



Source: Federal Emergency Management Agency Flood Insurance Rate Map
 1:1,200
 1 in = 100 ft



Legend

- Investigated Area
- 1 % Annual Chance Flood Hazard

Figure 6: Floodplain Map
 Author: Hillary Shaffer
 Small Structure Project
 SR 250 over UNT to Rider Ditch
 Jackson County, Indiana
 Des. No. 1801015

May 18, 2022



National Agriculture Imagery Program (NAIP), Farm Services Agency (FSA), U. S. Department of Agriculture (USDA), UITS, Indiana Spatial Data Portal



Source: Indiana Department of Environmental Management

1:90,000

1 in = 7,500 ft



Legend



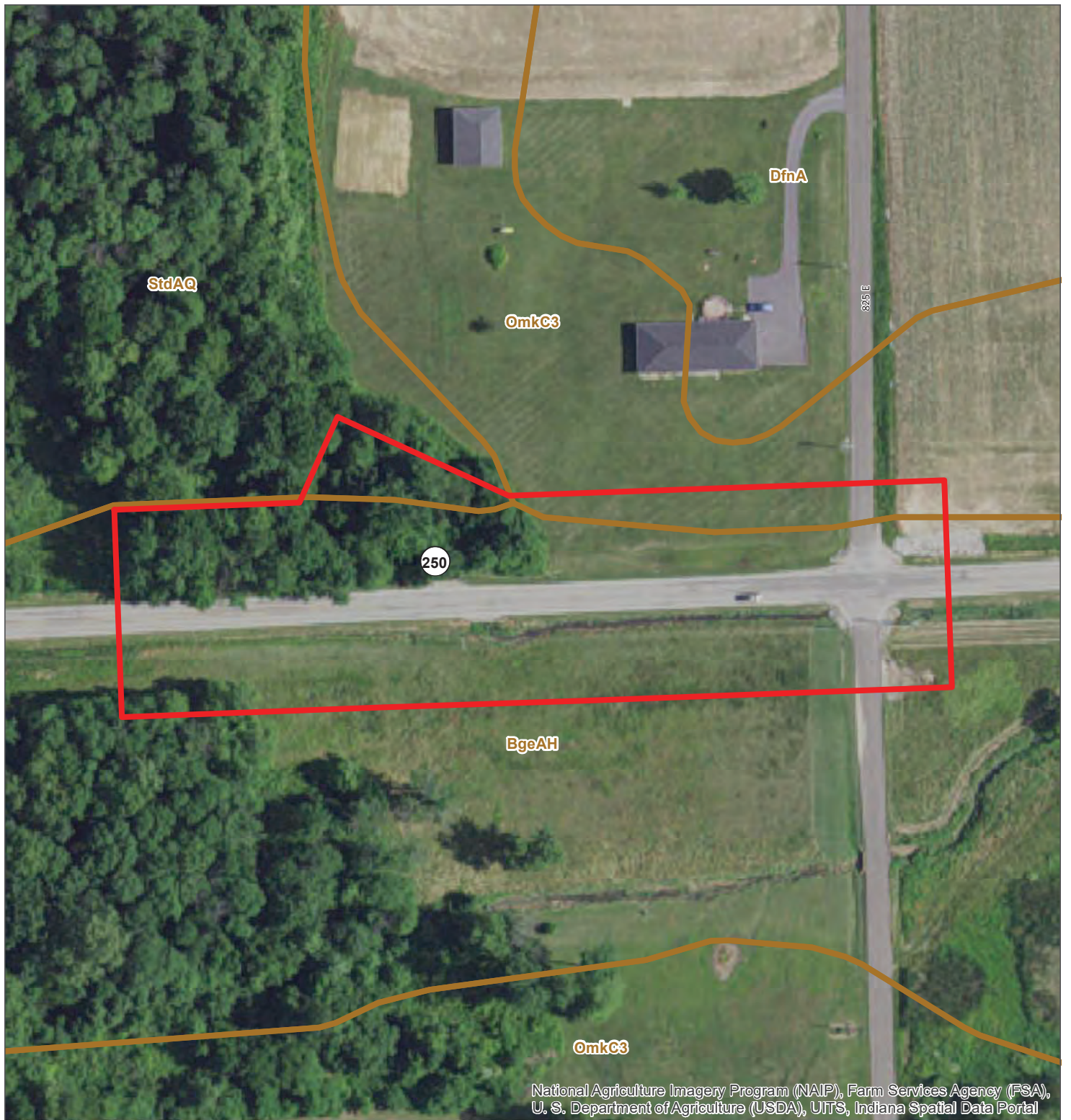
-  Investigated Area
-  Watershed - HUC 12

Figure 7: Watershed Map
 Author: Hillary Shaffer
 Small Structure Project
 SR 250 over UNT to Rider Ditch
 Jackson County, Indiana
 Des. No. 1801015

May 18, 2022



National Agriculture Imagery Program (NAIP), Farm Services Agency (FSA), U. S. Department of Agriculture (USDA), UITS, Indiana Spatial Data Portal



Source: Natural Resources Conservation Service, U.S. Department of Agriculture

1:1,200

1 in = 100 ft

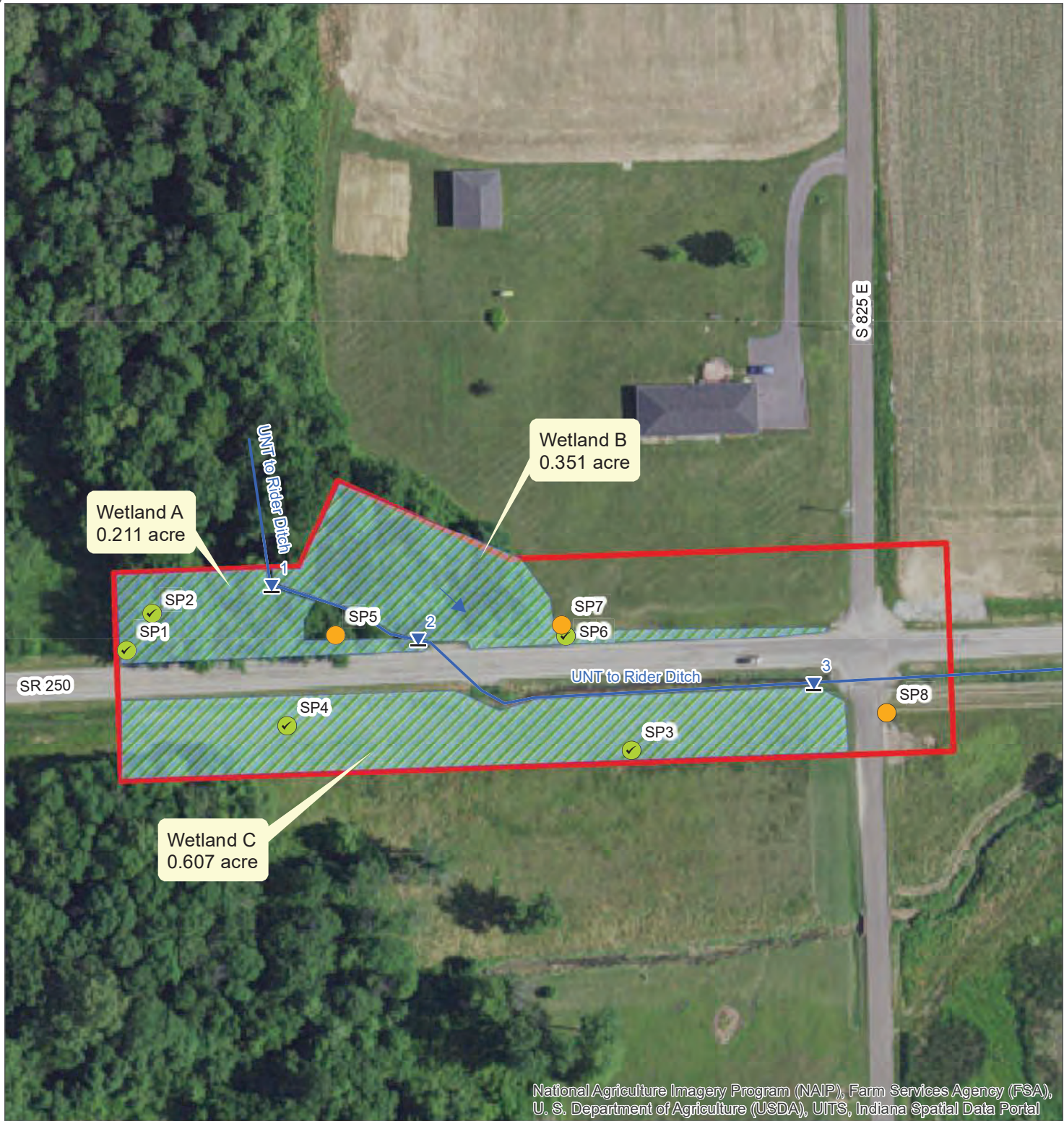


Legend

- Investigated Area
- Soils

Figure 8: Soil Survey Map
 Author: Hillary Shaffer
 Small Structure Project
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Source: U.S. Fish & Wildlife Service
 1:1,200
 1 in = 100 ft



Legend

Investigated Area	Upland
Stream	Wetland
OHWM Locations	Wetlands

Figure 9: Water Resources Map
 Author: Hillary Shaffer
 Small Structure Project
 SR 250 over UNT to Rider Ditch
 Jackson County, Indiana
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May 19, 2022



National Agriculture Imagery Program (NAIP), Farm Services Agency (FSA), U. S. Department of Agriculture (USDA), UITS, Indiana Spatial Data Portal



Source: U.S. Fish & Wildlife Service

1:1,200

1 in = 100 ft

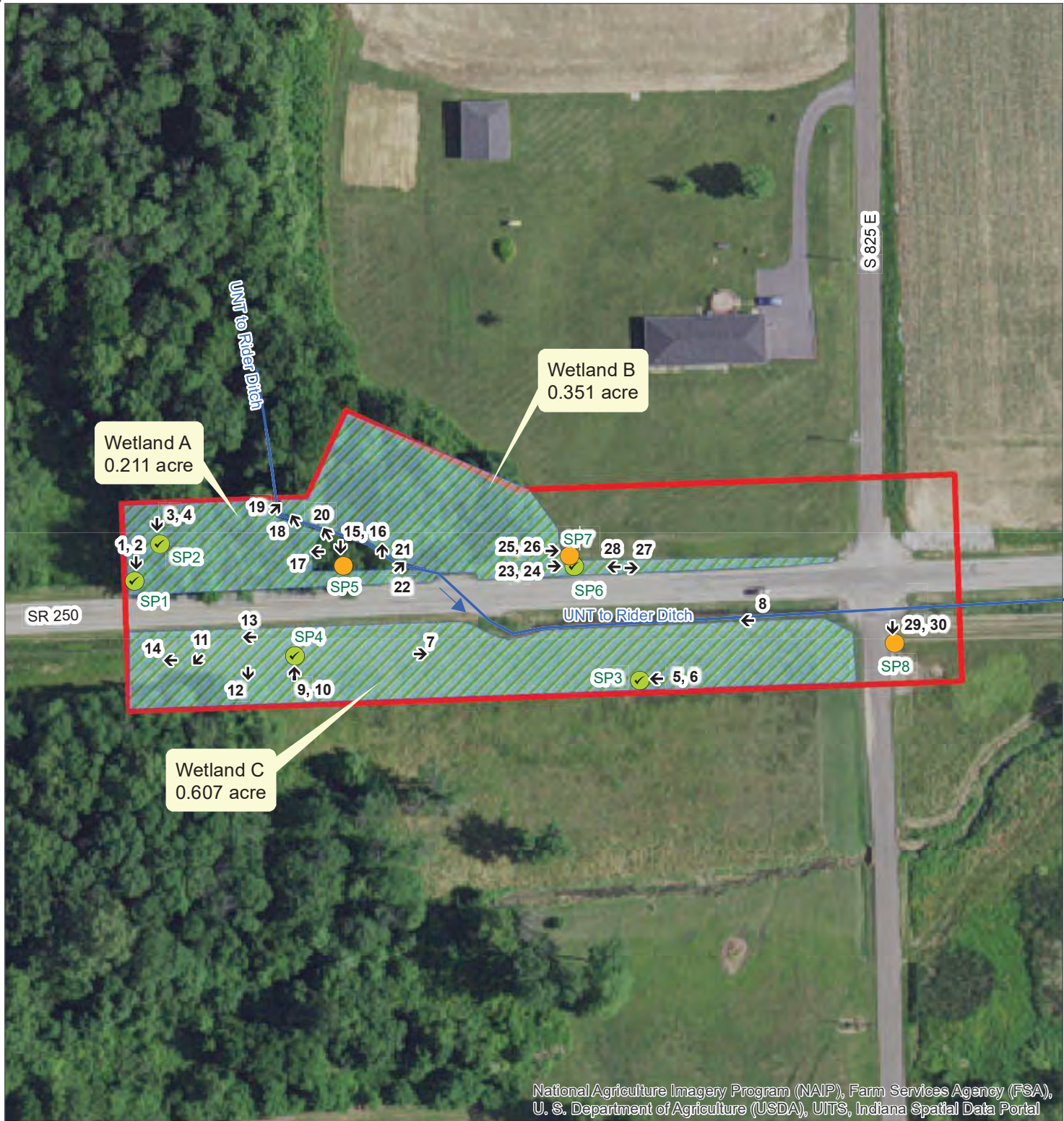


Legend

Investigated Area	Upland Sample Point
Stream	Wetland Sample Point
Emergent Wetlands	
Forested Wetlands	

Figure 10: Wetland Map
 Author: Hillary Shaffer
 Small Structure Project
 SR 250 over UNT to Rider Ditch
 Jackson County, Indiana
 Des. No. 1801015

May 23, 2022



National Agriculture Imagery Program (NAIP), Farm Services Agency (FSA), U. S. Department of Agriculture (USDA), UITS, Indiana Spatial Data Portal



Source: U.S. Fish & Wildlife Service
 1:1,200
 1 in = 100 ft



Legend

Investigated Area	Upland
Stream	Wetland
OHWM Locations	Wetlands
Photo Location/Direction	

Figure 11: Photo Location Map
 Author: Hillary Shaffer
 Small Structure Project
 SR 250 over UNT to Rider Ditch
 Jackson County, Indiana
 Des. No. 1801015

May 19, 2022



Photo 1: Looking south toward SP1 and Wetland A.



Photo 2: The soil profile of SP1.

Photo Log: October 29, 2020, October 19, 2021, April 20, 2022, and May 2, 2022
Small Structure Replacement
SR 250 over UNT to Rider Ditch
Jackson County, Indiana
Des. No. 1801015



Photo 3: Looking south toward SP2 and Wetland A.



Photo 4: The soil profile of S 2.

Photo Log: October 29, 2020, October 19, 2021, April 20, 2022, and May 2, 2022

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SR 250 over UNT to Rider Ditch

Jackson County, Indiana

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Photo 5: Looking west toward SP3, Wetland C, and UNT to Rider Ditch.



Photo 6: The soil profile of SP3.

Photo Log: October 29, 2020, October 19, 2021, April 20, 2022, and May 2, 2022
Small Structure Replacement
SR 250 over UNT to Rider Ditch
Jackson County, Indiana
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Photo 7: Looking east toward Wetland C, south of SR 250.



Photo 8: Looking west along UNT to Rider Ditch, south of SR 250.

Photo Log: October 29, 2020, October 19, 2021, April 20, 2022, and May 2, 2022
Small Structure Replacement
SR 250 over UNT to Rider Ditch
Jackson County, Indiana
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Photo 9: Looking north toward SP4 and Wetland A.



Photo 10: The soil profile of SP4.

Photo Log: October 29, 2020, October 19, 2021, April 20, 2022, and May 2, 2022
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SR 250 over UNT to Rider Ditch
Jackson County, Indiana
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Photo 11: Looking southwest toward Wetland C.



Photo 12: Looking south toward Wetland C.

Photo Log: October 29, 2020, October 19, 2021, April 20, 2022, and May 2, 2022
Small Structure Replacement
SR 250 over UNT to Rider Ditch
Jackson County, Indiana
Des. No. 1801015



Photo 13: Looking west toward the roadside ditch portion of Wetland C.



Photo 14: Looking west toward Wetland C.

Photo Log: October 29, 2020, October 19, 2021, April 20, 2022, and May 2, 2022

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Jackson County, Indiana
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Photo 15: Looking south toward SP5 and a small upland area between Wetland A and Wetland B.



Photo 16: The soil profile of SP5.

Photo Log: October 29, 2020, October 19, 2021, April 20, 2022, and May 2, 2022
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SR 250 over UNT to Rider Ditch
Jackson County, Indiana
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Photo 17: Looking west toward Wetland A, west of UNT to Rider Ditch.



Photo 18: Looking northwest along UNT to Rider Ditch.

Photo Log: October 29, 2020, October 19, 2021, April 20, 2022, and May 2, 2022

Small Structure Replacement
SR 250 over UNT to Rider Ditch

Jackson County, Indiana

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Photo 19: Looking northeast along UNT to Rider Ditch.



Photo 20: Looking northwest along UNT to Rider Ditch.

Photo Log: October 29, 2020, October 19, 2021, April 20, 2022, and May 2, 2022

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Photo 21: Looking north along UNT to Rider Ditch.



Photo 22: Looking northeast along UNT to Rider Ditch.

Photo Log: October 29, 2020, October 19, 2021, April 20, 2022, and May 2, 2022

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SR 250 over UNT to Rider Ditch

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Photo 23: Looking east toward SP6 and Wetland B.



Photo 24: The soil profile of SP6

Photo Log: October 29, 2020, October 19, 2021, April 20, 2022, and May 2, 2022

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Photo 25: Looking east toward SP7 and Wetland B.



Photo 26: The soil profile of SP 7 .

Photo Log: October 29, 2020, October 19, 2021, April 20, 2022, and May 2, 2022
Small Structure Replacement
SR 250 over UNT to Rider Ditch
Jackson County, Indiana
Des. No. 1801015



Photo 27: Looking east along SR 250 and Wetland B.



Photo 28: Looking west along SR 250 and Wetland B.

Photo Log: October 29, 2020, October 19, 2021, April 20, 2022, and May 2, 2022
Small Structure Replacement
SR 250 over UNT to Rider Ditch
Jackson County, Indiana
Des. No. 1801015



Photo 29: Looking south toward SP8 and surrounding upland area.



