

NWI – Wetlands: Three (3) wetland polygons are located within the 0.5-mile search radius. One (1) wetland polygon is located within the project area. A Waters of the US Report is recommended based on the mapped features, and coordination with INDOT ESD Ecology and Waterway Permitting will occur.

MINING AND MINERAL EXPLORATION TABLE AND SUMMARY

Mining/Mineral Exploration			
Indicate the number of items of concern found within the 0.5 mile search radius. If there are no items, please indicate N/A:			
Petroleum Wells	N/A	Mineral Resources	N/A
Mines – Surface	3	Mines – Underground	N/A

Explanation:

Mines – Surface: Three (3) surface mines are located within the 0.5-mile search radius. The nearest mine is located 0.25 mile east 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	N/A
Infectious/Medical Waste Sites	N/A	NPDES Pipe Locations	N/A
Leaking Underground Storage (LUST) Sites	N/A	Notice of Contamination Sites	N/A

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

Explanation: No Hazardous Material Concerns were identified within the 0.5-mile search radius.

ECOLOGICAL INFORMATION SUMMARY

The Vigo County listing of the Indiana Natural Heritage Data Center information on endangered, threatened, or rare (ETR) species and high-quality natural communities is provided at https://www.in.gov/dnr/nature-preserves/files/np_vigo.pdf. A preliminary review of the Indiana Natural Heritage Database by INDOT ESD did not indicate the presence of ETR species within the 0.5-mile search radius.

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 area is located in a rural area surrounded by agricultural and forest land. The October 6, 2022, inspection report for Culvert #CV 159-084-23.30 states that no evidence of bats was seen or heard in culvert. The range-wide programmatic consultation for the Indiana Bat and Northern Long-eared Bat will be completed according to the most recent "Using the USFWS's IPaC System for Listed Bat Consultation for INDOT Projects".

RECOMMENDATIONS SECTION

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

INFRASTRUCTURE: N/A

WATER RESOURCES: A Waters of the US Report is recommended based on the presence of mapped features, and coordination with INDOT ESD Ecology and Waterway Permitting will occur for the following features:

- One (1) NWI-line segment flows through the project area.
- One (1) river and stream is located within the project area.
- One (1) wetland polygon is located within the project area.

IDEM 303d Listed Streams and Lakes (Impaired): One (1) segment is located within the project area. UNT to Splunge Creek is listed as impaired for E coli. Workers who are working in or near water with E. coli should take care to wear appropriate PPE, observe proper hygiene procedures, including regular hand washing, and limit personal exposure.

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 be completed according to the most recent "Using the USFWS's IPaC System for Listed Bat Consultation for INDOT Projects".

Peter
Washburn

Digitally signed by Peter
Washburn
Date: 2023.07.25 12:10:10
-04'00'

(Signature)

INDOT ESD concurrence: _____

Prepared by:
Ryan Silvers
Environmental Manager 2
INDOT Crawfordsville DE

Graphics:

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

SITE LOCATION: YES

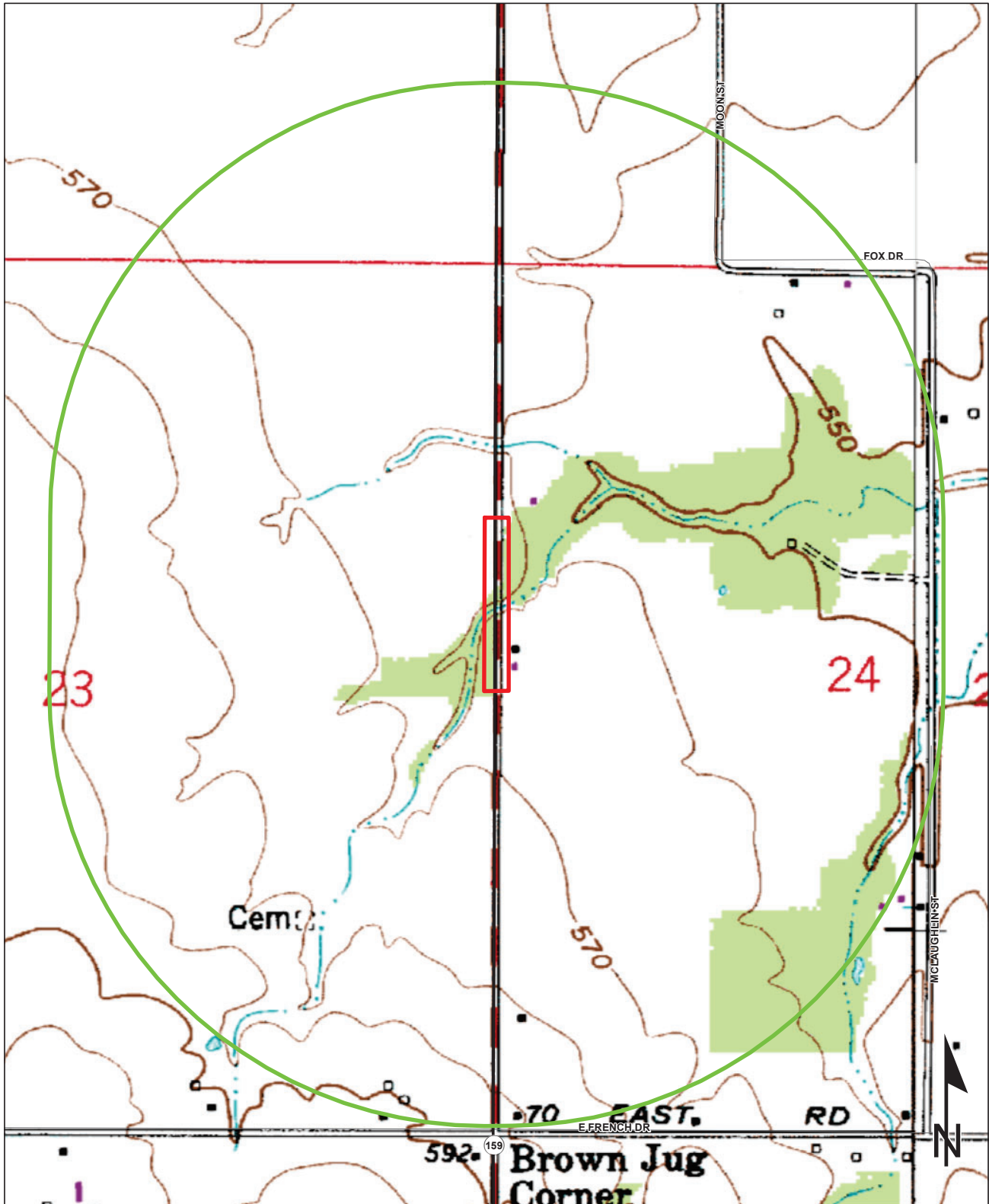
INFRASTRUCTURE: YES

WATER RESOURCES: YES

MINING/MINERAL EXPLORATION: YES

HAZARDOUS MATERIAL CONCERNS:N/A

Red Flag Investigation - Site Location
 SR 159 over UNT to Splunge Creek, 4.15 Miles North of SR 246
 Des. No. 2002197, Small Structure Replacement
 Vigo County, 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.

