID#18083C, there is a floodplain located in the investigated area (Figure 6).

This project does not lie within the karst region of Indiana. A review of IndianaMAP data (<https://www.indianamap.org/>) did not indicate karst features within 0.5 mile of the investigated area.

3.0 FIELD RECONNAISSANCE

Methodology:

A field visit was conducted by Molly Barletta and Krista Bollmann on September 12, 2019 to survey and document water resources within the project area. The investigated area was approximately 100 feet wide by 260 feet long.

Streams were assessed for jurisdictional disposition Ordinary High Water Mark (OHWM) and relative quality. The OHWM measurements were taken by hand at the widest non-scour hole location, outside of the influence of the structure.

The investigated area was surveyed for the presence of vegetation, soil, or hydrological indicators that would signify a potential for wetlands to be present according to the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)*.

All roadside ditches within the investigated area were also evaluated for consideration as jurisdictional or non-jurisdictional aquatic resources.

During a June 2019 INDOT bridge inspection, birds and/or nests were visible. The structure was investigated for the presence of migratory bird nests and evidence of bats during the September 2019 visit and bird nests were noted.

Water resources are summarized in Table 2. A water resource map showing all identified features within the investigated areas are located in Figure 7. Photographs and a photo direction map are included after the figures.

Results:

One likely jurisdictional stream and four roadside ditches were identified within the investigated area. No wetlands were found.

Wells Ditch

Wells Ditch would likely be classified as a perennial stream because it appears to have base flow. It is represented by a solid blue-line on the USGS topographic maps. It flows southeast to northwest under the bridge that carries SR 159. The stream is surrounded by agricultural fields and maintained turf. The dominant substrate in the stream was silt. Riffles and pools were present. An OHWM was observed that was approximately 15 feet wide and 18 inches deep. It was defined by a clear, natural line impressed on bank, vegetation matted down, bent, or absent, shelving, and scour. It had an average of 5 percent cover from instream vegetation. Some instream wetland vegetation was present. The dominant vegetation within the stream consisted of *Phalaris arundinacea* (reed canary grass) (FACW). The dominant vegetation along the banks consisted of *Helianthus hirsutus* (hairy sunflower) (UPL), *Commelina communis* (Asiatic dayflower) (FACU), *Persicaria pensylvanica* (pinkweed) (FACW), *Persicaria punctata* (dotted smartweed) (OBL), *Xanthium strumarium* (rough cocklebur) (FAC), and reed canary grass.

Due to instream structure, this stream is of average quality. Wells Ditch has a defined bed and bank, an OHWM, and drains into Maria Creek, and then into the Wabash River, a traditionally navigable waterway. Wells Ditch is likely a Waters of the U.S. (WOUS).

Wetlands:

No indicators of hydric soil, wetland vegetation, or hydrological indicators were found within the rest of the investigated area that would signify the presence of wetlands. Dominant plant species within the investigated area consisted of *Ambrosia trifida* (giant ragweed) (FAC), *Sorghum halepense* (Johnson grass) (FACU), reed canary grass (FACW), *Setaria viridis* (green foxtail) (UPL), *Elymus virginicus* (Virginia wild rye) (FACW), hairy sunflower (UPL), *Asclepias syriaca* (common milkweed) (FACU), and *Echinochloa crus-gallii* (barnyard grass) (FACW). No wetlands were identified within the investigated area.

Roadside Ditches:

There are four roadside ditches (RSD) within the investigated area. RSD 1 and RSD 4 are on the north side of Wells Ditch and drain into Wells Ditch. RSD 2 and RSD 3 are on the south side of Wells Ditch and drain into Wells Ditch. RSD 1 is a lined ditch, with part riprap and part concrete. It drains into an underground culvert via surface drains on the north side of a private drive and then outlets from a culvert on the south side of the drive. RSD 2 contained thick vegetation. RSD 3 contained partially mowed grass with thicker taller vegetation near the outfall into Wells Ditch. RSD 4 is concrete-lined on the north side of the investigated area. It drains into a culvert which outlets

on the south side of an agricultural drive and into Wells Ditch. This portion is overgrown with vegetation. Dominant plant species observed in the ditches consisted of the species listed above. Vegetation did not appear to be matted down or disturbed by flowing water. No defined OHWM was observed. No indicators of hydric soil, dominance of wetland vegetation, or hydrological indicators were found that would signify the presence of wetlands. It is likely these ditches hold water intermittently, but they would not be classified as a wetland or Waters of the U.S.

4.0 CONCLUSIONS

Field observations revealed the presence of one likely jurisdictional stream that has the potential to be impacted by the proposed project (Wells Ditch). Every effort should be taken to avoid and minimize impacts to wetlands and waterways. 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 USACE. This report is our best judgment based on the guidelines set forth by the USACE.

5.0 ACKNOWLEDGEMENT

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

Respectfully,

Kaskaskia Engineering Group, LLC

Environmental Scientist II
Kaskaskia Engineering Group, LLC

**Table 2 - Stream Summary Table
 SR 159 over Wells Ditch, Bridge Replacement
 Knox County, Indiana - INDOT Des. No. 1700149**

ID	Coordinates (Decimal Degrees)		USGS Blue-Line (Y/N)	Stream Type	Riffles/ Pools (Y/N)	Substrate	OHWM Width (ft.)	OHWM Depth (in.)	Stream Relative Quality	Estimated Amount of Aquatic Resources within Investigated Area (acres / linear feet)	Photograph Numbers	Likely Water of the U.S.?
	Latitude	Longitude										
Wells Ditch	38.81489	-87.315642	Yes	Perennial	Yes	Silt	15	18	Average	0.057 ac. / 166 lf	1-9	Yes

6.0 REFERENCES

Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Fish and Wildlife Service. FWS/OBS-79/31. Washington, DC.

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U.S. Department of Agriculture, Natural Resources Conservation Service. 2010. *Field indicators of hydric soils in the United States. Version 7*. L.M. Vasilas, G.W. Hunt, and C.V. Noble, eds. USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.

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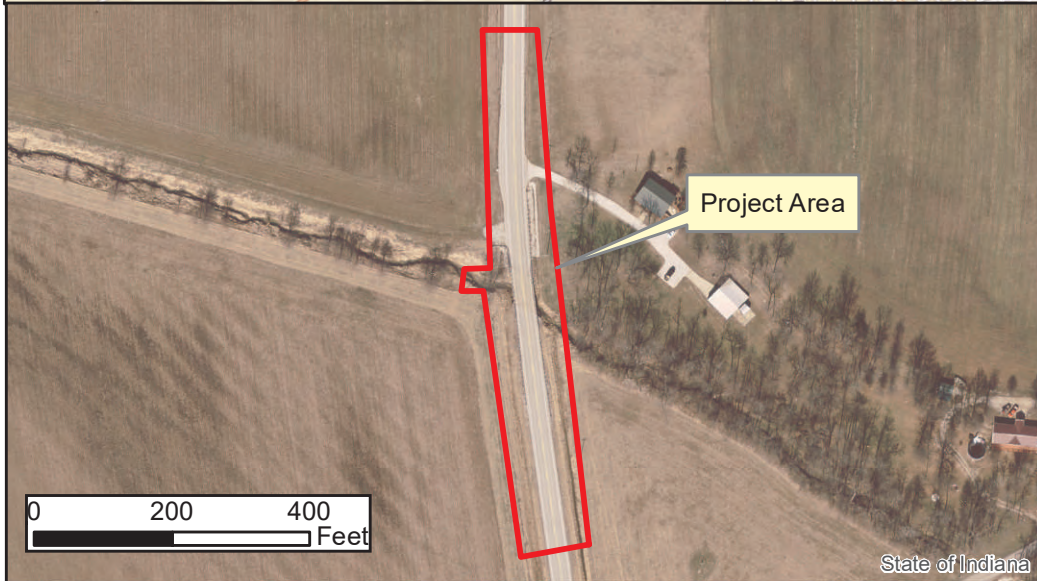


Figure 1
Location Map
SR 159, Bridge Replacement
Knox County, IN
Des. 1700149

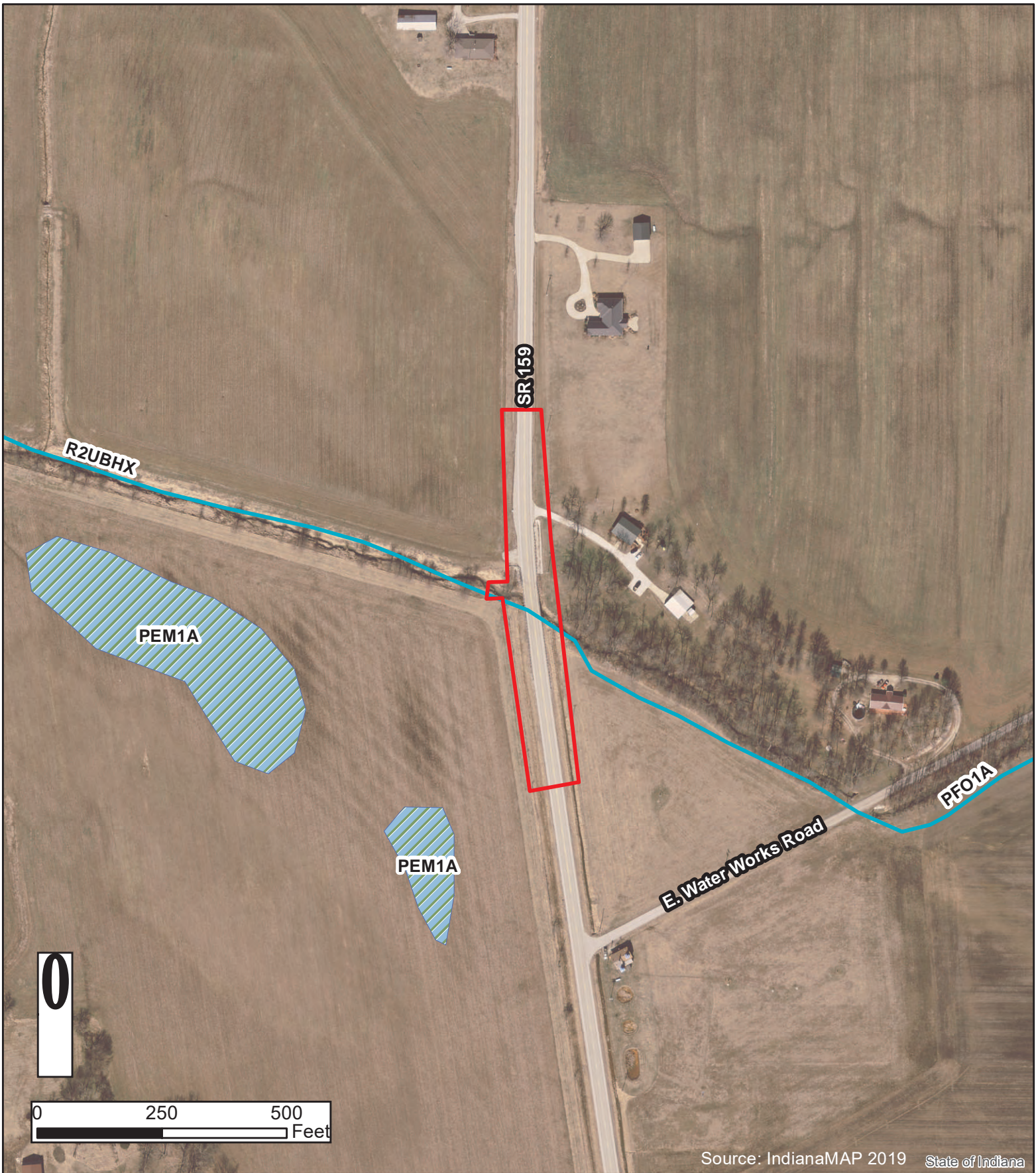





Figure 2
National Wetland Inventory Map
SR 159, Bridge Replacement
Knox County, IN
Des. 1700149

-  Investigated Area
-  NWI Streams
-  NWI Wetlands

Source: IndianaMAP 2019 State of Indiana



Source: IndianaMAP, 2019

Figure 3a
USGS Map
SR 159, Bridge Replacement
Knox County, IN
Des. 1700149

Legend

 Investigated Area

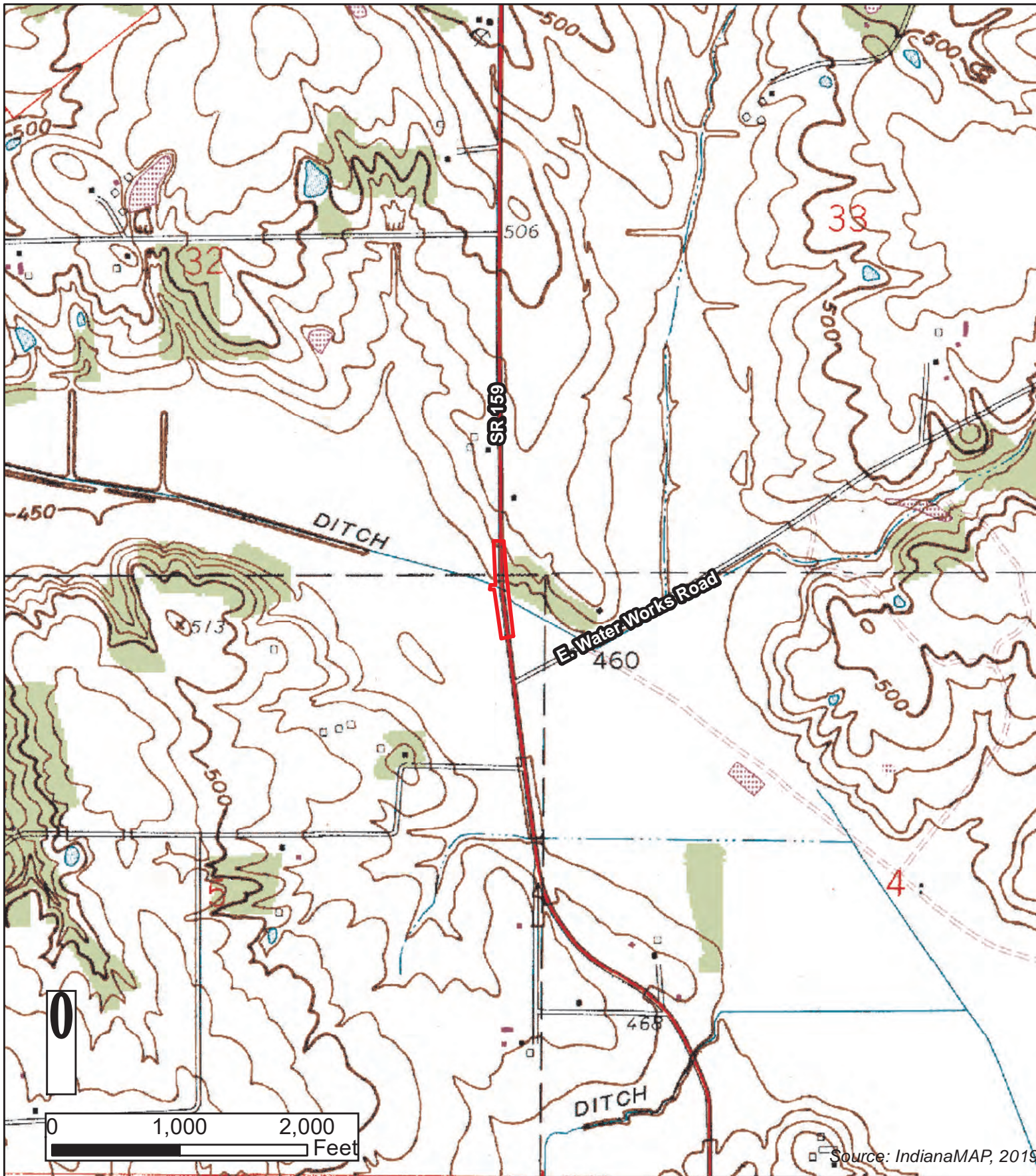
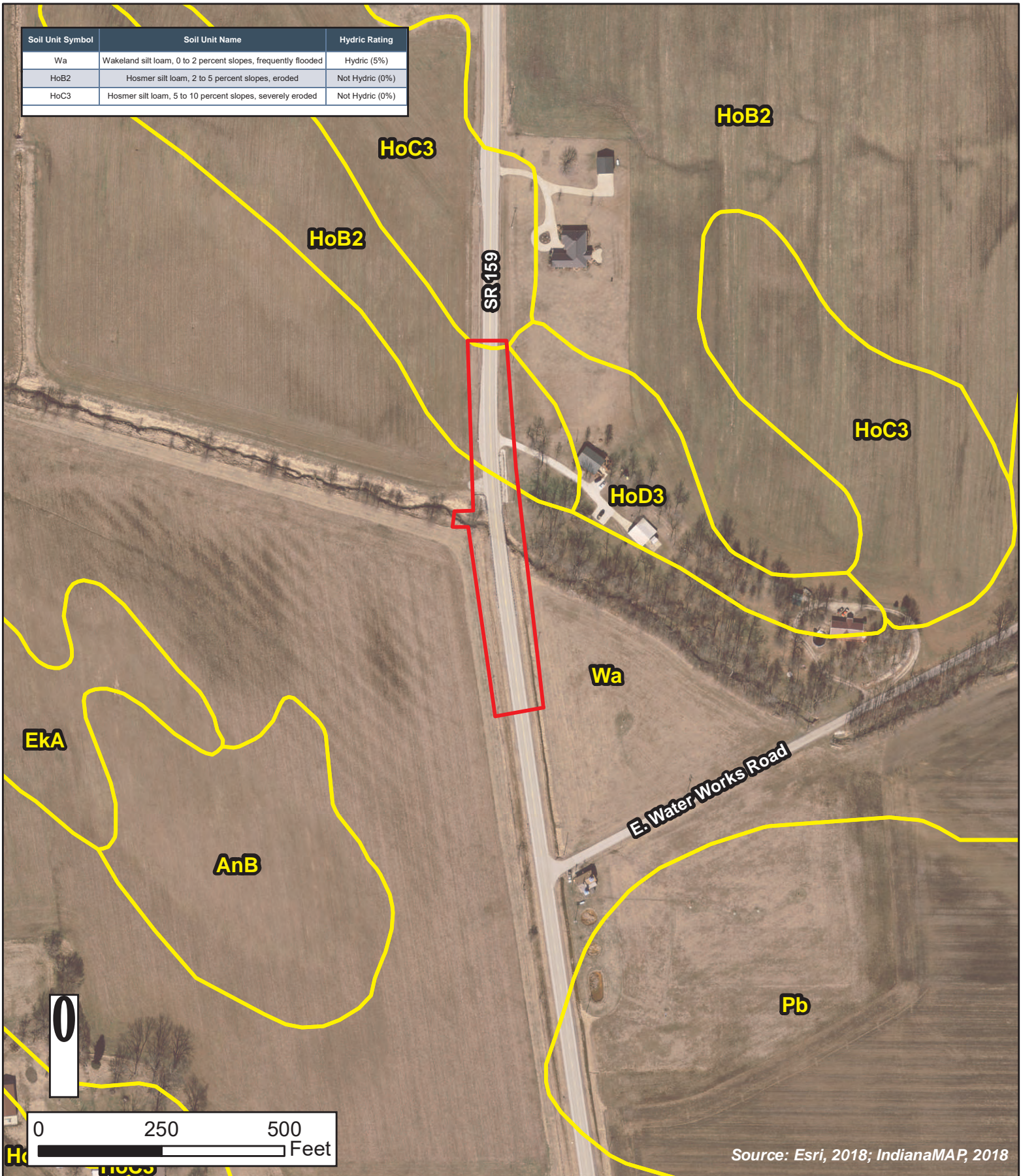


Figure 3b
USGS Map Zoomed Out
SR 159, Bridge Replacement
Knox County, IN
Des. 1700149

Legend

 Investigated Area

Soil Unit Symbol	Soil Unit Name	Hydric Rating
Wa	Wakeland silt loam, 0 to 2 percent slopes, frequently flooded	Hydric (5%)
HoB2	Hosmer silt loam, 2 to 5 percent slopes, eroded	Not Hydric (0%)
HoC3	Hosmer silt loam, 5 to 10 percent slopes, severely eroded	Not Hydric (0%)



Source: Esri, 2018; IndianaMAP, 2018

Figure 4
USGS-NRCS Soil Map
SR 159, Bridge Replacement
Knox County, IN
Des. 1700149

- Investigated Area
- USGS Soils



Source: IndianaMAP 2019 State of Indiana

Figure 5
USGS National Hydrography
Data Map
SR 159, Bridge Replacement
Knox County, IN
Des. 1700149