Photo 30: The soil profile of SP8.

Photo Log: October 29, 2020, October 19, 2021, April 20, 2022, and May 2, 2022
Small Structure Replacement
SR 250 over UNT to Rider Ditch
Jackson County, Indiana
Des. No. 1801015

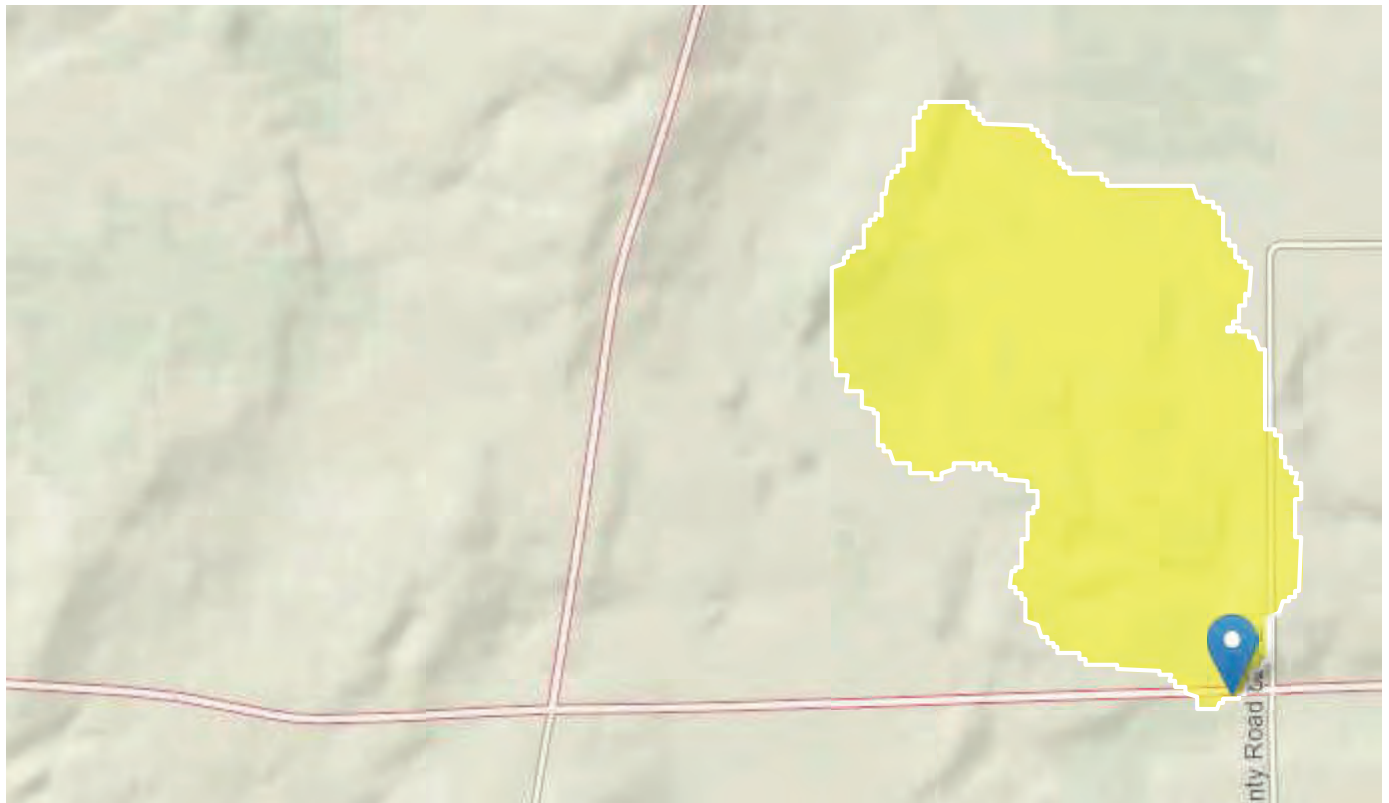
StreamStats Report

Region ID: IN

Workspace ID: IN20220519210343587000

Clicked Point (Latitude, Longitude): 38.85132, -85.88510

Time: 2022-05-19 17:03:59 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.235	square miles
K2INDNR	Average hydraulic conductivity (ft/d) for the full depth of unconsolidated deposits from InDNR well database.	61	ft per day
LC01FOREST	Percentage of forest from NLCD 2001 classes 41-43	9.9	percent
LOWREG	Low Flow Region Number	1730	dimensionless
QSSPERMTHK	Index of the permeability of surficial Quaternary sediments computed as in SIR 2014-5177	75	dimensionless

Parameter Code	Parameter Description	Value	Unit
T2INDNR	Average transmissivity (ft ² /d) for the full depth of unconsolidated deposits from InDNR well database.	1900	square feet per day

General Flow Statistics Parameters [Harmonic Mean Southern Region 2016 5102]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.235	square miles	6.95	533
LC01FOREST	Percent_Forest_from_NLCD2001	9.9	percent	7.3	91.3
LOWREG	Low Flow Region Number	1730	dimensionless		

General Flow Statistics Disclaimers [Harmonic Mean Southern Region 2016 5102]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

General Flow Statistics Flow Report [Harmonic Mean Southern Region 2016 5102]

Statistic	Value	Unit
Harmonic Mean Streamflow	0.00716	ft ³ /s

General Flow Statistics Citations

Martin, G.R., Fowler, K.K., and Arihood, L.D., 2016, Estimating selected low-flow frequency statistics and harmonic-mean flows for ungaged, unregulated streams in Indiana (ver 1.1, October 2016): U.S. Geological Survey Scientific Investigations Report 2016–5102, 45 p. (<http://dx.doi.org/10.3133/sir20165102>)

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Application Version: 4.8.1

StreamStats Services Version: 1.2.22

NSS Services Version: 2.1.2

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 250 over Rider Ditch City/County: Seymour/Jackson County Sampling Date: 2022-04-20
 Applicant/Owner: INDOT Seymour District State: Indiana Sampling Point: SP 1
 Investigator(s): Hillary Shaffer and Preeti Samra Section, Township, Range: Sections 20 & 29, Township 5 North, Range 6 East
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave
 Slope (%): 2 Lat: 38.8503003 Long: -85.8841267 Datum: WGS 84
 Soil Map Unit Name: BgeAH NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Lindera benzoin</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	<input type="checkbox"/>	_____	
3. _____	_____	<input type="checkbox"/>	_____	
4. _____	_____	<input type="checkbox"/>	_____	
5. _____	_____	<input type="checkbox"/>	_____	
<u>5%</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>22</u> x 1 = <u>22</u> FACW species <u>35</u> x 2 = <u>70</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>2</u> x 4 = <u>8</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>59</u> (A) <u>100</u> (B) Prevalence Index = B/A = <u>1.69</u>
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)				
1. _____	_____	<input type="checkbox"/>	_____	
2. _____	_____	<input type="checkbox"/>	_____	
3. _____	_____	<input type="checkbox"/>	_____	
<u>0%</u> = Total Cover				
Herb Stratum (Plot size: <u>5 ft r</u>)				
1. <u>Phalaris arundinacea</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ _____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Acorus calamus</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
3. <u>Typha latifolia</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
4. <u>Onoclea sensibilis</u>	<u>5</u>	<input type="checkbox"/>	<u>FACW</u>	
5. <u>Carex pensylvanica</u>	<u>5</u>	<input type="checkbox"/>	_____	
6. <u>Cardamine hirsuta</u>	<u>2</u>	<input type="checkbox"/>	<u>FACU</u>	
7. <u>Ranunculus sceleratus</u>	<u>2</u>	<input type="checkbox"/>	<u>OBL</u>	
8. _____	_____	<input type="checkbox"/>	_____	
9. _____	_____	<input type="checkbox"/>	_____	
10. _____	_____	<input type="checkbox"/>	_____	
<u>59%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft r</u>)				
1. _____	_____	<input type="checkbox"/>	_____	
2. _____	_____	<input type="checkbox"/>	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: SP 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 5	10YR 2/1	100					Muck	
5 - 14	10YR 3/1	85	10YR 4/6	5	C	PL	Silt Loam	
5 - 14	10YR 3/1	85	2.5Y / 4/1	10	D	M	Silt Loam	
14 - 18	10YR 4/1	95	10YR 3/6	5	C	PL	Silt Loam	Organic matter
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input checked="" type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
--	--

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
---	--

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required: check all that apply)		Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input checked="" type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input checked="" type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>1</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>1</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 250 over Rider Ditch City/County: Seymour/Jackson County Sampling Date: 2022-04-20
 Applicant/Owner: INDOT Seymour District State: Indiana Sampling Point: SP2
 Investigator(s): Hillary Shaffer and Preeti Samra Section, Township, Range: Sections 20 & 29, Township 5 North, Range 6 East
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave
 Slope (%): 2 Lat: 38.8515201 Long: -85.8858574 Datum: WGS 84
 Soil Map Unit Name: BgeAH NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)				
1. <u>Rubus occidentalis</u>	<u>7</u>	<input checked="" type="checkbox"/>	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>5</u> x 1 = <u>5</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>30</u> (A) <u>60</u> (B) Prevalence Index = B/A = <u>2.00</u>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
7% = Total Cover				
Herb Stratum (Plot size: <u>5 ft r</u>)				
1. <u>Phalaris arundinacea</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ _____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Eupatorium serotinum</u>	<u>5</u>	_____	<u>FAC</u>	
3. <u>Typha latifolia</u>	<u>5</u>	_____	<u>OBL</u>	
4. <u>Marsilea vestita</u>	<u>5</u>	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
35% = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft r</u>)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
2. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: SP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 5	10YR 2/1	100					Muck	
5 - 14	10YR 3/1	85	10YR 4/6	5	C	PL	Silt Loam	
5 - 14	10YR 3/1	85	2.5Y 4/1	10	D	M	Silt Loam	
14 - 18	10YR 4/1	95	10YR 3/6	5			Silt Loam	Organic matter also present
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input checked="" type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required: check all that apply)		Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input checked="" type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input checked="" type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>1</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>1</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 250 over Rider Ditch City/County: Seymore/Jackson County Sampling Date: 2022-05-02
 Applicant/Owner: INDOT Seymour District State: Indiana Sampling Point: SP3
 Investigator(s): Hillary Shaffer, Preeti Samra, Kristin Wing Section, Township, Range: Sections 20 & 29, Township 5 North, Range 6 East
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave
 Slope (%): 2 Lat: 38.8512958 Long: -85.8844543 Datum: WGS 84
 Soil Map Unit Name: BgeAH NWI classification: PEM1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
Prevalence Index worksheet:				
Total % Cover of: _____ Multiply by: _____				
OBL species <u>15</u> x 1 = <u>15</u>				
FACW species <u>17</u> x 2 = <u>34</u>				
FAC species <u>40</u> x 3 = <u>120</u>				
FACU species <u>18</u> x 4 = <u>72</u>				
UPL species <u>2</u> x 5 = <u>10</u>				
Column Totals: <u>92</u> (A) <u>251</u> (B)				
Prevalence Index = B/A = <u>2.73</u>				
Hydrophytic Vegetation Indicators:				
<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation				
<input checked="" type="checkbox"/> 2 - Dominance Test is >50%				
<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹				
<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)				
<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: SP3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 5	10YR 4/2	90	7.5YR 4/6	10	C	M	Sandy Clay Loam	
5 - 9	10YR 5/1	85	7.5YR 4/6	15	C	M	Silty Clay Loam	
9 - 16	10YR 5/1	80	7.5YR 4/6	20	C	PL / M	Silty Clay Loam	
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)
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Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Hydric Soil Present? Yes No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required: check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>10</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 250 over Rider Ditch City/County: Seymour/Jackson County Sampling Date: 2022-05-02
 Applicant/Owner: INDOT Seymour District State: Indiana Sampling Point: SP 4
 Investigator(s): Hillary Shaffer, Preeti Samra, Kristin Wing Section, Township, Range: Sections 20 & 29, Township 5 North, Range 6 East
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave
 Slope (%): 2 Lat: 38.8513101 Long: -85.8853564 Datum: WGS 84
 Soil Map Unit Name: BgeAH NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Poa pratensis</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. <u>Cardamine bulbosa</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
3. <u>Carex stricta</u>	<u>10</u>		<u>OBL</u>	
4. <u>Phalaris arundinacea</u>	<u>10</u>		<u>FACW</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>85%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
 Total Number of Dominant Species Across All Strata: 2 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:
 Total % Cover of: Multiply by:
 OBL species 35 x 1 = 35
 FACW species 10 x 2 = 20
 FAC species 40 x 3 = 120
 FACU species 0 x 4 = 0
 UPL species 0 x 5 = 0
 Column Totals: 85 (A) 175 (B)
 Prevalence Index = B/A = 2.06

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No _____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: SP 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 6	10YR 4/2	95	7.5YR 4/4	5	C	M	Silty Clay Loam	
6 - 11	10YR 5/1	90	7.5YR 4/6	10	C	M	Silty Clay Loam	
11 - 20	10YR 5/1	80	7.5YR 4/6	20	C	M	Silty Clay Loam	
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)
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Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Hydric Soil Present? Yes No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>1</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>10</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 250 over Rider Ditch City/County: Seymour/Jackson County Sampling Date: 2022-05-02
 Applicant/Owner: INDOT Seymour District State: Indiana Sampling Point: SP 5
 Investigator(s): Hillary Shaffer, Preeti Samra, Kristin Wing Section, Township, Range: Sections 20 & 29, Township 5 North, Range 6 East
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): _____
 Slope (%): 2 Lat: 38.8513241 Long: -85.8851298 Datum: WGS 84
 Soil Map Unit Name: BgeAH NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: _____ _____ _____	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Fraxinus americana</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. <u>Acer rubrum</u>	<u>7</u>		<u>FAC</u>	
3. _____				
4. _____				
5. _____				
<u>37%</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>2</u> x 2 = <u>4</u> FAC species <u>7</u> x 3 = <u>21</u> FACU species <u>70</u> x 4 = <u>280</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>79</u> (A) <u>305</u> (B) Prevalence Index = B/A = <u>3.86</u>
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: <u>5 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Rosa multiflora</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. <u>Galium aparine</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. <u>Lamium purpureum</u>	<u>10</u>	<input checked="" type="checkbox"/>		
4. <u>Packera glabella</u>	<u>2</u>		<u>FACW</u>	
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
<u>42%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
1. <u>Lonicera japonica</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. _____				
<u>10%</u> = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.) _____ _____				

SOIL

Sampling Point: SP 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 12	10YR 4/2	100					Silty Clay Loam	
-								
-								
-								
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: <u>Roots</u> Depth (inches): <u>12 inches</u>	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required: check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 250 over Rider Ditch City/County: Seymour/Jackson County Sampling Date: 2022-05-02
 Applicant/Owner: INDOT Seymour District State: Indiana Sampling Point: SP6
 Investigator(s): Hillary Shaffer, Preeti Samra, Kristin Wing Section, Township, Range: Sections 20 & 29, Township 5 North, Range 6 East
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Convex
 Slope (%): 2 Lat: 38.8514842 Long: -85.8846660 Datum: WGS 84
 Soil Map Unit Name: BgeAH NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Leersia oryzoides</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
2. <u>Ludwigia palustris</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
3. <u>Typha latifolia</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>40%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
 Total Number of Dominant Species Across All Strata: 3 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:
 Total % Cover of: Multiply by:
 OBL species 40 x 1 = 40
 FACW species 0 x 2 = 0
 FAC species 0 x 3 = 0
 FACU species 0 x 4 = 0
 UPL species 0 x 5 = 0
 Column Totals: 40 (A) 40 (B)
 Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: SP6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 4	2.5Y 3/1	95	10YR 5/6	5			Sandy Clay Loam	
5 - 11	2.5Y 4/2	75	7.5YR 4/6	25		PL / M	Sandy Clay Loam	
11 - 16	N 4/10Y	90	10YR 3/4	10			Sandy Clay Loam	Gley
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required: check all that apply)		Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input checked="" type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>2</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 250 over Rider Ditch City/County: Seymour/Jackson County Sampling Date: 2022-05-02
 Applicant/Owner: INDOT Seymour District State: Indiana Sampling Point: SP 7
 Investigator(s): Hillary Shaffer, Preeti Samra, Kristin Wing Section, Township, Range: Sections 20 & 29, Township 5 North, Range 6 East
 Landform (hillslope, terrace, etc.): Aa Lava Local relief (concave, convex, none): Concave
 Slope (%): _____ Lat: 38.8513833 Long: -85.8846167 Datum: WGS 84
 Soil Map Unit Name: BgeAH NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	0%	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	0%	= Total Cover		
Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Schedonorus arundinaceus</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. <u>Poa pratensis</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
3. <u>Taraxacum officinale</u>	<u>10</u>		<u>FACU</u>	
4. <u>Trifolium repens</u>	<u>10</u>		<u>FACU</u>	
5. <u>Erigeron annuus</u>	<u>5</u>		<u>FACU</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
	95%	= Total Cover		
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	_____	= Total Cover		

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 2 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0 x 1 = 0
 FACW species 0 x 2 = 0
 FAC species 30 x 3 = 90
 FACU species 65 x 4 = 260
 UPL species 0 x 5 = 0
 Column Totals: 95 (A) 350 (B)
 Prevalence Index = B/A = 3.68

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 ___ 2 - Dominance Test is >50%
 ___ 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: SP7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 4	10YR 4/3	100					Loam	
4 - 18	2.5Y 4/4	100					Loam	
-								
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required: check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 250 over Rider Ditch City/County: Seymour/Jackson County Sampling Date: 2021-10-19
 Applicant/Owner: INDOT Seymour District State: Indiana Sampling Point: SP8
 Investigator(s): Hillary Shaffer and Kayla Swoveland Section, Township, Range: Sections 20 & 29, Township 5 North, Range 6 East
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None
 Slope (%): 2 Lat: 38.8512940 Long: -85.8838586 Datum: WGS 84
 Soil Map Unit Name: BgeAH NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Alopecurus pratensis</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
2. <u>Lotus corniculatus</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. <u>Trifolium repens</u>	<u>20</u>	_____	<u>FACU</u>	
4. <u>Setaria parviflora</u>	<u>10</u>	_____	<u>FAC</u>	
5. <u>Plantago lanceolata</u>	<u>7</u>	_____	<u>FACU</u>	
6. <u>Amaranthus palmeri</u>	<u>5</u>	_____	<u>FACU</u>	
7. <u>Phleum pratense</u>	<u>5</u>	_____	<u>FACU</u>	
8. <u>Taraxacum officinale</u>	<u>5</u>	_____	<u>FACU</u>	
9. <u>Equisetum arvense</u>	<u>3</u>	_____	<u>FAC</u>	
10. <u>Leymus mollis</u>	<u>3</u>	_____	<u>FACU</u>	
<u>128%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 2 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0 x 1 = 0
 FACW species 40 x 2 = 80
 FAC species 13 x 3 = 39
 FACU species 75 x 4 = 300
 UPL species 0 x 5 = 0
 Column Totals: 128 (A) 419 (B)
 Prevalence Index = B/A = 3.27

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 ___ 2 - Dominance Test is >50%
 ___ 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: SP8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 8	10YR 2.5/2	100					Sandy Clay Loam	
8 - 18	10YR 4/2	83	7.5YR 4/6	10	C	M	Sandy Loam	
8 - 18			10YR 4/1	7	D			Organic matter
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required: check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

Appendix 2 - PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PJD: May 23, 2022

B. NAME AND ADDRESS OF PERSON REQUESTING PJD: Hillary Shaffer, BLN, 8320 Craig St. Indianapolis, IN 46250

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: **IN** County/parish/borough: **Jackson** City: **N/A**

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

Lat.: **38.851390** Long.: **-85.885660**

Universal Transverse Mercator:

Name of nearest waterbody: **UNT to Rider Ditch**

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

Office (Desk) Determination. Date: May 23, 2022

Field Determination. Date(s): October 29, 2020, October 19, 2021, April 20, 2022, and May 2, 2022

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)
UNT to Rider Ditch	38.851446	-85.885040	540 lin. ft.	non-wetland waters	404
Wetland A	38.851470	-85.885603	0.211	wetland	404
Wetland B	38.851521	-85.884895	0.351	wetland	404
Wetland C	38.851254	-85.884891	0.607	wetland	404

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: A-1 - A-10 and B-1, Ground Level Photos
- 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 data.
 - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: (A-2) 10,000x and (A-3) 2,500x Norman Quad
- Natural Resources Conservation Service Soil Survey. Citation: (A-7) NRCS, USDA, UITS, Indiana Spatial Data Portal
- National wetlands inventory map(s). Cite name: (A-5) USFWS, USDA, UITS, Indiana Spatial Data Portal
- State/local wetland inventory map(s): _____
- FEMA/FIRM maps: (A-8) FEMA, USDA, UITS, Indiana Spatial Data Portal
- 100-year Floodplain Elevation is: _____.(National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): (A-4) Indiana MAP, USDA, UITS, Indiana Spatial Data Portal, December 15,2020
or Other (Name & Date): BLN Staff, field October 29, 2020 and October 19, 2021
- 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.