**LEWIS QUADRANGLE
 INDIANA
 7.5 MINUTE SERIES
 (TOPOGRAPHIC)**

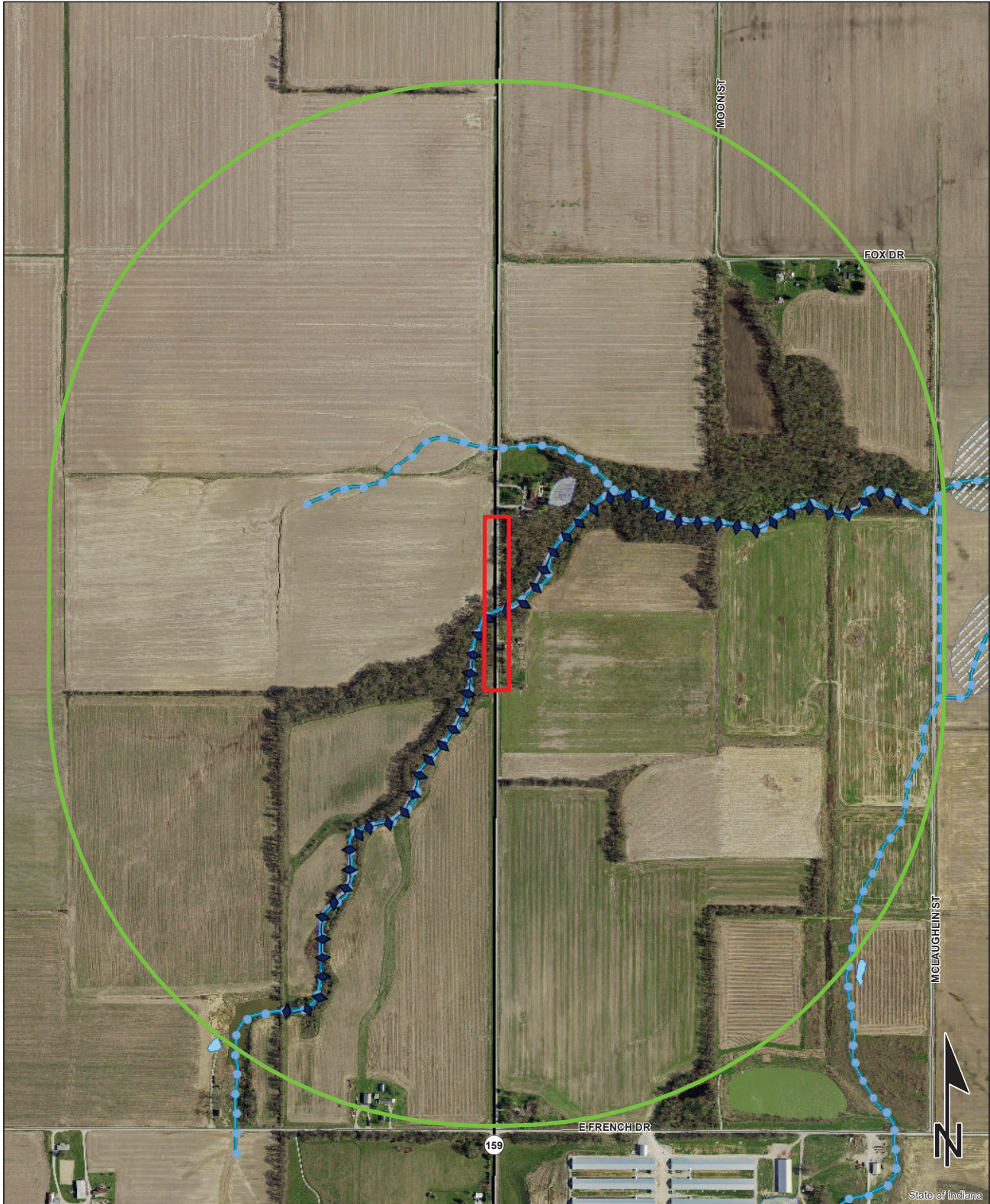
Red Flag Investigation - Infrastructure
 SR 159 over UNT to Splunge Creek, 4.15 Miles North of SR 246
 Des. No. 2002197, Small Structure Replacement
 Vigo County, Indiana



Sources: 0.1 0.05 0 0.1 Miles
Non Orthophotography
 Data - Obtained from the State of Indiana Geographical Information Office Library
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 Map Projection: UTM Zone 16 N Map Datum: NAD83
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	Religious Facility		Recreation Facility		Project Area
	Airport		Pipeline		Half Mile Radius
	Cemeteries		Railroad		Toll
	Hospital		Trails		Interstate
	School		Managed Lands		State Route
			County Boundary		US Route
					Local Road

Red Flag Investigation - Water Resources
 SR 159 over UNT to Splunge Creek, 4.15 Miles North of SR 246
 Des. No. 2002197, Small Structure Replacement
 Vigo County, Indiana



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

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



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

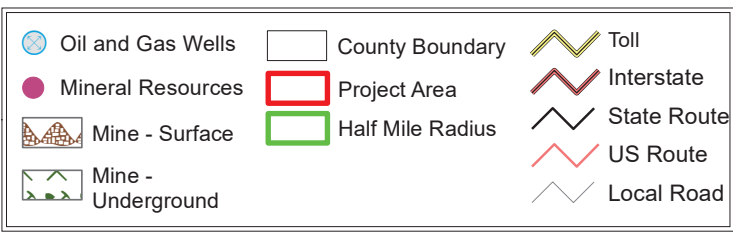
Red Flag Investigation - Mining/Mineral Exploration
 SR 159 over UNT to Splunge Creek, 4.15 Miles North of SR 246
 Des. No. 2002197, Small Structure Replacement
 Vigo County, Indiana



0.1 0.05 0 0.1 Miles

Sources:
Non Orthophotography
Data - Obtained from the State of Indiana Geographical Information Office Library
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Appendix F: Waters of the U.S. Report

Waters of the US Report Text (Approved 9/7/2023).....	F-1 – F-6
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WATERS OF THE US REPORT
Small Structure Project at SR 159 over UNT to Splunge Creek
4.15 Miles North of SR 246
Vigo County

Designation Number: 2002197

Prepared by: Brock N. Ervin
INDOT, Crawfordsville District
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Report Date: August 15, 2023

APPROVED

Justus McMill
9/7/23

I: PROJECT INFORMATION

Date(s) of Field Reconnaissance: August 25, 2022

This report is valid for five years after the first day that fieldwork was conducted. It expires August 25, 2027.

Project Location (pages 7 to 8):

SR 159 at Splunge Creek, 4.15 Miles North of SR 246 (RP 23+38)
PLSS Sections 23 and 24 of Township 10 North, Range 8 West
USGS 7.5' Lewis Quadrangle
Pierson Civil Township, Vigo County
Latitude: 39.297099°, Longitude: -87.258971°

Project Description:

INDOT, Crawfordsville District, has programmed a FHWA-funded small structure project, Des. No. 2002197, to address the deteriorating condition of a small structure carrying SR 159 over an unnamed tributary (UNT) to Splunge Creek in Vigo County at reference post (RP) 23+38.

The SR 159 small structure at UNT to Splunge Creek is identified as Str. No. CV 159-084-23.30. The small structure consists of twin elliptical 47-foot-long steel pipes, each 8.5 feet wide by six feet high, with no skew to the road. At each end, the structure is stabilized by concrete anchors on both sides and in between the pipes. Existing right-of-way is limited to the edge of pavement, approximately 11 feet to either side of the roadway centerline. The preferred alternative to address the deteriorating structure is to replace the twin pipes with a new small structure.

II: DESKTOP RECONNAISSANCE

Desktop Methodology:

The limits of the area of investigation (AOI) used for review of surface water features, as shown on page 9, was determined in consultation with the project designer. A GIS-based desktop review of information from numerous sources was conducted to identify potential water features in or near the AOI, which was used to inform the field investigation.

USGS Topographic and NHD Mapping:

The United States Geological Survey (USGS) 7.5-minute Lewis Quadrangle topographic map (page 8) identifies UNT to Splunge Creek as the only stream feature within the AOI, which is mapped as an intermittent dashed blue-line stream. In addition to UNT to Splunge Creek, USGS National Hydrography Dataset (NHD) mapping identifies one other flowline within the AOI (page 10), which originates nearby in the agricultural field in the northwest quadrant of the project area, which then crosses beneath SR 159 approximately 190 feet north of the subject culvert, and then joins UNT to Splunge Creek beyond the AOI.