- Investigated Area
- ➔ USGS NHD Flowlines

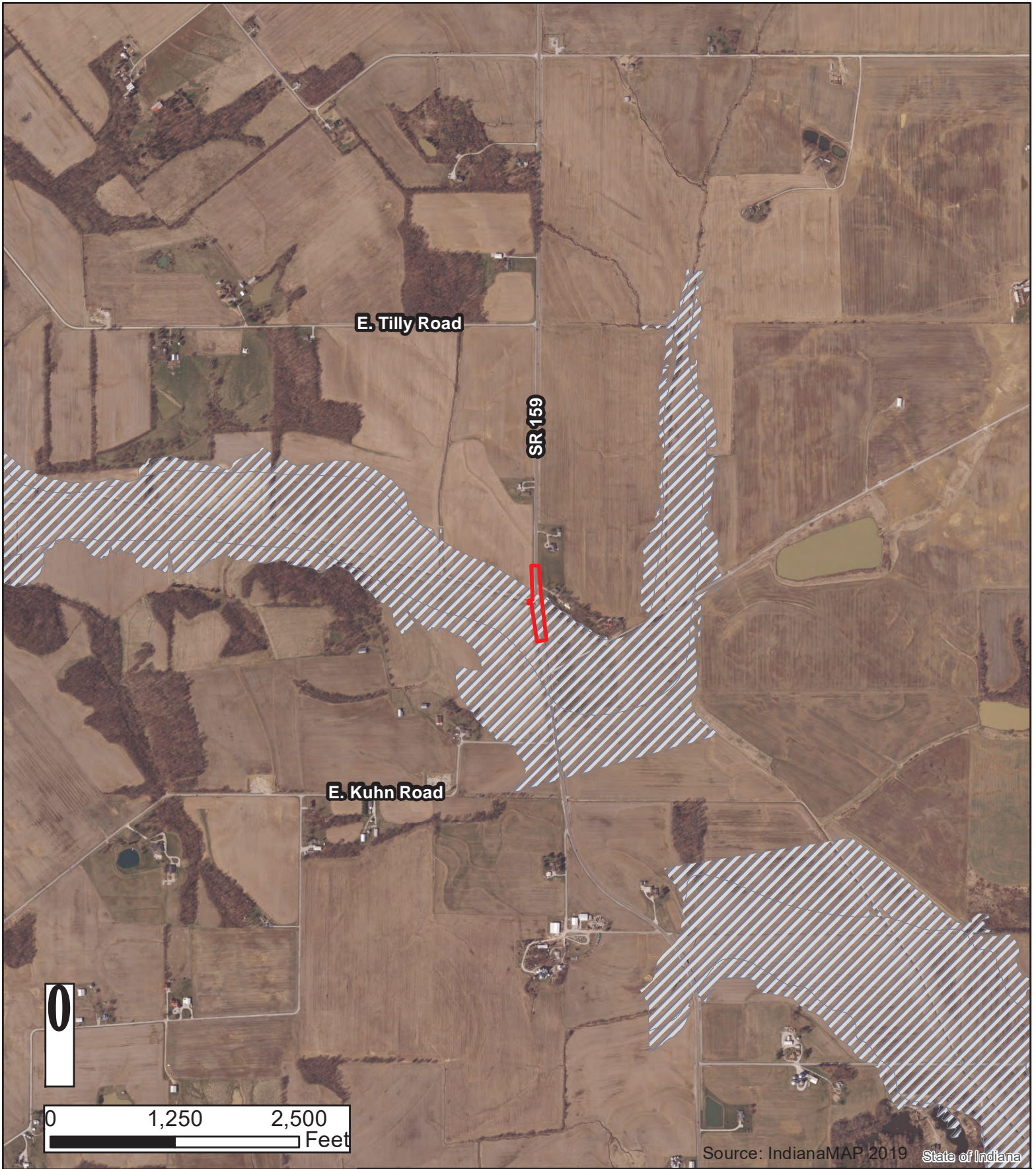




Figure 6
Floodplain Map
SR 159, Bridge Replacement
Knox County, IN
Des. 1700149

-  Floodplain (IDNR Best Available)
-  Investigated Area

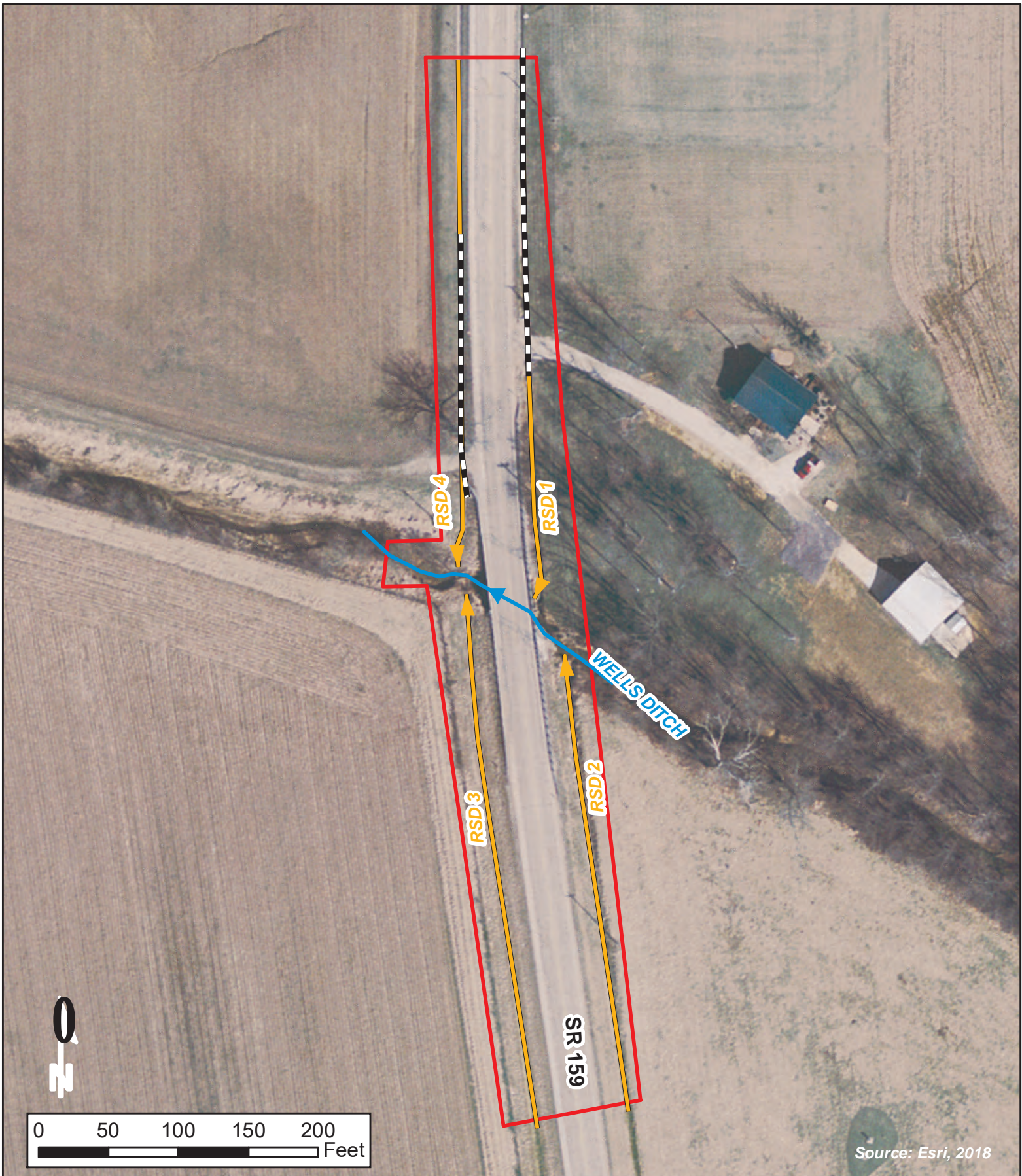




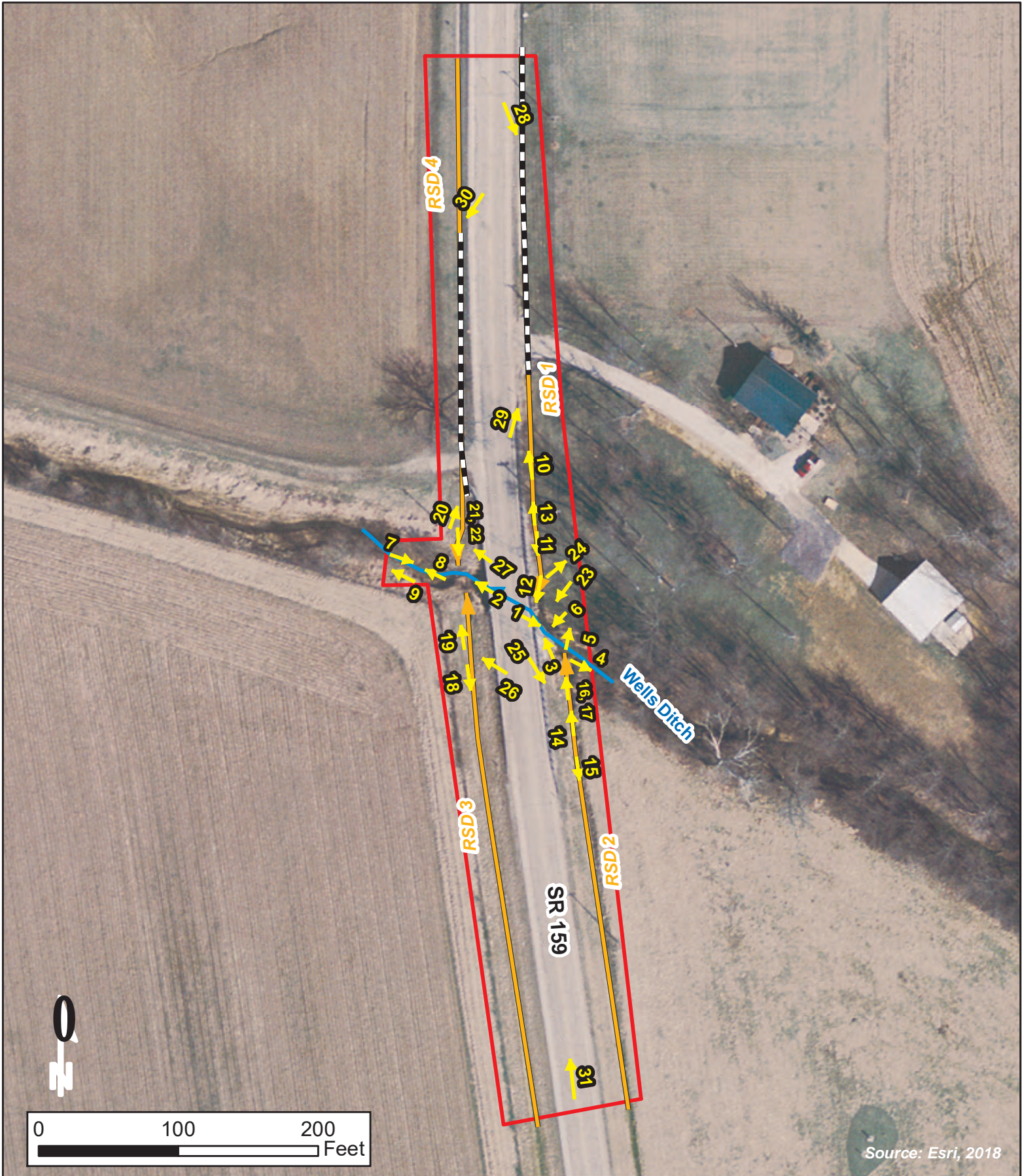




Figure 7
Water Resources Map
SR 159 Bridge
Replacement
Knox County, IN
Des.1700149

-  Culverts
-  RSD
-  Streams
-  Investigated Area



Source: Esri, 2018

**Photo Direction Map
 SR 159 over Wells Ditch
 Bridge Replacement
 Knox County, IN
 Des. 1700149**

-  Photo Direction
-  Investigated Area

Appendix 2 - PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PJD:

B. NAME AND ADDRESS OF PERSON REQUESTING PJD:

C. DISTRICT OFFICE, FILE NAME, AND NUMBER:

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:

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

State: County/parish/borough: City:

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

Lat.: Long.:

Universal Transverse Mercator:

Name of nearest waterbody:

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)

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

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

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

- Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:
Map: Figures 1-7
- Data sheets prepared/submitted by or on behalf of the PJD requestor.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report. Rationale: _____
- Data sheets prepared by the Corps: _____
- Corps navigable waters' study: _____
- U.S. Geological Survey Hydrologic Atlas: USGS NHD (IndianaMAP)
 - USGS NHD data.
 - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: 7.5' Bicknell, IN Quad
- Natural Resources Conservation Service Soil Survey. Citation: NRCS Web Soil Survey 2019
- National wetlands inventory map(s). Cite name: USFWS Wetland Mapper Online 2019
- State/local wetland inventory map(s): _____
- FEMA/FIRM maps: Firm Panel ID: 1804220050C
- 100-year Floodplain Elevation is: _____.(National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): IndianaMAP Best Available 2013-2018
or Other (Name & Date): Site Photos (September 12, 2019)
- Previous determination(s). File no. and date of response letter: _____
- Other information (please specify): _____

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

Signature and date of
Regulatory staff member
completing PJD

vflynn@kaskaskiaeng.com Digitally signed by vflynn@kaskaskiaeng.com
DN: cn=vflynn@kaskaskiaeng.com
Date: 2019.10.30 08:42:15 -05'00'

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

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

Appendix G of the AI approved March 30, 2020

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

SPONSOR	CONTR ACT # / LEAD DES	STIP NAME	ROUTE	WORK TYPE	LOCATION	DISTRICT	MILES	FEDERAL CATEGORY	Estimated Cost left to Complete Project*	PROGRAM	PHASE	FEDERAL	MATCH	2020	2021	2022	2023	2024
Knox County	39839 / 1600892	Init.	IR 1009	Bridge Replacement, Other Construction	Bridge on Old US 41 over CSX Railroad	Vincennes	.16	STPBG		Local Bridge Program	CN	\$2,150,000.00	\$0.00		\$400,000.00	\$1,750,000.00		
										Local Bridge Program	RW	\$80,000.00	\$0.00	\$80,000.00				
										Local Funds	CN	\$0.00	\$537,500.00		\$100,000.00	\$437,500.00		
										Local Funds	RW	\$0.00	\$20,000.00	\$20,000.00				
Vincennes	39842 / 1600727	Init.	ST 1022	Road Reconstruction (3R/4R Standards)	Main Street from 900' NW of Ramsey Rd. to 200' SE of Felt King Rd.	Vincennes	.27	STPBG		Local Funds	CN	\$0.00	\$668,800.00		\$60,000.00	\$608,800.00		
										Local Funds	RW	\$0.00	\$40,000.00	\$40,000.00				
										Group III Program	CN	\$2,675,200.00	\$0.00		\$240,000.00	\$2,435,200.00		
										Group III Program	RW	\$160,000.00	\$0.00	\$160,000.00				
Indiana Department of Transportation	39927 / 1600734	Init.	SR 550	Small Structure Replacement	0.90 mi E Jct SR-67	Vincennes	0	STPBG		Bridge Construction	CN	\$734,394.40	\$183,598.60	\$350,000.00	\$567,993.00			
Indiana Department of Transportation	39927 / 1600734	A 04	SR 550	Small Structure Replacement	0.90 mi E Jct SR-67	Vincennes	0	NHPP	\$567,993.00	Bridge ROW	RW	\$32,000.00	\$8,000.00	\$40,000.00				
Comments:Amend 2020-2024 STIP. Adding FY20 RW \$40,000.00. Des# 1600735 and 1600734. No MPO.																		
Indiana Department of Transportation	40029 / 1600066	Init.	US 41	Bridge Deck Overlay	Over South Fork Smalls Creek, 2.97 miles N SR-67, SBL	Vincennes	0	NHPP		Bridge Construction	CN	\$1,529,939.20	\$382,484.80	\$1,912,424.00				
Indiana Department of Transportation	40552 / 1500082	Init.	US 50	HMA Functional Overlay on PCCP	From E. Jct of US-41 SBL to 4.7 5 east of E Jct of US-41 SBL	Vincennes	3.466	NHPP		Road Construction	CN	\$8,928,649.60	\$2,232,162.40			\$11,160,812.00		
Indiana Department of Transportation	40554 / 1700149	Init.	SR 159	Bridge Replacement, Concrete	Over Wells Ditch, 02.49 miles North SR-67	Vincennes	0	STPBG		Bridge ROW	RW	\$126,400.00	\$31,600.00	\$158,000.00				
										Bridge Construction	CN	\$4,077,786.40	\$1,019,446.60			\$5,097,233.00		
Indiana Department of Transportation	40639 / 1701410	Init.	US 50	Replace Superstructure	Old SR67 Over US50 , 0.59 mile W US-41	Vincennes	0	NHPP		Bridge Construction	CN	\$2,141,131.20	\$535,282.80		\$2,676,414.00			
Indiana Department of Transportation	40639 / 1701410	A 04	US 50	Replace Superstructure	Old SR67 Over US50 , 0.59 mile W US-41	Vincennes	0	NHPP	\$2,685,214.00	Bridge ROW	RW	\$7,040.00	\$1,760.00	\$8,800.00				
Comments:Amend 2020-2024 STIP. Adding FY20 RW \$8800.00. No MPO.																		
Indiana Department of Transportation	41132 / 1800911	Init.	SR 58	Bridge Thin Deck Overlay	Over White River, 01.73 mi W SR-57	Vincennes	0	STPBG		Bridge ROW	RW	\$46,400.00	\$11,600.00	\$58,000.00				
										Bridge Construction	CN	\$1,451,206.40	\$362,801.60		\$1,814,008.00			

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

Appendix H of the AI approved March 30, 2020

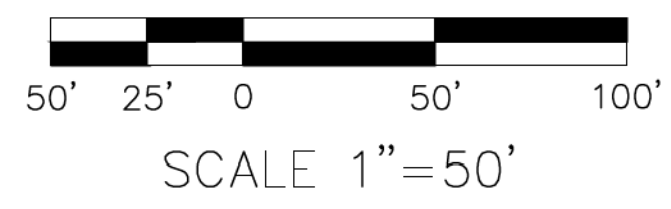
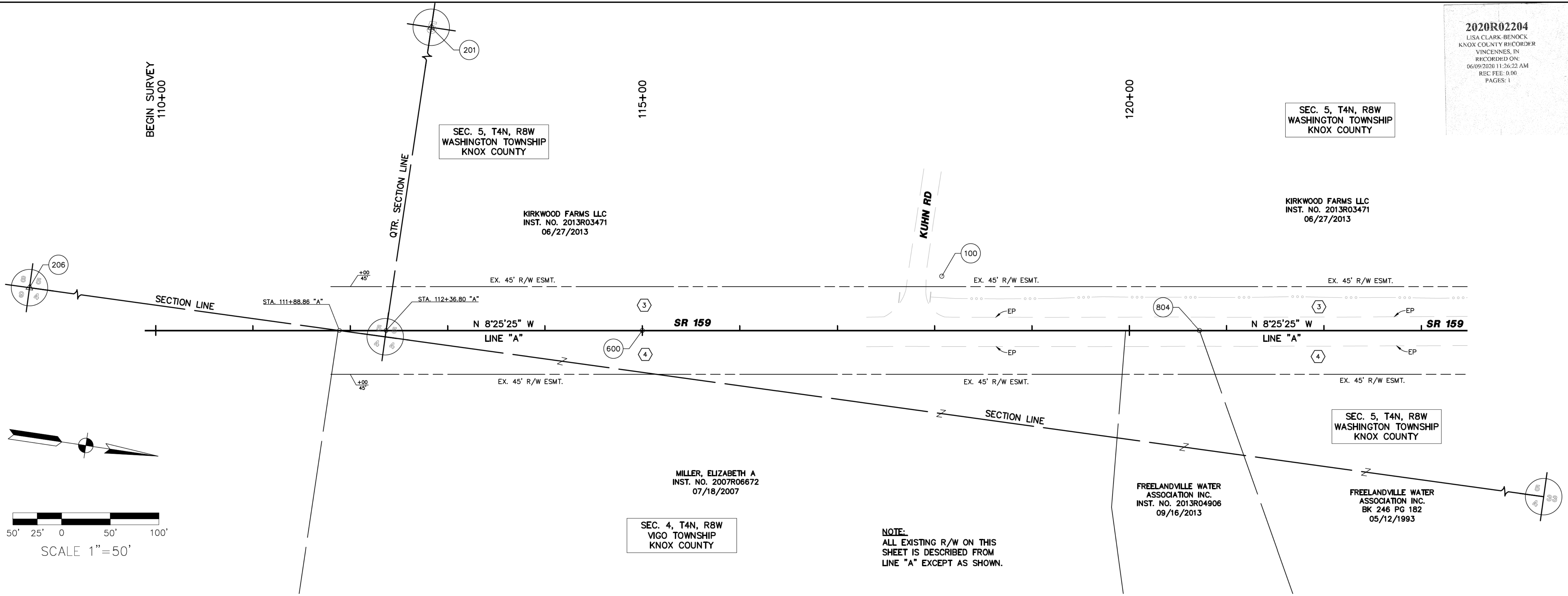
Knox County LWCF Listings

objectid	State	County	Grant ID Element	Type	Grant Element Title	Grant Sponsor	Fiscal Year	Amount
51339	Indiana	KNOX	197	D	FOUR LAKES PARK	VINCENNES PARK BOARD	1975	80044.9
51355	Indiana	KNOX	278	C	D/SANDBORN COMMUNITY PARK	SANDBORN PARK BOARD	1977	23361
51427	Indiana	KNOX	589	C	FOX RIDGE NATURE PARK	KNOX COUNTY PARKS AND RECREATION BOARD	2015	200000
60747	Indiana	Knox	344	C	OUBACHE TRAILS PARK	KNOX COUNTY PARKS AND RECREATION BOARD	1979	302471.5

SR 159 over Wells Ditch Bridge Replacement
Knox County, Indiana
Des. No. 1700149

Appendix B: Graphics

2020R02204
LISA CLARK-BENOCK
KNOX COUNTY RECORDER
VINCENNES, IN
RECORDED ON:
06/09/2020 11:36:22 AM
REC. FEE: 0.00
PAGES: 1



- 3 STATE OF INDIANA
INDOT BOOK PAGE 366
DECEMBER 15, 1975
- 4 STATE OF INDIANA
INDOT BOOK PAGE 382
DECEMBER 15, 1975

NOTE:
ALL EXISTING R/W ON THIS SHEET IS DESCRIBED FROM LINE "A" EXCEPT AS SHOWN.

LEGEND

	ALIGNMENT LINE
	SECTION LINE
	RIGHT-OF-WAY LINE
	RIGHT-OF-WAY EASEMENT LINE
	APPROXIMATE PARCEL LINE
	APPROXIMATE LOT LINE
	EASEMENT LINE
	EXISTING FENCE
	EXISTING FLOWLINE
	EXISTING TOPOGRAPHY
(R)	RECORD DIMENSION
(M)	MEASURED DIMENSION
(P)	PLAN DIMENSION
	CONTROL POINT FND., SET, OR CALC.

NOTE:
THERE MAY BE INSTANCES THROUGH CURVES, OR WHERE ADDING THE SEGMENT LENGTHS OF LINES VERSUS THE OVERALL LENGTH, THERE APPEAR TO BE MATHEMATICAL ERRORS (+/- 0'00'01" OR 0.01 FEET). THESE APPARENT ERRORS RESULT FROM NUMERIC ROUNDING, ARE CONSIDERED NEGLIGIBLE, AND, ARE NOT REVISED HEREIN.

APP	APPARENT
NE	NO EVIDENCE
PL	PROPERTY LINE
EP	EDGE OF PAVEMENT
R/W	RIGHT-OF-WAY
EX	EXISTING
L.A.	LIMITED ACCESS

UNLESS NOTED OTHERWISE ALL MONUMENTS, FOUND OR SET, ARE LOCATED FLUSH WITH THE SURFACE

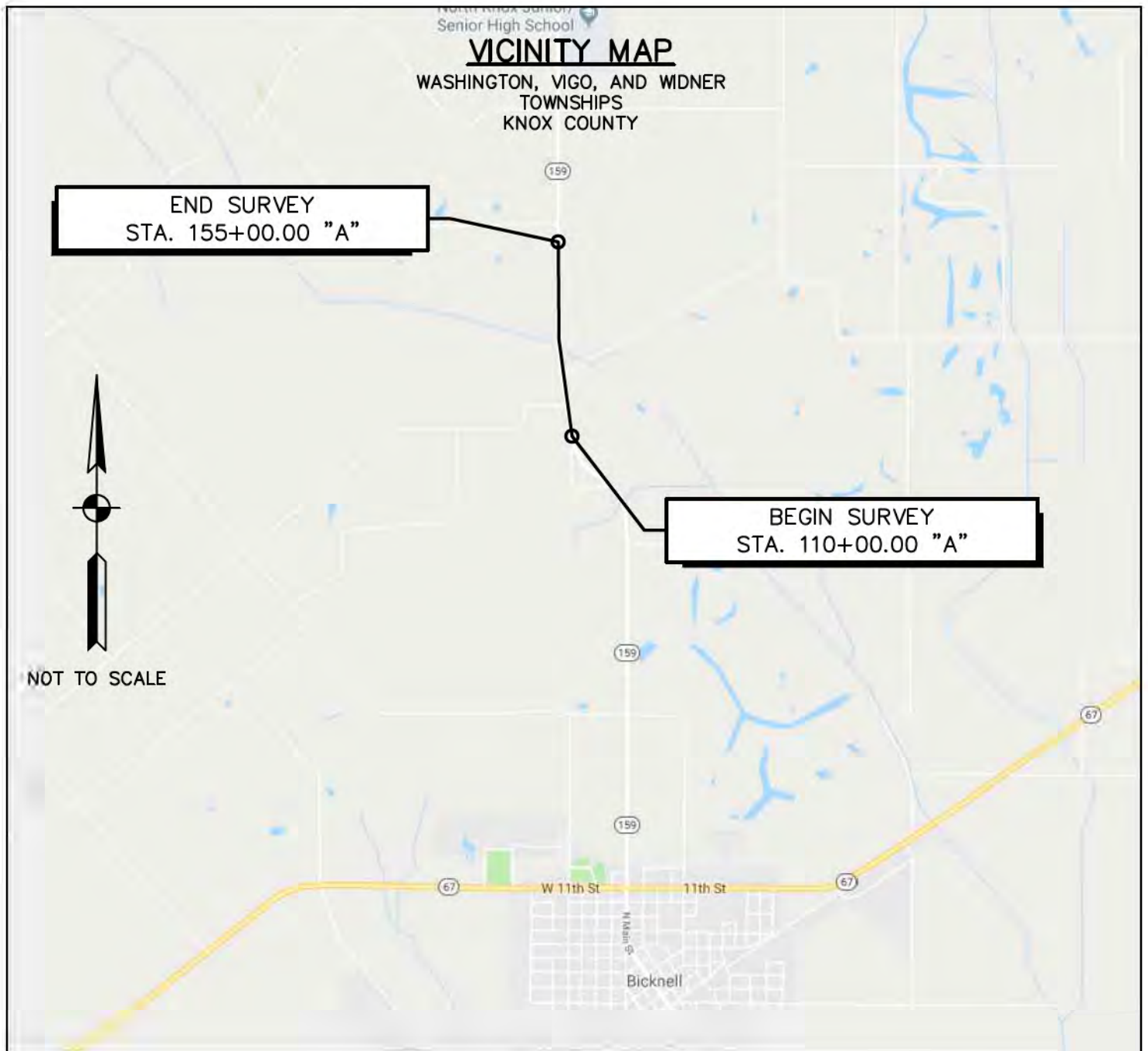
ALIGNMENT TABLE

POINT No.	NORTHING	EASTING	MONUMENT TYPE	DESCRIPTION
600	267,620.5508	825,879.9389	MAG NAIL SET	P.O.T. STA. 115+00.00 "A"
804	268,186.6334	825,796.1073	MAG NAIL FND.	P.O.T. STA. 120+72.26 "A"

MONUMENT TABLE

POINT No.	NORTHING	EASTING	STATION	OFFSET	DESCRIPTION
100	267,916.4886	825,779.7919	STA. 118+07.42 "A"	55.71' Lt.	REBAR W/ PINK "VSEI" CAP SET (SURVEY CONTROL POINT)
201	267,362.4340	823,272.9058	N/A	N/A	RAILROAD SPIKE FND. (4" BELOW GRADE)
206	264,671.5762	825,951.8164	N/A	N/A	12"x 12" CONCRETE MONUMENT FND. (60" ABOVE GRADE)

"I AFFIRM, UNDER THE PENALTIES FOR PERJURY, THAT I HAVE TAKEN REASONABLE CARE TO REDACT EACH SOCIAL SECURITY NUMBER IN THIS DOCUMENT, UNLESS REQUIRED BY LAW."
NAME: Alex J. Daugherty
ALEX J. DAUGHERTY, P.S.