 05/23/22

Signature and date of
Regulatory staff member
completing PJD

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

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

Appendix G:

Public Involvement

*Note-This Appendix will be updated after public involvement

Notice of Survey

Date: 10/9/2019

**SUBJECT: SR 250 Small Structure Replacement
DES No. 1801015 Jackson County, Indiana**

Dear Property Owner:

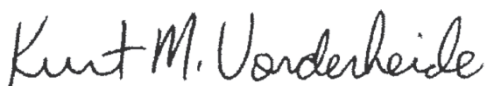
CECon, on behalf of Beam, Longest & Neff LLC, will perform a survey for the replacement of the SR 250 Small Structure located 300 west of County Road 825 East, Jackson County, Indiana. This work is associated with Indiana Department of Transportation (INDOT) Des No. 1801015. Our information indicates that you own or occupy property near the above referenced project. Our employees will be performing 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 permitted by law per 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, you will be contacted 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 is needed for the proper planning and design of this 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 telephone number or address shown above for our office. The Beam, Longest & Neff LLC Project Manager is also available for questions concerning this project. His contact information is as follows:

Adam Clauss
8320 Craig Street
Indianapolis, IN 46250
(317) 849-5832

Sincerely,



Kurt M. Vonderheide, PS
Senior Survey Project Manager

Appendix H:

Air Quality

Indiana Department of Transportation (IND T)
 State Preservation and Local Initiated Projects FY 2022 - 2026

SPONSOR	CONTRACT # / LEAD DES	STIP NAME	ROUTE	WORK TYPE	LOCATION	DISTRICT	MILES	FEDERAL CATEGORY	Total Cost of Project*	PROGRAM	PHASE	FEDERAL	MATCH	2022	2023	2024	2025	2026
Indiana Department of Transportation	40950 / 2000446	Init.	SR 11	HMA Overlay, Preventive Maintenance	SR 250 to 1.39 miles S of US 50	Seymour	6.32	STBG	\$3,038,451.00	Road Construction	CN	\$2,370,760.80	\$592,690.20		\$2,963,451.00			
Performance Measure Impacted: Pavement Condition																		
Comments: Include DES 1801099, 2000446																		
Indiana Department of Transportation	40991 / 1593127	Init.	SR 58	Bridge Deck Overlay	Bridge over Kiper Creek, 0.44 mile west of the east jct of SR 135	Seymour		STBG	\$872,753.00	Bridge Construction	CN	\$466,210.40	\$116,552.60		\$582,763.00			
Performance Measure Impacted: Bridge Condition																		
Comments: Include DES 1593127																		
Indiana Department of Transportation	40993 / 1800342	Init.	SR 135	Bridge Deck Overlay	Bridge over Kiper Creek, 03.04 miles N of SR 58	Seymour		STBG	\$668,690.00	Bridge Construction	CN	\$437,680.00	\$109,420.00		\$547,100.00			
Performance Measure Impacted: Bridge Condition																		
Comments: Include DES 1800342																		
Indiana Department of Transportation	40998 / 2000302	Init.	SR 135	Bridge Deck Overlay	over Kiper Creek, 02.49 N SR 58	Seymour		STBG	\$1,413,617.00	Bridge Construction	CN	\$934,837.60	\$233,709.40			\$1,168,547.00		
Performance Measure Impacted: Bridge Condition																		
Comments: Include DES 1800352, 2000302																		
Indiana Department of Transportation	41258 / 1298633	Init.	SR 258	Sight Distance Improvement	From Base Road to County Rd 100 E	Seymour	.994	STBG	\$3,653,691.00	Safety Construction	CN	\$1,963,484.00	\$490,871.00			\$2,454,355.00		
Performance Measure Impacted: Safety																		
Comments: Include DES 1298633																		
Indiana Department of Transportation	41445 / 1800276	Init.	SR 250	Bridge Replacement	1.5 mi W of SR 11, at Horse Lick Creek	Seymour		STBG	\$5,857,035.28	Bridge ROW	RW	\$104,000.00	\$26,000.00	\$130,000.00				
Performance Measure Impacted: Bridge Condition																		
Comments: Include DES 1800265, 1800266, 1801014, 1801015, 1802992, 1800276																		
Indiana Department of Transportation	41456 / 1800287	Init.	SR 135	Replace Superstructure	2.66 mi N of SR 58, at Branch Kiper Creek	Seymour		STBG	\$3,100,000.00	Bridge Consulting	PE	\$38,219.42	\$9,554.85	\$28,574.28	\$19,200.00			
Performance Measure Impacted: Bridge Condition																		
Comments: Include DES 1800228, 1800292, 1801011, 1801032, 1801047, 1801048, 1800287																		
Indiana Department of Transportation	41457 / 1800287	Init.	SR 135	Replace Superstructure	2.66 mi N of SR 58, at Branch Kiper Creek	Seymour		STBG	\$3,100,000.00	Bridge Consulting	PE	\$16,320.00	\$2,500.00		\$12,900.00			
Performance Measure Impacted: Bridge Condition																		
Comments: Include DES 1800228, 1800292, 1801011, 1801032, 1801047, 1801048, 1800287																		
Indiana Department of Transportation	41457 / 1800287	Init.	SR 135	Replace Superstructure	2.66 mi N of SR 58, at Branch Kiper Creek	Seymour		STBG	\$3,100,000.00	Bridge Consulting	PE	\$16,320.00	\$2,500.00		\$12,900.00			
Performance Measure Impacted: Bridge Condition																		
Comments: Include DES 1800228, 1800292, 1801011, 1801032, 1801047, 1801048, 1800287																		
Indiana Department of Transportation	41457 / 1800287	Init.	SR 135	Replace Superstructure	2.66 mi N of SR 58, at Branch Kiper Creek	Seymour		STBG	\$3,100,000.00	Bridge Consulting	PE	\$16,320.00	\$2,500.00		\$12,900.00			
Performance Measure Impacted: Bridge Condition																		
Comments: Include DES 1800228, 1800292, 1801011, 1801032, 1801047, 1801048, 1800287																		
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Performance Measure Impacted: Bridge Condition																		
Comments: Include DES 1800228, 1800292, 1801011, 1801032, 1801047, 1801048, 1800287																		
Indiana Department of Transportation	41457 / 1800287	Init.	SR 135	Replace Superstructure	2.66 mi N of SR 58, at Branch Kiper Creek	Seymour		STBG	\$3,100,000.00	Bridge Consulting	PE	\$16,320.00	\$2,500.00		\$12,900.00			
Performance Measure Impacted: Bridge Condition																		
Comments: Include DES 1800228, 1800292, 1801011, 1801032, 1801047, 1801048, 1800287																		

*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 I:
Additional Studies

Environmental Justice Des 1801015 SR 250 Rider Ditch

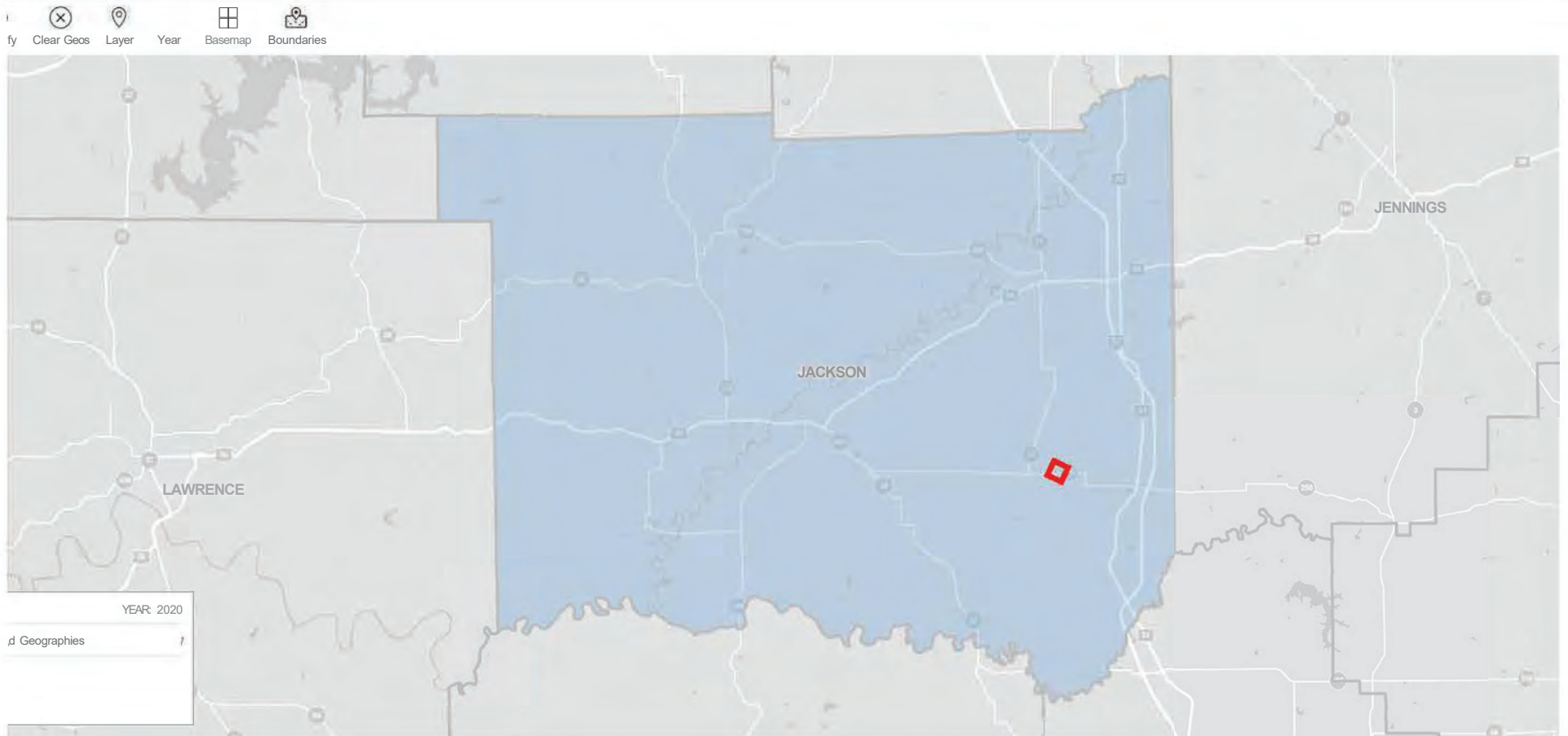
	COC - Jackson County	AC - Census Tract 9675_02	AC - Census Tract 9682
Percent Minority	13%	14%	3%
125% of COC	16%	AC < 125% COC	AC < 125% COC
EJ Population of Concern		No	No
Percent Low-Income	14%	13%	9%
125% of COC	18%	AC < 125% COC	AC < 125% COC
EJ Population of Concern		No	No

B03002 | HISPANIC OR LATINO ORIGIN BY RACE

2020: ACS 5-Year Estimates Detailed Tables | Universe: Total population

	Jackson County, Indiana		Census Tract 9675.02, Jackson County, Indiana		Census Tract 9682, Jackson County, Indiana	
Label	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
V Total:	44,077	*****	6,795	:t530	4,583	±417
v Not Hispanic or Latino:	40,839	*****	6,597	:t545	4,583	±417
White alone	38,454	:t216	5,818	±558	4,449	>432
Black or African American alone	596	±78	23	±43	0	,12
American Indian and Alaska Native alone	38	,30	25	>26	8	•9
Asian alone	1,074	±69	693	:343	31	,47
Native Hawaiian and Other Pacific Islander alone	9	±32	0	,17	0	,12
Some other race alone	202	:t212	16	,2a	0	,12
) Two or more races:	456	±116	22	•30	95	>65
v Hispanic or Latino:	3,238	*****	198	±179	0	,12
White alone	969	±313	91	±108	0	,12
Black or African American alone	0	•26	0	,17	0	,12
American Indian and Alaska Native alone	81	,as	0	,17	0	,12
Asian alone	0	•26	0	,17	0	,12
Native Hawaiian and Other Pacific Islander alone	0	>26	0	>17	0	,12
Some other race alone	1,924	t346	107	±139	0	,12