NWI Wetland Mapping:

The US Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) mapping (page 12) identifies UNT to Splunge Creek as a wetland line. It also shows a narrow, linear wetland polygon feature along the same alignment, which is classified as PFO1A. The wetland polygon is likely intended to represent UNT to Splunge Creek as well; however, both the wetland line and the wetland polygon are shifted roughly 50 feet southward of the actual location of the creek.

Floodplain Mapping and Drainage Area:

The AOI is located within the Splunge Creek USGS 12-Digit Watershed (051202030802, page 13). Federal Emergency Management Agency (FEMA) floodplain mapping was reviewed (page 12), and an Indiana Department of Natural Resources (IDNR) Floodplain Analysis & Regulatory Assessment (FARA) Report was generated for the project (page 15). The FEMA mapping and FARA Report show that the project is not located within the limits of any waterway with a delineated 100-year floodplain. A USGS StreamStats Report was generated to determine the upstream drainage area. Based on a point at the eastern limits of the AOI, the upstream drainage area of UNT to Splunge Creek is 0.372 square mile (pages 13 and 14).

NRCS Mapped Soil Units:

According to mapping for Vigo County, Indiana, from the Soil Survey Geographic Database (SSURGO), compiled by the National Resources Conservation Service (NRCS), the following soil units are located within the AOI.

Table 1: NRCS SSURGO Mapped Soil Units (see pages 11)

Soil Unit Name	Symbol	NRCS Flooding Frequency	NRCS Drainage Class	NRCS Hydric Soil Category	SSURGO Hydric Rating	Percent Area of AOI
Ava silt loam, 2 to 6 percent slopes, eroded	AvB2	None	Moderately Well Drained	Not Hydric	0%	51.7%
Iva silt loam, 0 to 2 percent slopes	IvA	None	Somewhat Poorly Drained	Predominantly Non-Hydric	5%	48.3%

Aerial Imagery:

Aerial imagery from 2018 (page 9) was reviewed for indications of surface water features within or near the AOI, in conjunction with or separate from the potential water features identified above. UNT to Splunge Creek presented a recognizable aerial signature, but the NHD-mapped flowline north of the creek could not be confirmed by aerial. Indications of roadside ditches on the aerial imagery appeared to be present in all four quadrants of the AOI. No indications of any other streams, ponds, or wetlands were discernable based on aerial imagery within the AOI.

III: FIELD RECONNAISSANCE**Field Methodology:**

The entire AOI was reviewed for surface water features via a walking survey. Mapped features were investigated. Waterways exhibiting an ordinary high-water mark (OHWM) and a defined bed and bank were assumed to be jurisdictional streams. The surface areas of all streams in this report are estimated by multiplying the length of the stream within the AOI by the width of its OHWM. Areas meeting the USACE Midwest Region wetland criteria were assumed to be jurisdictional. The ordinary high-water mark (OHWM) of each identified stream was obtained using a measuring tape when conditions were safe to do so; otherwise, aerial imagery and USGS stream gage data were used.

Field-Identified Streams:

A field investigation for stream features in or adjacent to the AOI was conducted on August 25, 2022. The investigation confirmed the presence of one stream within the AOI, UNT to Splunge Creek, that is likely to be a water of the US (see Table 2, below). Approximately 176 linear feet and 0.0566 acre of UNT to Splunge Creek are within the AOI, and it is likely a jurisdictional stream. See page 16 for a map of field-identified surface water features.

Table 2: Stream Summary Table

Name	Photo Numbers	Latitude/Longitude*	OHWL Width and Depth	Stream Length in AOI	USGS Blue-Line & Type	Cowardin Classing	Riffles/ Pools	Dominant Substrate	Quality	Likely Water of US
UNT to Splunge Creek	1 to 19	39.297099°/-87.258971°	14 ft. wide 30 in. deep	176 ft.	Yes Intermittent	R4SB5C	None	Clay, Silt, Sand	Average	Yes
Total Linear Feet of Streams Within AOI: Total Area of Streams Within AOI:				176 linear feet 0.0566 acre						

*If a stream feature crosses a road within the AOI, the latitude and longitude of the crossing is provided.

UNT to Splunge Creek

UNT to Splunge Creek is a USGS-mapped intermittent blue-line stream that generally flows east through the AOI beneath SR 159, which is carried by Str. No. CV 159-084-23.30. The SR 159 small structure is proposed for replacement. Within the AOI, UNT to Splunge Creek was moderately incised, having a bank-full elevation of approximately six to eight feet. At the time of the field visit, there was no perceptible flow along the channel, but water was ponded along nearly its entire length, except within the twin pipes of the small structure. With the exception of the scour holes near the inlet of the small structure (Photos 2 to 5), water depth was one to three inches deep. The OHWM was taken upstream of the small structure beyond the influence of scouring, where it measured 14 feet wide and 30 inches deep (Photo 1). Downstream of the small structure, the stream was approximately ten feet wide (Photo 17).

Based on field observations of flow and substrate, UNT to Splunge Creek was classified through the Cowardin system as an intermittent, seasonally-flooded riverine streambed with a mud substrate (R4SB5C). Per USGS StreamStats, UNT to Splunge Creek has an upstream drainage area of 0.372 square mile, as measured from the point where the stream leaves the AOI to the east. In the immediate project area, UNT to Splunge Creek has a wide forested riparian corridor along both sides of SR 159. A review of aerial imagery shows a substantial forested riparian corridor upstream of the AOI, but a very narrow one for most of its 2.8-mile length until its confluence with Splunge Creek, along which it is bordered by agricultural fields. No faunae were observed within the creek. Based on these considerations, UNT to Splunge Creek was determined to have average stream quality compared to similarly sized waterways.

Approximately 176 linear feet and 0.0566 acre of UNT to Splunge Creek are located within the AOI. UNT to Splunge Creek has an OHWM and a defined bed and bank, and it is a tributary to Splunge Creek, which is a tributary to the Eel River, which is a navigable water of the US. Therefore, UNT to Splunge Creek is also likely to be a water of the US.

Field-Identified Wetlands:

A field investigation for potential wetlands within or adjacent to the AOI was conducted on August 25, 2022. Four wetland determination points were taken (see Table 4, next page), identifying one wetland within the AOI, with an area of 0.0753 acre (see Table 3, next page). See page 16 for a map of field-identified surface water features.

Wetland A

Wetland A is a palustrine emergent wetland with persistent vegetation (PEM1) located along and somewhat beyond the roadside ditch, RSD-3, in the northeast quadrant of the AOI (page 16). Wetland A consists of numerous FAC, FACW, and OBL species along its length, including *Echinochloa crus-galli* (large barnyard grass, FACW), *Panicum dichotomiflorum* (fall panic grass, FACW), *Persicaria hydropiper* (mild water-pepper, OBL), *Bidens frondosa* (devil's-pitchfork, FACW), *Cyperus esculentus* (chufa, FACW), *Eupatorium serotinum* (late-flowering thoroughwort, FAC), *Eupatorium perfoliatum* (common boneset, OBL), *Carex vulpinoidea* (common fox sedge, FACW), and *Ambrosia trifida* (great ragweed, FAC). Florae beyond the mainline of the roadside ditch varied from being dominantly wetland species to dominantly non-wetland species. The dominant indicator statuses appeared to be a factor of subtle changes in topography, indicating changes in hydrology based on elevation. As wetland hydrology appeared to be mostly

associated with topography, the vegetative review for wetland indicators was restricted to the area defined by lower topography and hydrophytic vegetation. Based on these criteria, the tree, sapling/shrub, and woody vine strata were not present.