DIRECTOR: C:\P\1910\1910_4879_08_168_mch_mch.dwg Date: 17/08/2019 02:02 Survey\Survey\Drawings\CRSP\...
 FILE NAME: 4727.CRSP - 5x11 Plot 1.dwg
 PLOTTED BY: ALEX DAUGHERTY
 DATE: 08/20/2019 9:10am

SURVEY STARTED	
05/01/2019	
SURVEY COMPLETED	
08/20/2019	
ROUTE PLAT SHEETS	
1	of 5

PREPARED BY: ALEX J. DAUGHERTY, P.S.

4275 N. HIGH SCHOOL RD. INDIANAPOLIS, INDIANA 46254
TEL. (317) 293-3542 FAX: (317) 293-4737

FIELD SURVEYOR STATEMENT

THIS SURVEY, TO THE BEST OF MY KNOWLEDGE AND BELIEF, IS EXECUTED ACCORDING TO THE PROVISIONS OF 865 I.A.C. 1-12-20 THROUGH 1-12-26 REGARDING ROUTE SURVEYS, EXCEPT THAT ANY DATA SHOWN REGARDING THE LOCATION OR DESCRIPTION OF THE EXISTING PARCELS IS NOT A PART OF THIS SURVEY.



RECOMMENDED FOR APPROVAL: Alex J. Daugherty
REGISTERED LAND SURVEYOR, FIELD 6-4-20

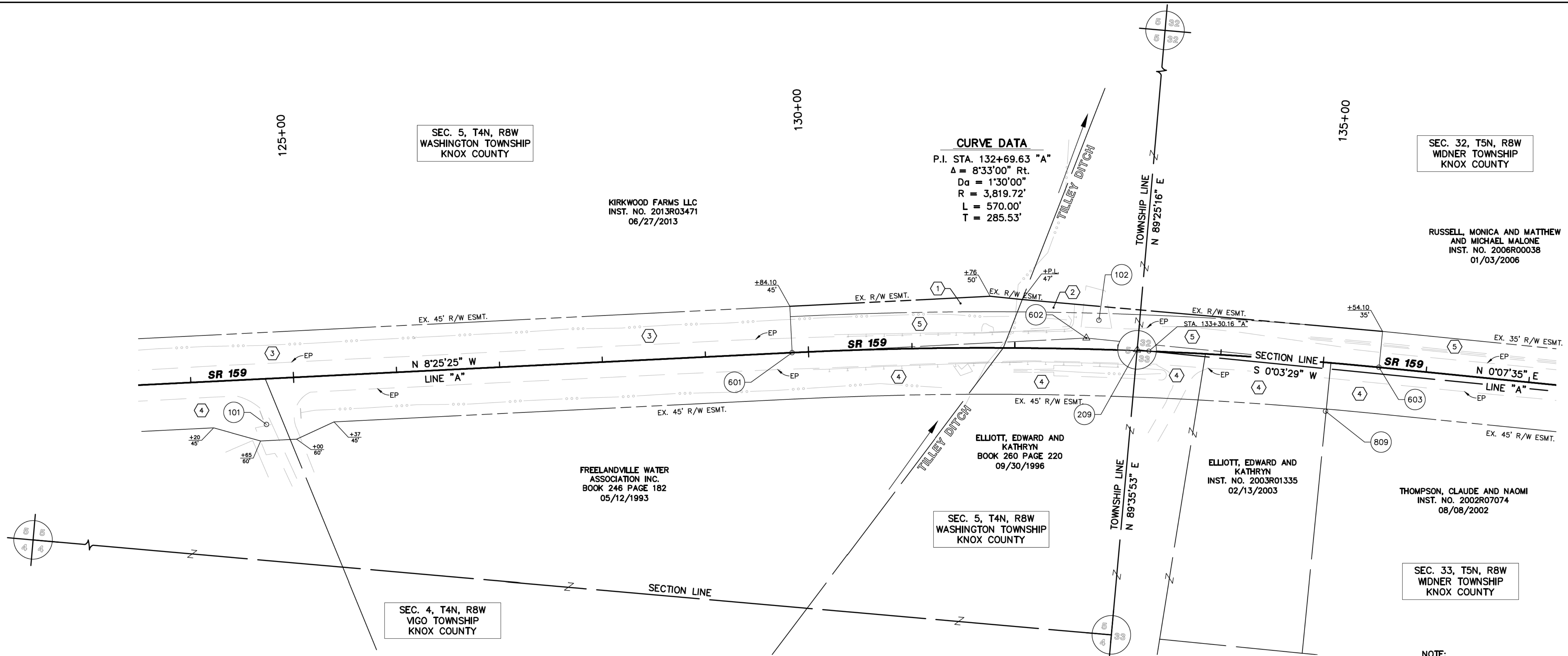
DRAWN: DAK CHECKED: AJD

INDIANA DEPARTMENT OF TRANSPORTATION

LOCATION CONTROL ROUTE SURVEY

LINE "A"

HORIZONTAL SCALE	DESIGNATION
1" = 50'	1700149
VERTICAL SCALE	
N/A	
SURVEY BOOK	SHEETS
ELECTRONIC	3 of 15
CONTRACT	PROJECT
B-40554	1700149



CURVE DATA
 P.I. STA. 132+69.63 "A"
 $\Delta = 8^{\circ}33'00''$ Rt.
 $D\alpha = 1^{\circ}30'00''$
 $R = 3,819.72'$
 $L = 570.00'$
 $T = 285.53'$

- 1 STATE OF INDIANA DEED RECORD 99 PAGE 96-97 DECEMBER 09, 1940
- 2 STATE OF INDIANA DEED RECORD 99 PAGE 97-98 DECEMBER 09, 1940
- 3 STATE OF INDIANA INDOT BOOK PAGE 366 DECEMBER 15, 1975
- 4 STATE OF INDIANA INDOT BOOK PAGE 382 DECEMBER 15, 1975
- 5 STATE OF INDIANA INDOT BOOK PAGE 369 DECEMBER 15, 1975

NOTE:
 ALL EXISTING R/W ON THIS SHEET IS DESCRIBED FROM LINE "A" EXCEPT AS SHOWN.

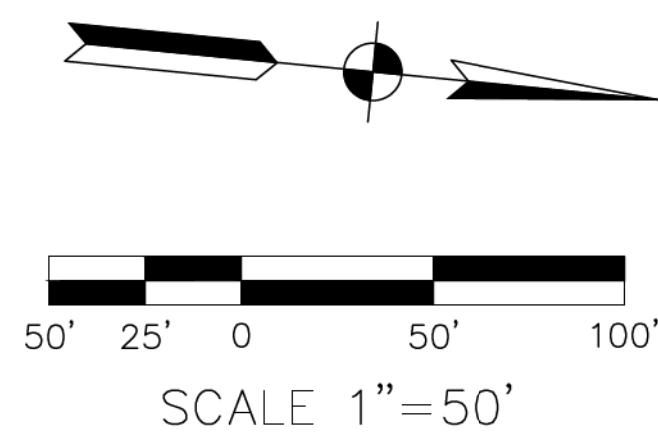
LEGEND

ALIGNMENT LINE
 SECTION LINE
 RIGHT-OF-WAY LINE
 RIGHT-OF-WAY EASEMENT LINE
 APPROXIMATE PARCEL LINE
 APPROXIMATE LOT LINE
 EASEMENT LINE
 EXISTING FENCE
 EXISTING FLOWLINE
 EXISTING TOPOGRAPHY
 (R) RECORD DIMENSION
 (M) MEASURED DIMENSION
 (P) PLAN DIMENSION
 CONTROL POINT
 FND., SET, OR CALC.

APP APPARENT
 NE NO EVIDENCE
 PL PROPERTY LINE
 EP EDGE OF PAVEMENT
 R/W RIGHT-OF-WAY
 EX. EXISTING
 L.A. LIMITED ACCESS

NOTE:
 THERE MAY BE INSTANCES THROUGH CURVES, OR WHERE ADDING THE SEGMENT LENGTHS OF LINES VERSUS THE OVERALL LENGTH, THERE APPEAR TO BE MATHEMATICAL ERRORS (+/- 0'00"01" OR 0.01 FEET). THESE APPARENT ERRORS RESULT FROM NUMERIC ROUNDING, ARE CONSIDERED NEGLIGIBLE, AND, ARE NOT REVISED HEREIN.

UNLESS NOTED OTHERWISE ALL MONUMENTS, FOUND OR SET, ARE LOCATED FLUSH WITH THE SURFACE.



MONUMENT TABLE

POINT No.	NORTHING	EASTING	STATION	OFFSET	DESCRIPTION
101	268,588.1130	825,781.4792	STA. 124+71.55 "A"	44.34' Rt.	REBAR W/ PINK "VSEI" CAP SET (SURVEY CONTROL POINT)
102	269,381.6305	825,802.3299	STA. 132+80.86 "A"	28.24' Lt.	MAG NAIL SET
209	269,421.3011	825,827.3871	STA. 133+18.89 "A"	0.68' Lt.	MAG NAIL FND. (1" BELOW GRADE)
809	269,609.2002	825,668.7886	STA. 135+06.19 "A"	47.27' Rt.	REBAR W/ "D BIGGS" CAP FND.

ALIGNMENT TABLE

POINT No.	NORTHING	EASTING	MONUMENT TYPE	DESCRIPTION
601	269,088.6399	825,862.5286	MAG NAIL SET	P.C. STA. 129+84.10 "A"
602	269,371.0895	825,620.7004	MAG NAIL SET	P.I. STA. 132+69.63 "A"
603	269,656.6187	825,621.3296	MAG NAIL SET	P.T. STA. 135+54.10 "A"

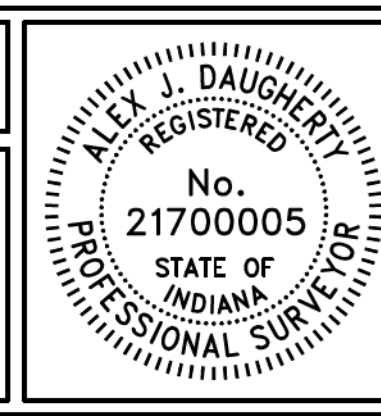
SURVEY STARTED	
05/01/2019	
SURVEY COMPLETED	
08/20/2019	
ROUTE PLAT SHEETS	
2	of 5

PREPARED BY: ALEX J. DAUGHERTY, P.S.

VS ENGINEERING, INC.
 4275 N. HIGH SCHOOL RD. INDIANAPOLIS, INDIANA 46254
 TEL. (317) 293-3542 FAX: (317) 293-4737

FIELD SURVEYOR STATEMENT

THIS SURVEY, TO THE BEST OF MY KNOWLEDGE AND BELIEF, IS EXECUTED ACCORDING TO THE PROVISIONS OF 865 I.A.C. 1-12-20 THROUGH 1-12-26 REGARDING ROUTE SURVEYS, EXCEPT THAT ANY DATA SHOWN REGARDING THE LOCATION OR DESCRIPTION OF THE EXISTING PARCELS IS NOT A PART OF THIS SURVEY.



RECOMMENDED FOR APPROVAL: *Alex Daugherty*
 REGISTERED LAND SURVEYOR, FIELD
 6-4-20

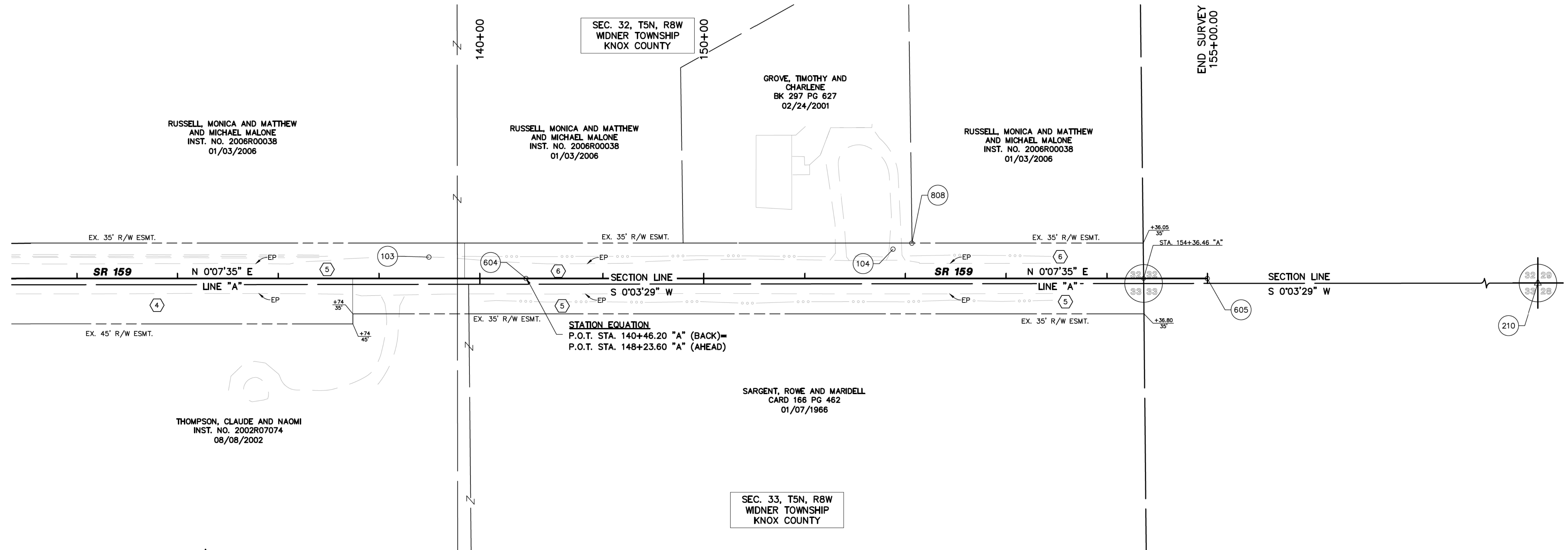
DRAWN: DAK CHECKED: AJD

INDIANA DEPARTMENT OF TRANSPORTATION

LOCATION CONTROL ROUTE SURVEY LINE "A"

HORIZONTAL SCALE	DESIGNATION
1" = 50'	1700149
VERTICAL SCALE	
N/A	
SURVEY BOOK	SHEETS
ELECTRONIC	4 of 15
CONTRACT	PROJECT
B-40554	1700149

PROJECT: C:\NORTH\10_4879_08_169.mxd
 FILE: 4072.LCS.P - 5N_2 Plot 2.dwg
 PLOTTED BY: ALEX DAUGHERTY
 DATE: 08/20/2019 09:46:00 AM



STATION EQUATION
 P.O.T. STA. 140+46.20 "A" (BACK)=
 P.O.T. STA. 148+23.60 "A" (AHEAD)

NOTE:
 ALL EXISTING R/W ON THIS SHEET IS DESCRIBED FROM LINE "A" EXCEPT AS SHOWN.

- 4 STATE OF INDIANA
INDOT BOOK PAGE 382
DECEMBER 15, 1975
- 5 STATE OF INDIANA
INDOT BOOK PAGE 369
DECEMBER 15, 1975
- 6 STATE OF INDIANA
INDOT BOOK PAGE 391
DECEMBER 15, 1975

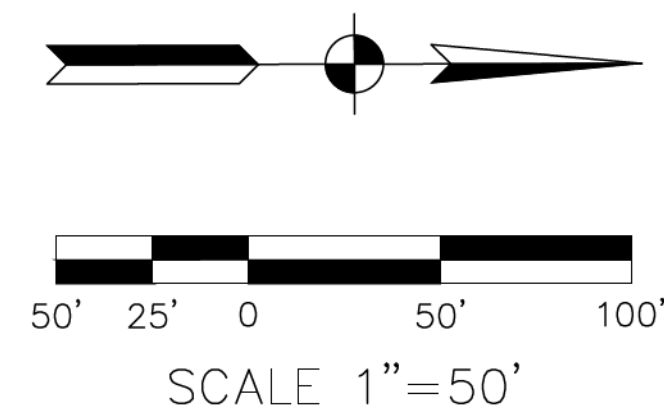
LEGEND

	ALIGNMENT LINE
	SECTION LINE
	RIGHT-OF-WAY LINE
	RIGHT-OF-WAY EASEMENT LINE
	APPROXIMATE PARCEL LINE
	APPROXIMATE LOT LINE
	EASEMENT LINE
	EXISTING FENCE
	EXISTING FLOWLINE
	EXISTING TOPOGRAPHY
(R)	RECORD DIMENSION
(M)	MEASURED DIMENSION
(P)	PLAN DIMENSION
123	CONTROL POINT FND., SET, OR CALC.

NOTE:
 THERE MAY BE INSTANCES THROUGH CURVES, OR WHERE ADDING THE SEGMENT LENGTHS OF LINES VERSUS THE OVERALL LENGTH, THERE APPEAR TO BE MATHEMATICAL ERRORS (+/- 0'00'01" OR 0.01 FEET). THESE APPARENT ERRORS RESULT FROM NUMERIC ROUNDING, ARE CONSIDERED NEGLIGIBLE, AND, ARE NOT REVISED HEREIN.

APP APPARENT
 NE NO EVIDENCE
 PL PROPERTY LINE
 EP EDGE OF PAVEMENT
 R/W RIGHT-OF-WAY
 EX. EXISTING
 L.A. LIMITED ACCESS

UNLESS NOTED OTHERWISE ALL MONUMENTS, FOUND OR SET, ARE LOCATED FLUSH WITH THE SURFACE



MONUMENT TABLE

POINT No.	NORTHING	EASTING	STATION	OFFSET	DESCRIPTION
103	270,052.1797	825,601.0041	STA. 139+49.62 "A"	21.20' Lt.	MAG NAIL SET
104	270,512.8774	825,594.0698	STA. 151+87.70 "A"	29.15' Lt.	MAG NAIL SET
210	272,101.9502	825,630.1080	N/A	N/A	REBAR FND. (1' BELOW GRADE)
808	270,531.6279	825,588.2272	STA. 152+06.43 "A"	35.03' Lt.	REBAR W/ "MRF 11238" CAP FND.

ALIGNMENT TABLE

POINT No.	NORTHING	EASTING	MONUMENT TYPE	DESCRIPTION
604	270,148.7175	825,622.4140	MAG NAIL SET	P.O.T. STA. 140+46.20 "A" = P.O.T. STA. 148+23.60 "A"
605	270,825.1159	825,623.9044	MAG NAIL SET	P.O.T. STA. 155+00.00 "A"

PROJECT: I:\DRAWING\4275\4275.dwg Date: 17/08/2019 02:00:00 Survey\Survey\DRAWINGS\4275.dwg
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 PLOTTED BY: ALEX J. DAUGHERTY
 DATE: 08/20/2019 09:58am

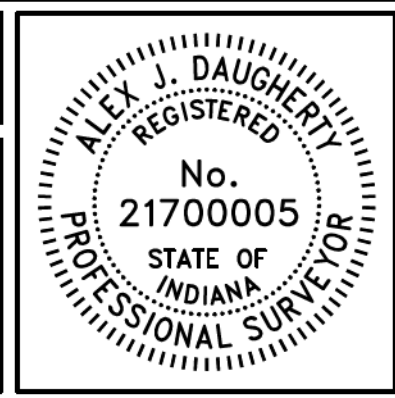
SURVEY STARTED	
05/01/2019	
SURVEY COMPLETED	
08/20/2019	
ROUTE PLAT SHEETS	
3	of 5

PREPARED BY: ALEX J. DAUGHERTY, P.S.

VS ENGINEERING, INC.
 4275 N. HIGH SCHOOL RD. INDIANAPOLIS, INDIANA 46254
 TEL. (317) 293-3542 FAX: (317) 293-4737

FIELD SURVEYOR STATEMENT

THIS SURVEY, TO THE BEST OF MY KNOWLEDGE AND BELIEF, IS EXECUTED ACCORDING TO THE PROVISIONS OF 865 I.A.C. 1-12-20 THROUGH 1-12-26 REGARDING ROUTE SURVEYS, EXCEPT THAT ANY DATA SHOWN REGARDING THE LOCATION OR DESCRIPTION OF THE EXISTING PARCELS IS NOT A PART OF THIS SURVEY.