Community of Comparison (COC) - Minority

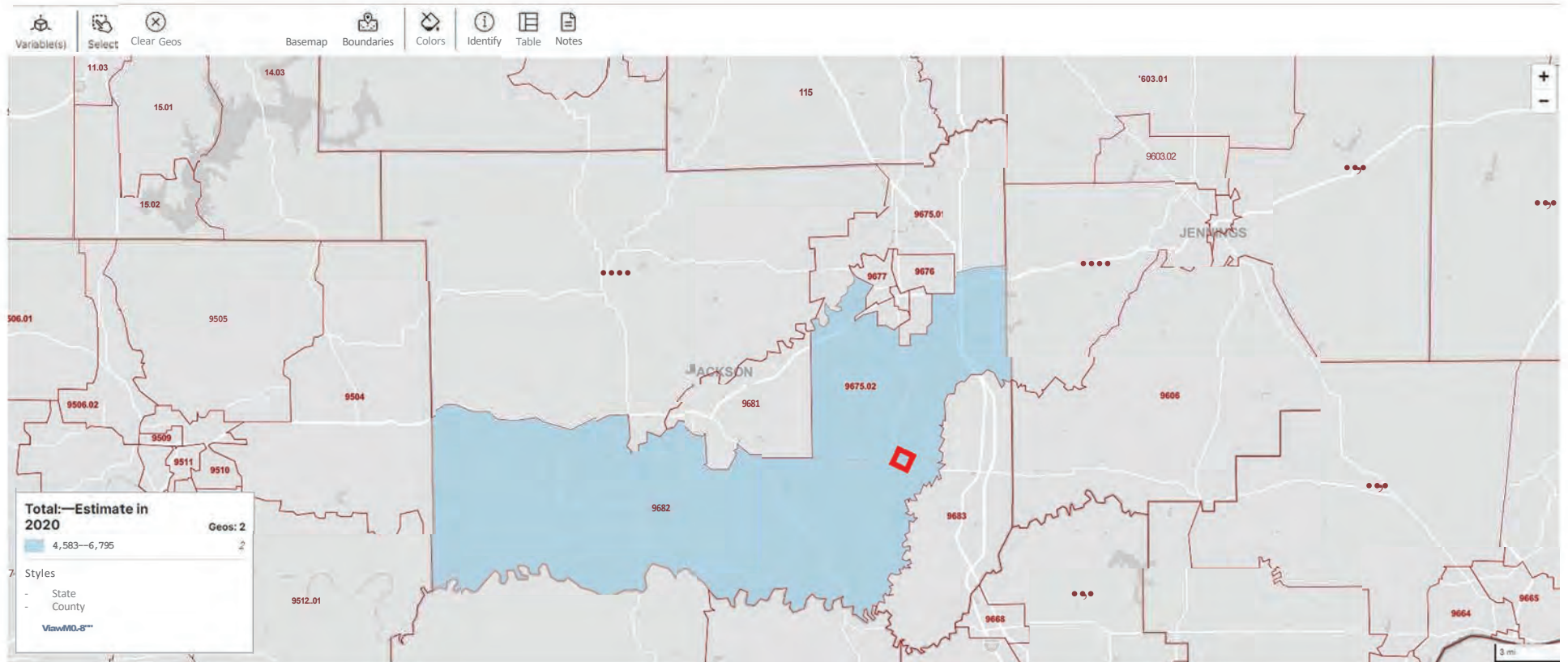


Affected Community (AC) - Minority

American Community Survey

Total:—Estimate in 2020

2020: ACS 5-Year Estimates Detailed Tables



B17001 POVERTY STATUS IN THE PAST 12 MONTHS BY SEX BY AGE

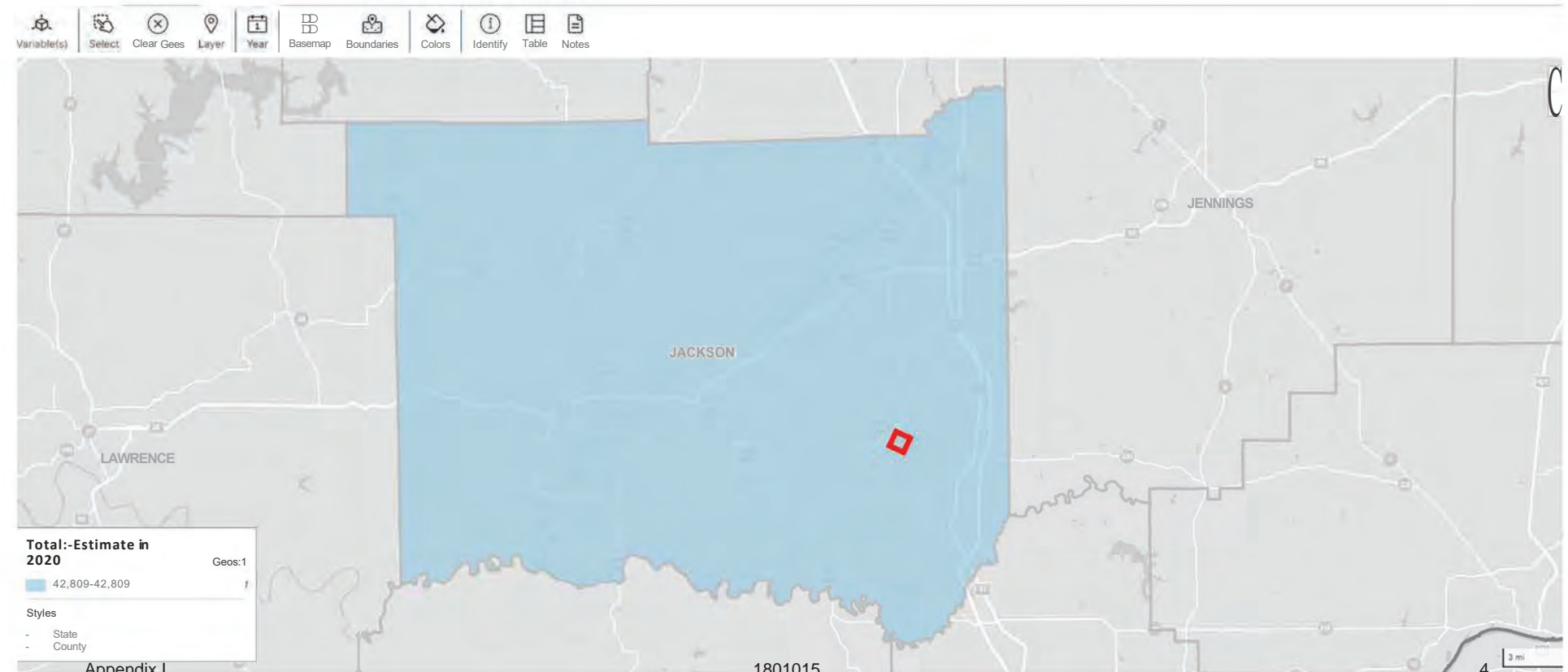
2020: ACS 5-Year Estimates Detailed Tables v Universe: Population for whom poverty status is determined

	Jackson County, Indiana		Census Tract 9675.02, Jackson County, Indiana		Census Tract 9882, Jackson County, Indiana	
Label	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
v Total:	42,809	±1,341	6,732	±539	4,422	±393
) Income in the past 12 months below poverty level:	6,019	±920	871	±488	388	±190
) Income in the past 12 months at or above poverty level:	36,790	±1,967	5,861	±1,574	4,034	±1,395

Community of Comparison (COC) - Low Income

Total: Estimate in 1 Geos in 2020

2020: ACS 5-Year Estimates Detailed Tables

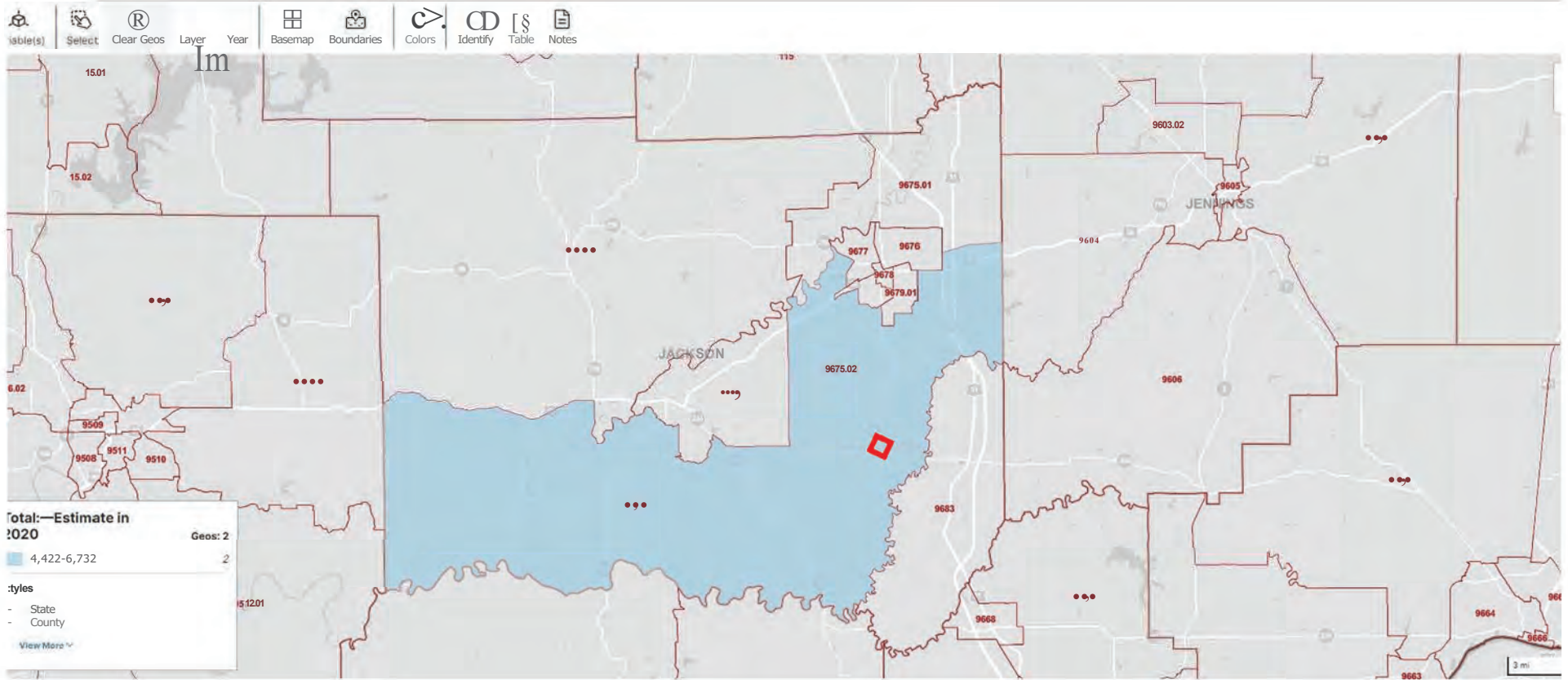


Affected Community (AC) - Low Income

American Community Survey

Total:—Estimate in 2020

ID : ACS 5Year Estimates Detailed Tables



Land and Water Conservation Fund (LWCF) County Property

ProjectNumber	SubProjectCode	County
1800171	1800171BB	Jackson
1800230	1800230	Jackson
1800305	1800305C	Jackson
1800327	1800327J	Jackson
1800363	1800363EE	Jackson
1800447	1800447	Jackson

*Park names may have changed. If acquisition of publically owned land with IDNR, Division of Outdoor Recreation, should occur.

ABBREVIATED ENGINEERING ASSESSMENT REPORT

S.R. 250 OVER U.N.T. TO RIDER DITCH
SMALL STRUCTURE REPLACEMENT
JACKSON COUNTY

DESIGNATION #: 1801015
LEAD DESIGNATION #: 1800276

STRUCTURE FILE #: CV 250-036-09.30



PREPARED FOR:

INDIANA DEPARTMENT OF TRANSPORTATION

PREPARED BY: BEAM, LONGEST & NEFF

FEBRUARY 2020



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ABBREVIATED ENGINEERING ASSESSMENT REPORT

PROJECT NUMBER: 1800276

STRUCTURE FILE NUMBER: CV 250-036-09.30

DESIGNATION NUMBER: 1801015

ROUTE IDENTIFICATION AND FEATURE CROSSED:

S.R. 250 Over Unnamed Tributary to Rider Ditch

PROJECT LOCATION: 0.79 miles east of S.R. 11, in Sections 19 and 30, T-5-N, R-6-E,
Washington Township, Jackson County, Indiana

REFERENCE POST: 009+30

LATITUDE: N38°51'05.0" LONGITUDE: W85°53'05.7"

1. PURPOSE OF REPORT:

The purpose of this report is to document the Engineering Assessment phase for project development, including all coordination that has been completed in preparation for this small structure replacement project. This report provides background information on the project site and provides conclusions and recommendations for future improvements at this location. This document outlines the proposal and is intended to serve as a guide for the subsequent survey, design, environmental investigation, public involvement, right of way acquisition, and other project activities leading to construction.

2. PROJECT LOCATION:

The proposed small structure replacement project site is located approximately 0.79 miles east of S.R. 11 near Dudleytown in Jackson County, Indiana. The small structure perpetuates drainage for Unnamed Tributary to Rider Ditch and is within Washington Township in Jackson County within Sections 19 and 30, Township 5 North, Range 6 East. This project is in the Indiana Department of Transportation's Seymour District. Maps of the project location are provided in Appendix A.

3. PROJECT PURPOSE AND NEED:

Based on the current condition of the existing structure, the structure is nearing the end of its design life. The purpose of this project is to address the deterioration of the structure while providing the necessary geometric criteria for the roadway along with adequate scour protection. The need of this project is to address the deterioration of the existing structure that continues to worsen and compromises the safety of the public.

4. EXISTING FACILITIES:

The existing roadway facility is classified as a Major Collector and is not part of the National Highway System or the National Truck Network. This project is located in a rural area and has level terrain. The posted speed limit at the project location is 55 mph. Plans were not available for the existing structure and the construction year is unknown.

Structure CV 250-036-09.30

The existing small structure consists of a single span prestressed concrete box beam small structure, spanning 18.5 feet with a rise of 3 feet. The existing structure is approximately 40 feet long (along the skew) and skewed approximately 45 degrees left to the roadway. The perpendicular span is 13 feet. There is existing cover of approximately 6 inches between the top of structure and

the existing surface of the roadway. The minimal cover consists entirely of asphalt. The existing prestressed concrete box beams are rated in fair condition and the substructure is rated in good condition according to the 2019 inspection report. There is leaking with efflorescence between the box beams and there is a scour hole at the inlet. The remainder of the structure is in satisfactory to good condition. A copy of the 2019 inspection report, including photos, is provided in Appendix E.

S.R. 250 Roadway

The existing approach roadway consists of asphalt and is 20 feet wide, containing two travel lanes that are 10 feet wide. There are no paved shoulders. The usable shoulders, which consist of compacted aggregate and earth, are approximately 1-2 feet wide. The total approach roadway width is approximately 24 feet. The only guardrail at the site is located on the structure, with 17 feet on each side of the structure. There is no access control for S.R. 250.

The road embankment side slopes are graded at an approximate slope of 3:1 or flatter at the northwest, northeast and southwest corners. The existing side slope is approximately 2:1 at the southeast corner because the channel is immediately adjacent to the roadway. The existing horizontal alignment of S.R. 250 is straight in the anticipated project limits. The existing roadway is a normal crown section with an approximate cross slope of 2%. The existing vertical alignment of S.R. 250 within the project limits is a flat crest curve, bounded by a large sag curve on both ends.

Road History

The age of the existing pavement is unknown. However, the existing pavement appeared to be in satisfactory condition at the scoping field check. Photos of the existing roadway conditions are provided in Appendix A.

Drainage

The existing drainage through the project is conveyed by the Unnamed Tributary to Rider Ditch. The stream flows from northwest to southeast underneath S.R. 250. The drainage area is north of the existing structure and primarily consists of pasture and agricultural land use with some undeveloped wooded areas. S.R. 250 is on a shallow embankment across the structure and roadside ditches are present at the northwest, northeast, and southwest corners. Downstream of the structure, the stream (located at the southeast corner of the structure) continues to flow east towards Vernon Fork Muscatatuck River. The existing structure provides adequate roadway serviceability freeboard for S.R. 250 for the 10-year design storm.

5. FIELD CHECK:

An Engineering Assessment Field Check was held at the project site on November 20, 2019 with William Fortson, Adam Pyle, Bill Read and Joe Middeler of INDOT Seymour District. Right-of-way acquisition, utilities and design exceptions were key issues discussed during the field check. Lane width, shoulder width, and guardrail were discussed as some of the items anticipated to require design exceptions. All the items discussed, and decisions made during the field check meeting are summarized in the field check meeting minutes provided in Appendix C.

6. TRAFFIC DATA:

Traffic data was obtained from INDOT for this report. The traffic data for the current year and construction year were interpolated from the years provided in the traffic data report. The traffic growth rate was determined to be 1.06% per year. A copy of the INDOT Traffic data is provided in Appendix B and a summary may be seen in Table 1.

Table 1: Traffic Data Summary				
Year	AADT (VPD)	DHV	TRUCK AADT	Directional Distribution (Positive Direction)
2020 (Current Year)	1,062	11.35%	16.72%	45.77%
2022 (Constr. Year)	1,084			
2042 (Design Year)	1,318			

7. CRASH DATA AND ANALYSIS:

Vehicular crash data was obtained from INDOT for this report. INDOT provided 16,020 reports for Jackson County from July 2010 to July 2019. One crash was recorded near the anticipated project limits, based on analysis of the crash data. The crash did not involve personal injury. The primary factor for the crash was the vehicle running off the road.

The crash report narrative stated that the crash occurred west of County Road 825 East, but the exact location is unknown. The narrative also stated that the shoulders were narrow at the location of the crash. The narrative did not include information referencing the existing structure; therefore, the geometry of the structure was judged not to be a factor in the crash and no additional investigation was performed. A copy of the crash data filtered to this project location is provided in Appendix B and a summary may be seen in Table 2.

Table 2: Crash Data Summary		
Year	Number of Crashes	Recorded Personal Injury
2014	1	0
Total	1	0

8. ALTERNATIVES AND RECOMMENDATIONS:

Alternative A: No Build / Do Nothing

The No Build Alternative would require the existing small structure to remain in place with no improvements. The small structure will continue to deteriorate and will eventually fail, which would likely require the roadway to be closed until a replacement small structure can be constructed. Alternative A is not recommended because it would not satisfy the purpose and need of the project.

Alternative B (Preferred Alternative): New Structure on Existing Alignment with Minimum Width Road Reconstruction

Alternative B is recommended because it satisfies the purpose and need of the project. This alternative will construct a new structure on the existing roadway horizontal alignment and approximately the same vertical alignment. The roadway will contain 10 feet wide lanes and 4 feet wide usable shoulders. The lanes will consist of asphalt and the usable shoulders will consist of 2 feet of paved width and 2 feet of compacted aggregate width. The proposed lane width does not satisfy current geometric design criteria and requires a Level One Design Exception. The proposed lane width is recommended to match existing because INDOT has no current plans to widen S.R. 250 in the vicinity of the project limits.

The only existing guardrail is located on the structure. There is no existing approach guardrail and no end treatments. Guardrail installation was discussed at the field check, at which time it was anticipated that new guardrail would not be recommended. The structure ends must be outside the clear zone and the shoulders must be graded at 6:1 or flatter to the clear zone on both sides of the

structure for no guardrail. This would require the roadside ditches to be pushed outwards, which could worsen impacts to a potential wetland at the northeast corner. Therefore, for less earthwork, shorter structure length, and less potential wetland impacts, it is recommended to place guardrail with the structure.

See Table 4 for a summary of all Level One Controlling Criteria for the preferred alternative. The proposed plan and profile drawing for the preferred alternative is provided in Appendix I. A Level Two Design Exception is anticipated to be required for the channel centerline located approximately at the edge of the obstruction free zone at the southeast corner of the structure beyond the limits of new guardrail. The anticipated project limits will be approximately 50 feet on each side of the proposed structure with approximately 150 feet of incidental construction on each end for a total length of 400 feet. Full depth pavement will be placed within the project limits and the pavement will be milled and resurfaced within the incidental construction limits. It is anticipated that new full depth pavement will be placed directly on top of the structure to minimize raising the existing profile while providing adequate hydraulic capacity. The length of incidental construction is the minimum required to provide a usable shoulder width of 4 feet adjacent to guardrail and taper the shoulder back to the existing width at the guardrail ends. The project requires new pavement to be installed over the proposed structure; therefore, pavement cores and roadway borings will need to be taken during the geotechnical investigation to determine the existing and proposed pavement types.

The replacement structure will be a single span under-fill structure. A four-sided reinforced concrete box (RCB) and three-sided structures (flat top and arch top) were analyzed. The final structure type is recommended to be an RCB to minimize channel excavation compared to that required for placing the footings for a three-sided structure. Construction duration is also minimized with an RCB compared to a three-sided structure because footings are not required for an RCB. The proposed structure will be built on a 45 degree left skew to the roadway to minimize the structure length and channel realignment at each end of the structure. Wingwalls and 1 foot tall headwalls will be utilized. The ends of the structure and wingwalls will be protected with revetment riprap. The downstream channel banks (adjacent to the south side of S.R. 250 east of the structure) will be reinforced with permanent turf reinforcement mats to strengthen the side slopes against erosion caused by flow in the channel. A copy of the INDOT Hydraulic Review Memo is provided in Appendix F and a summary of the culvert properties is shown in Table 3.