Table 3: Wetlands Summary Table

Wetland Name	Photo Numbers	Latitude/ Longitude	Cowardin Classing	Notes	Total Area (acres)	Quality	Likely Water of US
Wetland A	71 to 73 82 to 90	39.297855° -87.258869°	PEM1B	Located in the northeast quadrant of the SR 159 Crossing at UNT to Splunge Creek along RSD-3	0.0753 ac.	Average	Yes
Total Wetland Acreage Within AOI:					0.0753 acre		

Table 4: Wetland Data Point Summary Table

Data Point	NWI Mapped Wetlands	SSURGO Hydric Rating	IDNR Mapped Floodplain	Hydrophytic Vegetation Present	Hydric Soils Present	Wetland Hydrology Present	Wetland
1-OUT (Page 37)	No	0% Hydric	No	Yes • Dominance Test	No	No • FAC-Neutral Test	No
2-OUT (Page 39)	No	5% Hydric	No	No	No	No	No
3-OUT (Page 41)	No	5% Hydric	No	Yes • Dominance Test	Yes • Depleted Matrix	No • FAC-Neutral Test	No
A-IN (Page 43)	No	5% Hydric	No	Yes • Rapid Test • Dominance Test • Prevalence Test	Yes • Depleted Below Dark Surface • Depleted Matrix	Yes • Geomorphic Position • FAC-Neutral Test	Yes

Data point A-IN was taken in the northeast quadrant of the AOI along a part of the eastern roadside ditch that was poorly defined compared to the northern portion. The data point is located above the bottom of the ditch, but lower than the forested area and other segments of the right-of-way (see Photos 82, 84, and 91). Data point A-IN exhibited three wetland vegetation indicators: The Rapid Test, Dominance Test, and Prevalence Index. Soil samples exhibited hydric soil indicators for Depleted Below Dark Surface and Depleted Matrix. While no primary hydrology indicators were present, the two secondary indicators of Geomorphic Position and FAC-Neutral Test were present. Unlike the test pits at the three other data points taken within the AOI that were completely dry, soils at this point were moist and nearly saturated at the bottom. Data point A-IN (page 43) met all three wetland criteria, indicating that it was within a wetland. The wetland boundary was poorly associated with hydrophytic vegetation and appeared to be more dependent on small changes in topography. Additionally, a heavy rain occurred four days prior, with 1.78 inches being recorded at the closest National Weather Service station (page 36), which does not appear to have provided sufficient water to cause long-term ponding or saturation. This indicates that the primary source of water for the wetland is likely associated with high groundwater levels during the spring season.

Wetland A was delineated to be 0.0753 acre. The boundary of the wetland was defined primarily by areas that maintained both lower topography and hydrophytic vegetation. Data point 3-OUT (page 41) was taken approximately 90 feet south of data point A-IN and ten feet from the eastern border of Wetland A. The vegetation identified at data point 3-OUT met the hydrophytic vegetation criteria, with four out of five dominant species having indicator statuses

of FACW. While the Depleted Matrix indicator for hydric soils was present, the criteria for wetland hydrology was not met, as only the FAC-Neutral Test indicator was present. The failure to meet wetland hydrology criteria confirmed that nearby areas outside of Wetland A, which are situated at or higher than data point 3-OUT, were not likely to be wetland. A second data point, data point 2-OUT (page 39), was taken approximately 40 feet south of the southern boundary of Wetland A, and no wetland indicators were observed. Additionally, the forested area east of Wetland A was reviewed (Photos 80 and 81), and no indications of wetland hydrology or vegetation were observed.

Wetland A contained no plants listed on the *Indiana Invasive Plant List*, but the USDA NRCS Plant Database lists large barnyard grass as being introduced, and many states and organizations consider it to be invasive. One other plant, Japanese honeysuckle, was identified nearby that is listed on the *Indiana Invasive Plant List*. Regardless of these two introduced species, Wetland A exhibited a high diversity of mostly native species. Due to these considerations, and because the small size of the wetland limits its beneficial functions and its value as wildlife habitat, Wetland A was determined to be an average-quality wetland compared to other wetlands of similar size and type.

Wetland A is situated along RSD-3, which outfalls into UNT to Splunge Creek, which was determined in this report to be a likely water of the US. Due to its hydrologic connection with a likely water of the US, which has connectivity to a navigable water of the US, Wetland A is also likely to be a water of the US.

Other Features:

Three man-made roadside ditches and one erosional feature were present in the AOI. The three ditches, RSD-1, RSD-2, and RSD-3 were present within the southeast, southwest, and northeast quadrants of the AOI, respectively (see photo orientation maps on pages 17 to 19 and the associated photos). All three ditches were vegetated, and none of them exhibit an OHWM or defined bed and bank. Therefore, the three roadside ditches within the AOI are not likely to be waters of the US. The erosional feature, ER-1, is a short gully that conveys drainage from the agricultural field in the northwest quadrant of the project area to UNT to Splunge Creek. ER-1 did not exhibit indications of an OHWM or defined bed and bank; therefore, it is not likely to be a water of the US.

While aeriels indicated that the northwest quadrant may also contain a roadside ditch, it was not observed during the field investigation. Additionally, NHD-mapping identified a flowline flowing through the northern part of the AOI from east to west, but this feature was also not observed.

Existing Riprap or Fill in Wetlands and Waterways:

Pieces of riprap were observed at the inlet of the SR 159 small structure carrying UNT to Splunge Creek (Photo 5); however, the inlet was heavily obstructed by vegetation and debris, and the extent of scour protection currently present at the inlet could not be confirmed. No riprap was observed at the outlet of the structure.

Wildlife Evidence and Concerns:

Undetermined bird species were generally present within the tree canopy, and nests are likely present in the trees during nesting season; however, no nests in trees were specifically observed, and no nests were observed attached to the SR 159 small structure. No other indications of terrestrial or aquatic faunae were observed.

IV: CONCLUSIONS

A field investigation for surface water features was conducted on August 25, 2022. The investigation confirmed the presence of two likely waters of the US in the AOI. Within the AOI, UNT to Splunge Creek was the only stream observed, and it had a length of 176 linear feet and an area of 0.0566 acre. Wetland A was the only wetland observed in or near the AOI and had an area of 0.0753 acre. Combined, UNT to Splunge Creek and Wetland A cover an area within the AOI of 0.1319 acre. These surface water features are likely to be considered waters of the US under the jurisdiction of the USACE. See page 16 for a map of these field-identified water features.

Every effort should be taken to avoid impacts to waters of the US. If impacts will occur, waterway permits will be required, and mitigation may be necessary as a condition of the permits. Impacts must be minimized before mitigation

can be considered. INDOT’s Ecology and Waterway Permitting Office (EWPO) staff should be contacted immediately if impacts will occur.

The conclusions presented in this report are the best judgment of the author and are based on the guidelines set forth by USACE, which is ultimately responsible for the final determination of the presence of waters of the US, as regulated by the Clean Water Act.

Acknowledgement:

This waters determination has been prepared based on the best available information, interpreted in light of the investigator’s training, experience, and professional judgement and 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.

The definition of waters of the US observed for this report was based on the proposed rule *Revised Definition of “Waters of the United States”* issued by the USACE and the Environmental Protection Agency (EPA) in the Federal Register on December 7, 2021, which directs implementation of jurisdiction under the Clean Water Act to be in observance with the pre-2015 definitions and practices. Preliminary determinations of jurisdiction are based on the criteria issued in the *USACE Jurisdictional Determination Form Instructional Guidebook* (USACE, 2007) and the USACE and EPA guidance document, *Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States*, issued on December 2, 2008. USACE Louisville District’s *Public Notice No. LRL-2012-5-6* was used to identify navigable waters, as well as waters subject to USACE jurisdiction under Sections 9 and 10 of the Rivers and Harbors Act. Wetland data was gathered in accordance with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* (USACE, 2010). Wetland indicator statuses for plants were obtained from *The National Wetland Plant List* (USACE, 2020).