RECOMMENDED FOR APPROVAL: *Alex J. Daugherty*
 REGISTERED LAND SURVEYOR, FIELD 6-4-20

DRAWN: DAK CHECKED: AJD

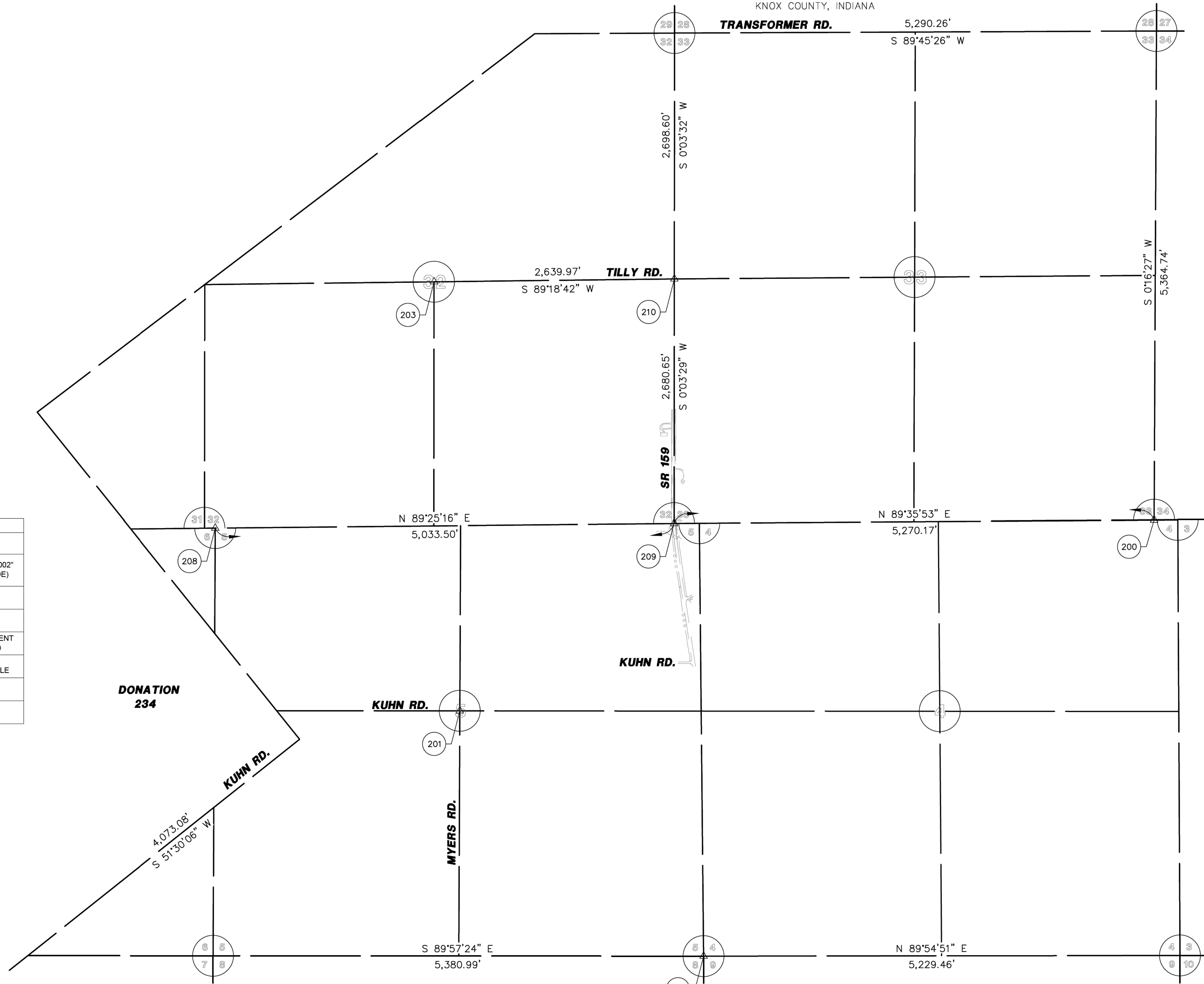
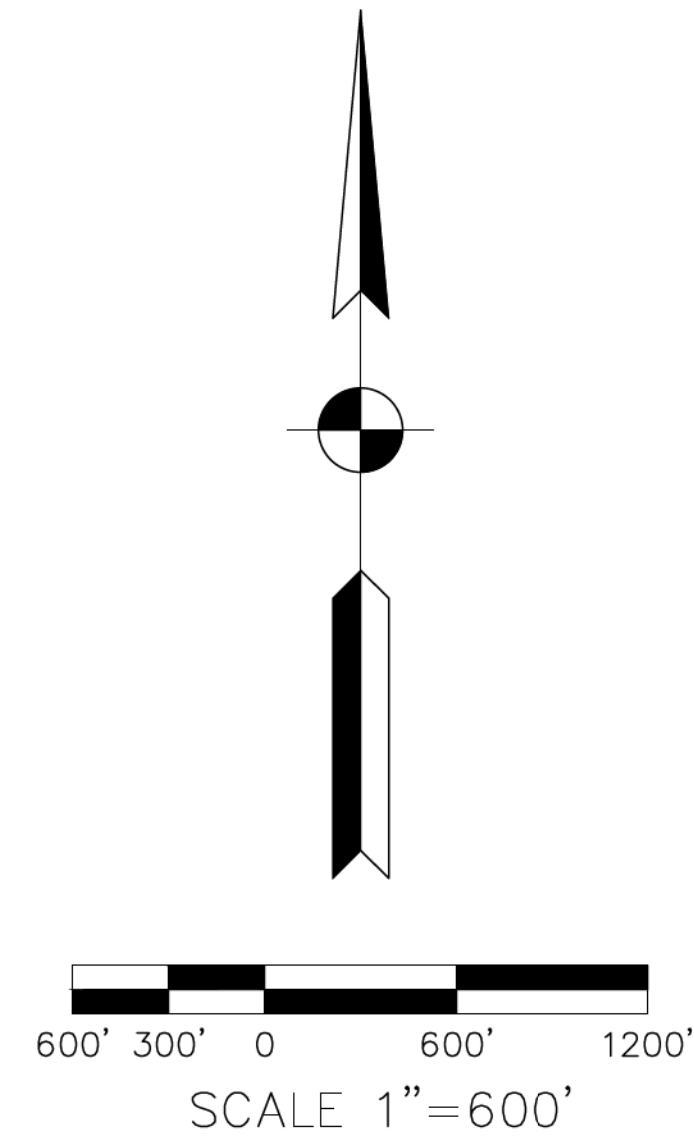
INDIANA DEPARTMENT OF TRANSPORTATION

LOCATION CONTROL ROUTE SURVEY

LINE "A"

HORIZONTAL SCALE	DESIGNATION
1" = 50'	1700149
VERTICAL SCALE	
N/A	
SURVEY BOOK	SHEETS
ELECTRONIC	5 of 15
CONTRACT	PROJECT
B-40554	1700149

SECTION MAP
 PART OF SECTIONS 32 & 33
 TOWNSHIP 5 NORTH, RANGE 8 WEST,
 ALSO PART OF SECTIONS 4 & 5
 TOWNSHIP 4 NORTH, RANGE 8 WEST,
 WIDNER, WASHINGTON, AND VIGO TOWNSHIPS,
 KNOX COUNTY, INDIANA



SECTION CORNER TABLE

POINT No.	NORTHING	EASTING	DESCRIPTION	MONUMENT
200	269,458.2709	830,897.4236	SOUTHEAST COR. SECTION 33	REBAR W/ "JOHNSON 20000002" CAP FND. (1" BELOW GRADE)
201	267,362.4340	823,272.9058	CENTER OF SECTION 5	RAILROAD SPIKE FND. (4" BELOW GRADE)
203	272,070.2413	822,990.3280	CENTER OF SECTION 32	RAILROAD SPIKE FND. (8" BELOW GRADE)
206	264,671.5762	825,951.8164	SOUTHEAST COR. SECTION 5	12"X12" CONCRETE MONUMENT FND. (60" ABOVE GRADE)
208	269,370.4444	820,594.1422	NORTHWEST COR. SECTION 5	CAPPED REBAR FND. (3" ABOVE GRADE) ILLEGIBLE
209	269,421.3011	825,627.3871	SOUTHWEST COR. SECTION 33	MAG NAIL FND. (1" BELOW GRADE)
210	272,101.9502	825,630.1080	EAST 1/4 COR. SECTION 32	REBAR FND. (1" BELOW GRADE)

PROJECT: C:\DATA\19_4879_08_169.mxd Date: 17/01/19/02 Survey\Survey\DRAWINGS\CADSW
 FILE: 19_4879_08_169.dwg
 PLOTTED BY: ALEX J. DAUGHERTY
 DATE: 08/20/2019 10:14am

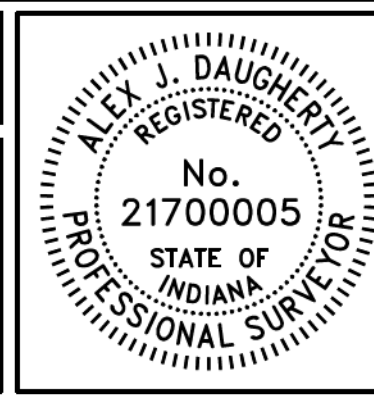
SURVEY STARTED	
05/01/2019	
SURVEY COMPLETED	
08/20/2019	
ROUTE PLAT SHEETS	
4	of 5

PREPARED BY: ALEX J. DAUGHERTY, P.S.

VS ENGINEERING, INC.
 4275 N. HIGH SCHOOL RD. INDIANAPOLIS, INDIANA 46254
 TEL. (317) 293-3542 FAX: (317) 293-4737

FIELD SURVEYOR STATEMENT

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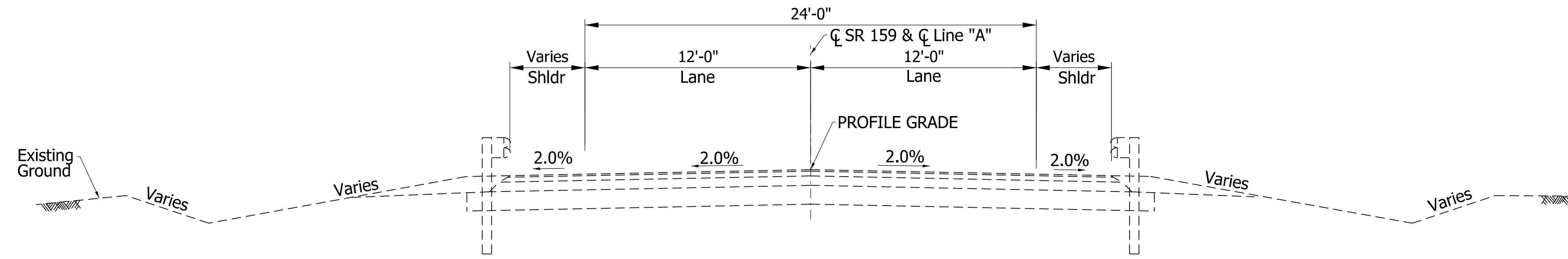
RECOMMENDED FOR APPROVAL: *Alex J. Daugherty*
 REGISTERED LAND SURVEYOR, FIELD
 6-4-20

DRAWN: DAK CHECKED: AJD

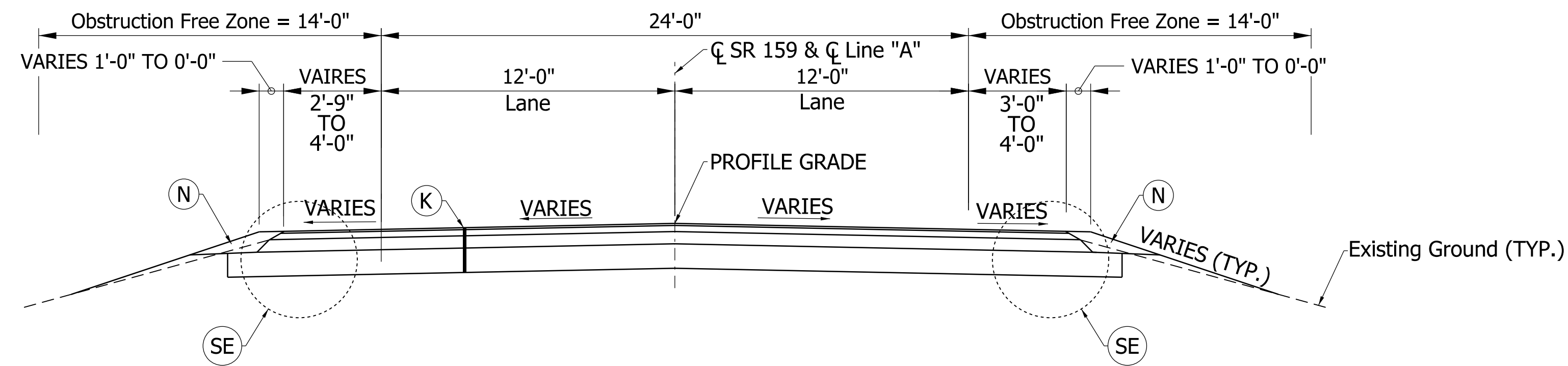
INDIANA DEPARTMENT OF TRANSPORTATION

LOCATION CONTROL ROUTE SURVEY SECTION MAP

HORIZONTAL SCALE	DESIGNATION
1" = 600'	1700149
VERTICAL SCALE	
N/A	
SURVEY BOOK	SHEETS
ELECTRONIC	6 of 15
CONTRACT	PROJECT
B-40554	1700149



EXISTING TYPICAL SECTION S.R. 159
 STA. 128+50.00 "A" TO STA 136+90.00 "A"



TYPICAL INCIDENTAL SECTION S.R. 159
 STA. 128+50.00 "A" TO STA 129+00.00 "A"
 STA. 136+40.00 "A" TO STA 136+90.00 "A"

LEGEND

- (K)** QC/QA-HMA, 2, 64, SURFACE, 9.5 MM ON
 QC/QA-HMA, 2, 64, INTERMEDIATE, 19.0 MM ON
 QC/QA-HMA, 2, 64, BASE, 25.0 MM ON
 SUBGRADE TREATMENT, TYPE IC
- (N)** Compacted Aggregate, No. 53
- (SE)** Safety Edge, Widening (See detail on next sheet)

DRAFT
 NOT FOR CONSTRUCTION

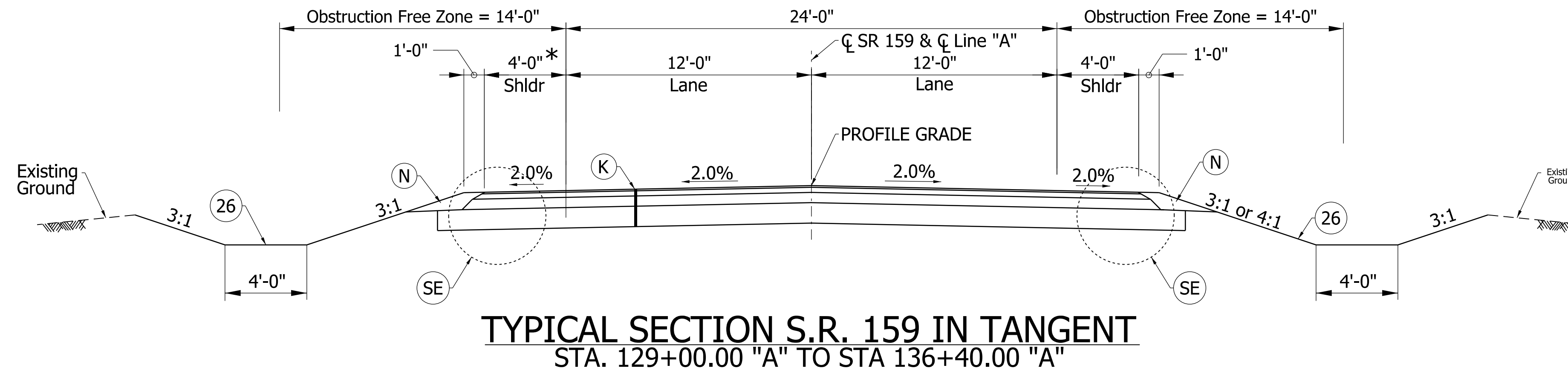
RECOMMENDED FOR APPROVAL _____	DESIGN ENGINEER _____	DATE _____
DESIGNED: _____ SM _____	DRAWN: _____ SM _____	
CHECKED: _____ MRS _____	CHECKED: _____ MRS _____	

INDIANA DEPARTMENT OF TRANSPORTATION	
TYPICAL SECTIONS	

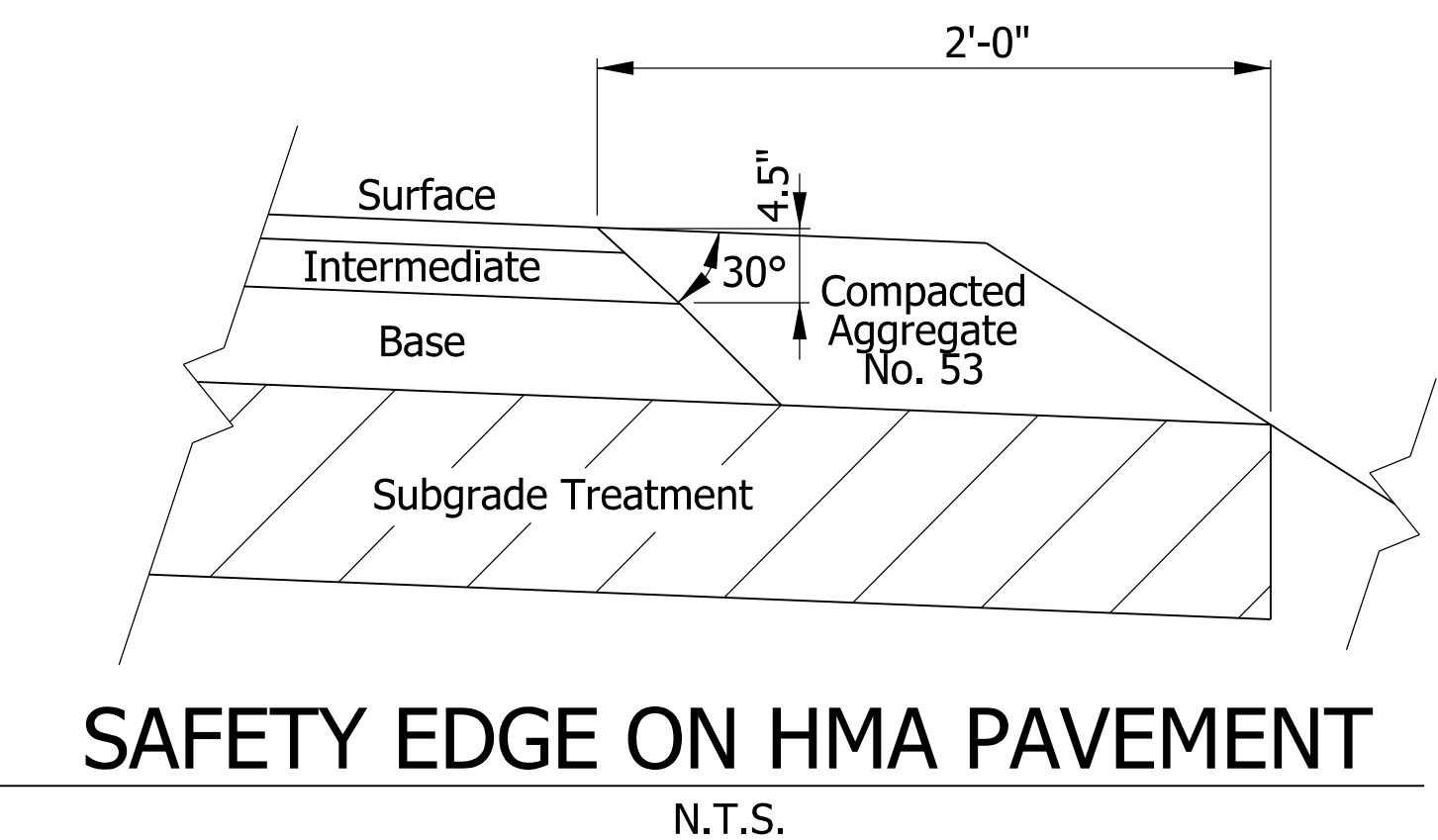
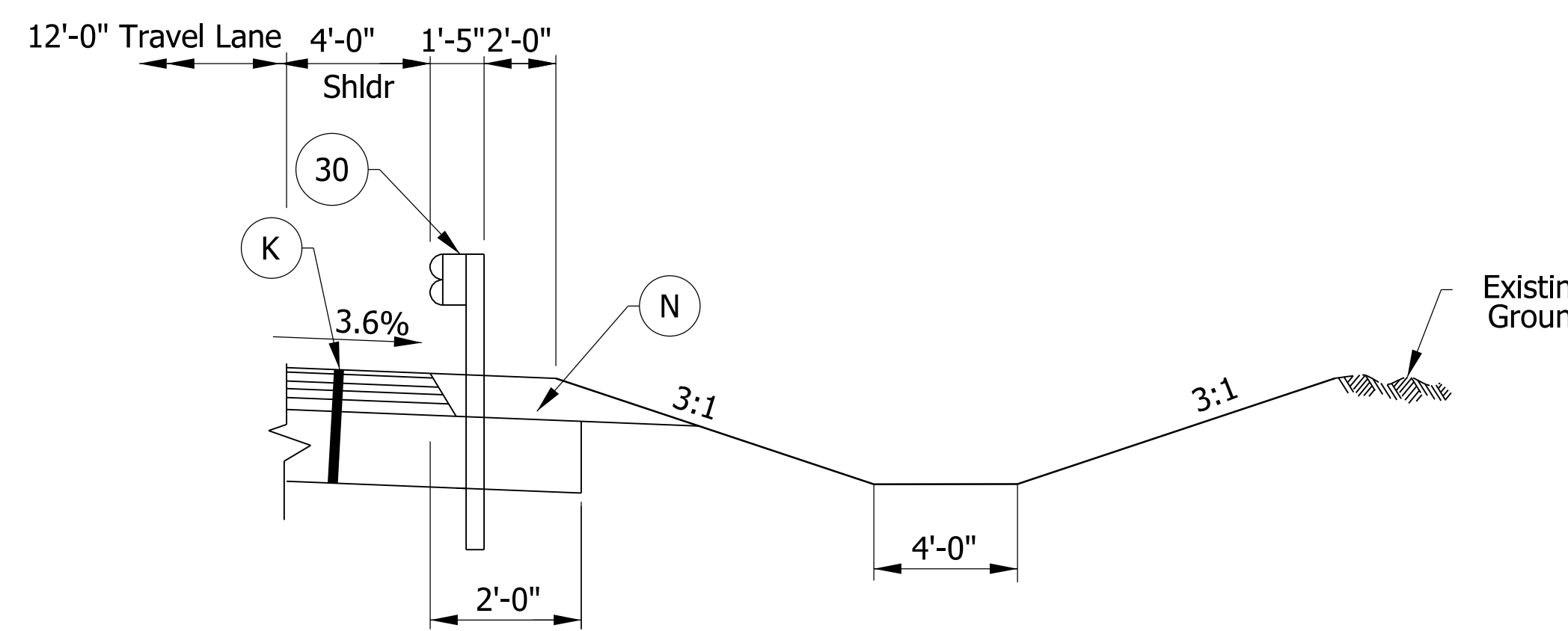
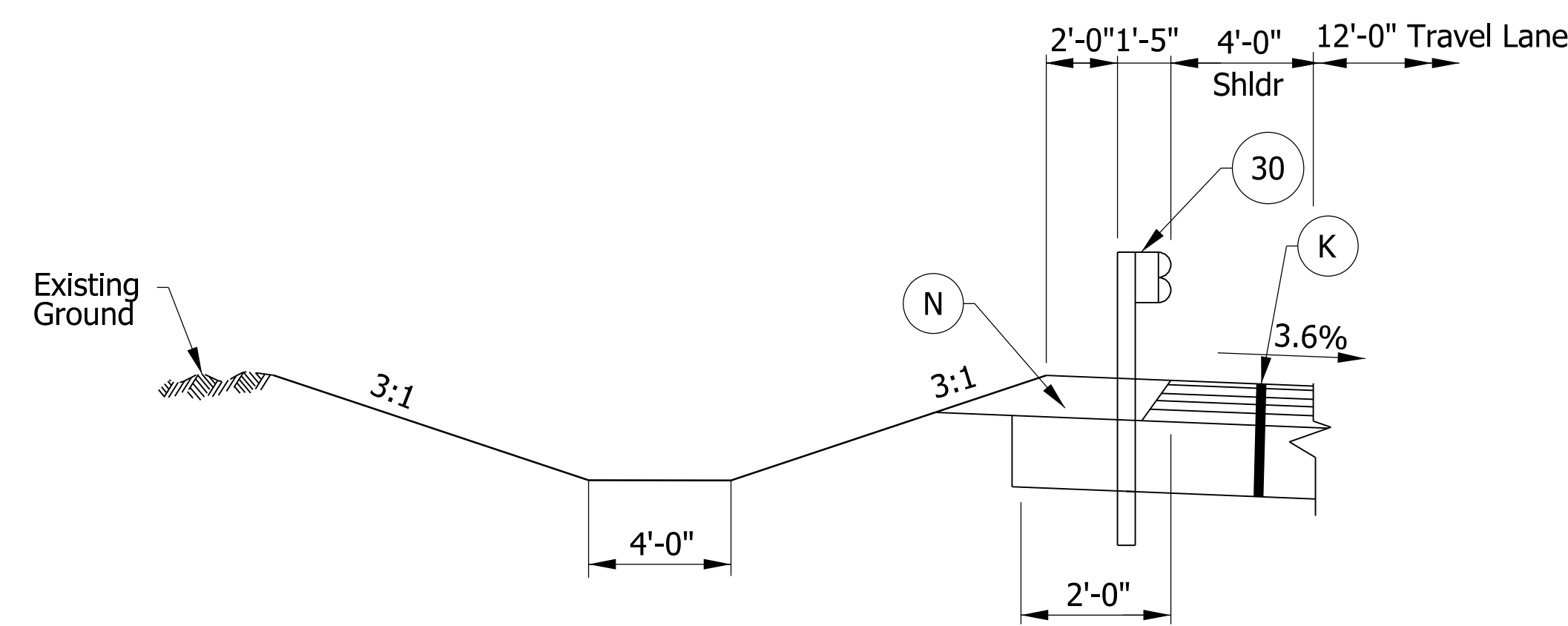
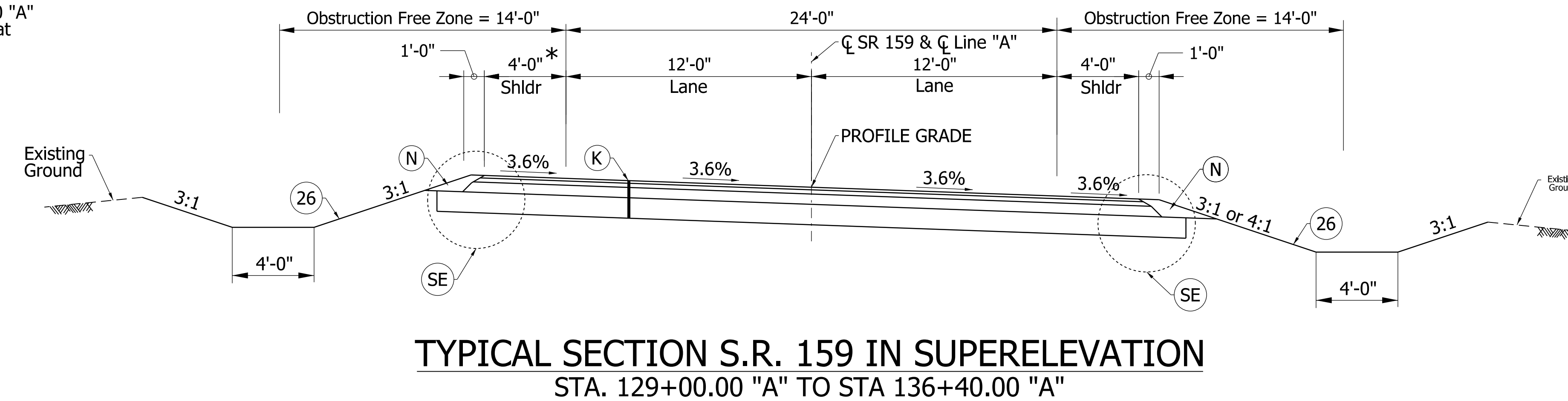
HORIZONTAL SCALE 1/4" = 1'-0"	BRIDGE FILE 159-42-10339
VERTICAL SCALE 1/4" = 1'-0"	DESIGNATION 1700149
SURVEY BOOK ELECTRONIC	SHEETS 9 of 15
CONTRACT B-40554	PROJECT 1700149

j/mrodrick
 8/24/2020 5:50:24 pm
 m:\data\sheet_1
 file: \\mrodrick\1289\projects\70946_in\docx\2018_bridges\1030-sr159_wells_des\1700149\cad\1\cbs\1700149-s-tyr01.dgn

NOTE TO REVIEWER
 FINAL PAVEMENT SECTION WILL BE DETERMINED FOR FUTURE SUBMISSIONS FOLLOWING APPROVED PAVEMENT DESIGN.