Table 3: Culvert Properties Summary								
Parameter	Existing		Proposal 1		Proposal 2		Proposal 3	
Structure Size & Type	13 ft. x 3 ft. Reinforced Concrete Slab Top		14 ft. x 4 ft. Reinforced Concrete Box		16 ft. x 4 ft. Reinforced Concrete Flat Top		16 ft. x 5 ft. Reinforced Concrete Arch Top	
Q ₁₀₀ Headwater Elevation	95.13	ft.	95.10	ft.	95.03	ft.	95.09	ft.
Q ₁₀ Headwater Elevation	94.14	ft.	94.11	ft.	94.04	ft.	94.08	ft.
Meets Roadway Serviceability @ Q ₁₀ (Y/N)	Y		Y		Y		Y	
Backwater	1.04	ft.	1.01	ft.	0.94	ft.	1.00	ft.
Outlet Velocity @ Q ₁₀	3.72	ft/s	3.50	ft/s	3.13	ft/s	3.33	ft/s
Min. Outlet Riprap Size	-		Revetment		Revetment		Revetment	
Inlet Riprap Needed (Y/N)	-		N		Y		Y	
Sump Depth	0	in.	12	in.	12	in.	24	in.

Table 4: Level One Controlling Criteria Summary

Project Scope of Work: Small Structure Replacement	Design Criteria Reference	Existing Condition	Does the proposed design satisfy the criteria? Enter the value provided in the appropriate column.		
			Yes	No *	N/A
Enter the minimum criteria below.					
1. Design Speed: 55mph	IDM Fig. 55-3B	55 mph	55 mph		
2. Lane Width, Mainline: 11 ft Auxiliary Lanes: N/A	IDM Fig. 55-3B	10 ft		10 ft	
3a. Uncurbed Sections, Usable Shoulder Width adjacent to: Mainline: 3 ft Auxiliary Lanes: N/A	IDM Fig. 55-3B	1 ft to 2 ft	4 ft		
Uncurbed Sections, Paved Shoulder Width adjacent to: Mainline: 2 ft Auxiliary Lanes: N/A	IDM Fig. 55-3B	0 ft	2 ft		
3b. Curbed Sections, Curb Offset: N/A ft	N/A	N/A			N/A
4. Bridge Clear-Roadway Width: N/A	IDM Fig. 55-3B	30.3 ft			N/A
5. Structural Capacity: HL-93	IDM Fig. 55-3B	Unknown	HL-93		
6. Horizontal Curvature, Minimum Radius: N/A	N/A	N/A			N/A
7. Superelevation Transition Lengths: N/A	N/A	N/A			N/A
8a. Stopping Sight Distances at Horizontal Curves: N/A	N/A	N/A			N/A
8b. Stopping Sight Distances at Vertical Curves: 495 ft	IDM Fig. 55-3B	> 495 ft	> 495 ft		
9. Maximum Grades: 7.5%	IDM Fig. 55-3B	1.68%	1.68%		
9. Through-Travel-Lane Cross Slope: 2% to 3%	IDM Fig. 55-3B	2% to 3%	2%		
11. Superelevation Rate e_{max} :	N/A	N/A			N/A
12. Vertical Clearances: N/A	N/A	N/A			N/A
13. Americans with Disabilities Act (ADA) Criteria	N/A	N/A			N/A
14. Bridge-Railing Safety Performance Criteria, (circle one of the following) TL-2 v. TL-4 v. TL-5	N/A	N/A			N/A

* A design exception is required when minimum criteria are not satisfied. See Indiana Design Manual Section 40-8.0.

9. MAINTENANCE OF TRAFFIC DURING CONSTRUCTION:

This project is not considered a mobility significant project per IDM Section 503-2.02. Therefore, a transportation management plan (TMP) is not anticipated for this project. As discussed at the scoping field check, the maintenance of traffic will consist of a road closure and an official detour route utilizing S.R. 11, U.S. 50 and I-65. The detour length is approximately 18.8 miles. Based on a discussion at the field check, the maximum road closure time is anticipated to be 30 calendar days to minimize traffic disruption. The official detour route shall be submitted to INDOT Traffic for final approval.

10. COST ESTIMATE:

The original total estimate of \$360,500 for a small structure replacement was provided by INDOT in the culvert mini scope dated 2/9/2018. A summary of the construction costs from the INDOT mini scope is shown in Table 5 and a copy of the entire INDOT culvert mini scope may be seen in Appendix H.

Table 5: Total Cost from INDOT Mini Scope Summary (2018)	
Construction Cost (CN)	\$250,600
Right of Way (Land Acquisition)	\$10,000
MOT Cost	\$48,400
Utility Cost (UT1)	\$60,000
Total Project Cost	\$369,000

The total construction cost summary for the preferred Alternative B is provided in Table 6 and the details of this cost estimate is provided in Appendix G.

Table 6: Alternative B Total Cost Summary (2020)	
Construction Cost (CN)	\$480,000
Right of Way (Land Acquisition)	\$75,000
MOT Cost (Closure)	\$16,000
Utility Cost (CN)	\$0
Total Project Cost	\$571,000

11. ENVIRONMENTAL ISSUES:

Coordination with environmental permitting agencies and INDOT Ecology and Waterway Permitting will be required based on the impacts of the project. Although originally anticipated to be a Categorical Exclusion Level 1, the environmental document for this project is anticipated to be a Categorical Exclusion Level 2 because wetlands are anticipated to be present and more than 300 linear feet of stream impacts are anticipated. A Storm Water Quality Manager Level 1 is anticipated for this project.

Land Use and Infrastructure

This project site is located on S.R. 250 in a rural area, approximately 0.79 miles east of the intersection with S.R. 11 near Dudleytown, Indiana, in southeastern Jackson County. Primary land uses in the general project area consist of pasture, residential and some undeveloped wooded land.

Wetlands

The USFWS National Wetland Inventory (NWI) map of the project area identifies potential freshwater forested/shrub wetlands in the immediate project vicinity on both sides of S.R. 250. Some plant species commonly found in wetlands were acknowledged upon inspection of the site at the field check. A Waters of the U.S. Report will be prepared, and any jurisdictional wetlands will be delineated therein. Coordination with the INDOT Ecology and Waterway Permitting will confirm the presence of the jurisdictional wetlands. If wetlands are located within the project limits, additional coordination with the U.S. Army Corps of Engineers (USACE) and the Indiana Department of Environmental Management (IDEM) will be required to determine if mitigation is required for wetland impacts. If jurisdictional wetlands are determined to be present at the site, they will be incorporated into the final design plans.

Floodplains

The existing structure is located within the Vernon Fork Muscatatuck River floodplain. The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps indicate that the project is located within Zone A of the floodplain, which is the 100-year floodplain. This project is not anticipated to affect flood heights, increase flood risks, or otherwise negatively impact the beneficial qualities of the floodplain.

Potential Historic Structures and Archaeology

The Indiana State Register of Historic Sites and Structures and the Indiana State Historic Architectural and Archeological Research Database (SHAARD) were reviewed to determine the presence of potential historic properties listed on or eligible for inclusion on the National Register of Historic Places (NRHP) within or near the project limits. These databases did not identify any properties in the anticipated project limits.

The Indiana Historic Bridge Inventory Report (Mead and Hunt, 2010) does not list Structure CV-250-036-09.30. The project will require an evaluation by a Qualified Professional meeting the Secretary of Interior's Professional Qualification Standards for compliance with Section 106 for above ground resources. Additionally, an assessment of the area by a Professional Archaeologist will be necessary to identify and evaluate impacts to potential archaeological resources.

Section 4(f) – Section 6(f)

No publicly owned parks, trails, other recreational facilities or wildlife refuges that would be afforded protection under Section 4(f) of the US Department of Transportation Act of 1966 have been identified in the immediate project area. Section 4(f) of the US Department of Transportation Act prohibits the use of public parks, recreational facilities, wildlife refuges, or historic sites listed on the NRHP for federally funded transportation facilities unless there is no feasible and prudent alternative to such use.

No potential Section 6(f) sites were identified within the project area. The National Park Service (NPS) Land and Water Conservation Fund (LWCF) was created through the Land and Water Conservation Fund Act of 1965. Section 6(f) of the Act prohibits the conversion of LWCF lands unless the NPS approves the conversion of property with reasonable equivalent usefulness and location and of at least equal fair market value. As there are no sites encumbered by Section 6(f) funds within the project area, no additional coordination will be necessary for this aspect as part of the environmental documentation prepared for the project.

Noise

As proposed, the replacement of the existing structure will be considered a Type III project. The project will not provide any added travel or auxiliary lanes and the roadway will not have a substantial horizontal or vertical alteration. In accordance with 23 CFR 772 and the 2017 INDOT Traffic Noise Policy, this action does not require a formal noise analysis.

All construction equipment will be required to comply with the Occupational Safety and Health Administration's (OSHA) regulations. Proper construction equipment maintenance with original exhaust equipment will help mitigate noise impacts. Additionally, the contractor will be required to follow best management practices to reduce noise impacts from construction equipment. These provisions will be incorporated into the project specifications.

Aviation

There are two airports within 5 miles north of the structure, Stewart Field and Freeman Municipal Airport. However, it is anticipated that Federal Aviation Administration notice criteria will not be exceeded for this project.

Records Reviews and Hazardous Materials

A preliminary red flag investigation of the project area was completed. No hazardous materials were identified within a 0.5 mile radius of the project limits. A full red flag investigation will be performed as part of the environmental document.

Air Quality

This project is of a type qualifying as a categorical exclusion (Group 1) under 23 CFR 7711.117(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. Conformance of the project with the 2020-2024 Indiana Statewide Transportation Improvement Program (STIP) must be completed as part of the environmental document.

Endangered, Threatened, and Rare Species

The Jackson County listing of the Indiana Natural Heritage Data Center information on endangered, threatened, and rare (ETR) species and high-quality natural communities was reviewed. The county listing has numerous plant and animal species categorized as rare, endangered, and/or threatened. Due to the nature of the project, this project is anticipated to fall under the guidelines set forth under the USFWS *Interim Policy for the Review of Transportation Projects in Indiana* (dated May 29, 2013). No further coordination is necessary, apart from the routine coordination with IDNR that will be done as part of the environmental document process.

The 2019 inspection report for Culvert CV-250-036-09.30 indicated there was no visual or audio evidence of bats in the structure. A review of the USFWS Information for Planning and Consultation database was conducted and indicated the presence of endangered bat species near the project location. Some tree clearing may be required for this project. Since the project falls within the range of the Indiana Bat and Northern Long-eared Bat, the range-wide programmatic consultation for the Indiana Bat and Northern Long-eared Bat will be completed according to "Using the USFWS's Information for Planning and Consultation (IPaC) System for Listed Bat Consultation for INDOT Projects".

IDEM Section 401 Water Quality Certification (WQC)

An IDEM Individual 401 WQC is anticipated to be required for this project because of impacts below the ordinary high water mark of U.N.T. to Rider Ditch. The IDEM Individual WQC is required for total stream impacts of greater than 300 linear feet, wetland impacts of greater than 0.1 acre and channel relocation. This determination will be made in coordination with IDEM. Based on a discussion at the field check, permanent turf reinforcement mats will be placed on the downstream channel banks from the structure to the intersection of S.R. 250 and County Road 825 East to prevent erosion of the roadway. When added to the length of channel disturbance for replacing the structure, the length of turf mat reinforcement will bring the total impacts to exceed 300 feet. It is anticipated that wetlands are present within the project limits and impacts may exceed 0.1 acres. Furthermore, the channel will need to be realigned at the structure ends to provide smooth transitions to and from the structure.

USACE Section 404 Permit for Discharge of Dredged Material

A Section 404 Permit is anticipated to be required from USACE. An Individual Permit may be required for extensive impacts to Waters of the U.S. This determination will be made in coordination with USACE.

Nation Pollution Elimination Discharge System (IDEM Rule 5)

An IDEM Rule 5 permit is not anticipated because the total area of soil disturbance will be less than 1 acre.

Construction in a Floodway Permit

An IDNR Construction in a Floodway Permit is not required. The project is in a rural area and the drainage area for the existing structure is less than 50 square miles.

12. SURVEY REQUIREMENTS:

The survey limits for the anticipated small structure replacement began 250 feet west of the center of the existing small structure and continued east for 600 feet (to include the intersection with CR 825 E) with a width of 75 feet on each side of the centerline of S.R. 250. The survey for the stream began 75 feet south of the existing small structure and continued north for 225 feet with a width of 75 feet beyond the stream's top of bank. The survey was completed in January 2020.

13. RIGHT OF WAY IMPACTS:

Based on preliminary research, the existing right of way (R/W) limits in the vicinity of the structure are the existing edges of pavement along S.R. 250. Therefore, this project will require acquisition of additional R/W. Temporary and permanent R/W acquisition (three parcels from two property owners) is anticipated for this project. Approximately 35 to 45 feet on each side of the centerline of S.R. 250 along the total project length will be required for constructing the replacement small structure. Temporary R/W is required along the south side of the roadway extending east of the structure to reinforce the channel banks. The land use within the anticipated R/W acquisition is undeveloped woods at the northwest corner of the structure and pasture at the other three corners. The R/W limits and property owners will be investigated further during the Stage 1 design phase. Total R/W acquisition may exceed 0.5 acres because of the channel work and guardrail installation but will be minimized if possible. No relocations are anticipated.

14. RAILROAD IMPACTS:

There are no railroads within the project area or in the vicinity of the project area.

15. UTILITY IMPACTS:

During the site visit and based on responses from the initial notices, some utilities were found to exist within the project limits. Below is a list of existing utilities that are believed to be located within the proposed project limits:

Electric:

Jackson County REMC
Attn: Brad Pritchett
274 E. Base Rd.
Brownstown, IN 47220

Jackson County REMC has an aerial electric line running parallel to the south side of S.R. 250, offset approximately 28 feet from the center of the road. There is a power pole near the southwest corner of the existing structure. Relocation may be required because the south end of the structure will be located underneath the aerial line. However, it may be possible to use shielding or de-energize the line to avoid relocation. Additional coordination with Jackson County REMC will determine if relocation is required.

Telephone/Cable/Internet:

Jackson Connect LLC (A Division of Jackson County REMC)
Attn: Mark Smallwood
274 E. Base Rd.
Brownstown, IN 47220

Preliminary coordination with INDOT at the field check indicated that Jackson Connect is underbuilt on the Jackson County REMC aerial electric line. Relocation may be required because the south end of the structure will be located underneath the aerial line. Additional coordination with Jackson County REMC will determine if relocation is required.

Frontier Communications
Attn: Robin Branson
24373 County Road 45
Elkhart, IN 46516

Frontier Communications has a buried line running parallel to the north side of S.R. 250, offset approximately 14 feet from the centerline of the road. The line has an aerial span across the stream, which is offset approximately 25 feet from the centerline of the road. It is anticipated that the line will conflict with the project and will require relocation.

16. RELATED PROJECTS:

This small structure replacement project (Des. No. 1801015) is currently kinned with five other INDOT Projects. S.R. 250 over Horse Lick Creek (Des. No. 1800276) is a bridge replacement project located approximately 1.51 miles west of S.R. 11 and is the Lead Project on Contract B-41445. The recommended detour for Lead Des. No. 1800276 will utilize S.R. 11, U.S. 50 and I-65, and is not anticipated to conflict with this project.

There are two kinned bridge rehabilitation projects on S.R. 39, located 3.39 miles south of S.R. 250 and 1.30 miles north of S.R. 56, respectively. The recommended detour route for the former S.R. 39 bridge rehabilitation replacement will utilize S.R. 250, I-65 and S.R. 256. The recommended detour route for the latter S.R. 39 bridge rehabilitation will utilize S.R. 56, I-65, and S.R. 256. Neither detour route is anticipated to conflict with this project.

There are two kinned small structure replacement projects, one of which is also on S.R. 250, located 5.15 miles west of S.R. 11. The other is on U.S. 31, located 2.24 miles north of S.R. 250. The recommended detour route for the other S.R. 250 small structure replacement project will utilize S.R. 39, U.S. 50 and S.R. 11. The recommended detour route for the U.S. 31 small structure replacement will utilize S.R. 250, I-65, and U.S. 50. Neither detour route is anticipated to conflict with this project.

The final maintenance of traffic scheme for these bundled projects will be designed to consider these kinned projects and their respective detours. Further discussion with the District will be required to coordinate the timing of these bundled projects.