Preparer: Brock N. Ervin, INDOT Crawfordsville District Environmental

Signature:



Date: August 15, 2023

Supporting Documentation:

- Page 7: Project Location Map
- Page 8: USGS 1:24k Topographic Map with PLSS Mapping
- Page 9: 2018 Indiana State Aerial Imagery
- Page 10: USGS NHD Map
- Page 11: NRCS Soils Map
- Page 12: GIS-Based Water Resources Map
- Page 13: Drainage Area & Watershed Map
- Page 14: USGS StreamStats Report Excerpt
- Page 15: IDNR Floodplain Analysis & Regulatory Assessment Excerpt
- Page 16: Field-Identified Surface Water Features Map
- Page 17 to 19: Photo Orientation Maps
- Pages 20 to 35: Site Photography
- Page 36: NOAA National Weather Service Climatological Data for August 2022
- Pages 37 to 44: Wetland Determination Data Forms
- Pages 45 to 48: Preliminary Jurisdictional Determination Form

Des. No. 2002197






SR 159 at UNT to Splunge Creek

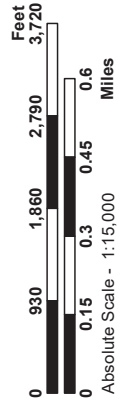
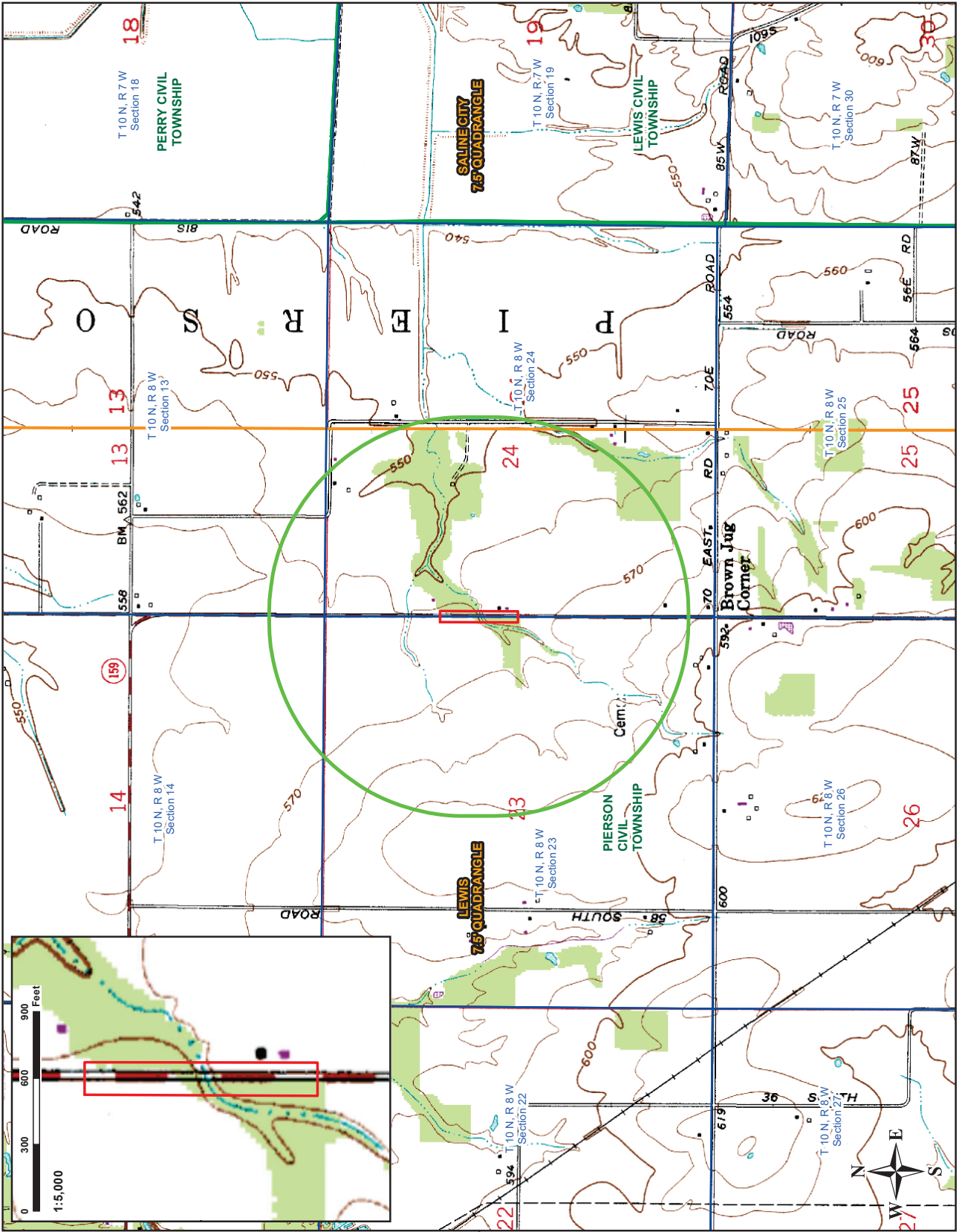
Small Structure Project

4.15 Miles North of SR 246

Vigo County

USGS 1:24k Topographic Map







-  Project Location
-  Half-Mile Radius
-  USGS 7.5' Quadrangle
-  PLSS Section, Township, & Range
-  Civil Township

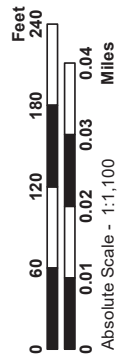


Sources:
Non Orthophotography Data -
Obtained from the State of Indiana
Geographical Information Office Library
Orthophotography - Obtained from Indiana
Map Framework Data (www.indianamap.org)
Map Projection: UTM Zone 16 N
Map Datum: NAD83

Des. No. 2002197
SR 159 at UNT to Splunge Creek
 Small Structure Project
 4.15 Miles North of SR 246
 Vigo County

Indiana State Aerial Imagery

-  Area of Investigation
-  State Highways
-  US Highways
-  Interstates
-  Toll Roads
-  Local Roads



Sources:
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Des. No. 2002197

SR 159 at UNT to Splunge Creek

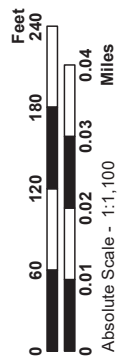
Small Structure Project
4.15 Miles North of SR 246
Vigo County

USGS NHD Map

-  Area of Investigation
-  USGS NHD Flowline: Perennial
-  USGS NHD Flowline: Intermittent
-  USGS NHD Flowline: Ephemeral
-  USGS NHD Flowline: Artificial
-  USGS NHD Flowline: Canal/Ditch
-  USGS NHD Flowline: Connector
-  USGS NHD Flowline: Pipeline
-  USGS NHD Flowline: UG Conduit
-  USGS NHD Waterbody: Lake/Pond
-  USGS NHD Waterbody: Wetland
-  USGS NHD Waterbody: Reservoir

Field-Identified Wetlands

-  Wetland Data Point
-  Non-Wetland Data Point
-  Wetland



Sources:
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 Geographical Information Office Library
Orthophotography - Obtained from Indiana
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map, USGS TM - National Hydrography Dataset. Data Refreshed July, 2012.

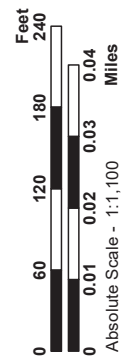
Des. No. 2002197
SR 159 at UNT to Splunge Creek
 Small Structure Project
 4.15 Miles North of SR 246
 Vigo County

NRCS Soils Map

- Area of Investigation
- NRCS SSURGO Soil Units

Field-Identified Wetlands

- Wetland Data Point
- Non-Wetland Data Point
- Wetland













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Map Datum: NAD83

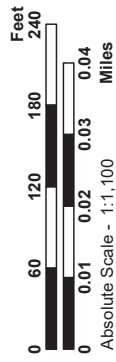


Des. No. 2002197
SR 159 at UNT to Splunge Creek
 Small Structure Project
 4.15 Miles North of SR 246
 Vigo County

GIS-Based Water Resources Map

-  Area of Investigation
-  River
-  NWI Wetland
-  NWI Line
-  NWI Point
-  Lake
-  Floodplain - DFIRM
-  Karst Spring
-  NPS NRI listed

- Field-Identified Wetlands**
-  Wetland Data Point
 -  Non-Wetland Data Point
 -  Wetland



Sources:
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 Geographical Information Office Library
 Orthophotography - Obtained from Indiana
 Map Framework Data (www.indianamap.org)
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 Map Datum: NAD83



Des. No. 2002197


SR 159 at UNT to Splunge Creek

Small Structure Project

4.15 Miles North of SR 246

Vigo County

Drainage Area & Watershed Map

 Area of Investigation

 USGS Upstream Drainage Area

 USGS HUC-12 Watershed

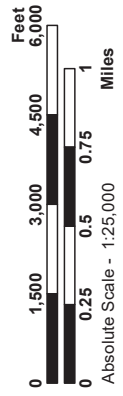
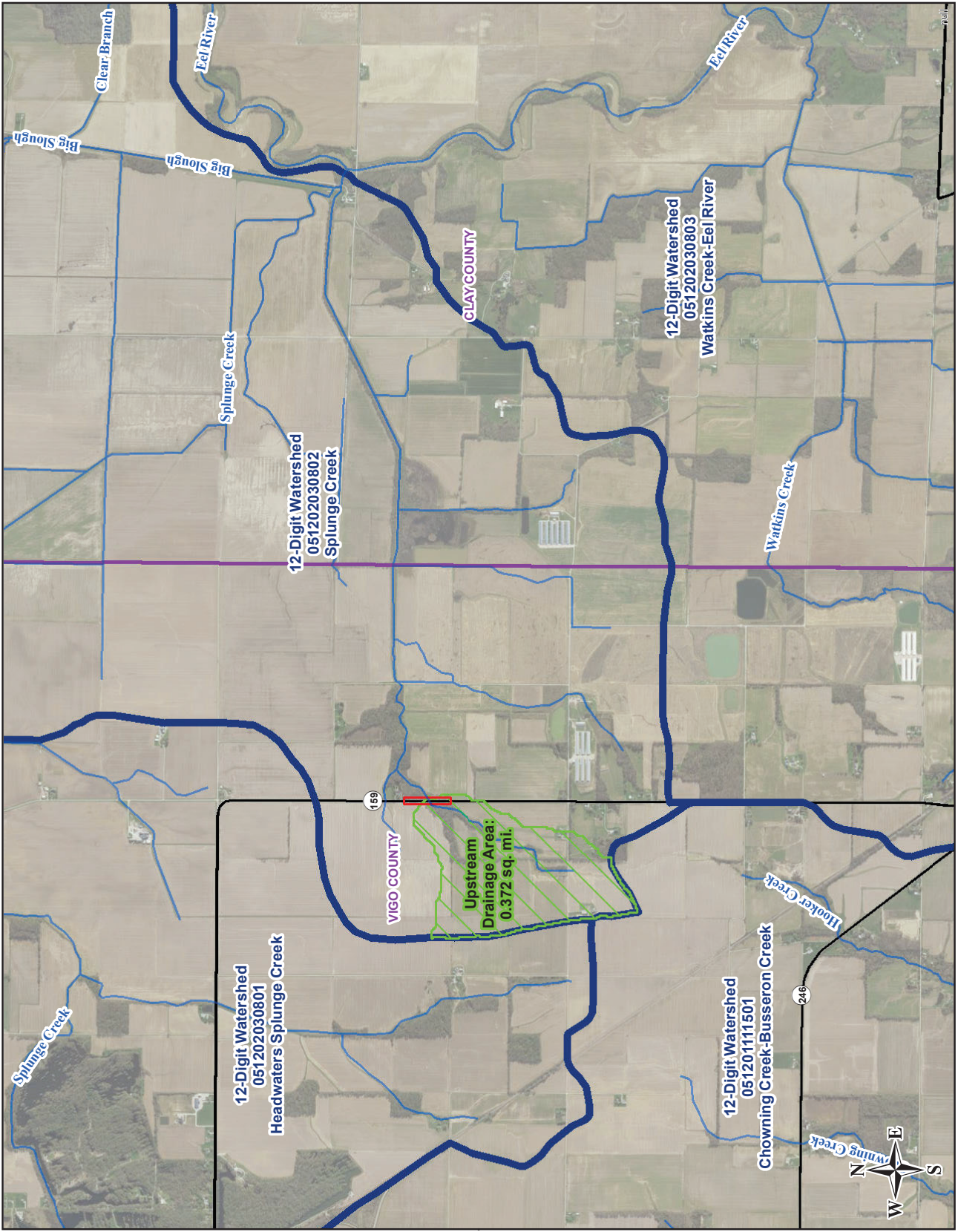
 Rivers and Streams

 State Highways

 US Highways

 Interstates

 County Line



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

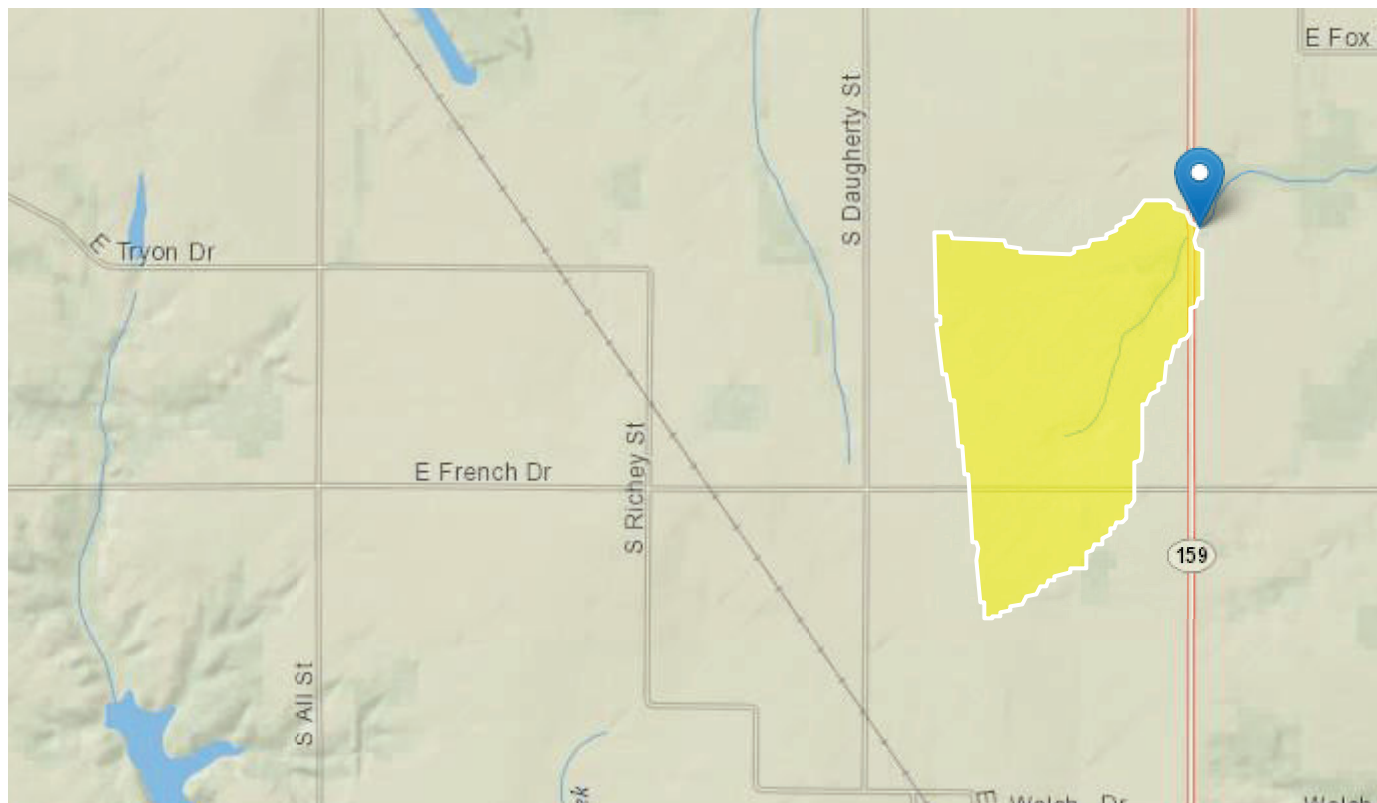
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Region ID: IN

Workspace ID: IN20220824140248255000

Clicked Point (Latitude, Longitude): 39.29698, -87.25869

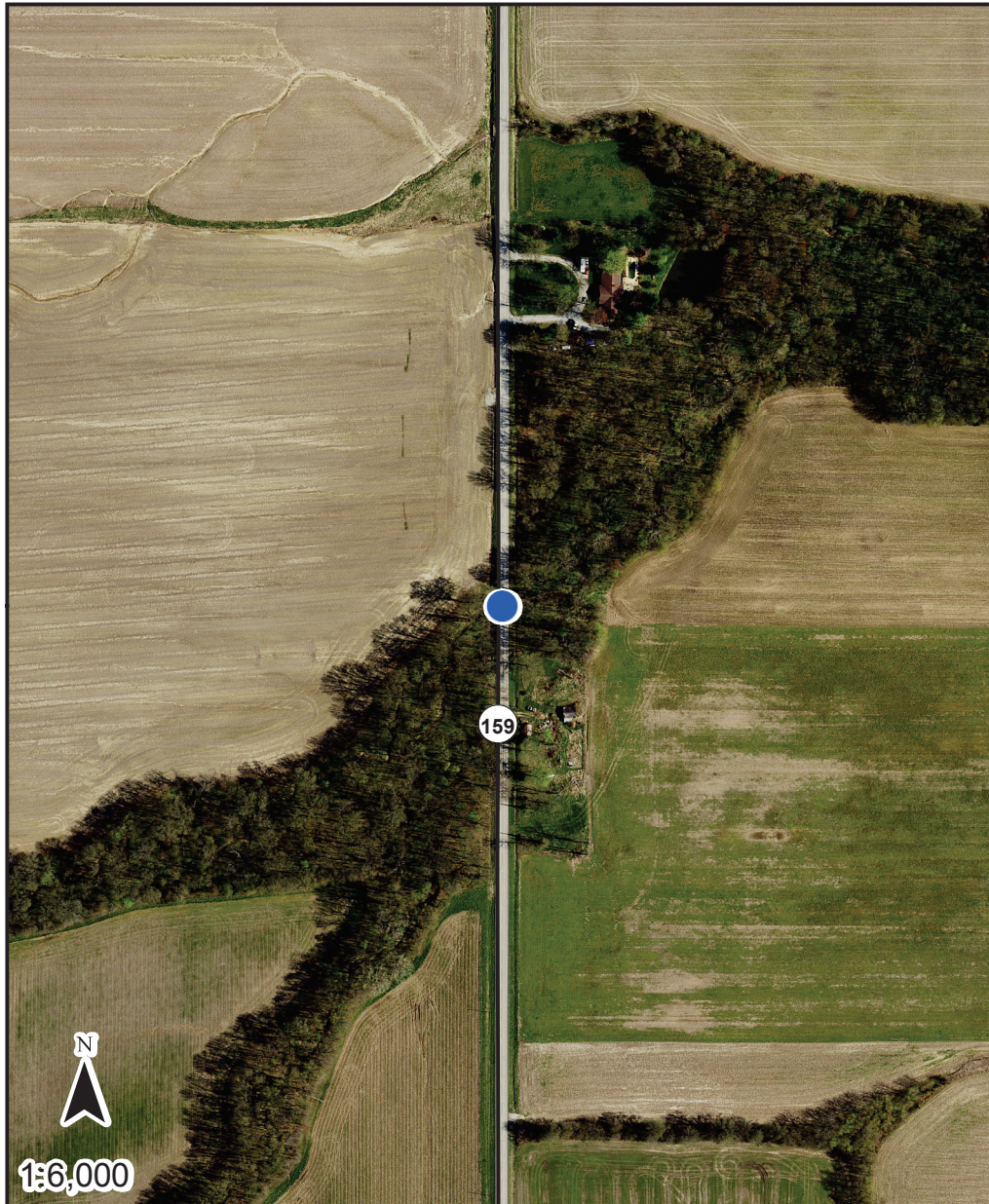
Time: 2022-08-24 10:03:07 -0400



+ Collapse All

➤ Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.372	square miles
K2INDNR	Average hydraulic conductivity (ft/d) for the full depth of unconsolidated deposits from InDNR well database.	2	ft per day
LC01FOREST	Percentage of forest from NLCD 2001 classes 41-43	5.5	percent
LOWREG	Low Flow Region Number	1730	dimensionless



- Point of Interest
- Base Flood Elevation Point

Point of Interest Coordinates
(WGS84)

Long: **-87.2589782789**

Lat: **39.2970910613**

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

County: **Vigo**

Approximate Ground Elevation: **563.4 feet (NAVD88)**

Stream Name:

Base Flood Elevation: **Not Available**

Unnamed Tributary

Drainage Area: **Not available**

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

National Flood Hazard Zone: **Not Mapped**

Is a Flood Control Act permit from the DNR needed for this location? **See following pages**

Is a local floodplain permit needed for this location? **Contact your local Floodplain Administrator-**

Floodplain Administrator: **Sydney Shahar, Assistant Director of Vigo County Area Planning**

Community Jurisdiction: **Vigo County, County proper**

Phone: **(812) 462-3354**








Email: **sydney.shahar@vigocounty.in.gov**

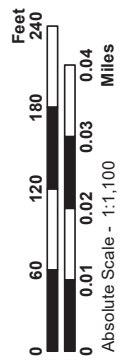
US Army Corps of Engineers District: **Louisville**

Date Generated: 7/11/2023

Des. No. 2002197
SR 159 at UNT to Splunge Creek
 Small Structure Project
 4.15 Miles North of SR 246
 Vigo County

Field-Identified Surface Water Features Map

-  Area of Investigation
-  Likely Jurisdictional Streams
-  Other Concentrated Flows
-  Wetland Data Point
-  Non-Wetland Data Point
-  Wetlands
-  OHWM Measurement Point



Sources:
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Orthophotography - Obtained from Indiana
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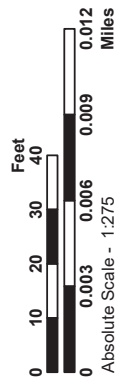
Des. No. 2002197

SR 159 at UNT to Splunge Creek

Small Structure Project
4.15 Miles North of SR 246 (RP 23+38)
Vigo County

Photo Orientation Map - Center

-  Area of Investigation
-  Photo Orientation Arrow
-  Downward Photo
-  Downward Photo (Data Point)
-  Likely Jurisdictional Streams
-  Other Concentrated Flows
-  Wetland Data Point
-  Non-Wetland Data Point
-  Wetlands
-  OHWM Measurement Point



Sources:
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Orthophotography - Obtained from Indiana
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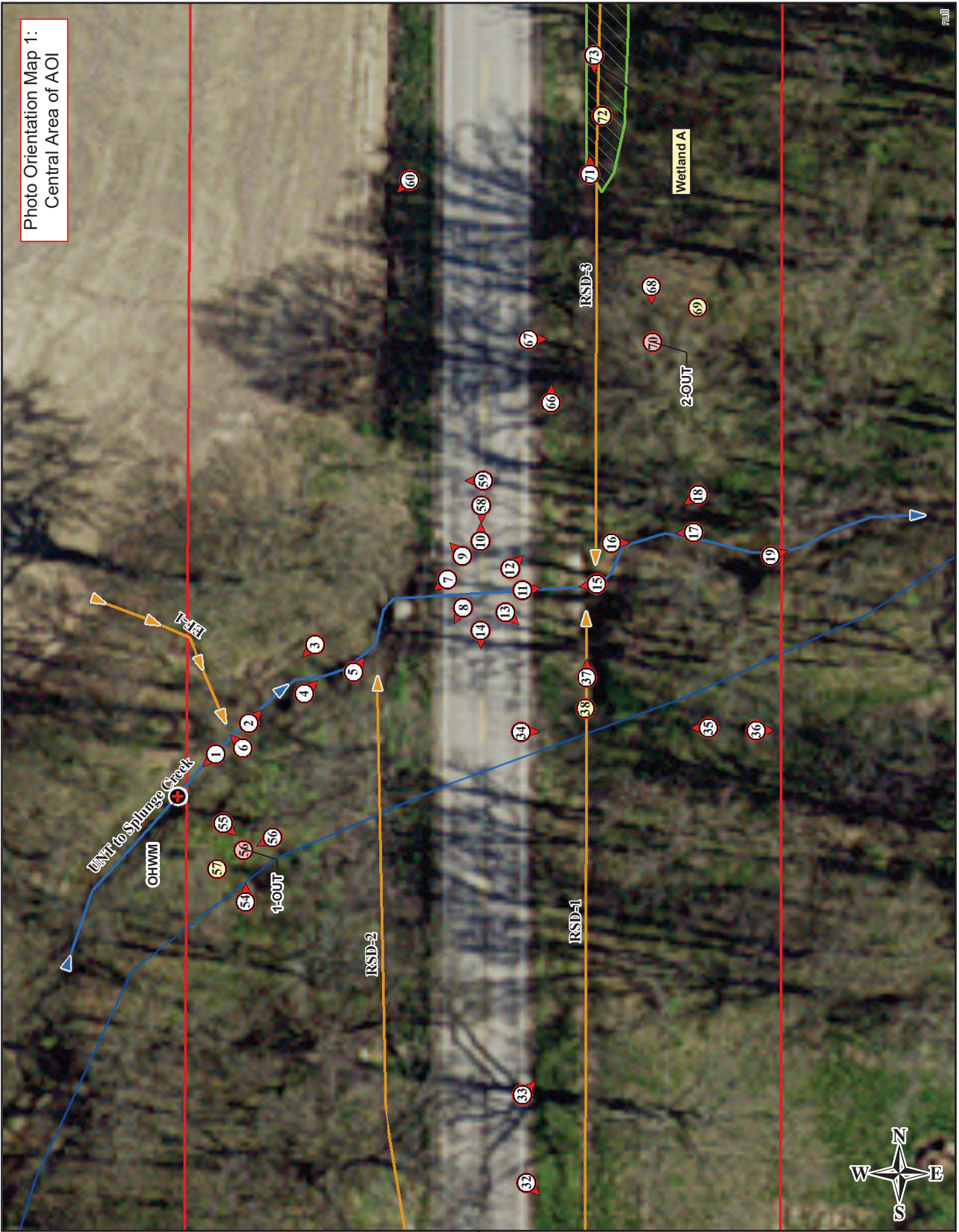










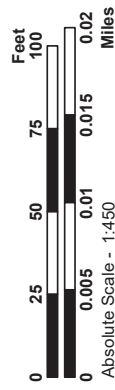


Photo Orientation Map 1:
Central Area of AOI

Des. No. 2002197
SR 159 at UNT to Splunge Creek
 Small Structure Project
 4.15 Miles North of SR 246
 Vigo County

Photo Orientation Map - South

-  Area of Investigation
-  Photo Orientation Arrow
-  Downward Photo
-  Downward Photo (Data Point)
-  Likely Jurisdictional Streams
-  Other Concentrated Flows
-  Wetland Data Point
-  Non-Wetland Data Point
-  Wetlands
-  OHWM Measurement Point



Sources:
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Orthophotography - Obtained from Indiana
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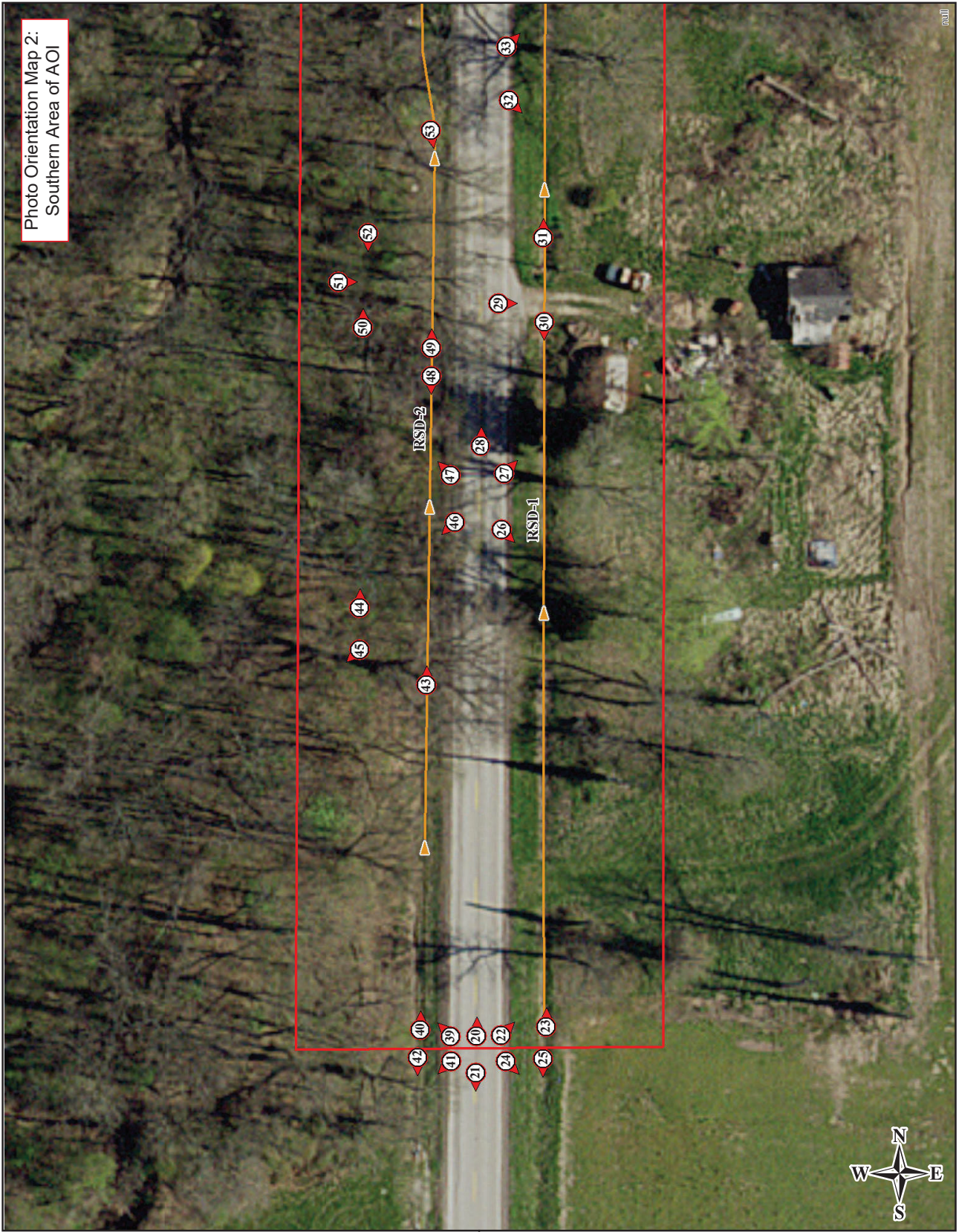


Photo Orientation Map 2:
 Southern Area of AOI