* Width varies from 4'-0" at Sta. 132+79.64 "A" to 12'-0" at Sta. 133+14.74 "A" for mailbox approach
 Width 12'-0" from Sta. 133+14.74 "A" to Sta. 133+86.50 "A"
 Width varies from 12'-0" at Sta. 133+86.50 "A" to 4'-0" at Sta. 135+46.50 "A" for mailbox approach



LEGEND

- (K) QC/QA-HMA, 2, 64, SURFACE, 9.5 MM ON
 QC/QA-HMA, 2, 64, INTERMEDIATE, 19.0 MM ON
- (N) Compacted Aggregate, No. 53
- (SE) Safety Edge, Widening (See detail on this sheet)
- (26) Seeding
- (30) Guardrail MGS W-Beam

DRAFT
 NOT FOR CONSTRUCTION

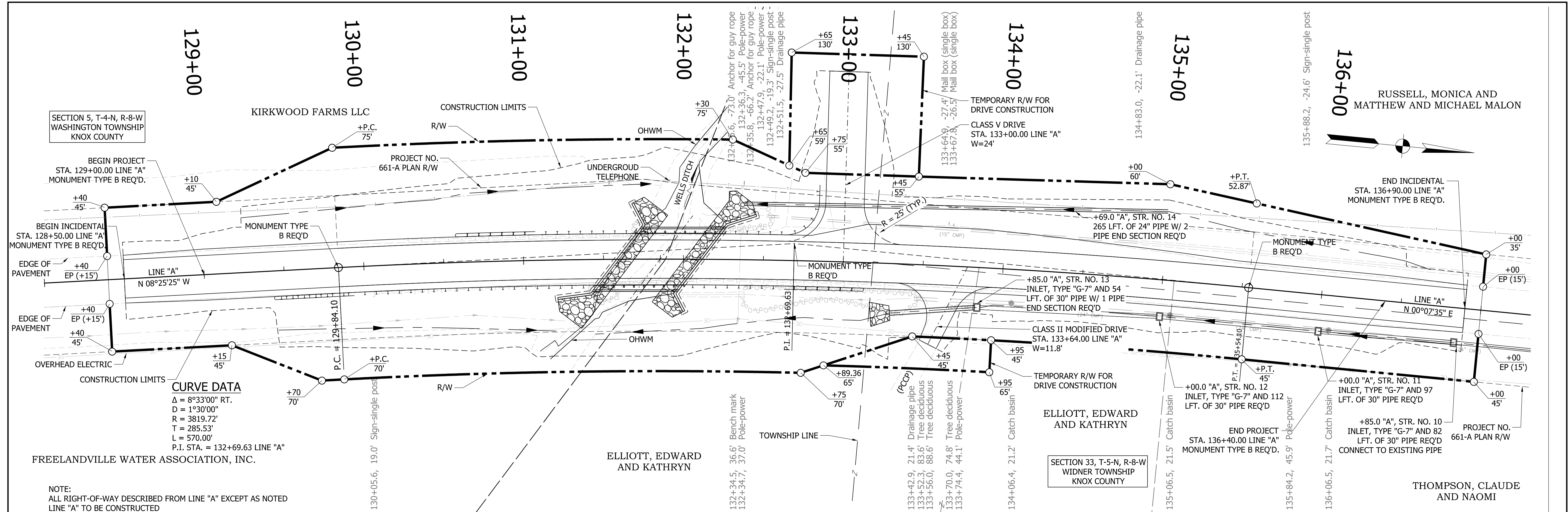
RECOMMENDED FOR APPROVAL _____	DESIGN ENGINEER _____	DATE _____
DESIGNED: _____ SM _____	DRAWN: _____ SM _____	
CHECKED: _____ MRS _____	CHECKED: _____ MRS _____	

INDIANA
 DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS

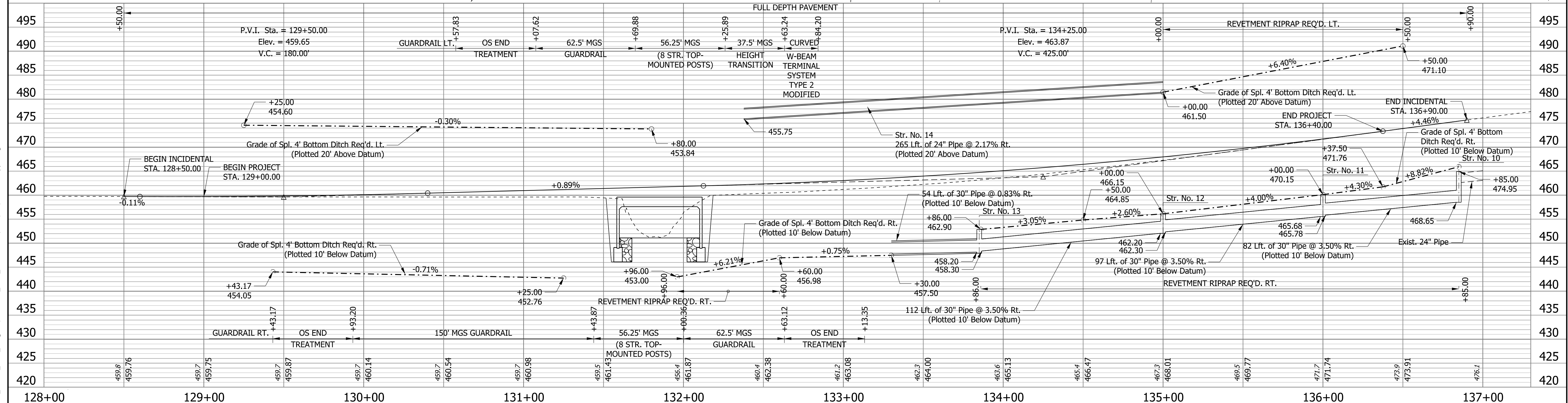
HORIZONTAL SCALE 1/4" = 1'-0"	BRIDGE FILE 159-42-10339
VERTICAL SCALE 1/4" = 1'-0"	DESIGNATION 1700149
SURVEY BOOK ELECTRONIC	SHEETS 10 of 15
CONTRACT B-40554	PROJECT 1700149

j/mrodrick
 8/24/2020 5:50:24 pm
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CURVE DATA
 $\Delta = 8^{\circ}33'00''$ RT.
 $D = 1^{\circ}30'00''$
 $R = 3819.72'$
 $T = 285.53'$
 $L = 570.00'$
 P.I. STA. = 132+69.63 LINE "A"

NOTE:
 ALL RIGHT-OF-WAY DESCRIBED FROM LINE "A" EXCEPT AS NOTED
 LINE "A" TO BE CONSTRUCTED



NOTE TO REVIEWER
 REFERENCE TIES AND
 BENCHMARKS WILL BE ADDED
 FOR FUTURE SUBMITTAL

DRAFT
 NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: MR	DRAWN: MR	
CHECKED: MRS	CHECKED: MRS	

INDIANA
 DEPARTMENT OF TRANSPORTATION
PLAN AND PROFILE

HORIZONTAL SCALE 1" = 30'-0"	BRIDGE FILE 159-42-10339
VERTICAL SCALE 1" = 10'-0"	DESIGNATION 1700149
SURVEY BOOK ELECTRONIC	SHEETS 11 of 15
CONTRACT B-40554	PROJECT 1700149

elahraman
 9/2/2020 11:04:00 am
 mdr:Plan and profile
 file: I:\mcd\0128\projects\70946_indot_v_2018_bridges\1030-sr159_wells_desc\1700149\cadd\csl\1700149-s-pp01.dgn

EXISTING STRUCTURE

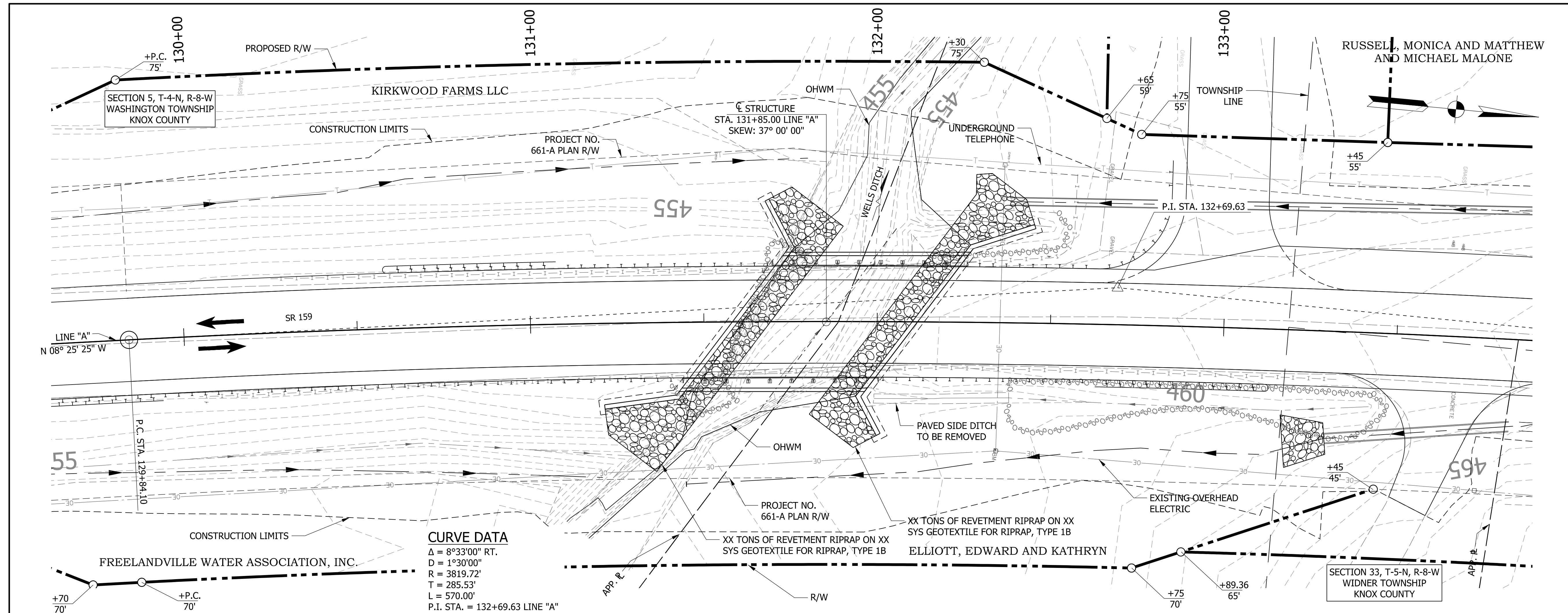
THE EXISTING STRUCTURE WAS BUILT IN 1925 AS A CONCRETE BOX BEAM BRIDGE BUILT ON CONCRETE ABUTMENTS. IN 1980 THE STRUCTURE WAS REHABILITATED. THE CONCRETE ABUTMENTS WERE WIDENED, AND ADDITIONAL BOX BEAMS WERE INSTALLED. A NEW DECK WAS PLACED, WITH VARIABLE DEPTH FROM 5' AT THE CURB TO 7' ALONG THE BRIDGE CENTERLINE.

THE EXISTING STRUCTURE IS TO BE REMOVED AND REPLACED.

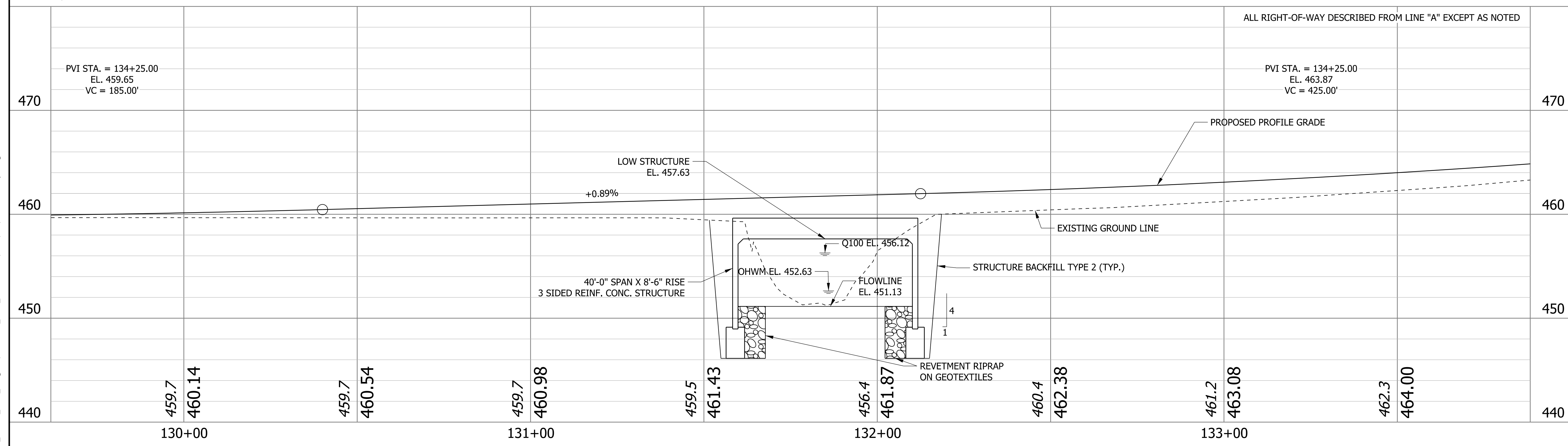
EXISTING PLANS ARE ON FILE WITH THE INDIANA DEPARTMENT OF TRANSPORTATION AS FILE NO. 159-42-6350 B.

HYDRAULIC DATA

WATERWAY OPENING REQUIRED	199.6 SFT
WATERWAY OPENING PROVIDED	199.6 SFT
DRAINAGE AREA	2.01 SQ MI
DESIGN DISCHARGE, Q100	1,000 CFS
VELOCITY	3.92 FT/S
Q100 ELEV.	456.12 FT
BACKWATER AT Q100	1.21 FT
EXISTING WATERWAY OPENING	99.6 SFT
EXISTING BACKWATER	1.92 FT
MIN. LOW STRUCTURE ELEV. REQ.	457.63 FT
EXISTING LOW STRUCTURE ELEV.	456.69 FT



CURVE DATA
 $\Delta = 8^{\circ}33'00''$ RT.
 $D = 1^{\circ}30'00''$
 $R = 3819.72'$
 $T = 285.53'$
 $L = 570.00'$
 P.I. STA. = 132+69.63 LINE "A"



**PRECAST REINFORCED CONCRETE
 3-SIDED FLAT TOP STRUCTURE**
 40'-0" SPAN X 8'-6" RISE
 32'-0" CLEAR ROADWAY
 SKEW: 37°00'00" RT.
 SR 159 OVER WELLS DITCH
 KNOX COUNTY

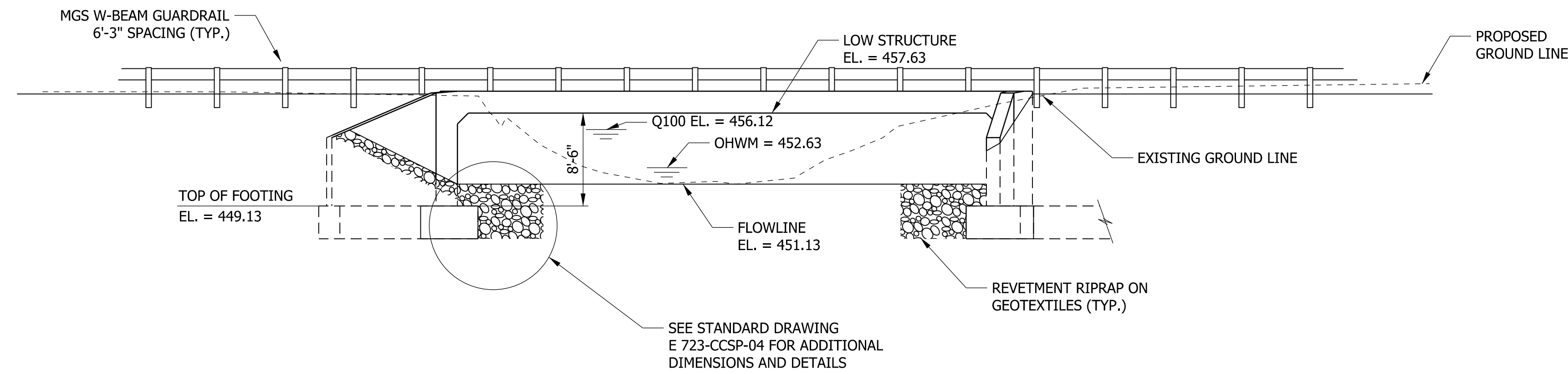
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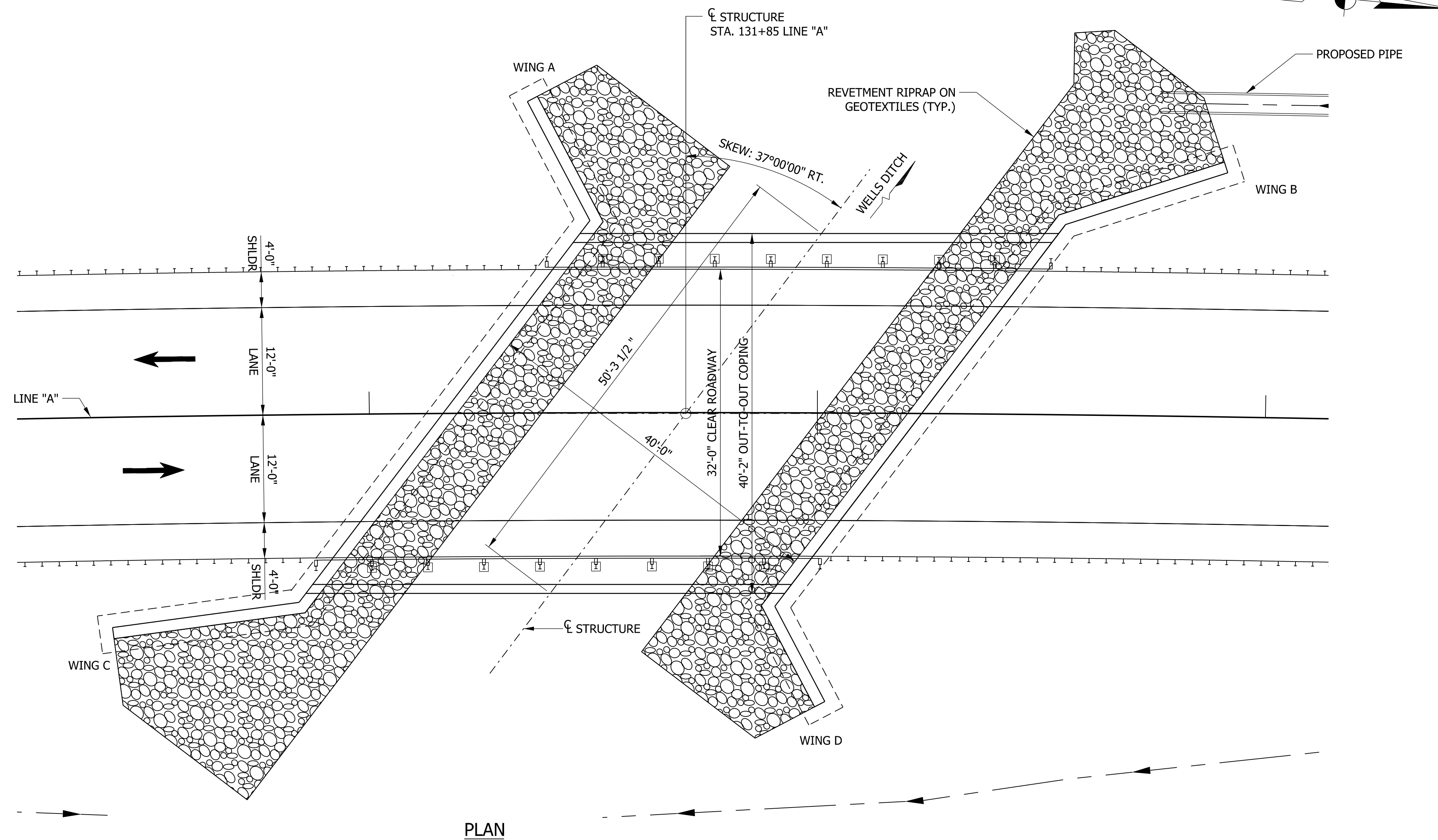
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DESIGNED: MR	DRAWN: CLF	
CHECKED: MRS	CHECKED: MRS	

INDIANA
 DEPARTMENT OF TRANSPORTATION
LAYOUT

SCALE	BRIDGE FILE
1/8" = 1'-0"	159-42-10339
VERTICAL SCALE	DESIGNATION
3/8" = 1'-0"	1700149
SURVEY BOOK	SHEETS
ELECTRONIC	12 of 15
CONTRACT	PROJECT
B-40554	1700149



ELEVATION



PLAN

GENERAL NOTES

SURFACE SEAL SHALL BE APPLIED TO ALL EXPOSED FACES OF HEADWALLS, WINGWALLS, AND FACE OF STRUCTURE SECTIONS. SURFACE SEAL MAY BE APPLIED TO PRECAST CONCRETE MEMBERS IN THE SHOP OR IN THE FIELD

A THREE-SIDED ARCH-TOPPED OR TRUE-ARCH STRUCTURE WILL NOT BE PERMITTED AT THIS LOCATION.