17. CONCURRENCE:

The aforementioned information regarding the Small Structure on S.R. 250 over Unnamed Tributary to Rider Ditch (Des. No. 1801015) has been agreed upon by:

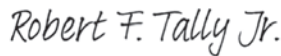
This document prepared by:



Adam J. Clauss, P.E.
Bridge Engineer
Beam, Longest & Neff, LLC

DATE: 3/20/2020

Reviewed by:



Robert F. Tally, Jr.
INDOT Seymour District
System Asset Manager

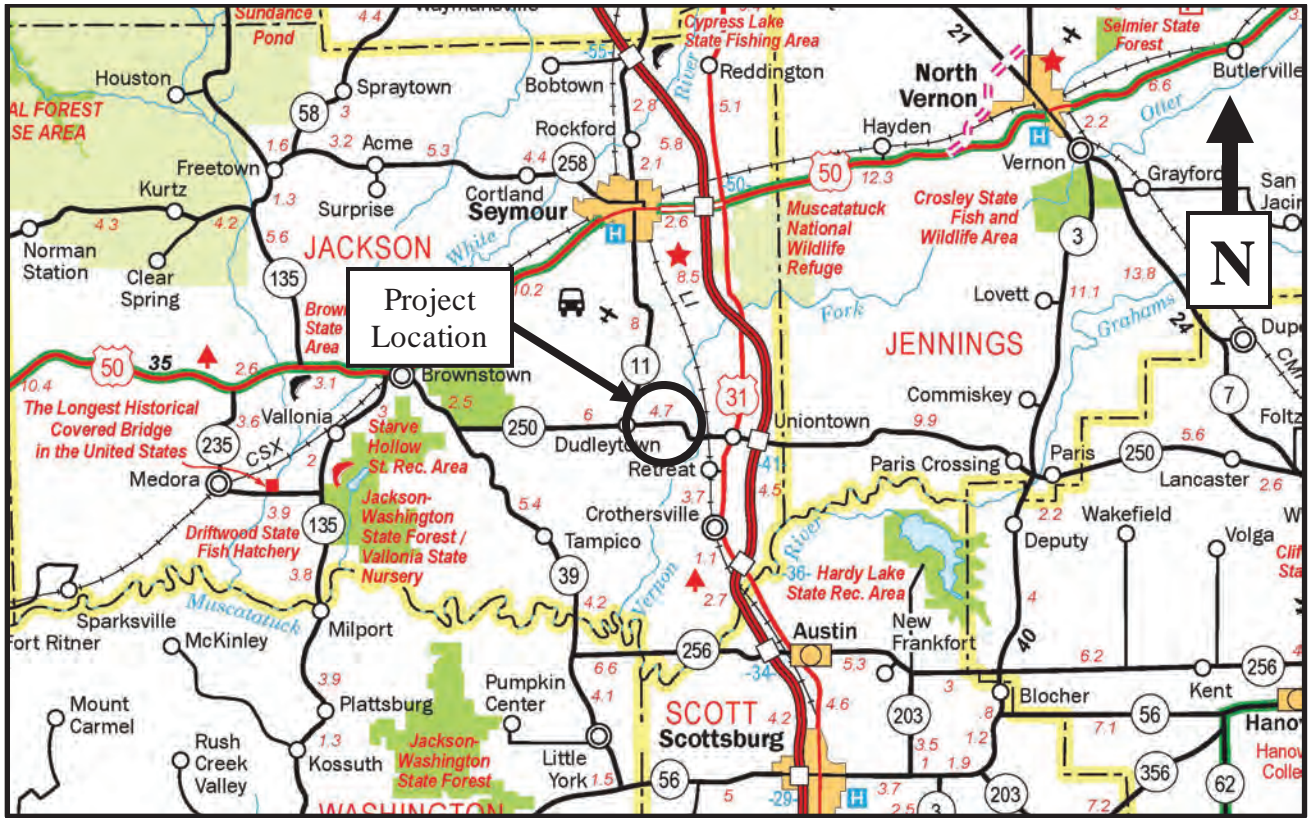
DATE: 04/08/2020



William Fortson
INDOT Seymour District
Project Manager

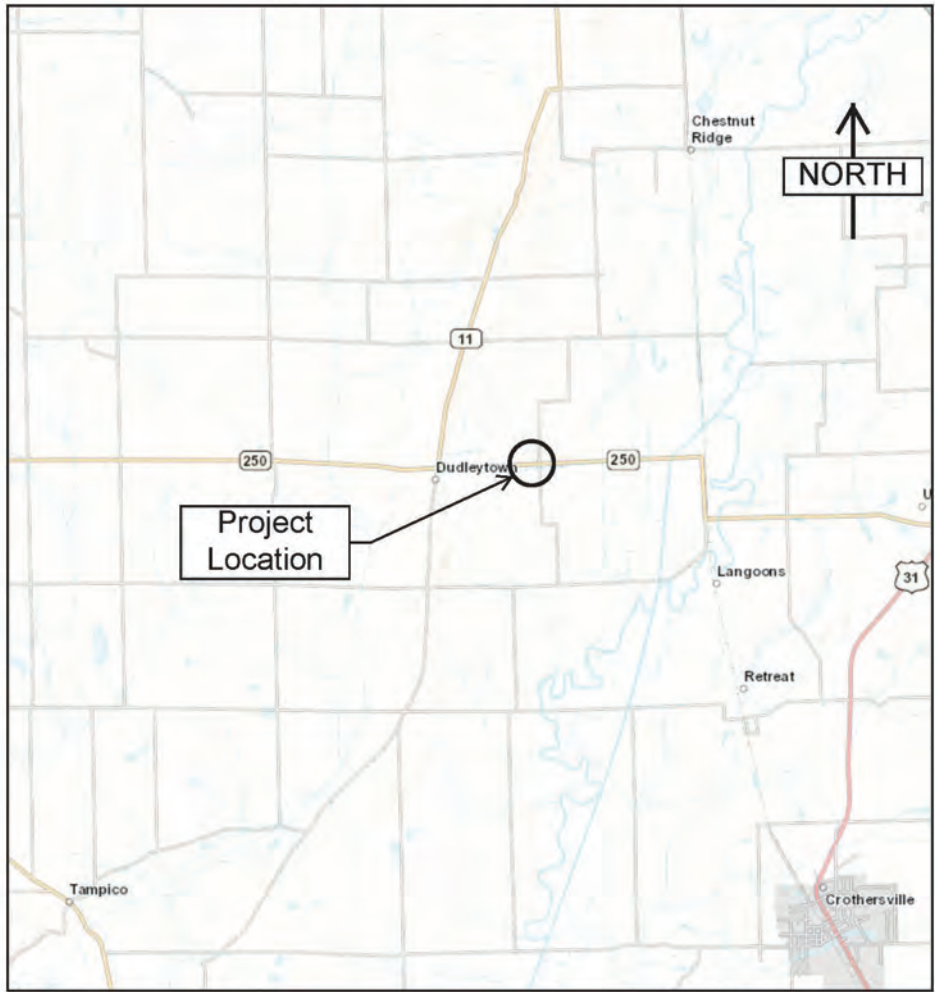
DATE: 4/8/2020

APPENDIX A:



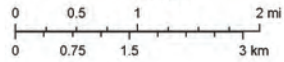
PROJECT LOCATION MAP
S.R. 250 OVER UNNAMED TRIBUTARY TO RIDER DITCH
0.78 MILES EAST OF S.R. 11
JACKSON COUNTY

S.R. 250 over UNT Rider Ditch



January 31, 2020

1:64,000



Indiana Department of Transportation (INDOT), U.S. Census Bureau (USCB),
Indiana Geographic Information Council (IGIC), UITS, Indiana Spatial Data
Portal

PROJECT LOCATION MAP
S.R. 250 OVER UNNAMED TRIBUTARY TO RIDER DITCH
0.78 MILES EAST OF S.R. 11
JACKSON COUNTY



PROJECT LOCATION MAP
S.R. 250 OVER UNNAMED TRIBUTARY TO RIDER DITCH
0.78 MILES EAST OF S.R. 11
JACKSON COUNTY



APPROACH LOOKING EAST

APPROACH LOOKING WEST



ELEVATION LOOKING NORTH



TYPICAL CONDITION OF SHOULDER AT
NORTHWEST CORNER OF STRUCTURE

TYPICAL CONDITION OF SHOULDER AT
SOUTHWEST CORNER OF STRUCTURE



TYPICAL CONDITION OF SHOULDER AT
NORTHEAST CORNER OF STRUCTURE

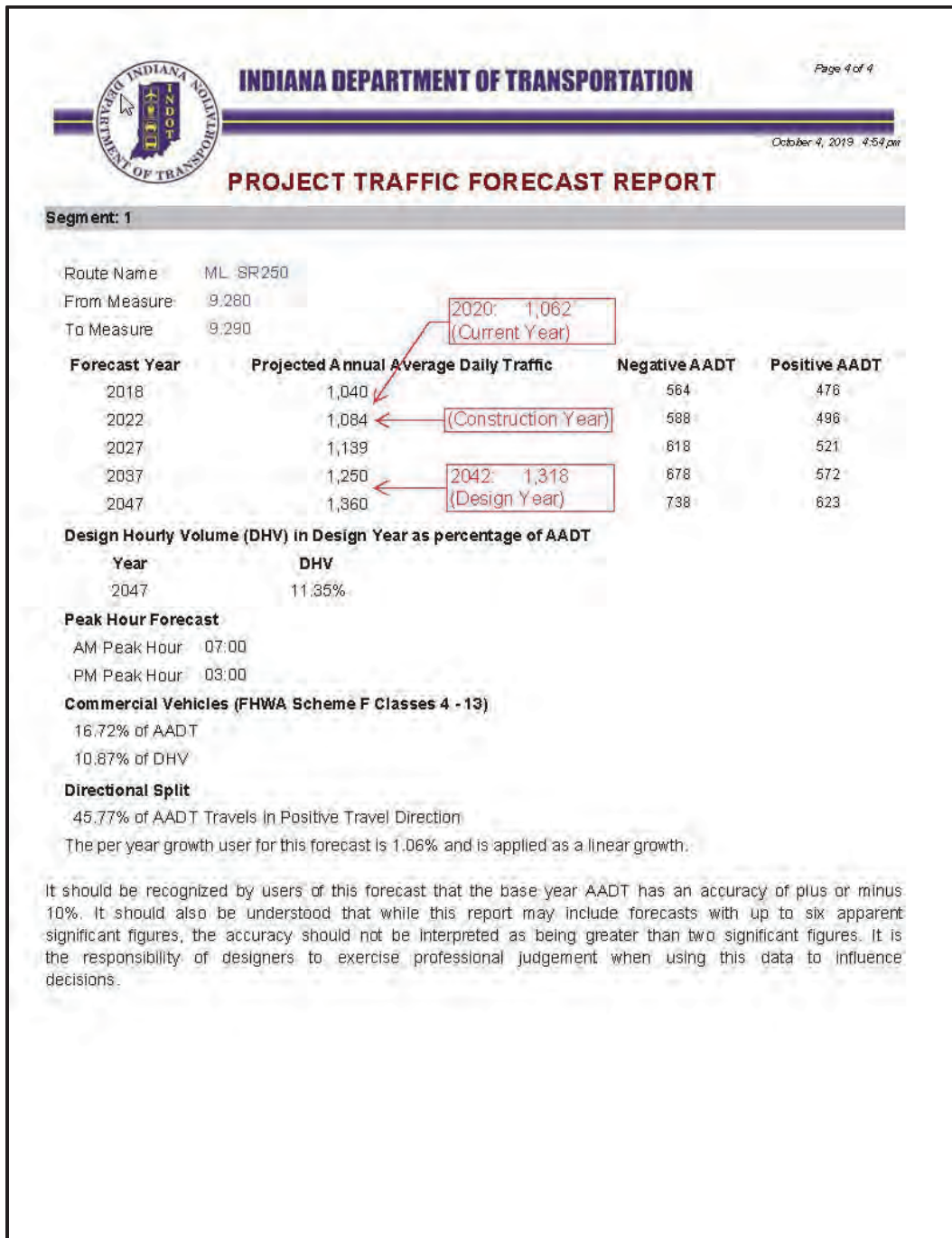


TYPICAL CONDITION OF SHOULDER AT
SOUTHEAST CORNER OF STRUCTURE

TYPICAL CONDITION OF DOWNSTREAM
CHANNEL LOOKING TOWARDS STRUCTURE



APPENDIX B:



TRAFFIC DATA

Master Record Number	Agency	Local Code	County	Township	City	COLLDTE	Collision Time	Vehicles Involved	Trailers Involved	Number Injured	Number Dead	Number Deer	House Number	Roadway Number
902215280	ISP VERSAILLES 42	201400113286	JACKSON	WASHINGTON	SEYMOUR	4/9/2014	1940	1	1	0	0	0		SR250

CRASH DATA
(Filtered within Project Limits)

Roadway Id	Intersecting Road	Corporate Limits?	Property Type	Feet From	Direction	Latitude	Longitude	Roadway Class	Aggressive Driving?	Hr and Run?	Locality	School Zone?	Rumble Strips?	Construction?	Light Condition
SR250		N	OTHER	2746	E	38.85169155	-85.87429482	STATE ROAD	N	N	RURAL	N	N	N	DAYLIGHT

CRASH DATA (Continued)
(Filtered within Project Limits)

Weather Conditions	Surface Condition	Type of Median	Roadway Junction Type	Road Character	Roadway Surface	Primary Factor	Damage Estimate	Manner of Collision	Time Notified	Time Arrived	Investigation Complete?	Photos Taken?	Unique Location Id	State Property Damage?
CLEAR	DRY	NONE	NO JUNCTION INVOLVED	STRAIGHT/LEVEL	ASPHALT	RAN OFF ROAD RIGHT	\$10000 TO \$25000	RAN OFF ROAD	1940	1948	Y	N	CR825ESR250	No.

CRASH DATA (Continued)

(Filtered within Project Limits)

Traffic Control	Narrative
LANE CONTROL	<p>Driver 1 was traveling westbound on State Road 250 west of County Road 825 East in Jackson County when his front passenger steer tire went off the roadway into a ditch on the north side of State Road 250. Driver 1 was unable to pull the vehicle up out of the ditch. Vehicle 1 continued traveling westbound in the ditch eventually tipping on the passenger side of the vehicle and coming to a final rest.</p> <p>In this area there is very little shoulder therefore the ditch is quite close to the roadway. Also very wet conditions the past few days made the soil very soft.</p> <p>As a results of the crash, a large amount of diesel fuel was leaked from Vehicle 1 into a nearby ditch.</p> <p>He was given a PBT per my personal policy at every crash and the results showed .000 for any alcohol.</p>

CRASH DATA (Continued)

(Filtered within Project Limits)

APPENDIX C:



8320 CRAIG STREET | INDIANAPOLIS, IN 46250
317.849.5832 | f: 317.841.4280 | 800.382.5206 | WWW.B-L-N.COM

A TRADITION OF EXCELLENCE SINCE 1945

November 26, 2019

SCOPING FIELD CHECK MEETING MINUTES

Meeting Date: November 20, 2019

Work Type: Small Structure Replacement

Route: S.R. 250

Des No.: 1801015

PE Project No.: 1800276

R/W Project No.: 1800276

CN Project No.: 1800276

Structure File: CV 250-036-09.30

Over U.N.T. to Rider Ditch

Location: 0.78 miles East of S.R. 11 (RP 9+30), near Dudleytown, in Jackson County

Attended By: William Fortson, Project Manager, Seymour District
Adam Pyle, Highway Engineer, Seymour District
Bill Read, Utility and Railroad Engineer, Seymour District
Joe Middeler, Area Engineer, Seymour District
Mike McCool, Bridge Dept. Manager, Beam, Longest and Neff, L.L.C. (BLN)
Gil Bullock, Bridge Engineer, BLN
Adam Clauss, Bridge Engineer, BLN

A scoping field check meeting, as part of the Abbreviated Engineer's Assessment Report, was held on November 20, 2019 for the referenced project. A list of attendees is shown above. A scoping field check is part of the engineering assessment process to evaluate this project. The project will include the replacement of the existing slab top (prestressed concrete box beams) culvert on the same horizontal alignment and the same vertical profile. The following is a summary of comments made at the field check:

1. Mr. Clauss briefly reviewed the existing structure condition, deterioration, and history. Mr. Clauss stated that the culvert is a single span prestressed concrete box beam structure with a span of 18 feet and a rise of 3 feet and is in fair condition with leaching between beams. The channel is also in fair condition. There are no known rehabilitations to this structure. Mr. Clauss recommended that the structure be replaced due to deterioration.
2. Mr. Clauss stated that the proposed structure hydraulics have been completed by INDOT. The proposed structure alternates are a reinforced concrete box with a span of 14 feet and a rise of 4 feet, a three-sided flat-top structure with a span length of 16 feet and a rise of 4 feet, and a three-sided arch-top structure with a span length of 16 feet and a rise of 5 feet. Mr. Clauss stated that the preferred alternate will be determined with the abbreviated engineer's report with attention to which alternate would have the least impact on the existing roadway profile. It was noted that the hydraulic memo for this project states that the existing structure has a span of 13 feet and a rise of 3 feet, which is a shorter span than shown on the most recent inspection report. The span length along skew was measured to be 18 feet. After the span length was measured, it was estimated that 13 feet is the perpendicular span of the structure when accounting for the approximate 45 degree skew. After the meeting, Mr. Clauss coordinated with INDOT Hydraulics and confirmed

that 13 feet is the perpendicular span length for the waterway opening through the structure. Mr. Clauss stated that wingwalls will be investigated for the proposed structure.

3. The design criteria and project limits were discussed. Mr. Clauss stated that S.R. 250 is classified as a rural major collector and that S.R. 250 is not on the National Highway System or the National Truck Network at this location. The ADT for S.R. 250 at this location is approximately 1,051 vehicles per day and the existing lanes are 10 feet wide with usable shoulders ranging from 1 to 2 feet wide (unpaved). Mr. Clauss stated that lanes are required to be 11 feet wide and usable shoulders are required to be at least 3 feet wide (with at least 2 feet paved). The proposed lanes and shoulders will match the existing (see below with level one and two design exceptions). Mr. Clauss recommended that the project length will be approximately 50 to 75 feet long to replace the structure and install new full depth pavement. The project length is sized to minimize the length of new full depth pavement. Incidental construction is anticipated to consist of approximately 100 feet of resurfacing and shoulder grading at the project ends. The existing profile grade will be maintained as closely as possible to minimize the construction limits.
4. Mr. Clauss discussed the crash history in the last 10 years. Based on the data previously provided by INDOT, there have been a few collisions with deer and a few instances of vehicles going off the road and not recovering because of steep side slopes in the vicinity of the project. The deer collisions are evaluated as unrelated to the characteristics of the existing structure and the crash data did not indicate the cause(s) for the vehicles going off the road. It was discussed that the shoulders adjacent to the structure are sloped approximately 3:1 with a maximum of approximately 3 feet of drop-off, except for the southeast corner, where the channel is right next to the road with steeper a foreslope and backslope.
5. The level one and level two design criteria were discussed. Mr. Clauss stated that level one design exceptions are anticipated for lane and shoulder width because it is recommended to maintain the existing lanes and shoulders (see above with design criteria). Mr. Clauss discussed the possibility of a level two design exception for roadside safety features (guardrail length). The only guardrail currently at the site is on the existing structure. There is no approach guardrail. Mr. Clauss recommended that no new guardrail be installed because of the relatively low ADT and that new guardrail would need to go all the way from the southeast corner of the structure to the intersection with County Road 825 East to protect the road from the channel. It is anticipated that the southeast shoulder would need to be widened to accommodate guardrail, and this could result in more than 300 feet of impacts to the channel. BLN will further investigate the shoulders and proposed structure length to determine if no guardrail is still recommended for the abbreviated engineer's report.
6. Mr. Clauss stated that the field survey is in progress and anticipated to be completed in early 2020. CECon is performing the field survey as a subconsultant for BLN. Mr. Clauss also stated that property research has been performed and indicates that the apparent existing right of way is at the edge of pavement throughout the anticipated project limits. It is anticipated that less than 0.5 acres of temporary and permanent right of way acquisition will be required for this project.
7. At the scoping field check meeting for Des. No. 1800276, the following items were discussed and affect this project. Mr. Bullock proposed to skip the stage 2 submittal for

the projects on this contract. However, Mr. Read stated that a stage 2 submittal should be made for projects that require additional right of way because it's required to have the right of way information on plans sent to utility companies. Mr. McCool stated that BLN would submit stage 2 plans if required, but also stated that plans from an earlier submittal could include the required right of way information and skip the stage 2 submittal to reduce the submittal review workload for INDOT. BLN will continue to coordinate with INDOT on whether a stage 2 submittal will be required for this project.

8. Utility impacts were discussed. Mr. Clauss stated that BLN is performing utility coordination. Jackson County REMC has overhead electrical lines on the south side of S.R. 250. Mr. Read stated that Jackson Connect is underbuilt on the REMC poles with an overhead fiberoptic line. Mr. Clauss stated that no impacts to the REMC facilities are anticipated because there is sufficient clearance from the structure to the overhead lines and nearest poles. Frontier has a buried line along the north side of S.R. 250 that has an overhead span across the channel. The Frontier facility is closer to the road and lower than the REMC facilities; therefore, the Frontier facility may be impacted, and relocation may be necessary. Mr. Read stated that Frontier may be installing new or upgraded facilities at this location in the future. BLN will continue coordinating with the utility companies and impacts will be avoided, if possible.
9. Mr. Clauss discussed the environmental impacts of the project. The environmental document is anticipated to be a Level 1 CE because less than 0.5 acres of right of way acquisition, less than 300 feet of stream impacts, and less than 0.1 acres of wetland impacts are anticipated. Some vegetation and tree clearing at the north side of the structure is anticipated for this project. A wetland investigation will be performed by BLN to determine if there are existing wetlands associated with U.N.T. to Rider Ditch within the project limits. Mr. Clauss stated that a small wetland may exist at the northeast corner of the structure. IDEM 401 and USACE 404 Permits will be required because of the proposed work below the ordinary high water mark of U.N.T. to Rider Ditch. Mr. McCool stated that the project will include armoring the channel banks from the south side of the structure to the next downstream structure at County Road 825 East. Armoring is recommended not to exceed 300 feet of impacts to the channel to avoid a higher level IDEM permit. An IDNR Construction in a Floodway Permit is not required because the drainage area is less than 50 square miles in a rural area. It is anticipated that an IDEM Rule 5 permit will not be required because the disturbed area of the project is anticipated to be less than 1 acre. The existing structure has no historical significance. Mr. Clauss stated that it is anticipated that no asbestos is present because the composition of the structure is primarily concrete and steel. Mr. McCool stated that BLN has been given conflicting instructions on whether to perform asbestos inspections for small structure replacement projects. BLN will seek clarification with INDOT on whether to perform an asbestos inspection for this project and will perform it if required.
10. Mr. Clauss discussed maintenance of traffic during construction. Mr. Clauss recommended full road closure with a detour route consisting of S.R. 11, U.S. 50 and I65 or U.S. 31. The detour route length is approximately 19 miles. Mr. Clauss stated that a road closure duration of 30 to 45 days would be sufficient for constructing this project. Mr. McCool and Mr. Middeler stated that 30 days would be sufficient. The INDOT representatives concurred with the proposed full closure for this project. Mr. Clauss stated that this project should not be constructed at the same time as Des. No. 1801014 (U.S. 31 over U.N.T. to John McDonald Ditch) because this structure could be on the proposed

detour route for Des. No. 1801014 and that Des. No. 1801014 is also recommended to have a full closure. Mr. Clauss stated that if the current letting date is held, either this project or Des. No. 1801015 could be constructed in the fall of 2022 and the other could be constructed in 2023 to avoid a potential conflict with the other project's detour route. BLN will coordinate with Mr. Damon Brown of Seymour District to determine the detour route for this project.

11. Mr. Clauss stated that a pavement design and geotechnical investigation will be required and will be requested at the appropriate time. K&S Engineers will perform the geotechnical investigation as a subconsultant for BLN.
12. Mr. Fortson previously reviewed and approved the project schedule submitted by BLN. The next submittal is the abbreviated engineer's report and it is scheduled to be submitted by February 25, 2020. The project is currently scheduled for letting in August 2022.
13. This project is currently bundled with Des No. 1800276 (Lead), 1800265, 1800266, 1802992, and 1801015 on Contract B-41445.

This is our understanding of the comments made at the field check. If you have any additional comments or revisions, please contact us.

Very truly yours,
BEAM, LONGEST AND NEFF, L.L.C.

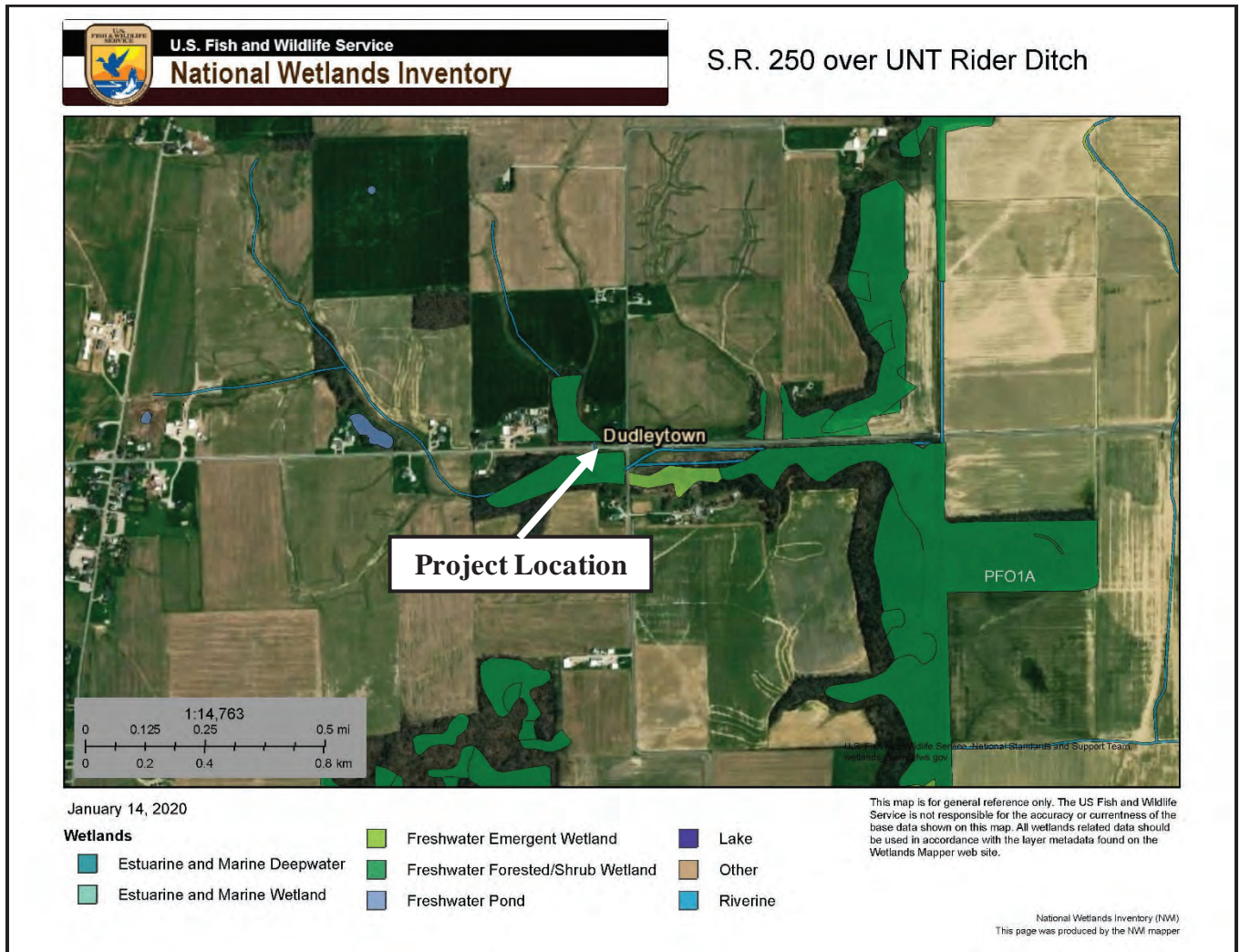


Adam J. Clauss, P.E.

AJC/ac
Enclosure

xc: All Invitees
All Attendees
File #190038

APPENDIX D:



WETLANDS MAP

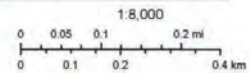
RED FLAG INVESTIGATIONS

A preliminary Red Flag Investigation was completed to gain a more thorough understanding of the project area. This information helps the project management team predict potential concerns and develop the appropriate strategies to deliver the project on time and within budget.



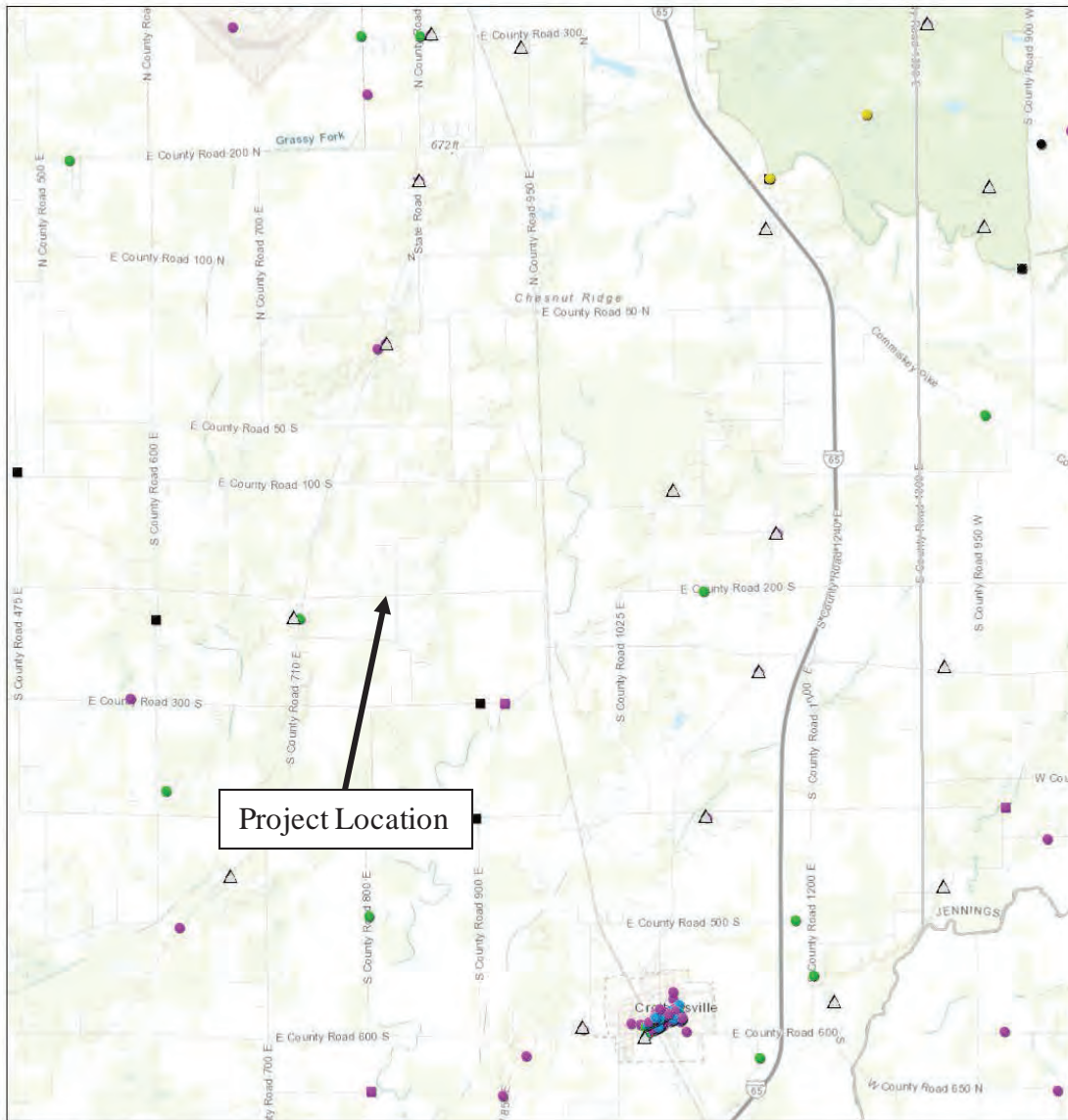
LEGEND

-  Search Radius
-  Streams / Waterways
-  100 year floodplain
-  Potential Wetlands



RED FLAG SURVEY MAP

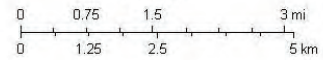
Historic Buildings, Bridges, and Cemeteries Map



1/14/2020, 3:40:00 PM

1:72,224

- Cemeteries
- County Survey Sites**
 - Other
 - Outstanding
 - Notable
 - Contributing
 - Non-Contributing
 - Demolished
- Historic Bridges**
 - Contributing
 - Demolished



Sources: Esri, HERE, © amlh, Intermap, Incentiv P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), © OpenStreetMap contributors, and the GIS User Community

Indiana DNR DHPA
2019 Indiana Dept. of Natural Resources, DHPA

SHAARD MAP

APPENDIX E:

Culvert Inspection Report

CV 250-036-09.30

SR 250

over



Inspection Date: 11/14/2019

Inspected By: Jessica Newton

Inspection Type(s): Culvert

Structure Number: CV 250-036-09.30

Inspector: Newton, Jessica

Large Culvert Inspection Report

(8) Asset Code:	93006304	(27) Year Built:	0000
Asset Name:	CV 250-036-09.30	(90) Inspection Date:	11/14/2019
OLD Culvert ID:	250-36-9.30	(91) Inspection Frequency:	24
Team Assignment:	05	<input type="checkbox"/> Additional Treatment Exists	

Identification

(2) Highway Agency District:	05	(3) County Code:	036
Sub District:	5500	Ramp ID:	
(42B) Type of Service (Under):	5	<input type="checkbox"/> Adjacent to Roadway	
(7) Facility Carried:	SR 250	(6) Features Intersected:	
(9) Location:	SR 250 0.78 E SR 11	(9.01) Location Additional Description:	
(11) Milepoint:	9.3	(16) Latitude:	38.85140
		(17) Longitude:	-85.88492
Classification:			
(104) Highway System of the Inventory Route:	0	(26) Functional Classification of Inventory Route:	02

Geometric Data

Culvert: Kind of Material:	Culvert: Type of Structure:	Min Est Fill Cover (ft):	1.00
Culvert: Max. Horizontal Opening (ft.):	Culvert: Max. Vertical Opening (ft.):	(34) Skew:	
Barrel Length (ft.):	Original Culvert Shape:		

Measurement Remarks:

Structure Additional Description: Concrete Slabtop

Openings:

Direction	Opening Latitude	Opening Longitude	Direction	Opening Latitude	Opening Longitude
1.			3.		
2.			4.		

Openings Comments:

Follow Up Required:

**If checked, please describe for follow up:

Endangered Species

Bats: seen or heard under structure? *

N - No evidence of bats

Birds/swallows/nests seen? Empty nests present?

N - No Birds and/or Nests Visi

* If yes, add one photo to the dropdown field

General Condition Ratings

(36A) Bridge Railings:	1	(36C) Approach Guardrail:
(36B) Transitions:		(36D) Approach Guardrail Ends:

Culvert:

(62) Culvert - Rating:	5
(62) Culvert Rating Comments:	<i>Efflorescence at box beam joints.</i>

Deck:

(58) Deck:

(58a) Deck Comments:

Superstructure:

(59) Superstructure:	5
(59.01) Superstructure Comments:	<i>Efflorescence between box beam joints.</i>

Substructure:

(60) Substructure:	7
--------------------	---

(60.01) Substructure
Comments:**Channel:**

(61) Channel and Channel Protection:	5
(61.01) Channel and Channel Protection Comments:	<i>North side has scour hole</i>
Bank Erosion Rating:	6
Drift/Sediment Rating	5
Channel Alignment Rating	6

 Check this box if culvert has **OBSTRUCTED** flow

Describe Obstruction:

Overtopping Frequency:

Overtopping Frequency
Comments:

Inspector: Jessica Newton
Inspection Date: 11/14/2019

Structure Number: 93006304
Facility Carried: SR 250

Culvert Inspection Report

Pictures



PHOTO 2 Elevation, Condition
Description S side, facing NW



PHOTO 3 Condition
Description Roadway facing East

Inspector: Jessica Newton
Inspection Date: 11/14/2019

Structure Number: 93006304
Facility Carried: SR 250

Culvert Inspection Report

Pictures



PHOTO 4 Elevation, Condition
Description N side, facing SW



PHOTO 5 Condition
Description Underside facing Southeast

Inspector: Jessica Newton
Inspection Date: 11/14/2019

Structure Number: 93006304
Facility Carried: SR 250

Culvert Inspection Report

Pictures



PHOTO 6 Condition
Description S channel, facing e

APPENDIX F:



INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N642-BR
Indianapolis, Indiana 46204

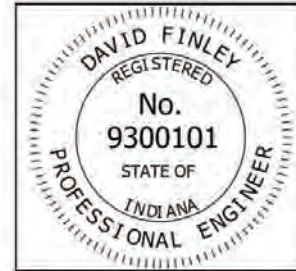
PHONE: (317) 233-2096
FAX: (317) 233-4929

Eric Holcomb, Governor
Joe McGuinness,
Commissioner

November 14, 2018

TO: Jessica Newton
Small Structure Asset Manager

FROM: Meagan Froman
Hydraulics Engineer



THROUGH: David Finley, P.E.
Hydraulics Engineer

SUBJECT: Hydraulic Review
Des. #: No Des.
Structure #: CV 250-036-09.30
County: Jackson
Location: 0.78 miles E of SR 11
Crossing: UNT to Rider Ditch
DNR CIF Permit Required (Y/N): No
Legal Drain (Y/N): No

Site Parameters		
Drainage Area	205.25	acres
Q ₁₀₀ Discharge	261.2	cfs
Q ₁₀ Discharge	130.3	cfs
Q ₁₀₀ Water Surface Elevation	94.08	ft.
Design Roadway Serviceability Elevation	95.48	ft.