FOOTING DIMENSIONS SHALL BE DETERMINED BY THE PRECAST UNIT MANUFACTURER.

ALL DIMENSIONS AND ELEVATIONS ARE IN FEET (FT.), EXCEPT AS NOTED.

MAXIMUM NOMINAL SOIL BEARING RESISTANCE = XXXX PSF.

DESIGN DATA

LIVE LOAD
STRUCTURE SHALL BE DESIGNED FOR HL-93 AND PEDESTRIAN LOADING, IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION, 2017 AND ITS SUBSEQUENT INTERIMS.

DEAD LOAD
DESIGN FOR ACTUAL WEIGHT PLUS 35 PSF FOR FUTURE WEARING SURFACE.

DESIGN STRENGTHS

THE MINIMUM DESIGN CONCRETE COMPRESSIVE STRENGTH FOR STRUCTURE SECTIONS SHALL BE 5000 PSI. FOR WINGWALLS, HEADWALLS, AND SPANDREL WALLS, IT SHALL BE 4000 PSI.

REINFORCING BARS $f_y = 60,000$ PSI

NOTE TO REVIEWER

WINGWALL DESIGN WILL BE FINALIZED FOR FUTURE SUBMITTAL

PRECAST REINFORCED CONCRETE
3-SIDED FLAT TOP STRUCTURE
40'-0" SPAN, 8'-6" RISE
32'-0" CLEAR ROADWAY
SKEW: 37°00'00" RT.
SR 159 OVER WELLS DITCH
KNOX COUNTY

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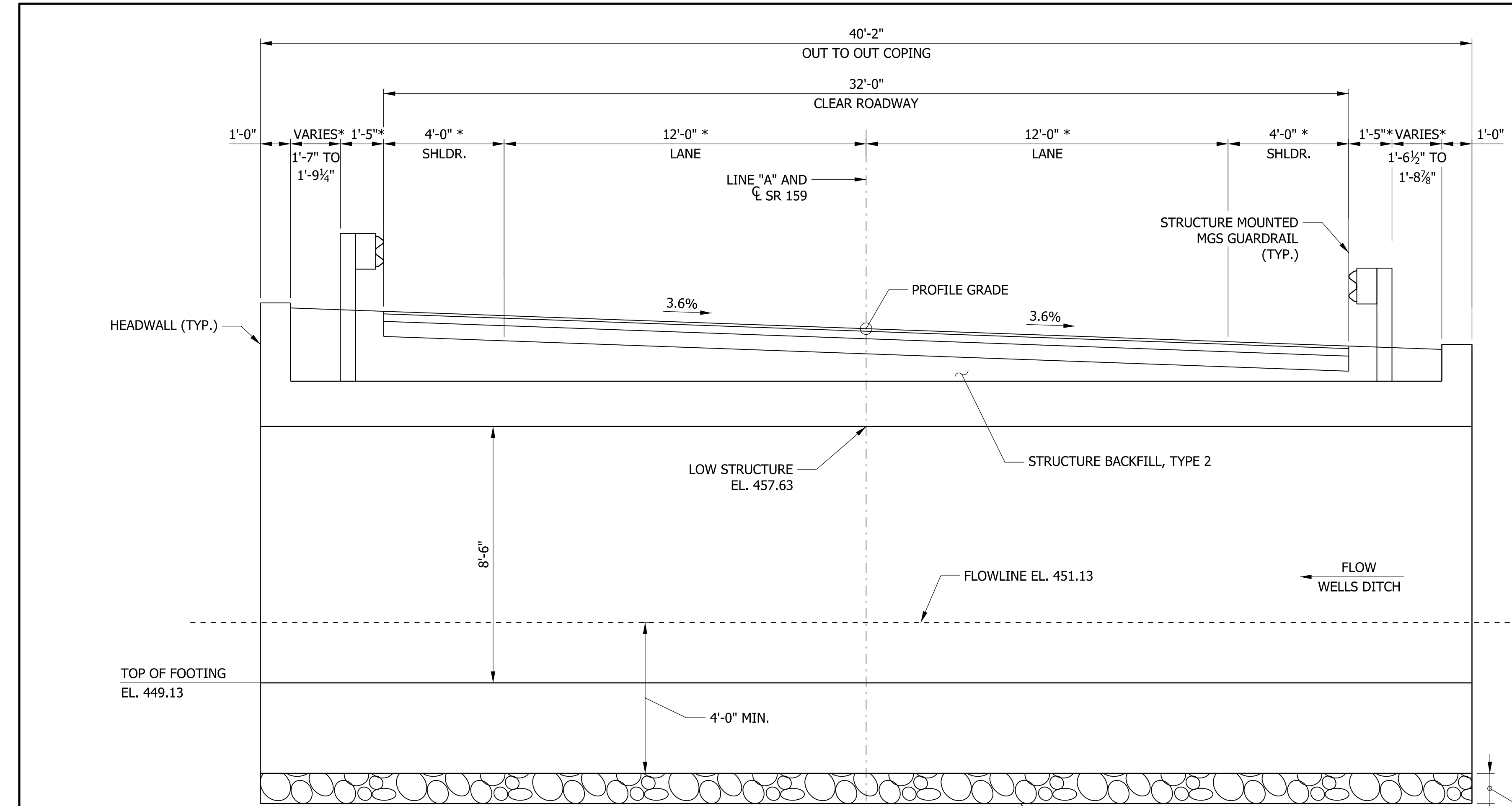
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DESIGNED: MR _____	DRAWN: CLF _____	
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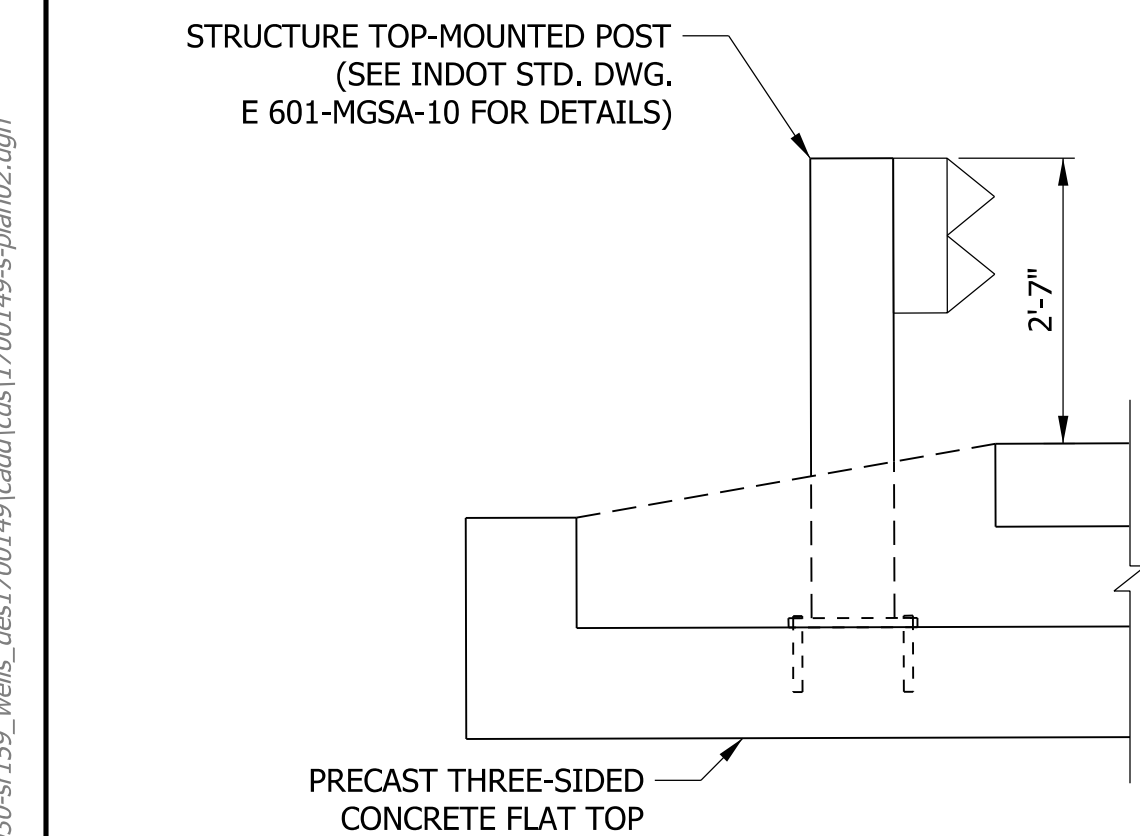
INDIANA
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN

HORIZONTAL SCALE	BRIDGE FILE
1/8" = 1'-0"	159-42-10339
VERTICAL SCALE	DESIGNATION
1/8" = 1'-0"	1700149
SURVEY BOOK	SHEETS
ELECTRONIC	13 of 15
CONTRACT	PROJECT
B-40554	1700149

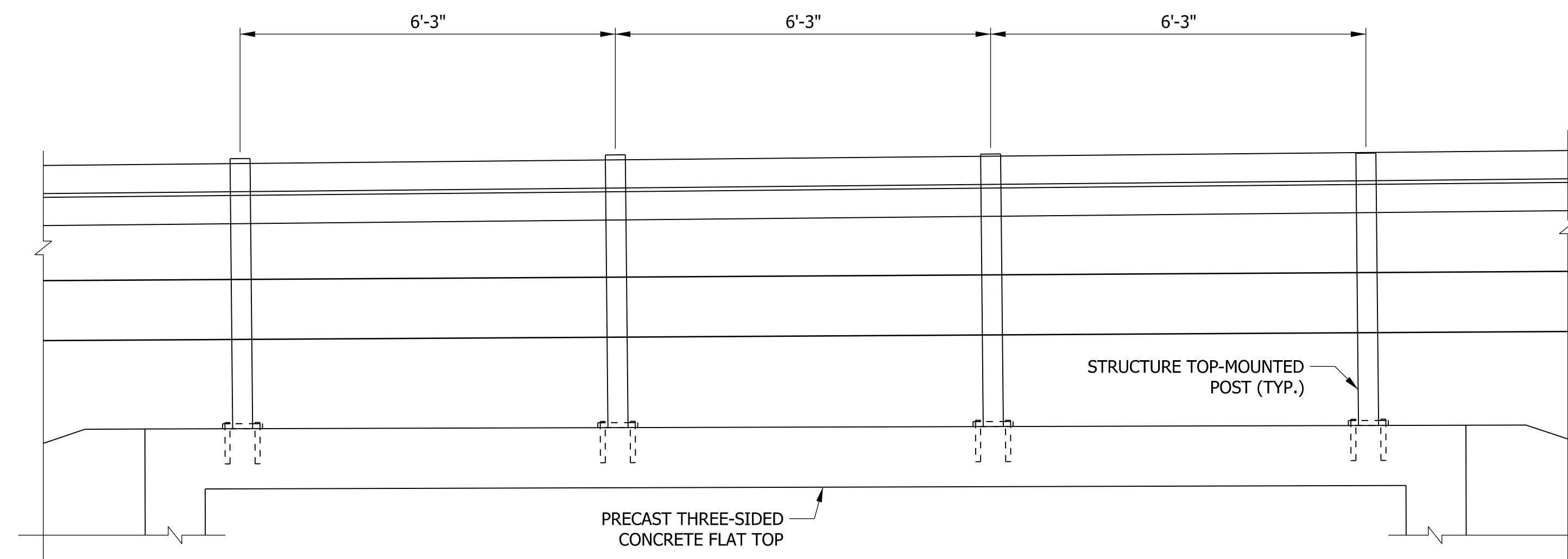


PROPOSED TYPICAL SECTION
SCALE: 3/8" = 1'-0"



TYPICAL SECTION

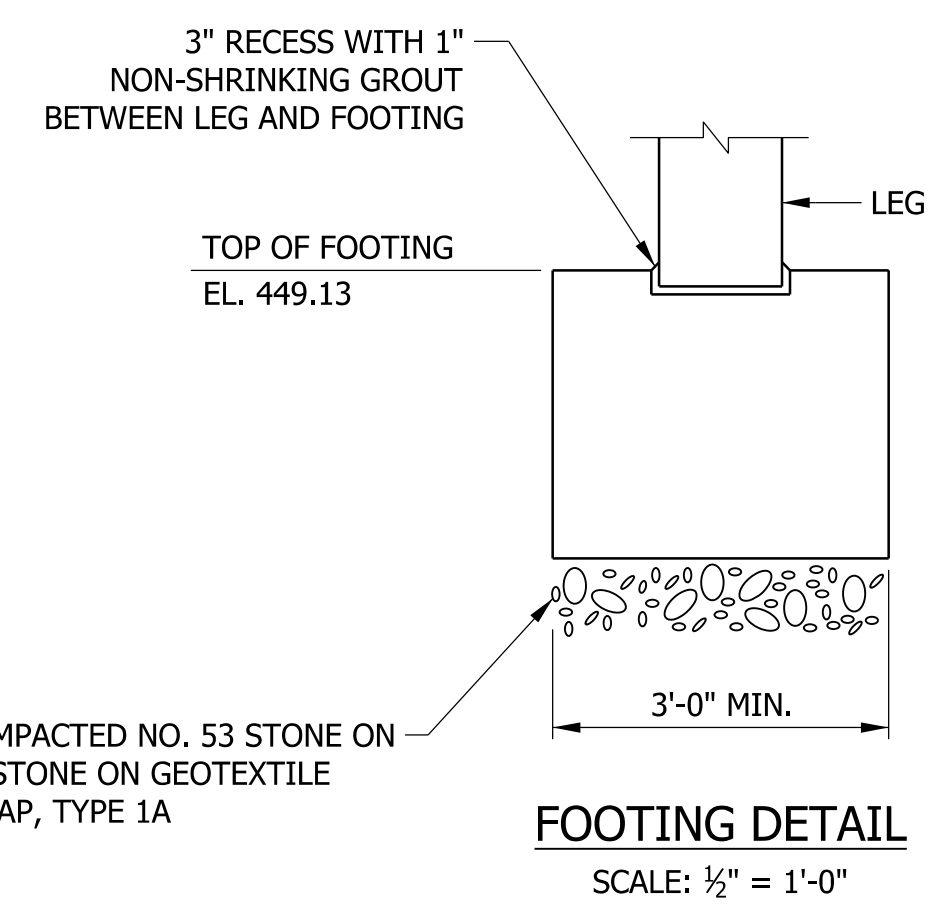
STRUCTURE TOP MOUNTED POST DETAILS
NOT TO SCALE



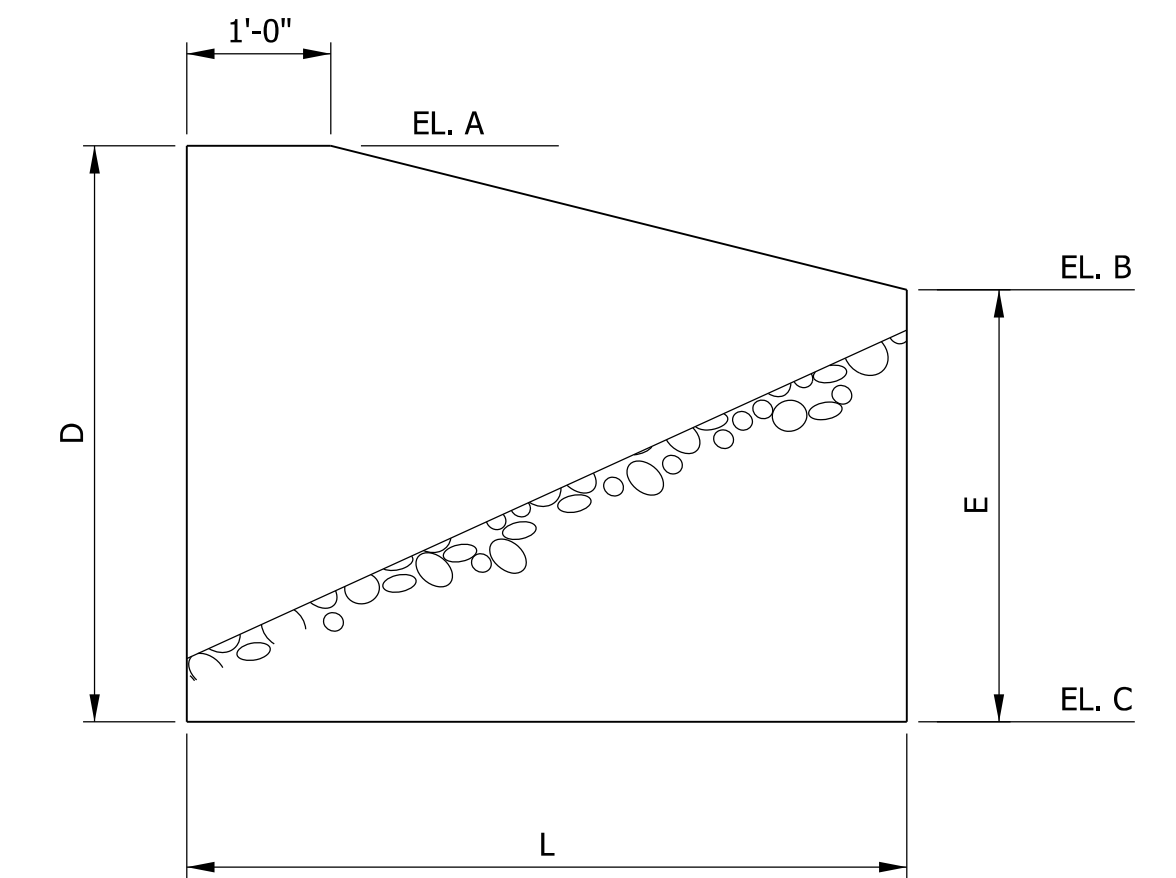
ELEVATION

NOTE TO REVIEWER
WINGWALL DESIGN WILL BE FINALIZED FOR FUTURE SUBMITTAL

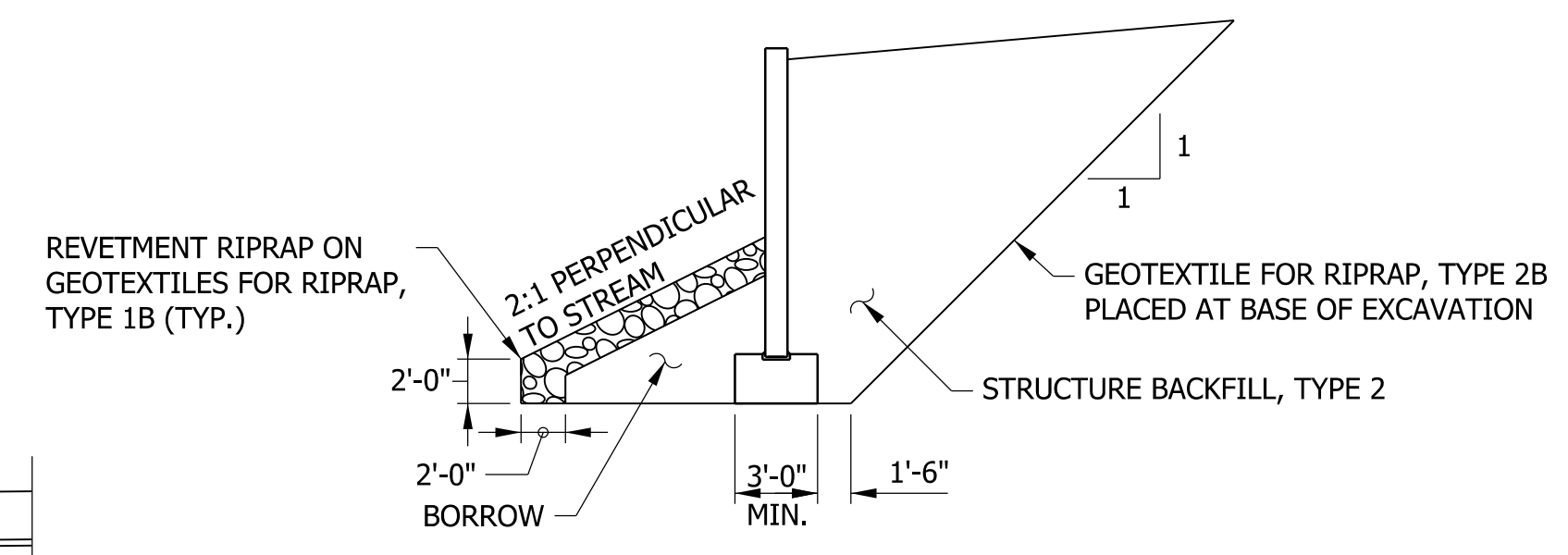
WINGWALL DATA TABLE					
WINGWALL	A	B	C	D	
EL. A	-	-	-	-	
EL. B	-	-	-	-	
EL. C	-	-	-	-	
D	-	-	-	-	
E	-	-	-	-	
L	-	-	-	-	TOTAL
AREA (SFT.)	-	-	-	-	-



FOOTING DETAIL
SCALE: 1/2" = 1'-0"



WINGWALL ELEVATION
NOT TO SCALE



WINGWALL SECTION
NOT TO SCALE

NOTE
PRECAST FOOTING SHALL BE MADE INTO A CONTINUOUS FOOTING BY THE USE OF CLOSURE POURS BETWEEN THE PRECAST UNITS.

LEGEND
* MEASURED PERPENDICULAR TO CL LINE "A"

PRECAST REINFORCED CONCRETE 3-SIDED FLAT TOP STRUCTURE
40'-0" SPAN, 8'-6" RISE
32'-0" CLEAR ROADWAY
SKEW: 37°00'00" RT.
SR 159 OVER WELLS DITCH
KNOX COUNTY

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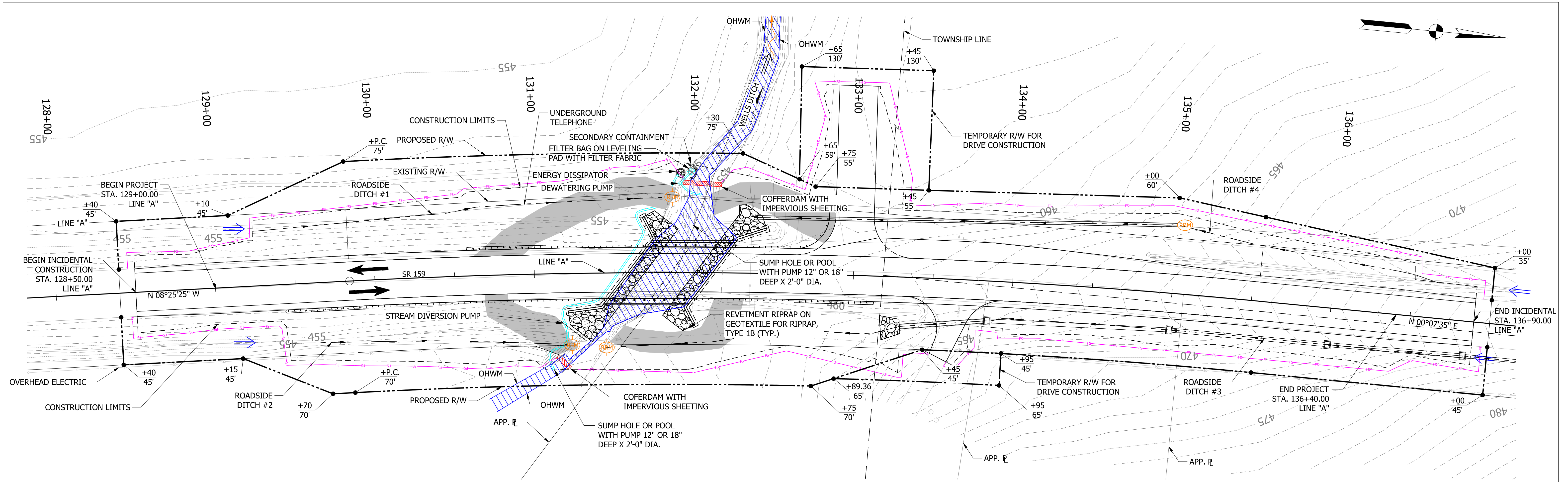
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RECOMMENDED FOR APPROVAL _____	DESIGN ENGINEER _____	DATE _____
DESIGNED: MR _____	DRAWN: CLF _____	
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INDIANA
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN

HORIZONTAL SCALE	BRIDGE FILE
AS SHOWN	159-42-10339
VERTICAL SCALE	DESIGNATION
AS SHOWN	1700149
SURVEY BOOK	SHEETS
ELECTRONIC	14 of 15
CONTRACT	PROJECT
B-40554	1700149



PLAN
SCALE: 1" = 30'-0"

LEGEND

- FS- FILTER SOCK
- ⊙ (with R/W) TEMPORARY DITCH CHECK DAM
- CONSTRUCTION ACCESS (NO. 2 STONE ON TEMPORARY GEOTEXTILES)
- ➡ OFFSITE DRAINAGE POINT OF ENTRY
- ~ STORM WATER EXIT (OPEN CHANNEL)
- OHWM ORDINARY HIGH WATER MARK

NOTES:

1. WELLS DITCH DRAINAGE AREA = 2.01 SQUARE MILES.
2. TEMPORARY DEWATERING MEASURES ARE EXPECTED TO BE IN PLACE LESS THAN 12 WEEKS.
3. PUMP AROUND DETAILS SHOWN ARE PART OF DOCUMENTATION INCLUDED FOR PERMIT APPROVAL. SEE SPECIAL PROVISIONS.
4. DISTURBED AREAS ABOVE THE OHWM WILL BE REGRADED AND RESTORED WITH MULCHED SEEDING R. EROSION CONTROL BLANKET SHALL BE USED ON ANY SLOPES STEEPER THAN 3:1, EXCEPT WHEN PROTECTED BY PERMANENT EROSION CONTROL MEASURES.
5. HOSE SHALL BE POSITIONED SO INTAKE DOES NOT REST ON STREAM BED.
6. THE CONTRACTOR SHALL FIELD VERIFY THE FLOW LINE ELEVATION TO SET THE APPROPRIATE PUMP DEPTH PRIOR TO CONSTRUCTION.
7. COFFERDAMS AND DEWATERING WILL BE REQUIRED TO PROVIDE DRY WORKING AREAS SO SCOUR PROTECTION CAN BE INSTALLED IN DRY CONDITIONS.
8. DISTURBED AREAS BELOW THE Q100 WILL BE REGRADED AND RESTORED WITH SEED MIXTURE, FLOODPLAN.
9. WELLS DITCH Q100 = 456.12.

TEMPORARY DITCH * CHECK DAM

TEMPORARY CHECK DAM, REVETMENT RIPRAP	X TONS
TEMPORARY FILTER STONE	X TONS
TEMPORARY GEOTEXTILES	X SYS

EROSION CONTROL BLANKET

NORTH SLOPES	XXX SYS
SOUTH SLOPES	XXX SYS

SEDIMENT REMOVE *

LOCATION	(CYS)
FILTER SOCK	4

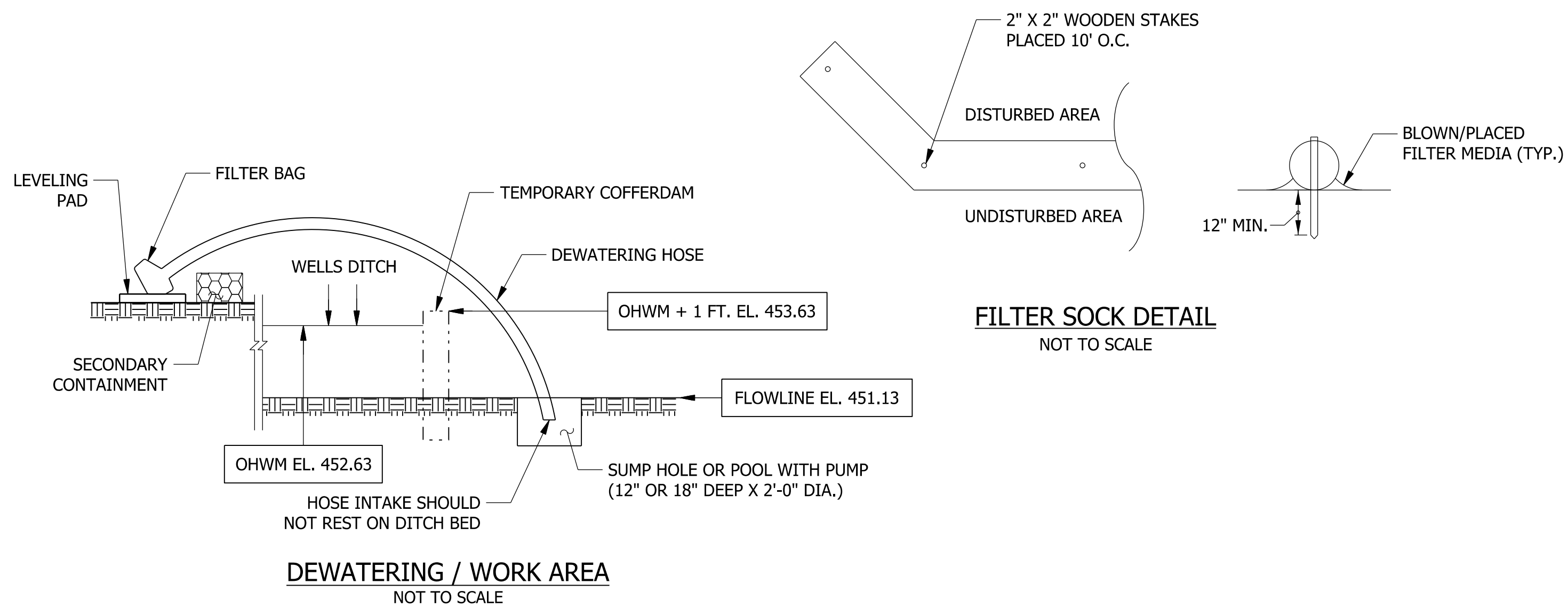
FILTER SOCK *

LOCATION	LENGTH (LFT)
STA. 128+50 TO 131+94 LT LINE "A"	385
STA. 132+15 TO 136+90 LT LINE "A"	645
STA. 128+50 TO 131+13 RT LINE "A"	305
STA. 131+20 TO 133+50 RT LINE "A"	245
STA. 133+60 TO 136+90 RT LINE "A"	380
TOTAL	1960

CONSTRUCTION * ENTRANCES

NO. 2 STONE (TONS)	TEMP. GEOTEXTILES (SYS)
100	235

* FOR INFORMATION ONLY. ESTIMATED QUANTITY INCLUDED IN STORM WATER MANAGEMENT BUDGET.



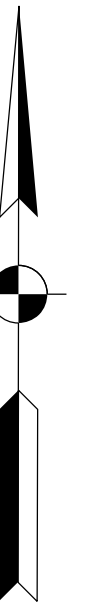
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RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: CEU	DRAWN: CEU	
CHECKED: TMB	CHECKED: TMB	

INDIANA DEPARTMENT OF TRANSPORTATION
EROSION CONTROL PLAN

HORIZONTAL SCALE	BRIDGE FILE
AS SHOWN	159-42-10339
VERTICAL SCALE	DESIGNATION
AS SHOWN	1700149
SURVEY BOOK	SHEETS
ELECTRONIC	12 of 15
CONTRACT	PROJECT
B-40554	1700149

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SOIL CLASSIFICATIONS	
MAP SYMBOL	MAP UNIT NAME
AnB	Alvine fine sandy loam, 2 to 5 percent slopes
Bd	Birds silt loam, rarely flooded
EKA	Elkinsville silt loam, 0 to 2 percent slopes
HoB2	Hosmer silt loam, 2 to 5 percent slopes, eroded
HoC3	Hosmer silt loam, 5 to 10 percent slopes, severely eroded
HoD3	Hosmer silt loam, 10 to 18 percent slopes, severely eroded
Pb	Patton silt loam
Wa	Wakeland silt loam, 0 to 2 percent slopes, frequently flooded

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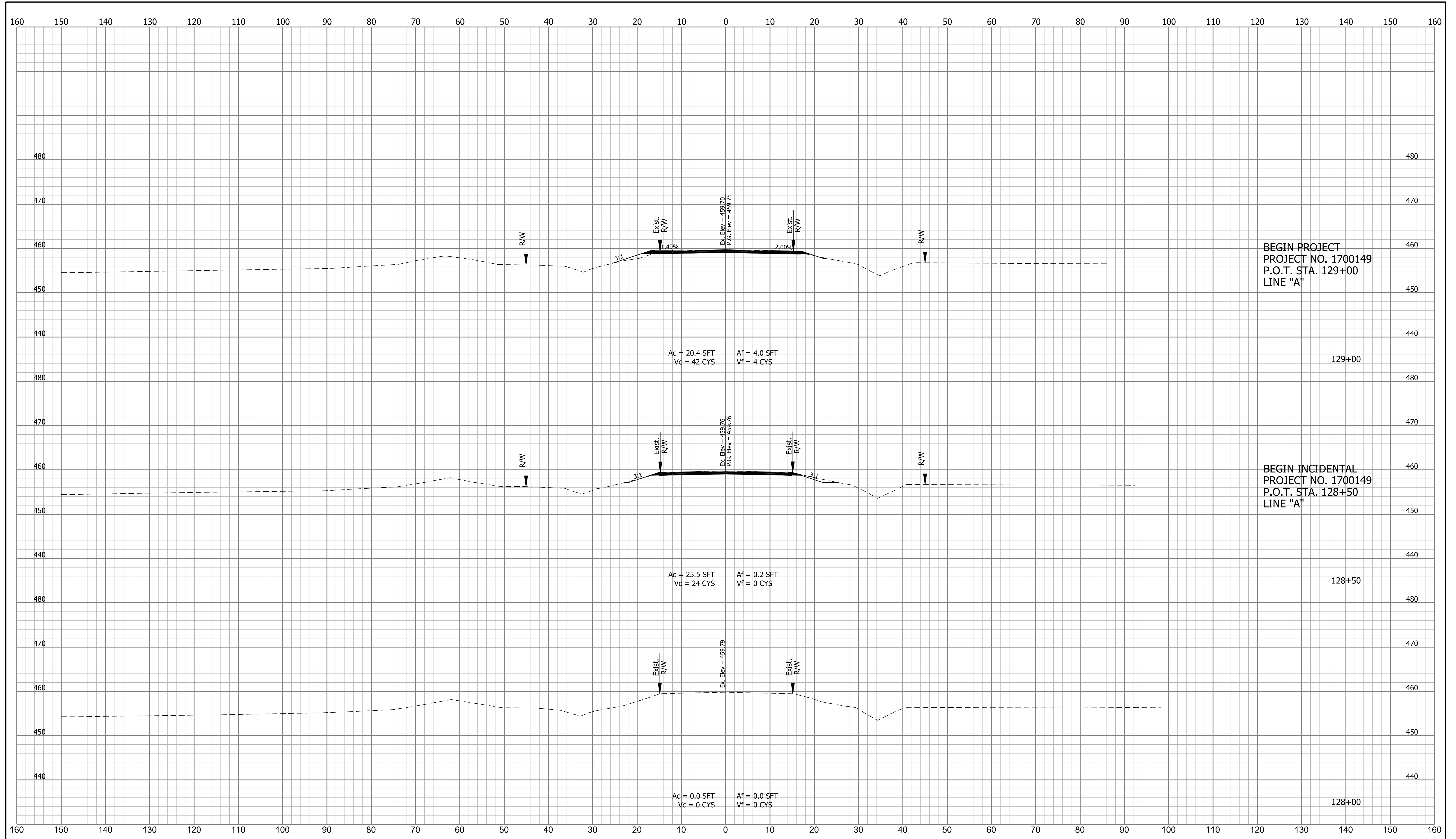
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INDIANA
DEPARTMENT OF TRANSPORTATION

EROSION CONTROL SOILS MAP

HORIZONTAL SCALE 1"=100'	BRIDGE FILE 159-42-10339
VERTICAL SCALE 1"=100'	DESIGNATION 1700149
SURVEY BOOK ELECTRONIC	SHEETS 12 of 15
CONTRACT B-40554	PROJECT 1700149



BEGIN PROJECT
PROJECT NO. 1700149
P.O.T. STA. 129+00
LINE "A"

129+00

BEGIN INCIDENTAL
PROJECT NO. 1700149
P.O.T. STA. 128+50
LINE "A"

128+50

128+00

NOTE TO REVIEWER
BENCHING WILL
BE ADDED IN FUTURE SUBMITTALS.

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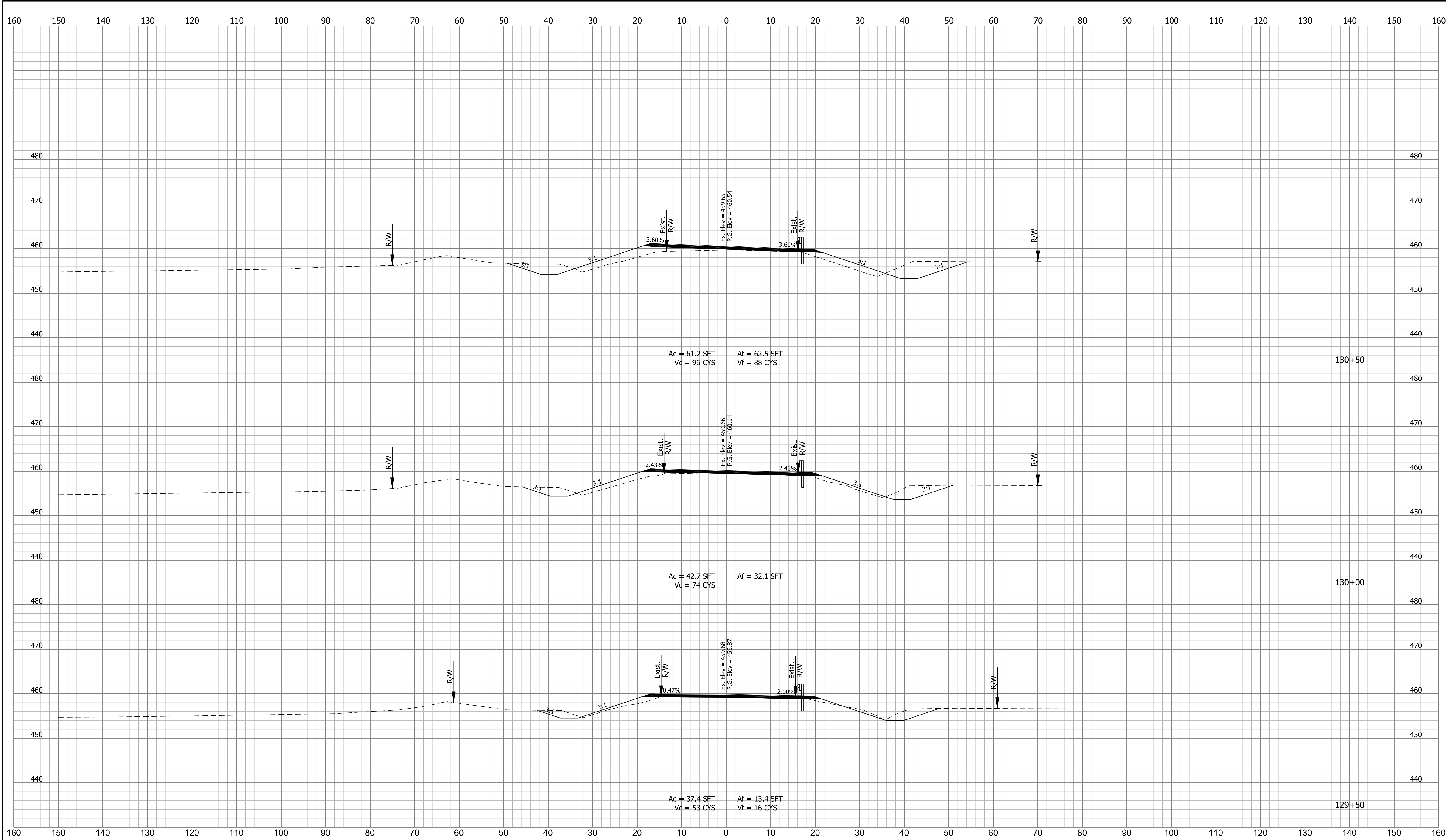
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DESIGNED: MR _____	DRAWN: MR _____	
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INDIANA
DEPARTMENT OF TRANSPORTATION

**CROSS SECTIONS
LINE "A"**

HORIZONTAL SCALE 1" = 10'-0"	BRIDGE FILE 159-42-10339
VERTICAL SCALE 1" = 10'-0"	DESIGNATION 1700149
SURVEY BOOK ELECTRONIC	SHEETS 10 of 15
CONTRACT B-40554	PROJECT 1700149

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NOTE TO REVIEWER
 BENCHING WILL
 BE ADDED IN FUTURE SUBMITTALS.

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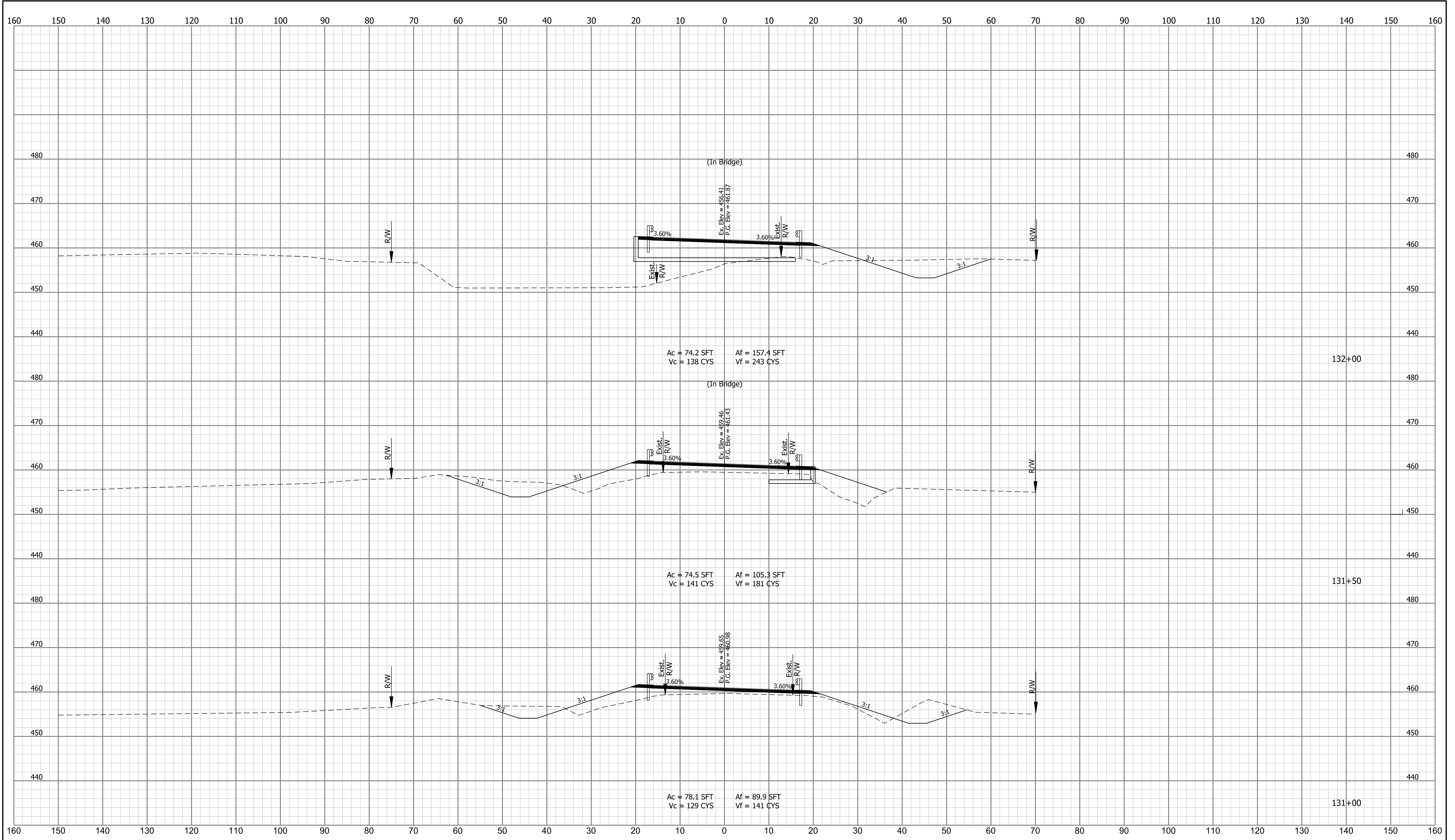
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DESIGNED: MR _____	DRAWN: MR _____	
CHECKED: AMK _____	CHECKED: AMK _____	

INDIANA
 DEPARTMENT OF TRANSPORTATION

**CROSS SECTIONS
 LINE "A"**

HORIZONTAL SCALE 1" = 10'-0"	BRIDGE FILE 159-42-10339
VERTICAL SCALE 1" = 10'-0"	DESIGNATION 1700149
SURVEY BOOK ELECTRONIC	SHEETS 11 of 15
CONTRACT B-40554	PROJECT 1700149

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NOTE TO REVIEWER
 BENCHING WILL
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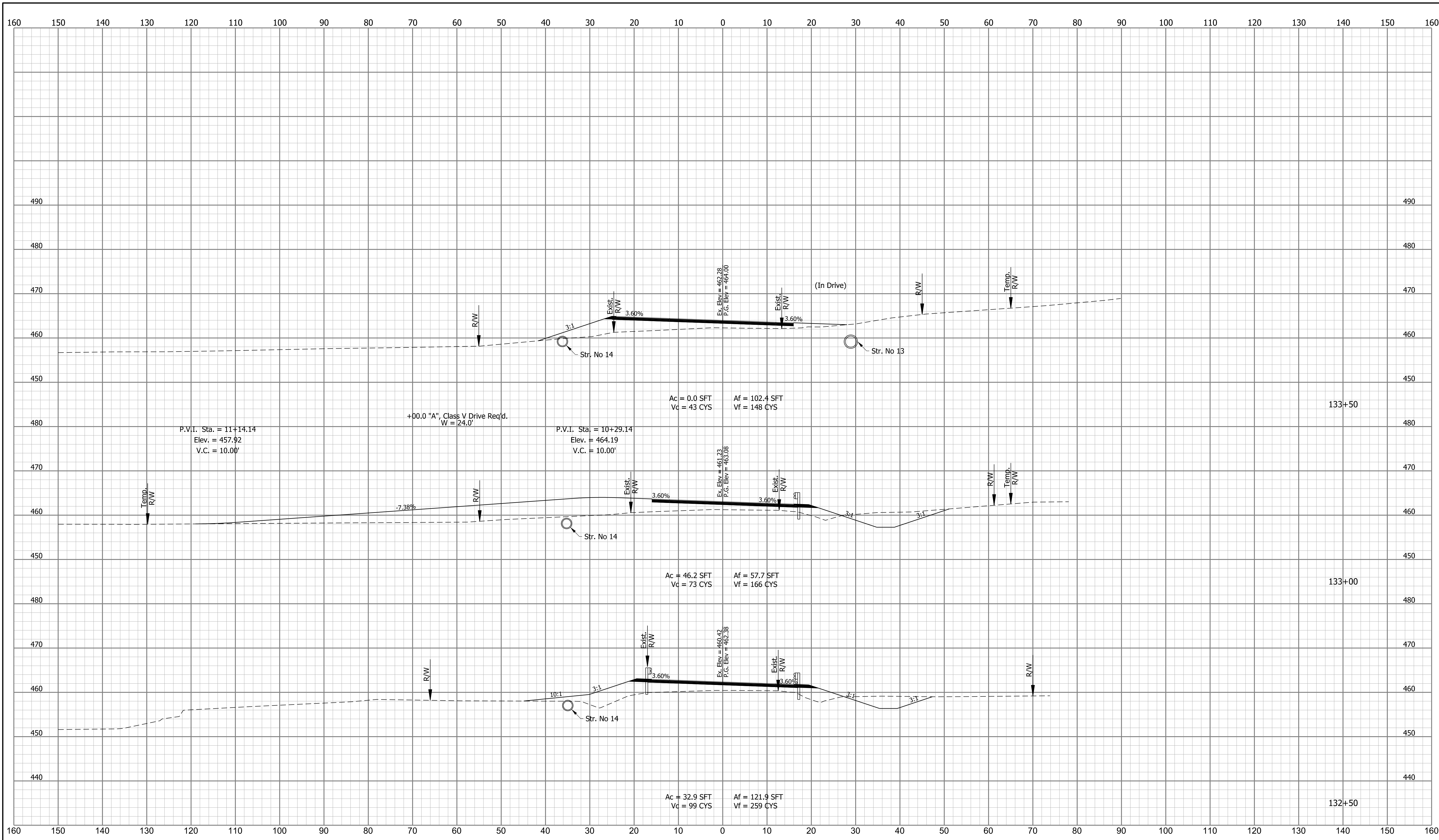
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DESIGNED: MR _____	DRAWN: MR _____	
CHECKED: AMK _____	CHECKED: AMK _____	

INDIANA
 DEPARTMENT OF TRANSPORTATION

**CROSS SECTIONS
 LINE "A"**

HORIZONTAL SCALE 1" = 10'-0"	BRIDGE FILE 159-42-10339
VERTICAL SCALE 1" = 10'-0"	DESIGNATION 1700149
SURVEY BOOK ELECTRONIC	SHEETS 12 of 15
CONTRACT B-40554	PROJECT 1700149

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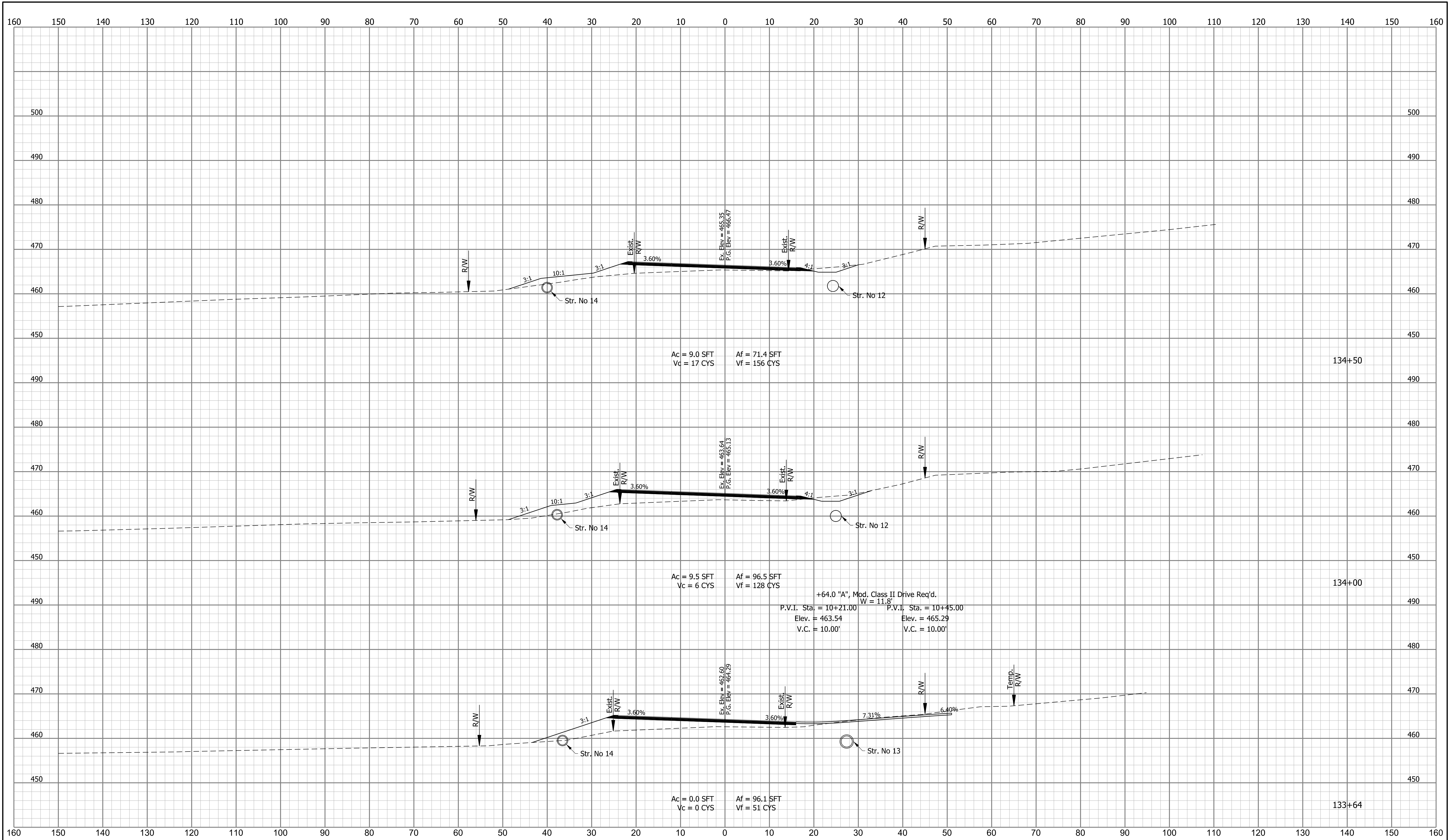
NOTE TO REVIEWER
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RECOMMENDED FOR APPROVAL _____	DESIGN ENGINEER _____	DATE _____
DESIGNED: MR _____	DRAWN: MR _____	
CHECKED: AMK _____	CHECKED: AMK _____	

INDIANA DEPARTMENT OF TRANSPORTATION
CROSS SECTIONS LINE "A"

HORIZONTAL SCALE 1" = 10'-0"	BRIDGE FILE 159-42-10339
VERTICAL SCALE 1" = 10'-0"	DESIGNATION 1700149
SURVEY BOOK ELECTRONIC	SHEETS 13 of 15
CONTRACT B-40554	PROJECT 1700149

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NOTE TO REVIEWER
 BENCHING WILL
 BE ADDED IN FUTURE SUBMITTALS.

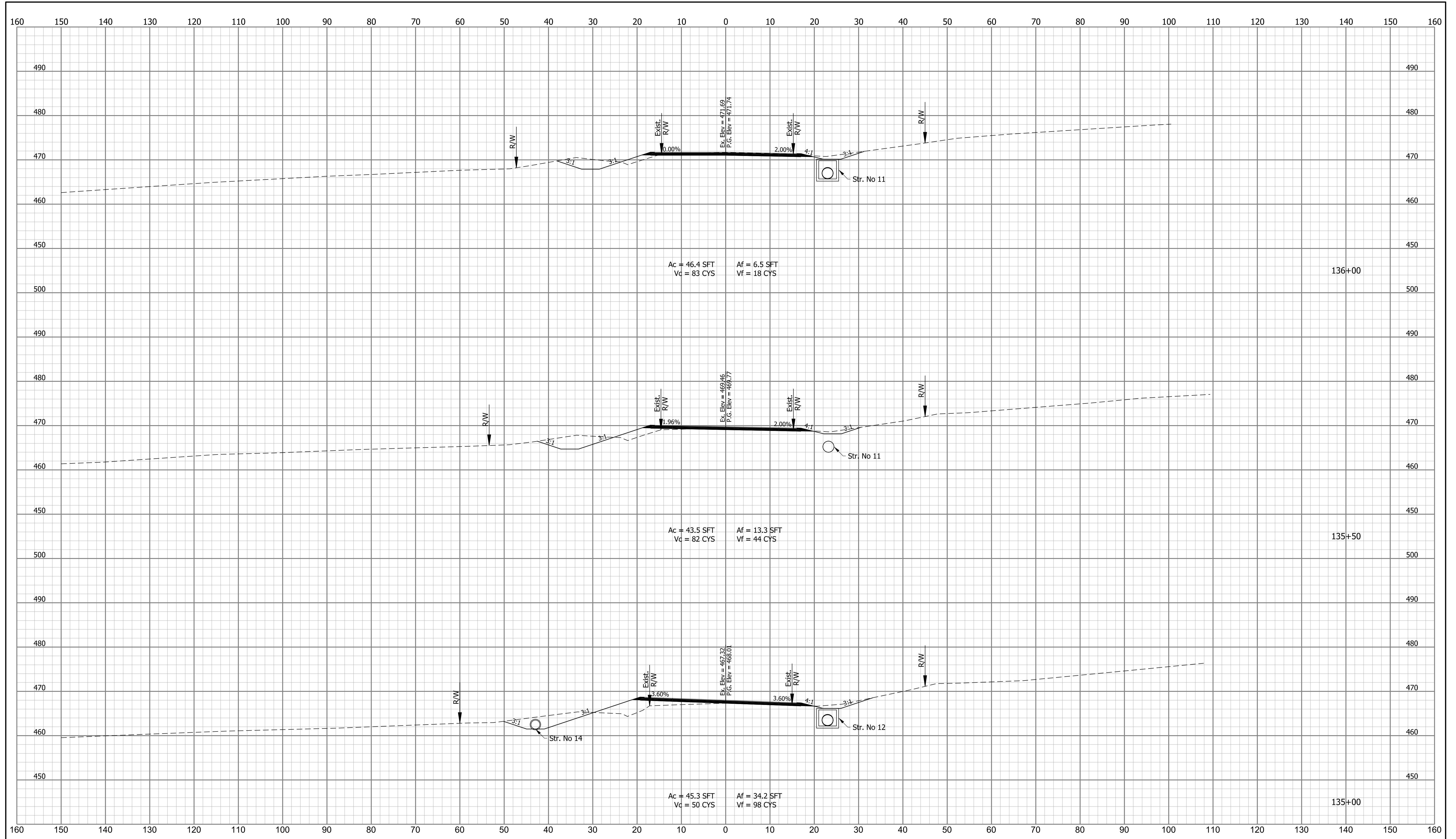
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RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: MR	DRAWN: MR	
CHECKED: AMK	CHECKED: AMK	

INDIANA
 DEPARTMENT OF TRANSPORTATION

**CROSS SECTIONS
 LINE "A"**

HORIZONTAL SCALE 1" = 10'-0"	BRIDGE FILE 159-42-10339
VERTICAL SCALE 1" = 10'-0"	DESIGNATION 1700149
SURVEY BOOK ELECTRONIC	SHEETS 14 of 15
CONTRACT B-40554	PROJECT 1700149



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NOTE TO REVIEWER

BENCHING WILL
BE ADDED IN FUTURE SUBMITTALS.

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RECOMMENDED FOR APPROVAL _____	DESIGN ENGINEER _____	DATE _____
DESIGNED: MR _____	DRAWN: MR _____	
CHECKED: AMK _____	CHECKED: AMK _____	

INDIANA
DEPARTMENT OF TRANSPORTATION

**CROSS SECTIONS
LINE "A"**

HORIZONTAL SCALE 1" = 10'-0"	BRIDGE FILE 159-42-10339
VERTICAL SCALE 1" = 10'-0"	DESIGNATION 1700149
SURVEY BOOK ELECTRONIC	SHEETS 15 of 15
CONTRACT B-40554	PROJECT 1700149

SR 159 over Wells Ditch Bridge Replacement
Knox County, Indiana
Des. No. 1700149

Appendix C: Re-Coordination

From: [Stanifer, Christie](#)
To: [Richard Connolly](#)
Subject: RE: ER-21976 SR 159 over Wells Ditch Coordination Revision
Date: Tuesday, September 15, 2020 7:59:57 AM
Attachments: [image002.png](#)

Good morning, Mr. Connolly:

This increase in right-of-way for this project does not change any of the recommendations in our previous letter. All recommendations in our letter still apply.

Sincerely,

Christie L. Stanifer
Environmental Coordinator
Indiana Department of Natural Resources
Division of Fish & Wildlife
402 West Washington St, Room W273
Indianapolis, IN 46204
Direct: (317) 232-8163
www.dnr.IN.gov

** Please let us know about the quality of our service by taking this [brief customer survey](#).*

From: Richard Connolly [mailto:rconnolly@HNTB.com]
Sent: Monday, September 14, 2020 10:18 AM
To: Stanifer, Christie <cstanifer@dnr.IN.gov>
Subject: ER-21976 SR 159 over Wells Ditch Coordination Revision

****** This is an EXTERNAL email. Exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email. ******

Ms. Stanifer,

On November 6, 2019 our subconsultant Kaskaksia, sent you the initial early coordination letter for this project to which you responded on December 12, 2019 (see attached). The initial coordination letter stated that "The project would require the acquisition of 0.7 acre of permanent right-of-way. Proposed right-of-way widths along SR 159 would be 50 feet maximum to the west and 55 feet maximum to the east from centerline. The project limits would be approximately 750 feet in length."

Since then the ROW for the project has increased to a total of approximately 1.7 acres. Proposed ROW widths will now be 80' maximum to the east and 85' maximum to the west from the centerline of SR 159 and 880 feet in total length.

Please let me know if your agency has any additional comments or recommendations based on this

increase to the ROW foot print of this project.

Richard J. Connolly, CPESC

Science Project Manager

Environmental Planning

Tel (317) 917-5333 Cell (317) 627-5311 Email rconnolly@hntb.com

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This e-mail and any files transmitted with it are confidential and are intended solely for the use of the individual or entity to whom they are addressed. If you are NOT the intended recipient and receive this communication, please delete this message and any attachments. Thank you.

October 5, 2020

Virginia Flynn
Kaskaski Engineering Group, LLC
323 Main Street, Suite E
Evansville, Indiana 47708

Dear Ms. Flynn:

The revised project to replace the bridge that carries State Road 159 over Wells Ditch in Knox County, Indiana (Des No. 1700149), as referred to in your letter received November 6, 2019, will cause a conversion of prime farmland.

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

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

Sincerely,

RICHARD Digitally signed by
RICHARD NEILSON
NEILSON Date: 2020.10.05
15:14:30 -04'00'

RICK NEILSON
State Soil Scientist

Enclosures



FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request			
Name of Project DES1700149 SR159 Bridge Replaceme		Federal Agency Involved			
Proposed Land Use		County and State Knox County, Indiana			
PART II (To be completed by NRCS)		Date Request Received By NRCS 9/18/2020		Person Completing Form: JRA	
Does the site contain Prime, Unique, Statewide or Local Important Farmland? <i>(If no, the FPPA does not apply - do not complete additional parts of this form)</i>		YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>	Acres Irrigated	Average Farm Size 627 ac
Major Crop(s) Corn	Farmable Land In Govt. Jurisdiction Acres: 296184 % 88	Amount of Farmland As Defined in FPPA Acres: 258203 % 77			
Name of Land Evaluation System Used LESA	Name of State or Local Site Assessment System	Date Land Evaluation Returned by NRCS 10/5/2020			
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		0.02			
B. Total Acres To Be Converted Indirectly		0.76			
C. Total Acres In Site		0.78			
PART IV (To be completed by NRCS) Land Evaluation Information					
A. Total Acres Prime And Unique Farmland		0.61			
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		80			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)		64			
PART VI (To be completed by Federal Agency) Site Assessment Criteria <i>(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)</i>		Maximum Points	Site A	Site B	Site C
1. Area In Non-urban Use		(15)	15		
2. Perimeter In Non-urban Use		(10)	10		
3. Percent Of Site Being Farmed		(20)	16		
4. Protection Provided By State and Local Government		(20)	0		
5. Distance From Urban Built-up Area		(15)	15		
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)	0		
9. Availability Of Farm Support Services		(5)	3		
10. On-Farm Investments		(20)	15		
11. Effects Of Conversion On Farm Support Services		(10)	0		
12. Compatibility With Existing Agricultural Use		(10)	0		
TOTAL SITE ASSESSMENT POINTS		160	89	0	0
PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)		100	64	0	0
Total Site Assessment (From Part VI above or local site assessment)		160	89	0	0
TOTAL POINTS (Total of above 2 lines)		260	153	0	0
Site Selected: A		Date Of Selection 10/6/2020		Was A Local Site Assessment Used? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	
Reason For Selection:					
Name of Federal agency representative completing this form: Richard Connolly					Date: 10/6/2020

(See Instructions on reverse side)

Form AD-1006 (03-02)

SR 159 over Wells Ditch Bridge Replacement
Knox County, Indiana
Des. No. 1700149

Appendix D: Public Involvement

(Appendix to be populated after PI requirements are completed)

SR 159 over Wells Ditch Bridge Replacement
Knox County, Indiana
Des. No. 1700149

Appendix E: Additional Information

From: [Engstrom, Maryssa H](#)
To: [Richard Connolly](#)
Cc: [Rehder, Crystal](#)
Subject: RE: Des 1700149 Waters Report - Revised area
Date: Wednesday, September 16, 2020 2:50:33 PM
Attachments: [image002.png](#)

Hello Richard,

Thanks for giving us a chance to comment. We also reviewed the area and agree that the area investigated is representative of the entire area due to topography causing water to drain to the investigated stream and we believe WOTUS does demonstrate ROW is mowed with uniform veg. This is slightly unusual, but in this case we agree the approved WOTUS can be used moving forward.

Thanks again!

Maryssa H. Engstrom

Vincennes District, Ecology and Waterway Permitting Office

INDOT Environmental Services

100 N Senate Ave, Room 642-ES

Indianapolis, IN 46204

Phone: (317).234.5241

From: Richard Connolly <rconnolly@HNTB.com>
Sent: Tuesday, September 15, 2020 3:14 PM
To: Engstrom, Maryssa H <MEngstrom@indot.IN.gov>
Subject: Des 1700149 Waters Report - Revised area

****** This is an EXTERNAL email. Exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email. ******

Maryssa,

Good afternoon. I've got a Waters Report question I'd like to run by you regarding the project area shown on the Approved Waters Report.

This waters report was approved by Nick Cooper back in February 2020. Since approval of the Waters Report the projects construction limits, right-of-way, and project area have expanded somewhat from what was shown in the waters report as the "investigated area". See attached pdfs for the project area in the initial Waters Report and a sketch of the revised project limits. The red "investigated area" shown in the graphic is from the waters report. The yellow is the current construction limits.

I'm trying to determine whether an amendment or revision will be required for this increase. Based on the photos in the initial waters report and a look through the google earth street view it doesn't look like there are any additional features within the construction limits. Additionally, any

From: [Foheybreting, Nicole K](#)
To: [Richard Connolly](#)
Subject: RE: Des 1700149 RFI Project area
Date: Tuesday, September 15, 2020 2:20:51 PM
Attachments: [image004.png](#)
[image005.png](#)
[image006.png](#)
[image007.png](#)
[image008.png](#)
[image009.png](#)
[image011.png](#)

Greetings Richard –

It does not appear as though significant project changes have occurred and additional recommendations are not needed. An addendum is not warranted and the updates can be summarized in the environmental document.

Sincerely,
Nicole

Nicole Fohey-Breting

Site Assessment & Management (SAM) Specialist

100 North Senate Avenue RM N642

Indianapolis, Indiana 46204

Office: (317) 232-0626

Email: NFoheyBreting@indot.in.gov



The Site Assessment and Management (SAM) Manual can be found at

<http://www.in.gov/indot/2523.htm>

Be sure to refer to the updated information in the SAM Manual for document preparation and submission.

From: Richard Connolly <rconnolly@HNTB.com>
Sent: Tuesday, September 15, 2020 1:45 PM
To: Foheybreting, Nicole K <NFoheyBreting@indot.IN.gov>
Subject: Des 1700149 RFI Project area

****** This is an EXTERNAL email. Exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email. ******

Nicole,

Good afternoon. I've got a RFI question I'd like to run by you regarding the project area shown on the RFI.

You had approved the RFI for this project back in December of 2019. Since approval of the RFI the projects construction limits, right-of-way, and project area have expanded somewhat from what was shown in the RFI as the "project area". See attached pdfs for the initial RFI project area and a sketch of the revised project limits. The red "investigated area" shown in the graphic is from the waters report. The yellow is the current construction limits.

I'm trying to determine whether an amendment will be required for this increase. The only thing that would change in an amendment is the distances to the closest resource, no additional resources would be within the project area.

Let me know what you think or call if you would like to discuss further.

Thanks.

Richard J. Connolly, CPESC

Science Project Manager

Environmental Planning

Tel (317) 917-5333 Cell (317) 627-5311 Email rconnolly@hntb.com

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This e-mail and any files transmitted with it are confidential and are intended solely for the use of the individual or entity to whom they are addressed. If you are NOT the intended recipient and receive this communication, please delete this message and any attachments. Thank you.

HISPANIC OR LATINO ORIGIN BY RACE



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

	Knox County, Indiana	Census Tract 9551, Knox County, Indiana
Label	Estimate	Estimate
▼ Total:	37,409	3,050
▼ Not Hispanic or Latino:	36,692	3,021
White alone	34,727	3,006
Black or African American alone	1,070	0
American Indian and Alaska Native alone	36	0
Asian alone	299	2
Native Hawaiian and Other Pacific Islander alone	47	0
Some other race alone	16	0
▼ Two or more races:	497	13
Two races including Some other race	0	0
Two races excluding Some other race, and three or more races	497	13
▼ Hispanic or Latino:	717	29
White alone	508	29
Black or African American alone	12	0
American Indian and Alaska Native alone	0	0
Asian alone	0	0
Native Hawaiian and Other Pacific Islander alone	10	0
Some other race alone	171	0

Table Notes

HISPANIC OR LATINO ORIGIN BY RACE

Survey/Program:

American Community Survey

Universe:

Total population

Year:

2018

Estimates:

5-Year

Table ID:

B03002

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

Source: U.S. Census Bureau, 2014-2018 American Community Survey 5-Year Estimates

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

While the 2014-2018 American Community Survey (ACS) data generally reflect the February 2013 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

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

Explanation of Symbols:

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

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

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

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

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

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

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

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

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

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

POVERTY STATUS IN THE PAST 12 MONTHS BY SEX BY AGE



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

	Knox County, Indiana	Census Tract 9551, Knox County, Indiana
Label	Estimate	Estimate
▼ Total:	34,977	2,983
▼ Income in the past 12 months below poverty level:	6,009	203
▼ Male:	2,811	91
Under 5 years	459	12
5 years	72	2
6 to 11 years	376	0
12 to 14 years	119	0
15 years	26	0
16 and 17 years	60	8
18 to 24 years	503	12
25 to 34 years	301	1
35 to 44 years	178	2
45 to 54 years	342	18
55 to 64 years	268	15
65 to 74 years	73	13
75 years and over	34	8
▼ Female:	3,198	112
Under 5 years	179	2

Table Notes

POVERTY STATUS IN THE PAST 12 MONTHS BY SEX BY AGE

Survey/Program:

American Community Survey

Universe:

Population for whom poverty status is determined

Year:

2018

Estimates:

5-Year

Table ID:

B17001

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

Source: U.S. Census Bureau, 2014-2018 American Community Survey 5-Year Estimates

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

While the 2014-2018 American Community Survey (ACS) data generally reflect the February 2013 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

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

Explanation of Symbols:

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

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

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

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

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

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

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

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

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

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

Table: Minority and Low-income Data (US Census Bureau - 2018)			Percent Minority						Percent Low-Income			
	COC: Knox County	AC: Census Tract 9551, Knox County, Indiana	Total Population (County)	White Alone (County)	Minority Population (County)	Total Population (Census Tract)	White Alone (Census Tract)	Minority Population (Census Tract)	Total Population (County)	Below Poverty Level (County)	Total Population (Census Tract)	Below Poverty Level (Census Tract)
Percent Minority	7.2	1.4	37409	34727	2682	3050	3006	44	34977	6009	2983	203
125 percent of COC	9.0											
EJ Population of Concern		No										
Percent Low-Income	17.2	6.8										
125 percent of COC	21.5											
EJ Population of Concern		No										