Culvert Properties								
Parameter	Existing		Proposal 1		Proposal 2		Proposal 3	
Structure Size & Type	13' x 3' Slab Top		14' x 4' RCB (12" Haunches) with 12" Sump		16' x 4' Three-Sided Flat Top (Haunches) with 12" Sump		16' x 5' Three-Sided Arch Top (Area = 79 ft ²) with 24" Sump	
Q ₁₀₀ Headwater Elevation	95.13	ft.	95.10	ft.	95.03	ft.	95.09	ft.
Q ₁₀ Headwater Elevation	94.14	ft.	94.11	ft.	94.04	ft.	94.08	ft.
Meets Roadway Serviceability @ Q ₁₀ (Y/N)	Yes		Yes		Yes		Yes	
Backwater	1.04	ft.	1.01	ft.	0.94	ft.	1.00	ft.
Q ₁₀ Outlet Velocity	3.72	ft/s	3.50	ft/s	3.13	ft/s	3.33	ft/s
Minimal Outlet Riprap Size	N/A		Revetment		Revetment		Revetment	
Inlet Riprap Needed (Y/N)	N/A		No		Yes		Yes	
Natural Channel Velocity	N/A		N/A		N/A		N/A	
Minimal Inlet Riprap Size	N/A		Revetment		Revetment		Revetment	





INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N642-BR
Indianapolis, Indiana 46204

PHONE: (317) 233-2096
FAX: (317) 233-4929

Eric Holcomb, Governor
Joe McGuinness,
Commissioner

The existing structure has a primarily rural watershed of crops and woods with a few small residential areas. Hydrology was performed using TR-20, and hydraulic analysis was performed with HY-8. The tailwater elevation was determined using a cross-section from hydraulic data collection and some LiDAR data. The cross-section was located about 100' downstream of the existing culvert.

The proposed culverts in the table above are approved, and the elevations in the table are based on the downstream existing invert and proposed flowline elevation of 91.06 ft.

Riprap Design Recommendations

Revetment riprap on geotextiles should be used at the outlet and placed according to IDM Figure 203-2J. Revetment riprap should be placed at the inlet for Proposals 2 and 3. It was noted from the site visit there is scour at the inlet. The scour hole should be lined with the same rip rap type as the remainder of the inlet.

Alternative scour protection designs should be submitted to the INDOT Office of Hydraulics for review and approval.

If you have any questions or comments, please contact Meagan Froman at (317) 233-7755 or MFroman@indot.IN.gov.

APPENDIX G:

BEAM, LONGEST & NEFF, L.L.C.

Job: S.R. 250 over UNT to Rider Ditch
 Item: Preliminary Cost Breakdown

DES: AJC DATE: 1/23/20
 CK: TSW DATE: 2/20/20

**PREFERRED ALTERNATIVE - 14' by 4' RC BOX
 STRUCTURE COSTS**

Item Num.	Pay Item	UNIT	QUANTITY	UNIT PRICE	AMOUNT
105-06845	CONSTRUCTION ENGINEERING	LSUM	1	\$6,400.00	\$6,400.00
110-01001	MOBILIZATION AND DEMOBILIZATION	LSUM	1	\$10,600.00	\$10,600.00
201-52370	CLEARING RIGHT OF WAY	LSUM	1	\$4,300.00	\$4,300.00
202-51330	PRESENT STRUCTURE, REMOVE	LSUM	1	\$35,000.00	\$35,000.00
205-11626	PUMP AROUND	EACH	1	\$15,000.00	\$15,000.00
211-09268	STRUCTURE BACKFILL, TYPE 5	CYS	69	\$150.00	\$10,350.00
616-06405	RIPRAP, REVETMENT	TON	76	\$65.00	\$4,940.00
616-12246	GEOTEXTILE FOR RIPRAP, TYPE 1A	SYS	102	\$5.00	\$510.00
714-11092	STRUCTURE, COATED REINFORCED CONCRETE BOX SECTIONS, 14 FT X 4 FT	LFT	62	\$2,350.00	\$145,700.00

Subtotal = \$232,800.00
 Add 15% Contingency = \$34,920.00
 Structure Total = \$267,720.00

USE \$268,000.00

BEAM, LONGEST & NEFF, L.L.C.

Job: S.R. 250 over UNT to Rider Ditch
 Item: Preliminary Cost Breakdown

DES: AJC DATE: 1/23/20
 CK: TSW DATE: 2/20/20

PREFERRED ALTERNATIVE - 14' by 4' RC BOX

ROAD COSTS

Item Num.	Pay Item	UNIT	QUANTITY	UNIT PRICE	AMOUNT
105-06845	CONSTRUCTION ENGINEERING	LSUM	1	\$4,700.00	\$4,700.00
110-01001	MOBILIZATION AND DEMOBILIZATION	LSUM	1	\$7,800.00	\$7,800.00
201-52370	CLEARING RIGHT OF WAY	LSUM	1	\$3,100.00	\$3,100.00
203-02000	EXCAVATION, COMMON	CYS	75	\$53.00	\$3,975.00
203-02070	BORROW	CYS	220	\$25.00	\$5,500.00
203-51223	EXCAVATION, WATERWAY	CYS	145	\$47.00	\$6,815.00
205-12108	STORM WATER MANAGEMENT BUDGET	DOL	8500	\$1.00	\$8,500.00
205-12109	SWQCP PREP. & IMPL. LEVEL 1	LSUM	1	\$19,100.00	\$19,100.00
207-09935	SUBGRADE TREATMENT, TYPE IC	SYS	267	\$37.00	\$9,879.00
303-01180	COMPACTED AGGREGATE NO. 53	TON	146	\$46.00	\$6,716.00
304-07494	WIDENING WITH HMA, TYPE C	TON	62	\$215.00	\$13,330.00
306-08034	MILLING, ASPHALT, 1 1/2 IN.	SYS	668	\$9.00	\$6,012.00
401-07322	QC/QA-HMA, 3, 64, SURFACE, 9.5 mm	TON	75	\$175.00	\$13,125.00
401-07392	QC/QA-HMA, 3, 64, INTERMEDIATE, 19.0 mm	TON	32	\$130.00	\$4,160.00
401-07408	QC/QA-HMA, 3, 64, BASE, 25.0 mm	TON	78	\$115.00	\$8,970.00
401-10258	JOINT ADHESIVE, SURFACE	LFT	400	\$2.00	\$800.00
401-10259	JOINT ADHESIVE, INTERMEDIATE	LFT	100	\$6.00	\$600.00
401-11785	LIQUID ASPHALT SEALANT	LFT	400	\$1.00	\$400.00
406-05521	ASPHALT FOR TACK COAT	SYS	1131	\$0.50	\$565.50
601-12281	GUARDRAIL MGS W-BEAM, 6 FT 3 IN SPA.	LFT	275	\$21.00	\$5,775.00
601-12293	GUARDRAIL, MGS, STRUCTURE, TOP-MOUNTED POST	EACH	8	\$550.00	\$4,400.00
601-94689	GUARDRAIL, END TREATMENT, OS	EACH	4	\$3,000.00	\$12,000.00
615-06490	RIGHT-OF-WAY MARKER	EACH	7	\$225.00	\$1,575.00
615-06505	MONUMENT, B	EACH	2	\$925.00	\$1,850.00
621-06559	MULCHED SEEDING, R	SYS	1936	\$2.00	\$3,872.00
621-08161	PERMANENT TURF REINFORCEMENT MAT	SYS	449	\$10.00	\$4,490.00
628-09401	FIELD OFFICE, A	MOS	3	\$2,400.00	\$7,200.00
808-06712	LINE, PAINT, BROKEN, YELLOW, 4 IN.	LFT	100	\$2.00	\$200.00
808-06713	LINE, PAINT, SOLID, WHITE, 4 IN.	LFT	800	\$2.00	\$1,600.00
808-06714	LINE, PAINT, SOLID, YELLOW, 4 IN.	LFT	240	\$2.00	\$480.00
808-75996	SNOWPLOWABLE RAISED PAVEMENT MARKER, REMOVE	EACH	5	\$80.00	\$400.00
808-75998	SNOWPLOWABLE RAISED PAVEMENT MARKER	EACH	5	\$400.00	\$2,000.00

Subtotal = \$169,889.50
 Add 15% Contingency = \$25,483.43
 Roadway Total = \$195,372.93

USE \$196,000.00

BEAM, LONGEST & NEFF, L.L.C.

Job: S.R. 250 over UNT to Rider Ditch
 Item: Preliminary Cost Breakdown

DES: AJC DATE: 1/23/20
 CK: TSW DATE: 2/20/20

PREFERRED ALTERNATIVE - 14' by 4' RC BOX

MOT COSTS

Item Num.	Pay Item	UNIT	QUANTITY	UNIT PRICE	AMOUNT
105-06845	CONSTRUCTION ENGINEERING	LSUM	1	\$400.00	\$400.00
110-01001	MOBILIZATION AND DEMOBILIZATION	LSUM	1	\$700.00	\$700.00
201-52370	CLEARING RIGHT OF WAY	LSUM	1	\$300.00	\$300.00
801-04308	ROAD CLOSURE SIGN ASSEMBLY	EACH	4	\$250.00	\$1,000.00
801-06625	DETOUR ROUTE MARKER ASSEMBLY	EACH	28	\$130.00	\$3,640.00
801-06640	CONSTRUCTION SIGN, A	EACH	6	\$200.00	\$1,200.00
801-06775	MAINTAINING TRAFFIC	LSUM	1	\$5,000.00	\$5,000.00
801-07118	BARRICADE, III-A	LFT	48	\$15.00	\$720.00
801-07119	BARRICADE, III-B	LFT	48	\$15.00	\$720.00

Subtotal = \$13,680.00
 Add 10% Contingency = \$1,368.00
 MOT Cost Total = \$15,048.00

USE \$16,000.00

BEAM, LONGEST & NEFF, L.L.C.

Job: S.R. 250 over UNT to Rider Ditch
Item: Preliminary Cost Breakdown

DES: AJC **DATE:** 1/23/20
CK: TSW **DATE:** 2/20/20

PREFERRED ALTERNATIVE - 14' by 4' RC BOX
TOTAL COST

Structure Subtotal = \$268,000.00
Road Subtotal = \$196,000.00
MOT Subtotal = \$16,000.00

Total with 15% Contingency (Structure & Road) & 10% Cont. (MOT) = \$480,000.00

APPENDIX H:

2/12/2018

Call Application Report Project (Culvert Mini Scope)

Updated 11/24/2017

Date:	02/09/2018	Work Type:	Box Culvert Replacement	Score:
Proposed FY:	2023	Work Category:	District.Small Structure Project	
DES:	1801015			

Select: CV 250-036-09.30 (Route No - County No - RP) Or: CV 250-036-09.30	Hint: To get the Main CV Code (without RP) Select County: Jackson 036 Route: SR 250 250 CV Main Code: CV 250-036												
Asset Code: 93006304 Asset ID: 62382 District: Seymour County: Jackson County Map Sub: Madison Description: Route: SR 250 Location: SR 250 0.78 E SR 11	RP: 9 Offset: 30 Latitude: 38.8514 Longitude: -85.88492 CV Map												
Year Built * Structure Add. Desc. CV Main Material Bridge Type Struct. Length 30 Span 18 Vertical Opening 4 Cover 1 Skew Inspection Date 11/22/2016 * Channel-Channel Prot.	* Barrel/Box rating <table border="1"> <tr> <td>Score Critical</td> <td>6</td> <td>Scour calculation/evaluation has not been made.</td> </tr> <tr> <td>Super Structure</td> <td>4</td> <td>Poor Condition</td> </tr> <tr> <td>Sub Structure</td> <td>6</td> <td>Satisfactory Condition</td> </tr> <tr> <td>CV Overall</td> <td>4</td> <td>Large spalls, heavy scaling, wide cracks, considerable efflorescence.</td> </tr> </table>	Score Critical	6	Scour calculation/evaluation has not been made.	Super Structure	4	Poor Condition	Sub Structure	6	Satisfactory Condition	CV Overall	4	Large spalls, heavy scaling, wide cracks, considerable efflorescence.
Score Critical	6	Scour calculation/evaluation has not been made.											
Super Structure	4	Poor Condition											
Sub Structure	6	Satisfactory Condition											
CV Overall	4	Large spalls, heavy scaling, wide cracks, considerable efflorescence.											

of Projects within: **5** Miles 15 Projects (3 Awarded, 12 Others)

FY	Awarded	To Let	Call	Prop.	Prov.	CN \$
2015	1					\$773,492
2016	2					\$5,325,995
2017						
2018						
2019		4				
2020 - 60		8				

Intent/ Purpose Of Project (Initial Statement Of Essential Project Purpose:

CV 250-036-09.30

The current structure is a 30' long 18'x4' slabtop culvert, with 1' of cover. Efflorescence exists at the box beam joints with reflective cracking through the asphalt surface.

The intent of this project is to replace this poor small structure with a new RC box structure. This will increase the overall condition from it's current "4" Poor condition to a "9" condition.

Completed Full Scope:

Own It: Alternatives

Preliminary Alternatives That Are Contemplated (Analysed) With Costs:

This replacement has been scoped with a proposed 20'x4'x44' long RCB culvert that is estimated to cost \$299,000, Pending the Hydraulic recommendation for this replacement.

Consequences if No Action Is Taken (Do Nothing Alternative Is Selected):

The most recent inspection report rates this culvert as a 4 and is in poor condition. If nothing is done, this culvert will continue to deteriorate and will need increasingly greater maintenance effort to keep it in service.

Secondary Considerations Or Goals With Costs:

Attach extra sheets as necessary to fully describe the alternatives.

Will Further Analysis/Assessment be required beyond this form? Yes

Solve It: Project Recommendations and Costs

CV 250-036-09.30

Quantifiable Primary Goal(S) Of Project (What Are We Purchasing Such As Condition, Service Life, LOS, Or CRF):

Potential design exceptions and open roads ideas

This project is being proposed to replace this 120' pipe consisting of 20' CMP, 4'x3'x50' RCB and a 4'x3'x50' Masonry Box 18'x4'x30' slabtop culvert that is in poor condition, with a new 20'x4'x44' long RCB culvert (Pending on the hydraulic review).

Estimated Total Project Costs:	Amount	COMMENTS
Right of Way Purchase (RW1):	\$10,000.00	
Right of Way Services (RW2):		
Preliminary Engineering 1 (PE1):	\$75,000.00	
Preliminary Engineering 2 (PE2):		
Maintenance of Traffic:	\$48,400.00	
Railroad PE (RR1):		
Railroad PE (RR2):		
Environmental Study:		
Utilities PE (UT1):	\$60,000.00	
Utilities CN (UT2):		
Construction (CN):	\$242,100.00	
Construction Engineering (CE):	\$8,500.00	
Relinquishment Payment (RQP):		
Other Considerations:		
	\$444,000.00	

Miscellaneous Notes

Anticipated Number Of Construction Seasons To Complete(1, 2 Or 3 Seasons):

Anticipated Number Of Years To Complete Design (1, 2 Or 3 Fiscal Years):

Tree Clearing Fish Bats Historical CE Type

Call History trees fish spans and bats and other envir CE type

CE

Pictures Location Map: Crash History:

Spreadsheets (calcs): Asset Team Scoring Sheet: Pathway Data:

Solution Schematic: Engineer Assessment: Mobility History:

Cost Calculations: Bridge/Culvert Inspection Report:

Additional Comments

Other items relevant to the project not specifically listed elsewhere.

NOTE: Appropriate environmental and assessment process need to be followed.

Report Prepared By and Approved By

Report Prepared By and Approved By	Title:	Signature
Prepared by:	District Asset Engineer	
Prepared by:	District Scoping Engineer	
Reviewed by:	Systems Assessment Manager	
Reviewed by:	Capital Prog. Manager	
Approval by:	Technical Services Director	
Reviewed by:	Approved On:	

Culvert Inspection Report

CV 250-036-09.30

SR 250

over

Inspection Date: 11/01/2021

Inspected By: Jessica Waggoner

Inspection Type(s): Culvert

Inspector: Jessica Waggoner

Structure Number: 93006304

Inspection Date: 11/01/2021

Facility Carried: SR 250

Culvert Inspection Report

Executive Summary

This structure is due to be replaced under DES#1801015, Contract # B-41445, due to let 08/10/2022

Large Culvert Inspection Report

(8) Asset Code:	93006304	(27) Year Built:	0000
Asset Name:	CV 250-036-09.30	(90) Inspection Date:	11/01/2021
OLD Culvert ID:	250-36-9.30	(91) Inspection Frequency:	36
Team Assignment:	05	<input type="checkbox"/> Additional Treatment Exists	

Identification

(2) Highway Agency District:	05	(3) County Code:	036
Sub District:	5500	Ramp ID:	
(42B) Type of Service (Under):	5	<input type="checkbox"/> Adjacent to Roadway	
(7) Facility Carried:	SR 250	(6) Features Intersected:	
(9) Location:	SR 250 0.78 E SR 11	(9.01) Location Additional Description:	
(11) Milepoint:	9.3	(16) Latitude:	38.85140
		(17) Longitude:	-85.88492
Classification:			
(104) Highway System of the Inventory Route:	0	(26) Functional Classification of Inventory Route:	02

Geometric Data

Culvert: Kind of Material:	1. Concrete	Culvert: Type of Structure:	1. Slab	Min Est Fill Cover (ft):	1.00
Culvert: Max. Horizontal Opening (ft.):	18.00	Culvert: Max. Vertical Opening (ft.):	4.00	(34) Skew:	
Barrel Length (ft.):	30.0	Original Culvert Shape:			

Measurement Remarks:

Structure Additional Description: Concrete Slabtop

Openings:

Direction	Opening Latitude	Opening Longitude	Direction	Opening Latitude	Opening Longitude
1.			3.		
2.			4.		

Openings Comments:

Follow Up Required:

**If checked, please describe for follow up:

Endangered Species

Bats: seen or heard under structure? *	N - No evidence of bats
Birds/swallows/nests seen? Empty nests present?	N - No Birds and/or Nests Visi

* If yes, add one photo to the dropdown field

General Condition Ratings

(36A) Bridge Railings:	1	(36C) Approach Guardrail:	1
(36B) Transitions:	1	(36D) Approach Guardrail Ends:	1

Culvert:

(62) Culvert - Rating:	5	
(62) Culvert Rating Comments:		<i>Efflorescence between beams.</i>

Deck:

(58) Deck:	6	
(58a) Deck Comments:		

Superstructure:

(59) Superstructure:	5	
(59.01) Superstructure Comments:		<i>Efflorescence and staining between box beam joints.</i>

Substructure:

(60) Substructure:	7	
(60.01) Substructure Comments:		

CV-Headwall/Anchor Rating	6	
CV-Wingwalls Rating	6	

Channel:

(61) Channel and Channel Protection:	5	
(61.01) Channel and Channel Protection Comments:		<i>North side has scour. Drift throughout.</i>
Bank Erosion Rating:	6	
Drift/Sediment Rating	5	
Channel Alignment Rating	6	

Check this box if culvert has OBSTRUCTED flow

Describe Obstruction:

Overtopping Frequency:

Overtopping Frequency Comments: