Des 1800182

Appendix F

Water Resources

WATERS OF THE U.S.
DETERMINATION REPORT

SR 14, Mill & Overlay, Full-Depth Reclamation, and Culvert Replacements
Pulaski and Fulton Counties, Indiana

INDOT Des. No. 1800182

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Approved by

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on 4/14/2021

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La Porte, Indiana 46350

Report Date: November 6, 2020

Kaskaskia
Engineering Group, LLC

1.0 PROJECT INFORMATION

Date of Waters Field Investigation:
September 9 and 10, 2020
October 7, 2020

Project Location:
Winamac and Kewanna, Indiana Quadrangles
Sections 12-13, T30N, R2W
Sections 7-18, T30N, R1W
Sections 7-9, 16-18, T30N, R1E
41.055278 N, -86.505556 W
Monroe and Harrison Townships (Pulaski County)
Union Township (Fulton County)
Pulaski and Fulton Counties, Indiana

Project Description:
The proposed state project is located on SR 14, from State Highway 35 to SR 17, in Winamac, Indiana in the Indiana Department of Transportation (INDOT) LaPorte District. The current proposed project includes a mill, overlay, and full-depth asphalt reclamation of SR 14. In addition, out of 23 culverts within the project corridor, 20 culverts will be replaced. Work is not anticipated to extend outside of the edge of pavement, except for areas where culverts are being replaced.

2.0 OFFICE EVALUATION

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

Results:
<u>NWI Mapping</u>
The NWI map was reviewed for the presence of potential wetlands in, or adjacent to, the investigated area (Figure 2). These are discussed below:

- One wetland, classified as riverine (R2UBH) is located within and directly adjacent to the investigated area, in Winamac. It is associated with Tippecanoe River.
- One wetland, classified as riverine (R5UBFx) is located within the investigated area, just east of County Road (CR) N 150 E. It is associated with Thompson Ditch.
- One wetland, classified as riverine (R5UBFx) is located within the investigated area, approximately 1,500 feet west of CR 300 E. It is associated with Leidendecker Ditch.
- One wetland, classified as riverine (R5UBFx) is located within the investigated area, just west of CR 400 E. It is associated with Breckenridge Ditch.

USGS Mapping

The USGS Winamac, Indiana 7.5-minute topographic quadrangle map indicates a perennial blue-line stream, associated with the Tippecanoe River. The quadrangle map indicates multiple intermittent dashed blue-line streams, associated with Thompson Ditch, Leidendecker Ditch, and Breckenridge Ditch. The USGS Kewanna, Indiana 7.5-minute topographic quadrangle map does not contain any blue-line streams within the investigated area (Figures 3 and 3a).

Mapped Soil Units

According to the Web Soil Survey geographic database for Pulaski and Fulton Counties, Indiana (USDA- NRCS 2020), the investigated area contains 38 map units (Figure 4, Table 1). Of the 38 map units, 24 are considered hydric (3-100 percent).

Table 1 - Soil Units within the Investigated Area

Soil Unit Symbol	Soil Unit Name	Hydric Rating
MtpA	Moon-Selfridge complex, 0 to 1 percent slopes	Not Hydric (0%)
DbsA	Denham fine sand, 0 to 1 percent slopes	Not Hydric (0%)
OacB	Oakville-Denham fine sands, 1 to 5 percent slopes	Not Hydric (0%)
MtoA	Moon-Omas loamy sands, 0 to 1 percent slopes	Not Hydric (0%)
GmnA	Goodell-Gilford fine sandy loams, 0 to 1 percent slopes	Hydric (100%)
AadAK	Abscota fine sandy loam, 0 to 2 percent slopes, occasionally flooded, brief duration	Not Hydric (0%)
MlwB	Metea-Moon loamy sands, 1 to 5 percent slopes	Not Hydric (0%)
RhcA	Riddles fine sandy loam, 0 to 2 percent slopes	Hydric (5%)
CjfC	Chelsea fine sand, 6 to 12 percent slopes	Not Hydric (0%)
BswA	Brems-Morocco loamy fine sands, 0 to 1 percent slopes	Hydric (5%)
CjfD	Chelsea fine sand, 12 to 18 percent slopes	Not Hydric (0%)
MnzB	Miami-Williamstown fine sandy loams, 2 to 5 percent slopes	Not Hydric (0%)
WpaA	Winamac-Bronson fine sandy loams, 0 to 1 percent slopes	Not Hydric (0%)
BwfA	Budd-Brady fine sandy loams, 0 to 1 percent slopes	Hydric (5%)
MgzA	Maumee-Gumz complex, 0 to 1 percent slopes	Hydric (95%)
HtbAN	Houghton muck, drained, 0 to 1 percent slopes	Hydric (100%)
BuuA	Brookston loam, 0 to 1 percent slopes	Hydric (92%)
CuyA	Crosier fine sandy loam, 0 to 1 percent slopes	Hydric (5%)
WogA	Williamstown fine sandy loam, 0 to 2 percent slopes	Not Hydric (0%)

MupA	Morocco loamy fine sand, 0 to 2 percent slopes	Hydric (7%)
GrfA	Granby loamy fine sand, 0 to 2 percent slopes	Hydric (95%)
OaeD	Oakville fine sand, 12 to 18 percent slopes	Not Hydric (0%)
OaeC	Oakville fine sand, 5 to 12 percent slopes	Not Hydric (0%)
SgzA	Selfridge loamy fine sand, 0 to 1 percent slopes	Hydric (5%)
ReyA	Rensselaer loam, 0 to 1 percent slopes	Hydric (95%)
ApuAN	Antung muck, drained, 0 to 1 percent slopes	Hydric (100%)
HtbAN	Houghton muck, drained, 0 to 1 percent slopes	Hydric (100%)
Hm	Houghton muck, drained	Hydric (100%)
Ad	Arian muck, drained, 0 to 1 percent slopes	Hydric (100%)
Gf	Gilford fine sandy loam, 0 to 2 percent slopes, gravelly subsoil	Hydric (95%)
BtA	Brems loamy sand, 0 to 3 percent slopes	Not Hydric (0%)
KoB	Kosciusko-Omas complex, 2 to 6 percent slopes	Hydric (5%)
WkC2	Wawasee fine sandy loam, 6 to 12 percent slopes, eroded	Hydric (3%)
Wa	Wallkill silt loam	Hydric (100%)
RlB2	Riddles fine sandy loam, 2 to 6 percent slopes	Hydric (5%)
RlA	Riddles fine sandy loam, 0 to 2 percent slopes	Hydric (5%)
CrA	Crosier loam, 0 to 2 percent slopes	Hydric (5%)
Bb	Barry loam	Hydric (100%)

Hydrology

Tippecanoe River has an upstream drainage area of 941.127 square miles. Thompson Ditch has an upstream drainage area of 1.058 square miles. Leidendecker Ditch has an upstream drainage area of 0.728 square miles. Breckenridge Ditch has an upstream drainage area of 0.332 square miles (USGS StreamStats). Tippecanoe River, Thompson Ditch, and Leidendecker Ditch are all within the USGS 12-Digit Hydrological Unit Code 051201060608. Breckenridge Ditch is located within the USGS 12-Digit Hydrological Unit Code 051201060703.

Tippecanoe River outfalls into Wabash River approximately 39 miles south of the project area. Thompson Ditch outfalls into the Tippecanoe River approximately 4,000 feet southwest of the project area. Leidendecker Ditch outfalls into the Tippecanoe River approximately 1.14 mile southwest of the project area. Breckenridge Ditch outfalls into Little Mill Creek approximately 3,852 feet southwest of the project area, which eventually drains into Mill Creek and then Tippecanoe River.

According to the USGS NHD map (Figure 5), seven flowlines are located in the investigated area. These are discussed below:

1) Flows west-east on the south side of SR 14 near Riverside Street into Tippecanoe River.
2) Flows north-south along the west side of Plymouth Street, into the feature mentioned above.
3) Flows north-south under SR 14, representing Tippecanoe River.
4) Flows north-south under SR 14, representing Thompson Ditch.
5) Flows north-south under SR 14, representing Leidendecker Ditch.
6) Flows east-west north of SR 14, under 300 East.
7) Flows north-south under SR 14, representing Breckenridge Ditch.

According to the Indiana Department of Natural Resources (IDNR) Best Available Floodplain Layer, there are floodplains located within the investigated area (Figure 6). The floodplains are associated with Tippecanoe River and Little Mill Creek.

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

3.0 FIELD RECONNAISSANCE

Methodology:

Field visits were conducted by Kent Ahrenholtz on September 9 and 10, 2020 and Virginia Flynn and Krista Bollmann on October 7, 2020 to survey and document water resources within the project area. The investigated area at each culvert was approximately 70-80 feet wide from the edge of pavement north and south, and approximately 140-150 in length. The investigated area varied depending on multiple culverts at a location, or culverts located under adjacent roads.

There are 23 culvert crossings and one bridge located within the project corridor. The bridge over Tippecanoe River has a paving exception and the bridge will not undergo any work. Therefore, it was not investigated. Additionally, three culverts will not be replaced as part of this project (Culverts 1-3). The remaining 20 replacement culvert crossings were all investigated.

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

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

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

Water resources are summarized in Tables 2 and 3. A water resource map showing all identified features within the investigated areas are located in Figure 7. Photographs and a photo direction map are included after the figures.

Results:
Two likely jurisdictional streams were identified within the investigated area. Three wetlands were found.

Streams:

Leidendecker Ditch (Culvert 6)
Leidendecker Ditch would likely be classified as an intermittent stream because it appears to only flow during or after seasonal rain events and has some in-stream structure. It is represented by a dashed-dotted blue-line on the USGS topographic maps. It flows north to south through the culvert under SR 14. The stream is surrounded by agricultural fields/pastures and maintained turf grass. The dominant substrate in the stream was silt. No riffles were observed; however, pools were present. An OHWM was observed that was approximately 9.5 feet wide and 18 inches deep. It was defined by vegetation matted down, bent, or absent and shelving. It had an average of 95 percent cover from overhanging vegetation. The dominant vegetation in-stream consisted of *Phalaris arundinacea* (reed canary grass) (FACW), *Lemna minor* (duckweed) (OBL), and *Leersia oryzoides* (rice cutgrass) (OBL). The dominant vegetation along the banks of Leidendecker Ditch consisted of reed canary grass, *Solidago gigantea* (tall goldenrod) (FACW), *Typha latifolia* (cattail) (OBL), *Equisetum hyemale* (horsetail) (FACW), *Morus alba* (white mulberry) (FAC), *Cornus racemosa* (gray dogwood) (FAC), and *Sambucus canadensis* (elderberry) (FAC).

Due to channeling, this stream is of relatively poor quality. Leidendecker Ditch has a defined bed and bank, an OHWM, and drains into Tippecanoe River, a traditionally navigable waterway. Leidendecker Ditch is likely a Waters of the U.S. (WOUS).

Breckenridge Ditch (Culvert 14)
Breckenridge Ditch would likely be classified as an intermittent stream because it appears to only flow during or after seasonal rain events. It is represented by a dashed-dotted blue-line on the USGS topographic maps. It flows east in the northwestern quadrant of the investigated area, and then south through a culvert under SR 14. The stream is surrounded by a roadway sideslope, maintained turfgrass, and agricultural fields. The dominant substrate in the stream was silt. Pools were present, but no riffles. An OHWM was observed that was approximately 6.5 feet wide and 6 inches deep. It was defined by an abrupt change in plant community, vegetation matted down, bent, or absent and shelving. It had an average of 90 percent cover from overhanging vegetation. The dominant vegetation within the stream consisted of reed canary grass, duckweed, cattail, and rice cut grass. The dominant vegetation along the stream banks consisted of reed canary grass and roadside turf grass.

This stream is of poor quality due to channelization. Breckenridge Ditch has a defined bed and bank, an OHWM, and drains into Little Mill Creek, which eventually drains into Mill Creek, which eventually drains into the Tippecanoe River, a traditionally navigable waterway. Breckenridge Ditch is likely a Waters of the U.S. (WOUS).

Wetlands:

Wetland 1 (Culvert 13)
Data Point 13-1 was taken on the south side of SR 14 near Culvert 13. The dominant vegetation at the data point consisted of reed canary grass (FACW), *Schedonorus arundinaceus* (tall fescue) (FACU), and *Phragmites australis* (common reed) (FACW). The vegetation satisfied the dominance test for hydrophytic vegetation. Two secondary indicators of hydrology, Geomorphic

Position (D2) and FAC-Neutral Test (D5), were observed. According to a review of the USDA web soil survey, the Goodell-Gilford fine sandy loam mapped at this location is 100 percent hydric. The soil profile exhibited a depleted below dark surface (10YR 2/2) with 0 percent redox features between 0-10 inches and a depleted matrix with 5 percent redox features between 10-20 inches. These met the hydric soil indicator of Depleted Below Dark Surface (A11). Since all three wetland criteria were met at Data Point 13-1, this area would likely be considered a scrub-shrub (PSS)/forested (PFO) wetland (Cowardin et al. 1979). The quality of the wetland was considered poor due to disturbance.

Data Point 13-2 was dominated by tall fescue (FACU) and reed canary grass (FACW). This point passed the prevalence index for hydrophytic vegetation. No hydrological indicators were present, and the soil profile did not meet the hydric criterion. The soil profile between 0 and 8 inches (due to gravel fill) exhibited a dark grayish brown (10YR 4/2) soil with no redox features. Since only one of the three wetland indicators were met, this point was determined to be upland. Data Point 13-2 helped establish the wetland/upland boundary for Wetland 1. There was a topographic change that was used in establishing the wetland/upland boundary.

Wetland 1 is a PSS/PFO wetland within a concave area just south of Culvert 13. It is not connected to any water resources. Its primary source of hydrology appears to be drainage from adjacent forested areas agricultural fields and the roadway. This feature is likely an isolated wetland.

Wetland 2 (Culvert 14)
Data Point 14-1 was taken on the south side of SR 14, near Culvert 14, adjacent to Breckenridge Ditch. The dominant vegetation consisted of *Juncus effusus* (soft rush) (OBL). The vegetation satisfied the rapid test for hydrophytic vegetation. Two primary indicators of hydrology, Saturation (A3) and Hydrogen Sulfide Odor (C1), and two secondary indicators, Dry-Season Water Table (C2) and Geomorphic Position (D2), were observed. According to a review of the USDA web soil survey, the Brookston loam mapped at this location is 92 percent hydric. The soil profile exhibited a dark surface (10YR 2/2) with 0 percent redox features between 0-6 inches and a gleyed matrix (Gley1 6/10Y) with 1 percent redox features between 6-20 inches. These met the hydric soil indicator of Sandy Gleyed Matrix (S4). Since all three wetland criteria were met at Data Point 14-1, this area would likely be considered an emergent wetland (PEM) wetland (Cowardin et al. 1979). The quality of the wetland was considered low due to disturbance.

Data Point 14-2 was dominated by *Hemerocallis fulva* (day lily) (UPL) and *Solidago canadensis* (Canadian goldenrod) (FACU). This point did not pass any indicators for hydrophytic vegetation. No hydrological indicators were present, and the soil profile did not meet the hydric criterion. The soil profile between 0 and 20 inches exhibited a black (10YR 2/1) soil with no redox features. Since none of the three wetland indicators were met, this point was determined to be upland. Data Point 14-2 helped establish the wetland/upland boundary for Wetland 2. There was a topographic change that was used in establishing the wetland/upland boundary.

Wetland 2 is a PEM wetland located adjacent to Breckenridge Ditch. Its primary source of hydrology appears to be a lack of drainage and high water events from Breckenridge Ditch. This feature is likely a jurisdictional wetland.

Wetland 3 (Culvert 16)
Data Point 16-1 was taken on the south side of SR 14, near Culvert 16, in an agricultural field. The dominant vegetation consisted of *Cornus racemosa* (gray dogwood) (FAC) and *Panicum*

rigidulum (redtop panicgrass) (FACW). The vegetation satisfied the dominance test for hydrophytic vegetation. Two secondary indicators for hydrology, Stunted or Stressed Plants (D1) and FAC-Neutral Test (D5), were observed. According to a review of the USDA web soil survey, the Arian muck mapped at this location is 100 percent hydric. The soil profile exhibited a dark surface (10YR 2/2) with 0 percent redox features between 0-12 inches and with 3 percent redox features between 12-20 inches. These met the hydric soil indicator of Thick Dark Surface (A12). Since all three wetland criteria were met at Data Point 16-1, this area would likely be considered an emergent (PEM) wetland (Cowardin et al. 1979). The quality of the wetland was considered low due to disturbance.

Data Point 16-2 was dominated by tall fescue (FACU). This point did not pass any indicators for hydrophytic vegetation. No hydrological indicators were present, and the soil profile did not meet the hydric criterion. The soil profile between 0 and 8 inches exhibited a brown (10YR 3/2) soil with no redox features, and a yellowish brown (10YR 5/4) soil with no redox features from 8-12 inches. Since none of the three wetland indicators were met, this point was determined to be upland. Data Point 16-2 helped establish the wetland/upland boundary for Wetland 3. There was a topographic change that was used in establishing the wetland/upland boundary.

Wetland 3 is a PEM wetland located adjacent Culvert 16 and in an agricultural field. Its primary source of hydrology appears to be drainage from adjacent agricultural fields and the roadway. This feature is likely an isolated wetland.

Roadside Ditches:

Twelve (12) roadside ditches were associated with Culverts 5 (NE and NW), 6 (SE), 7 (SW and SE), 8 (E and W), 9 (E and W), and 10 (NE and NW), and 22 (SE) within the investigated area. None exhibited an OHWM or wetland indicators (vegetation, soils, hydrology). All are likely non-jurisdictional.

Table 2 - Stream Summary Table
SR 14, Pavement Work/Replacement and Culvert Replacements
Pulaski and Fulton Counties, Indiana - INDOT Des. No. 1800182

ID	Coordinates (Decimal Degrees)		USGS Blue-Line (Y/N)	Stream Type	Riffles/ Pools (Y/N)	Substrate	OHWM Width (ft.)	OHWM Depth (in.)	Stream Relative Quality	Estimated Amount of Aquatic Resources within Investigated Area (acres / linear feet)	Photograph Numbers	Likely Water of the U.S.?
	Lat.	Long.										
Leidendecker Ditch	41.055749	-86.550543	Yes	Intermittent	Yes	Silt	9.5	18	Poor	0.044 ac. / 200 lf	9-16	Yes
Breckenridge Ditch	41.055683	-86.526383	Yes	Intermittent	Yes	Silt	6.5	6	Poor	0.036 ac. / 242 lf	55-62, 68-69	Yes

Table 3 - Wetland Summary Table
SR 14, Pavement Work/Replacement and Culvert Replacements
Pulaski and Fulton Counties, Indiana - INDOT Des. No. 1800182

ID	Coordinates		Classification	Relative Quality	Estimated Amount of Aquatic Resources in Review Area (acres)	Photograph Numbers	Likely Water of the U.S.?
	Latitude	Longitude					
Wetland 1	41.055608	-86.529618	PSS/PFO	Poor	0.228	45-52	No
Wetland 2	41.055532	-86.526351	PEM	Poor	0.103	63-70	Yes
Wetland 3	41.055106	-86.455852	PEM	Poor	0.136	85-92	No

Table 4 - Wetland Data Point Summary Table
SR 14, Pavement Work/Replacement and Culvert Replacements
Pulaski and Fulton Counties, Indiana - INDOT Des. No. 1800182

Data Point	Latitude	Longitude	Vegetation	Soils	Hydrology	Upland/Wetland
13-1	41.055608	-86.529618	Yes	Yes	Yes	Wetland
13-2	41.055624	-86.529616	Yes	No	No	Upland
14-1	41.055532	-86.526351	Yes	Yes	Yes	Wetland
14-2	41.055565	-86.526362	No	No	No	Upland
16-1	41.055106	-86.455852	Yes	Yes	Yes	Wetland
16-2	41.055156	-86.455833	No	No	No	Upland

4.0 CONCLUSIONS

Field observations revealed the presence of two likely jurisdictional streams that have the potential to be impacted by the proposed project (Leidendecker Ditch and Breckenridge Ditch). Additionally, two likely isolated wetlands and one likely jurisdictional wetland have the potential to be impacted by the proposed project. Every effort should be taken to avoid and minimize impacts to wetlands and waterways. If impacts are necessary, then mitigation may be required. The INDOT Environmental Services Division should be contacted immediately if impacts will occur. The final determination of jurisdictional waters is ultimately made by the U.S. Army Corps of Engineers (USACE). This report is our best judgment based on the guidelines set forth by the USACE.

5.0 ACKNOWLEDGEMENT

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

Respectfully,

Kaskaskia Engineering Group, LLC

Environmental Scientist II
Kaskaskia Engineering Group, LLC

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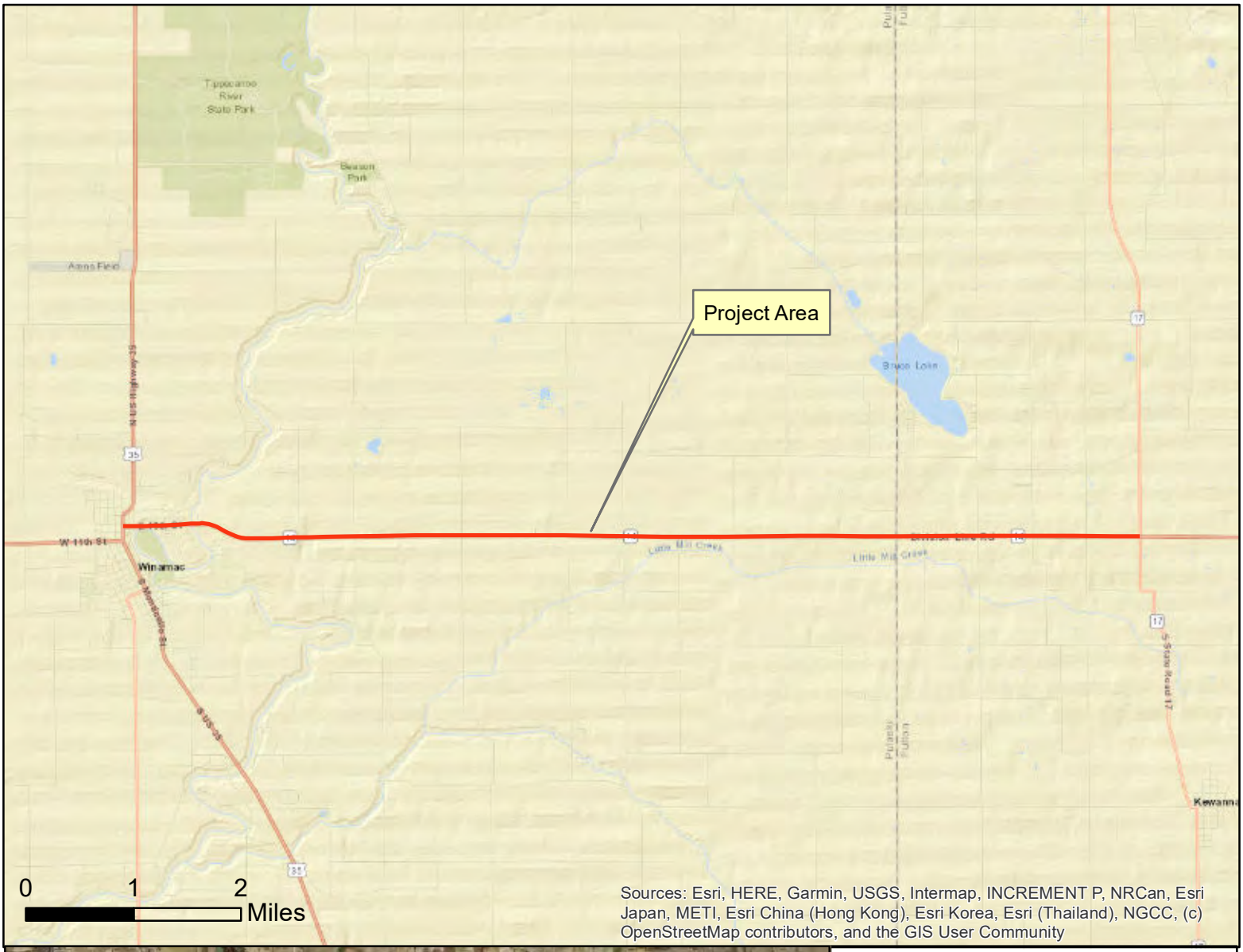

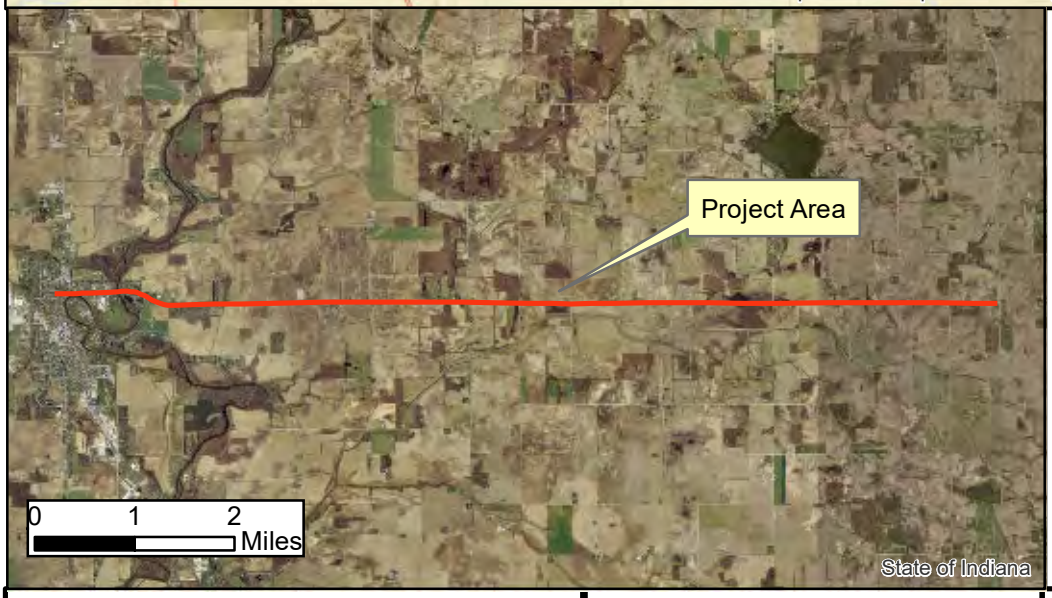

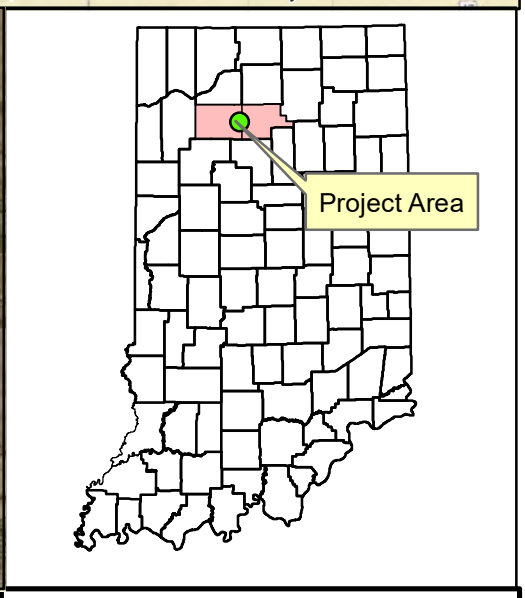

Figure 1
Location Map
SR 14 Pavement and Culvert Work
Pulaski and Fulton County, IN
Des. 1800182

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Map Created: 9/3/2020

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Figure 2
National Wetland Inventory Map
SR 14, Pavement and Culvert Work
Pulaski and Fulton County, IN
Des. 1800182

Investigated Area
Culverts
NWI Wetlands

0 500 1,000 Feet

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Map Created: 10/14/2020

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Culverts
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Map Created: 10/14/2020

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Map Created: 10/14/2020

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Investigated Area
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Map Created: 10/14/2020

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Investigated Area
Culverts
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0 500 1,000 Feet

Page 5 of 10
Map Created: 10/14/2020

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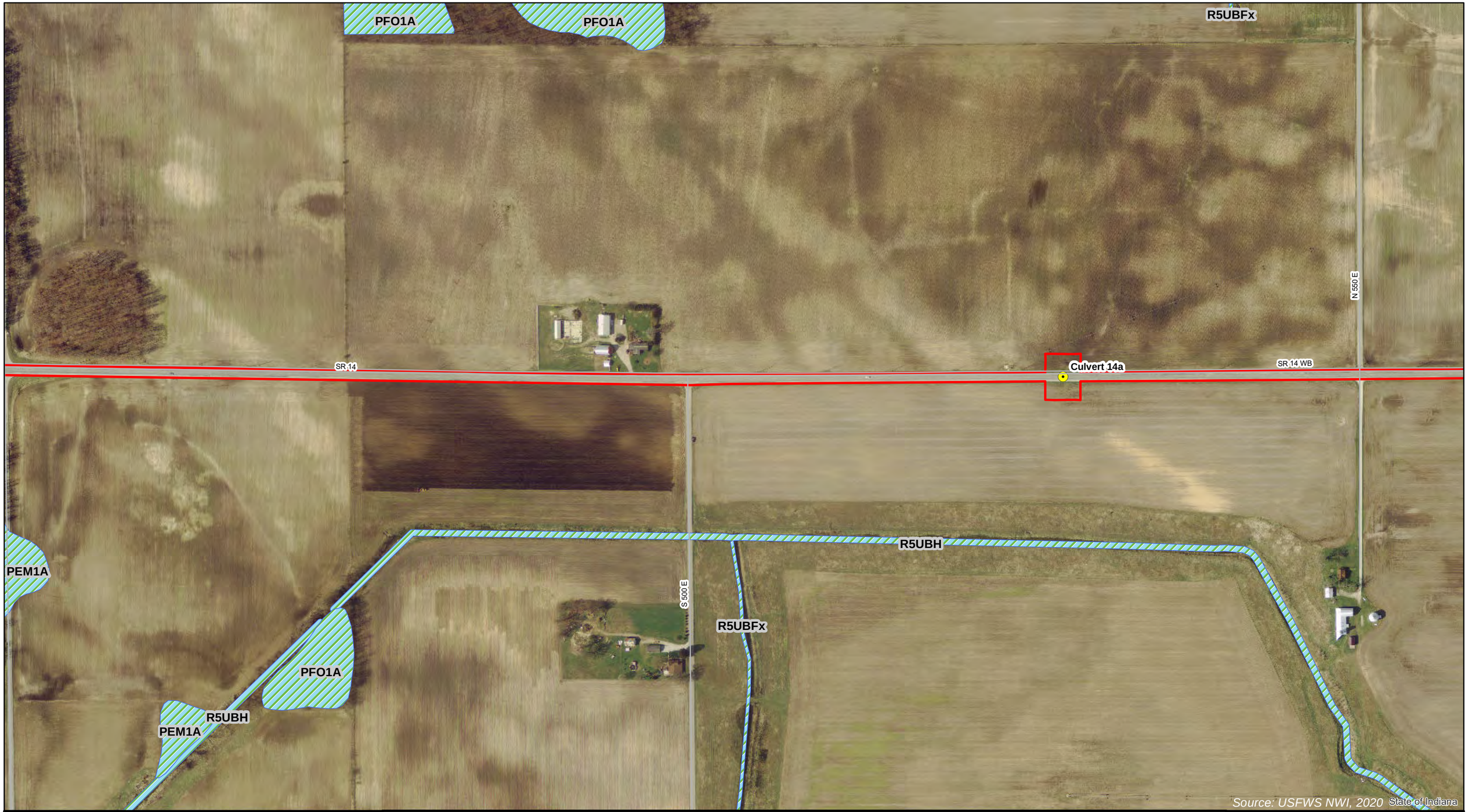

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Investigated Area
Culverts
NWI Wetlands

0 500 1,000 Feet

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Map Created: 10/14/2020

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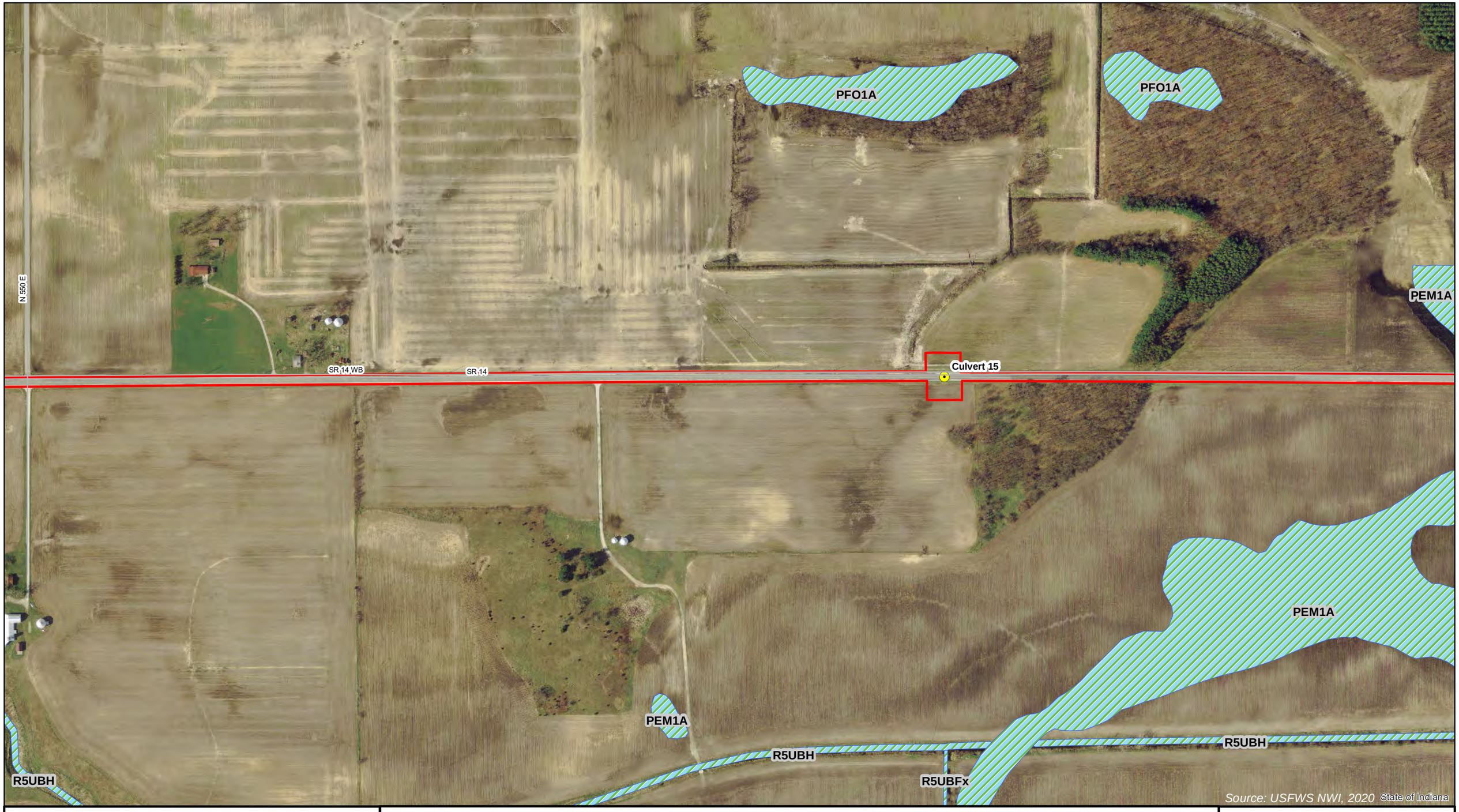

Figure 2
National Wetland Inventory Map
SR 14, Pavement and Culvert Work
Pulaski and Fulton County, IN
Des. 1800182

Investigated Area
Culverts
NWI Wetlands

0 500 1,000 Feet

Page 7 of 10
Map Created: 10/14/2020

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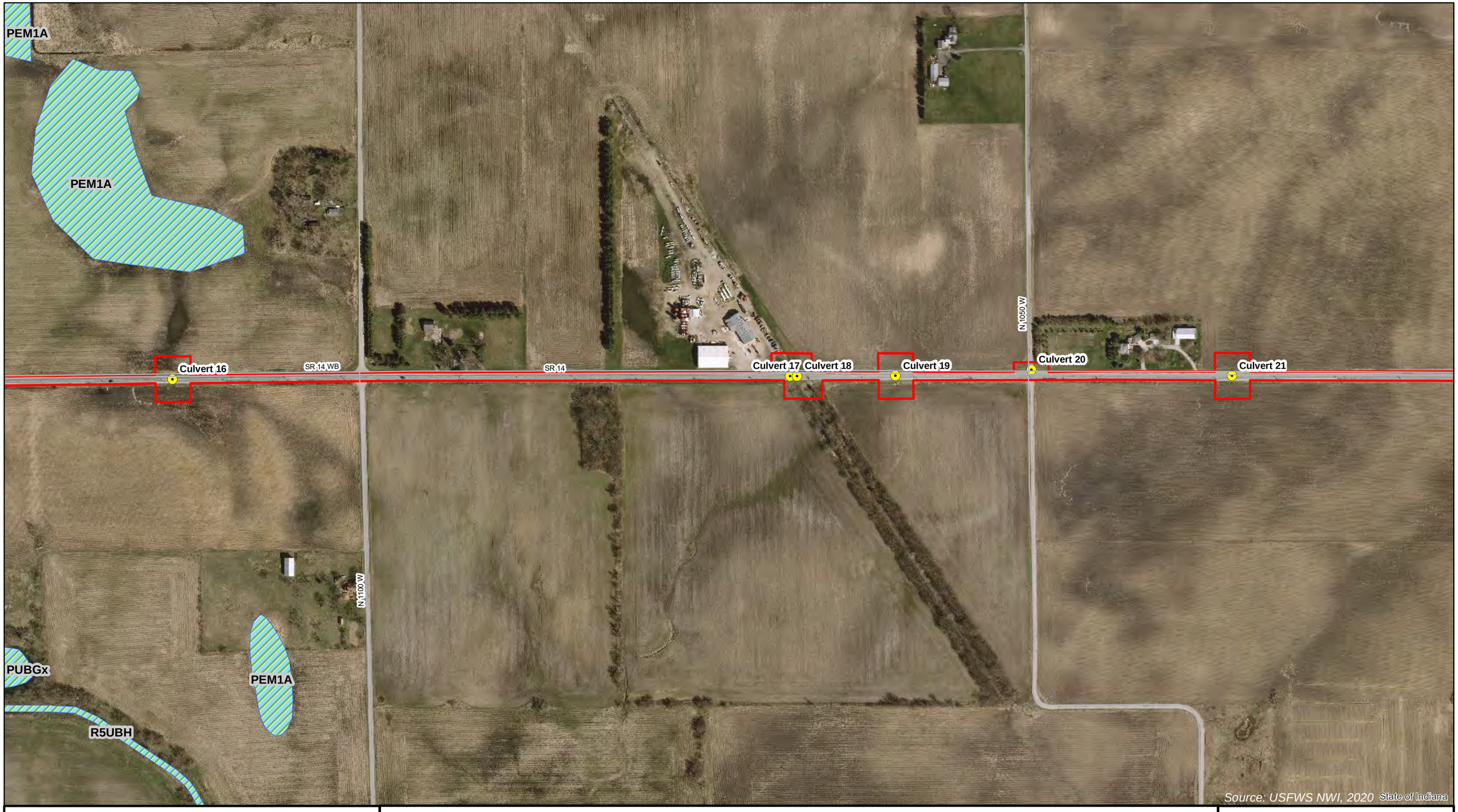

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NWI Wetlands

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Page 10 of 10
Map Created: 10/14/2020

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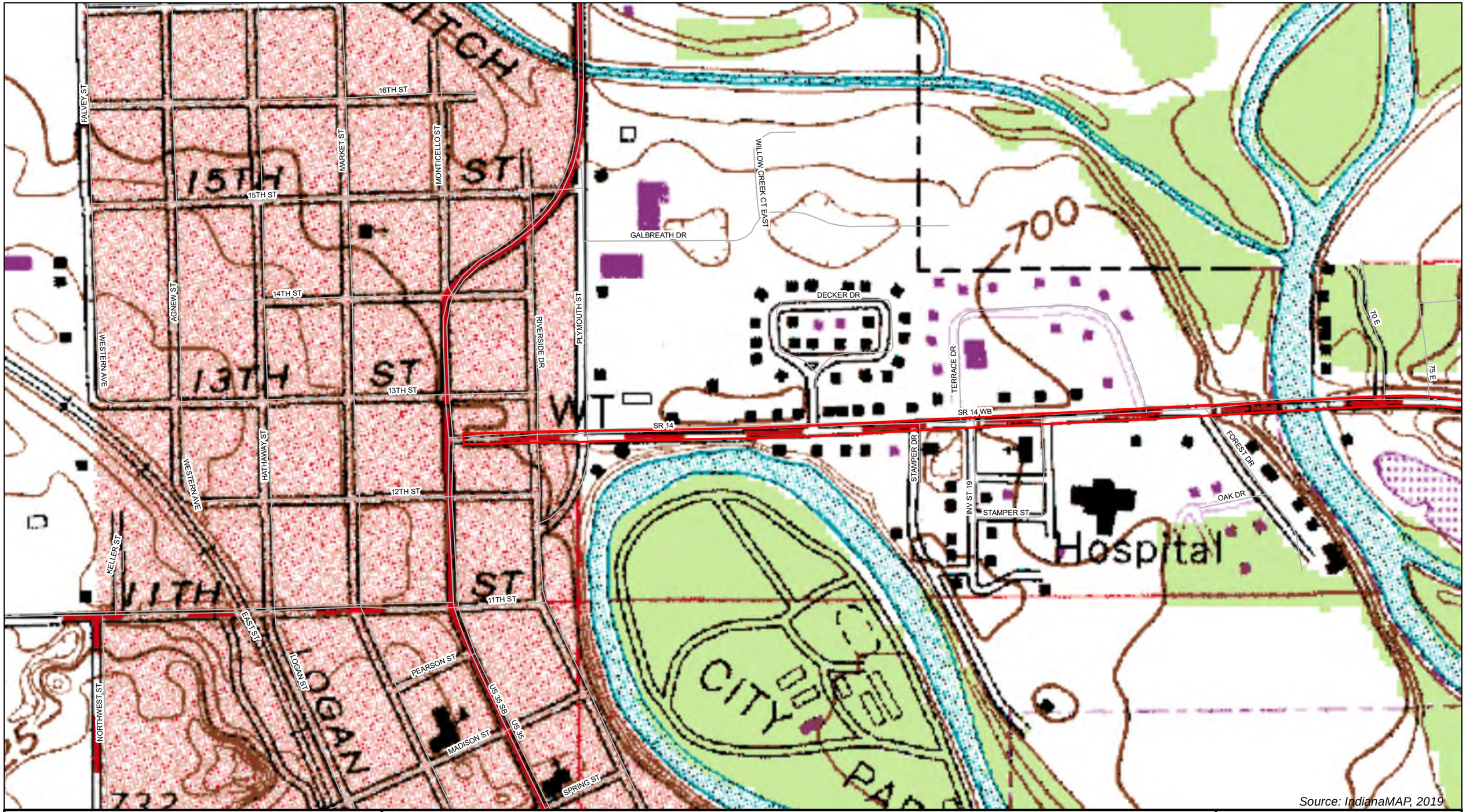

Source: IndianaMAP, 2019

Figure 3
USGS Map
SR 14 Pavement and Culvert Work
Pulaski and Fulton County, IN
Des. 1800182

Investigated Area
Culverts

0 500 1,000 Feet

Page 1 of 10
Map Created: 10/14/2020

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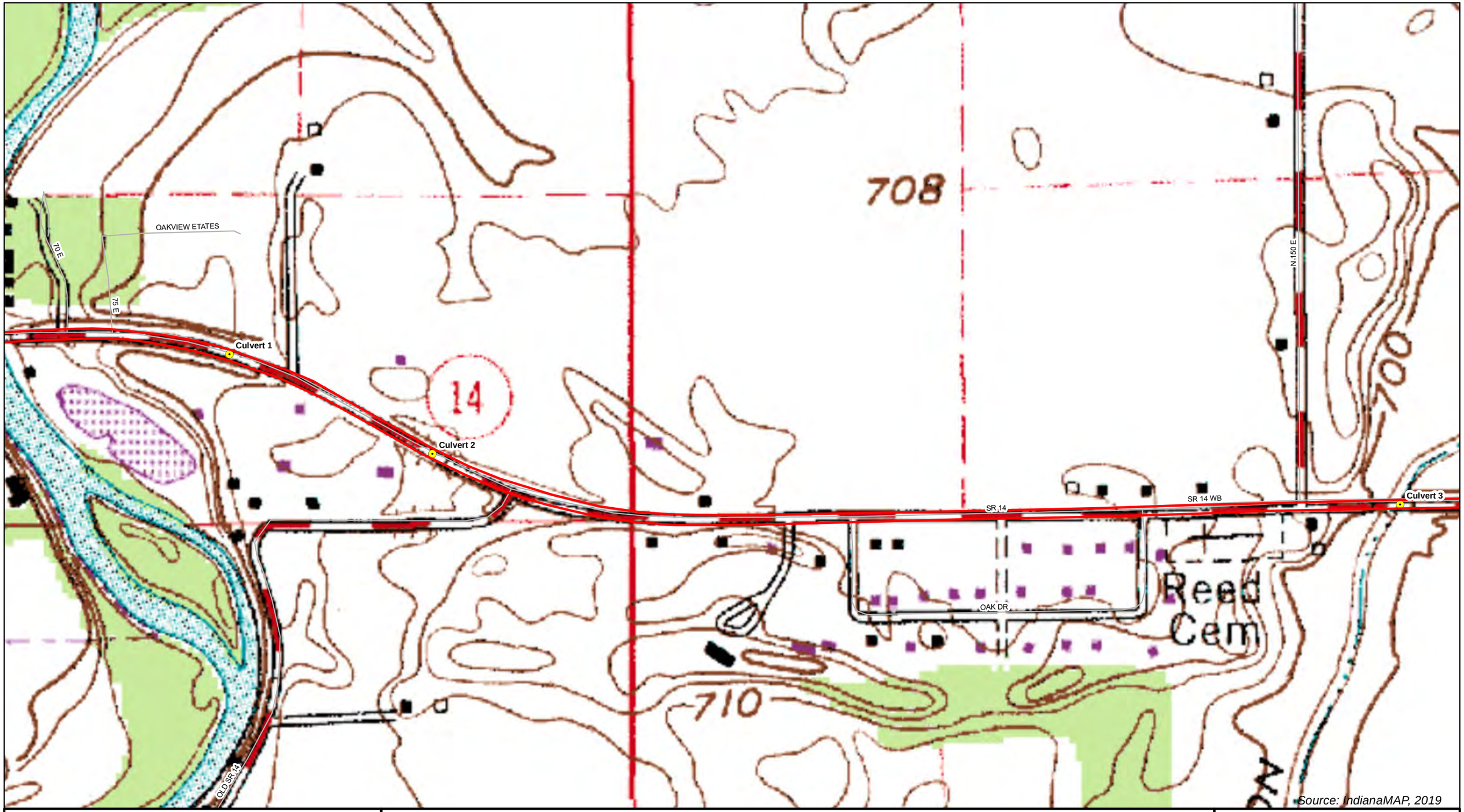

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Investigated Area
Culverts

0 500 1,000 Feet

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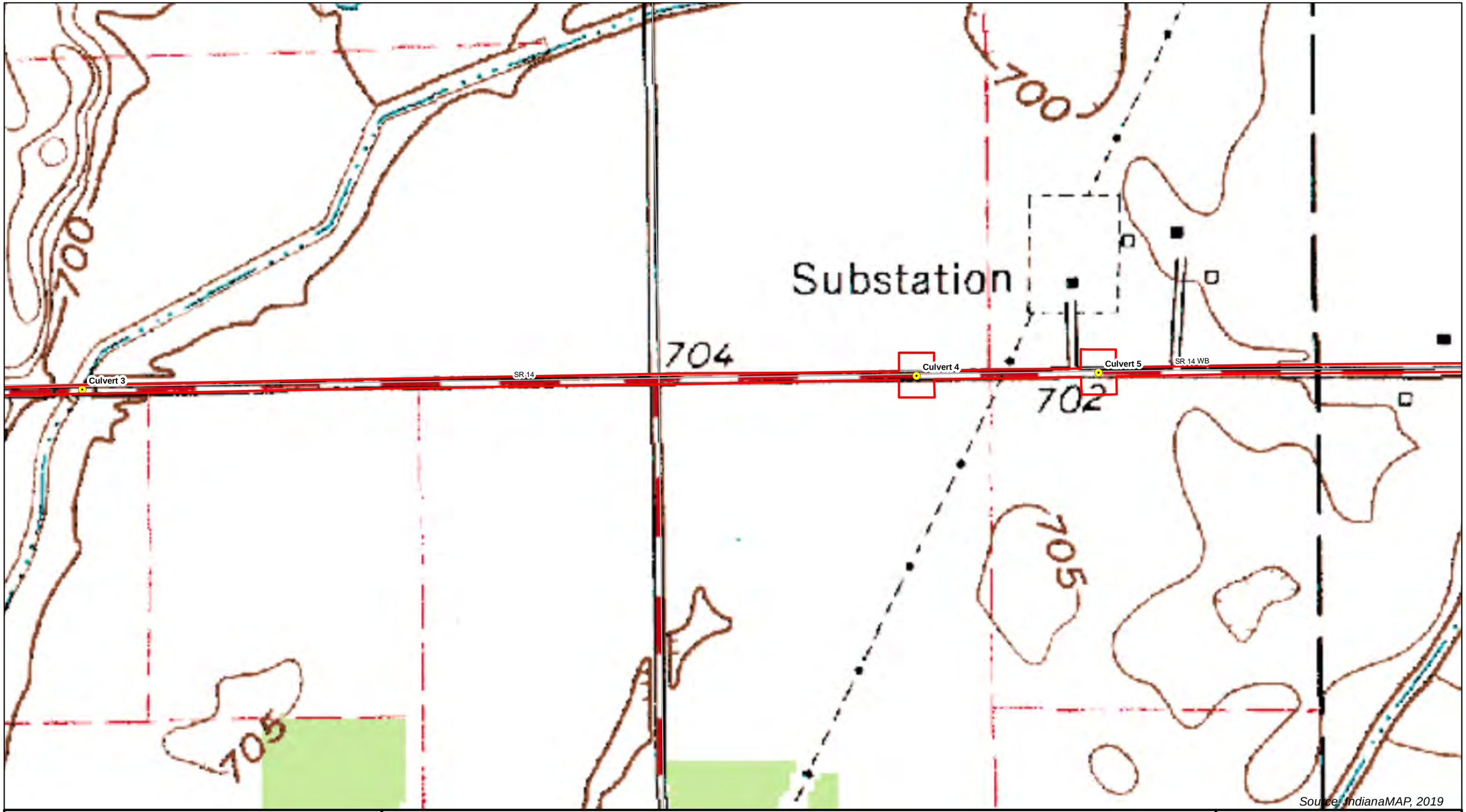

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Investigated Area
Culverts

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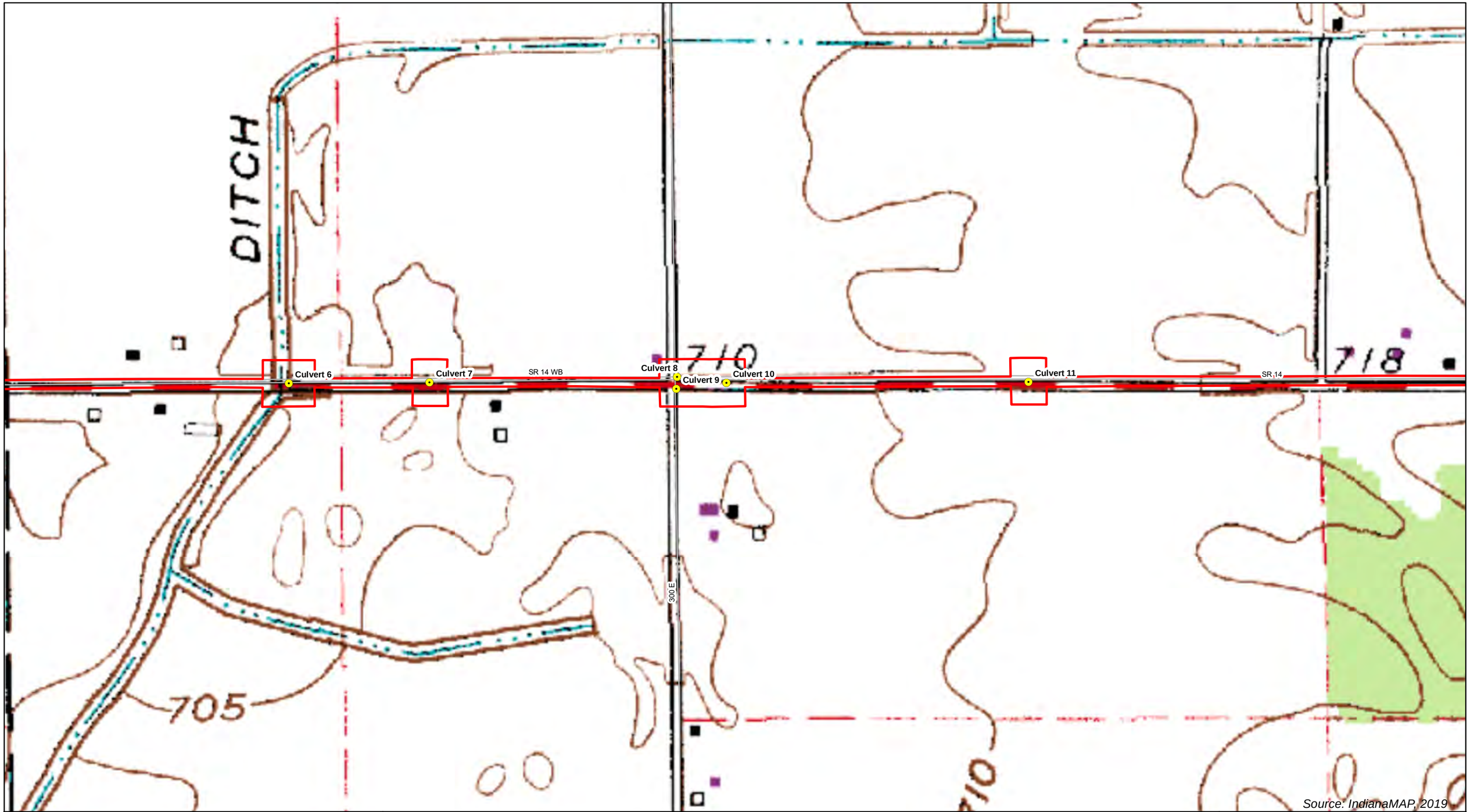

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Culverts

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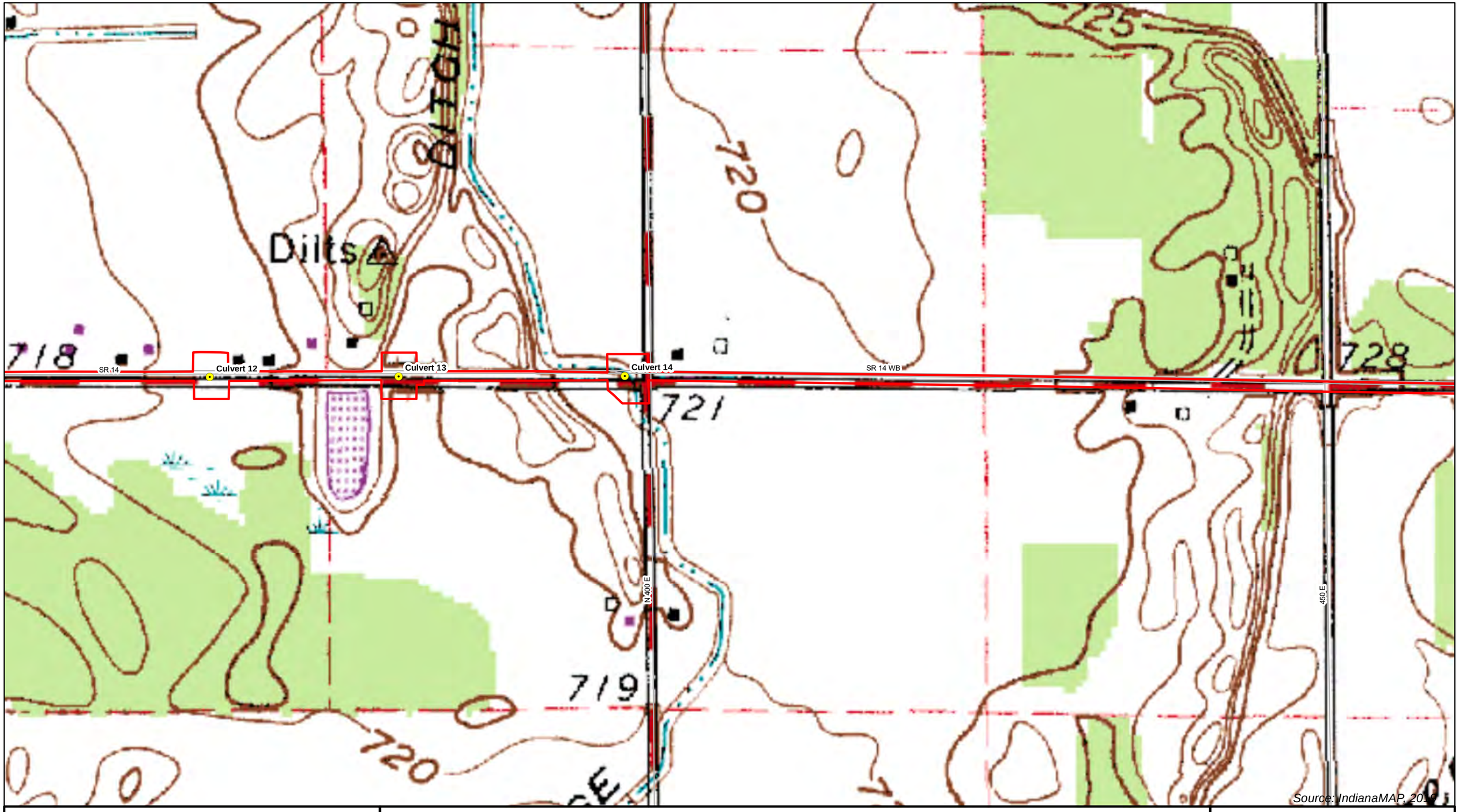

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Investigated Area
Culverts

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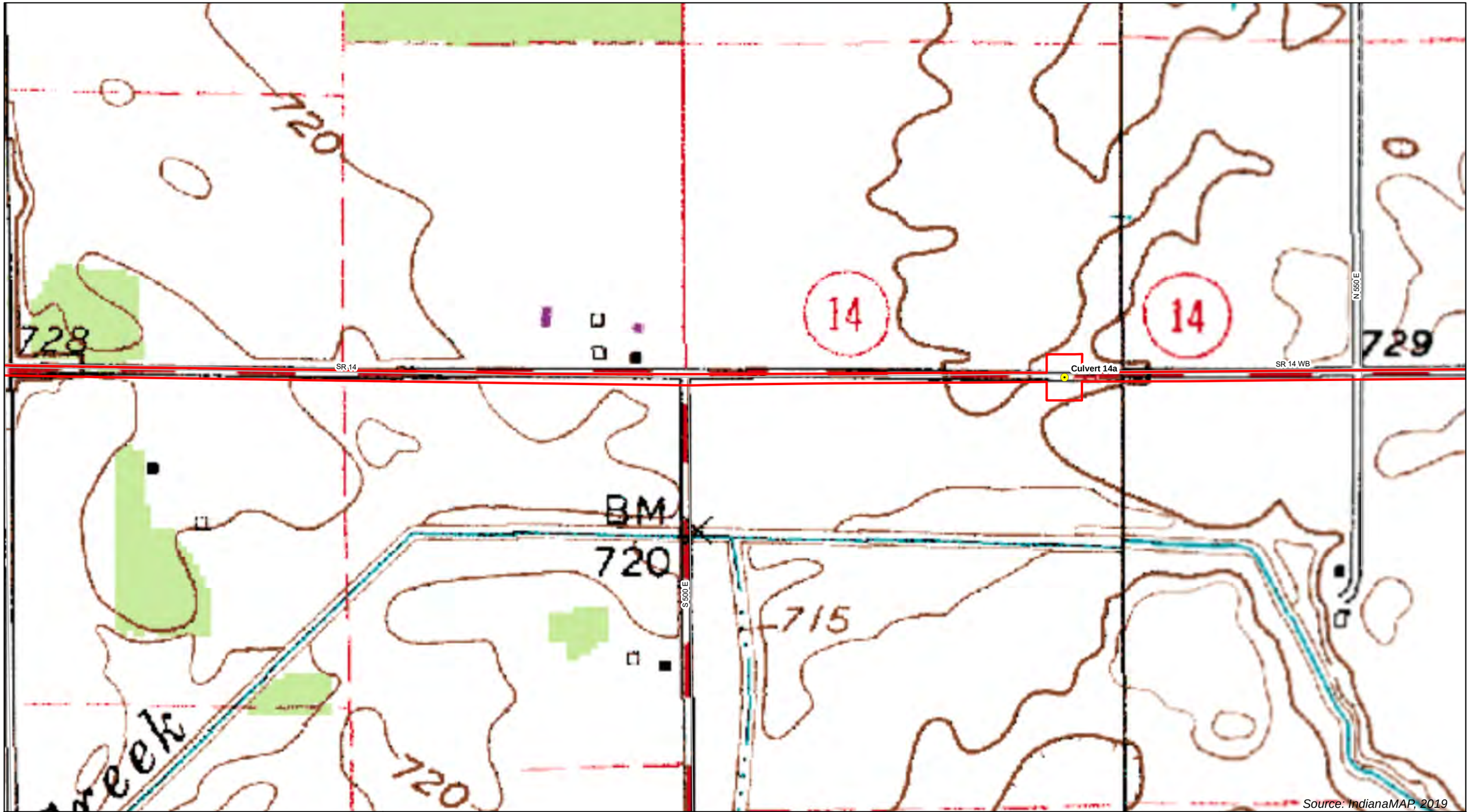

Source: IndianaMAP, 2019

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USGS Map
SR 14 Pavement and Culvert Work
Pulaski and Fulton County, IN
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Investigated Area
Culverts

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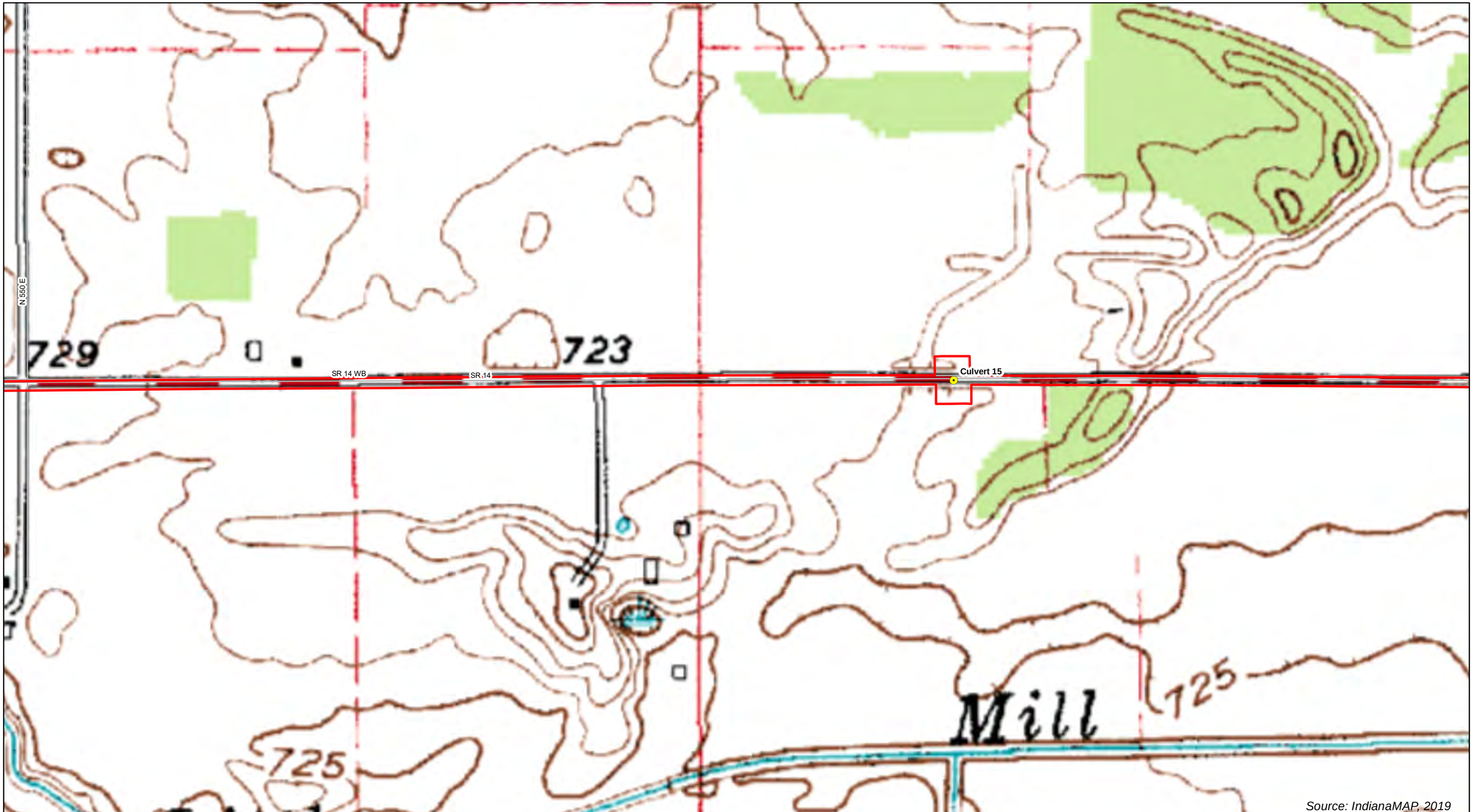

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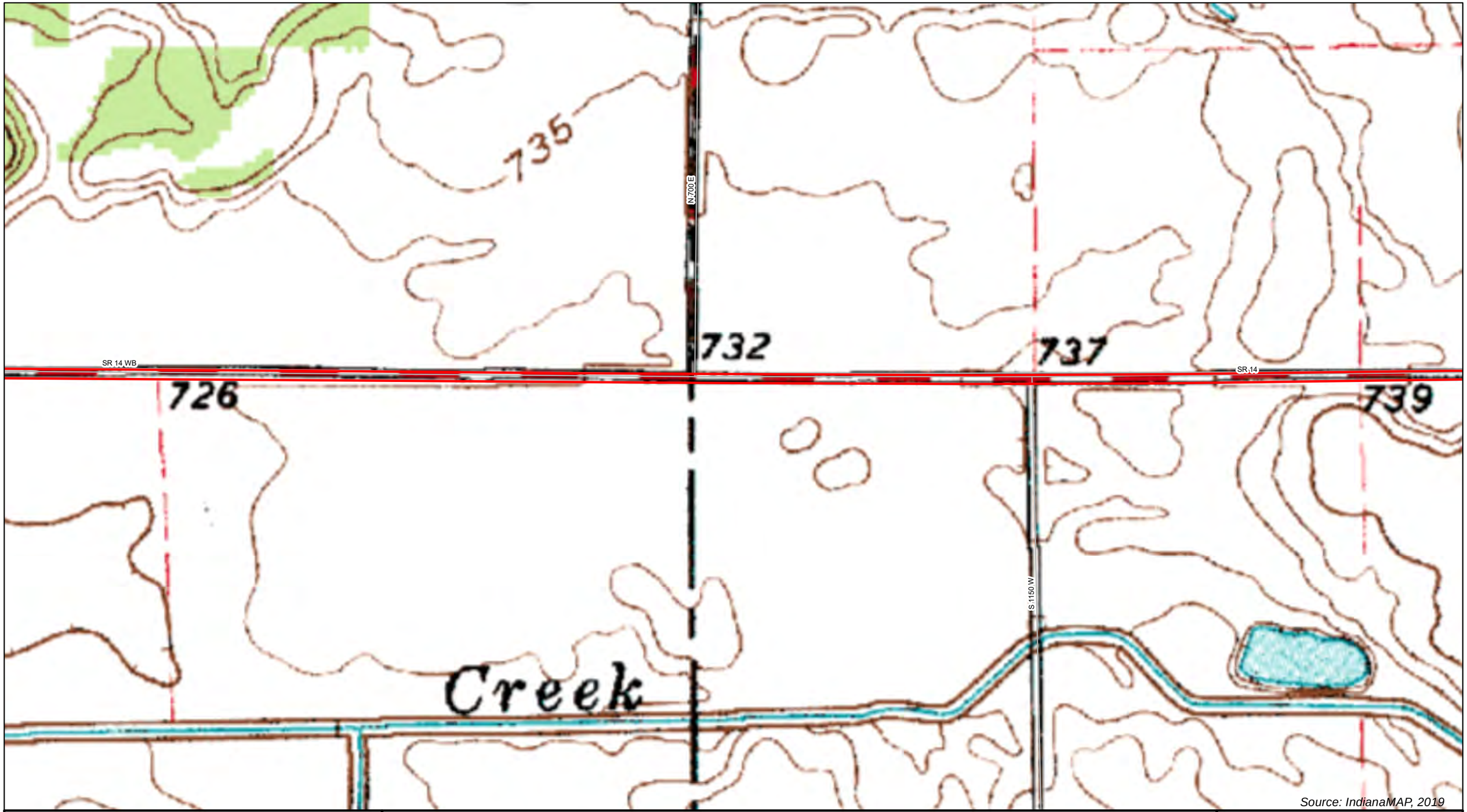

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Des. 1800182

Investigated Area

Culverts

0 500 1,000 Feet

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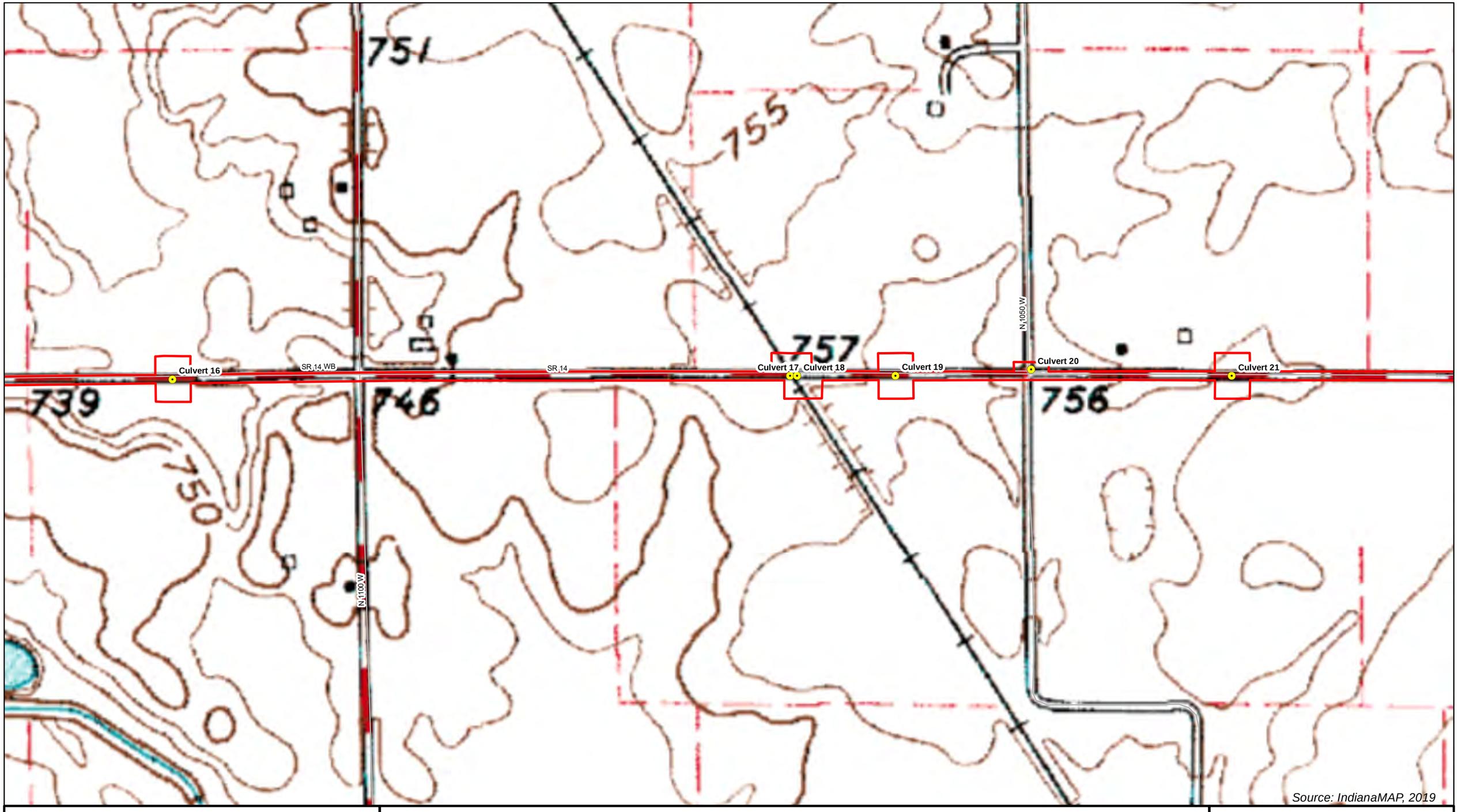

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Pulaski and Fulton County, IN
Des. 1800182

Investigated Area
Culverts

0 500 1,000 Feet

N

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Map Created: 10/14/2020

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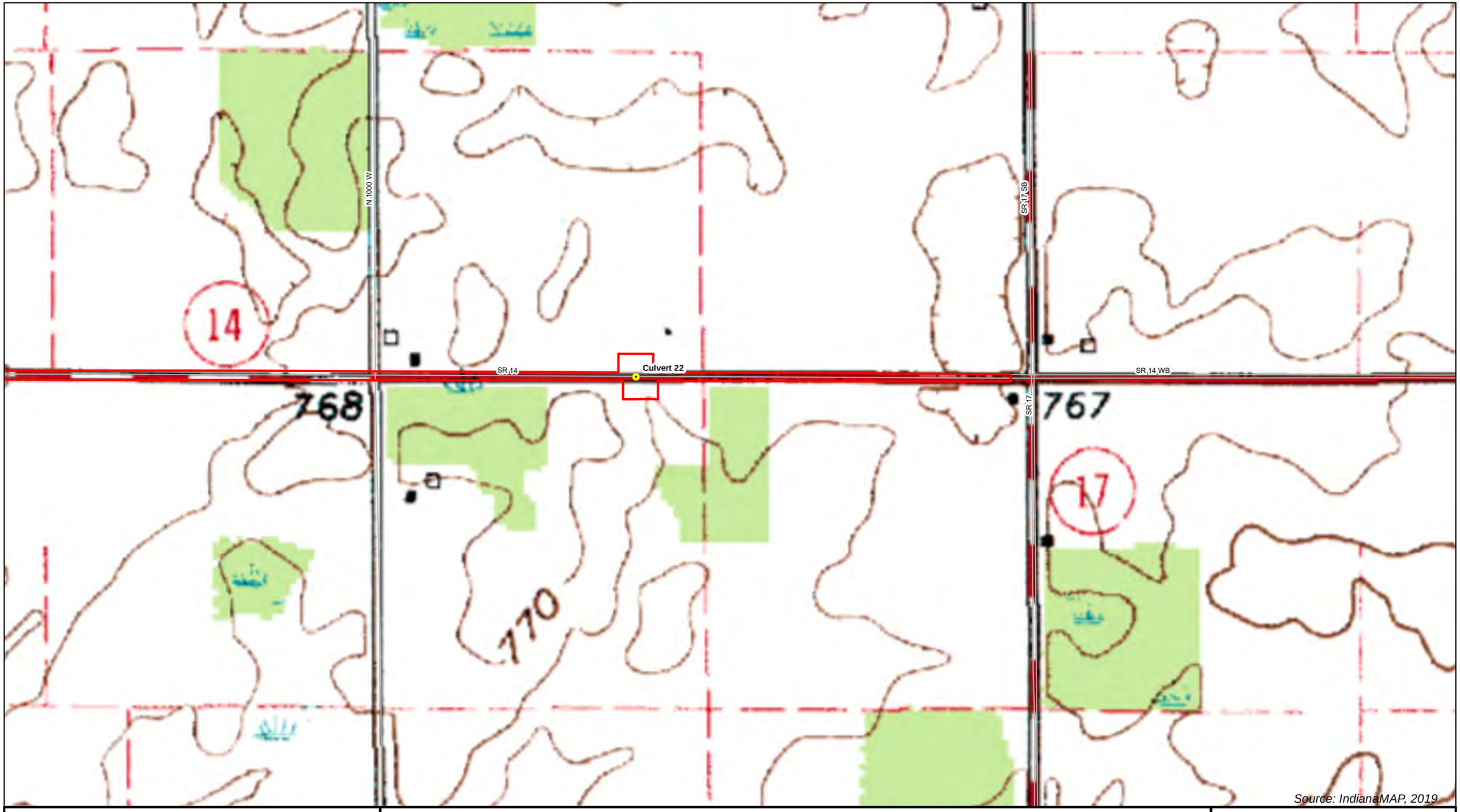

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Des. 1800182

Investigated Area
Culverts

0 500 1,000 Feet

N

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Map Created: 10/14/2020

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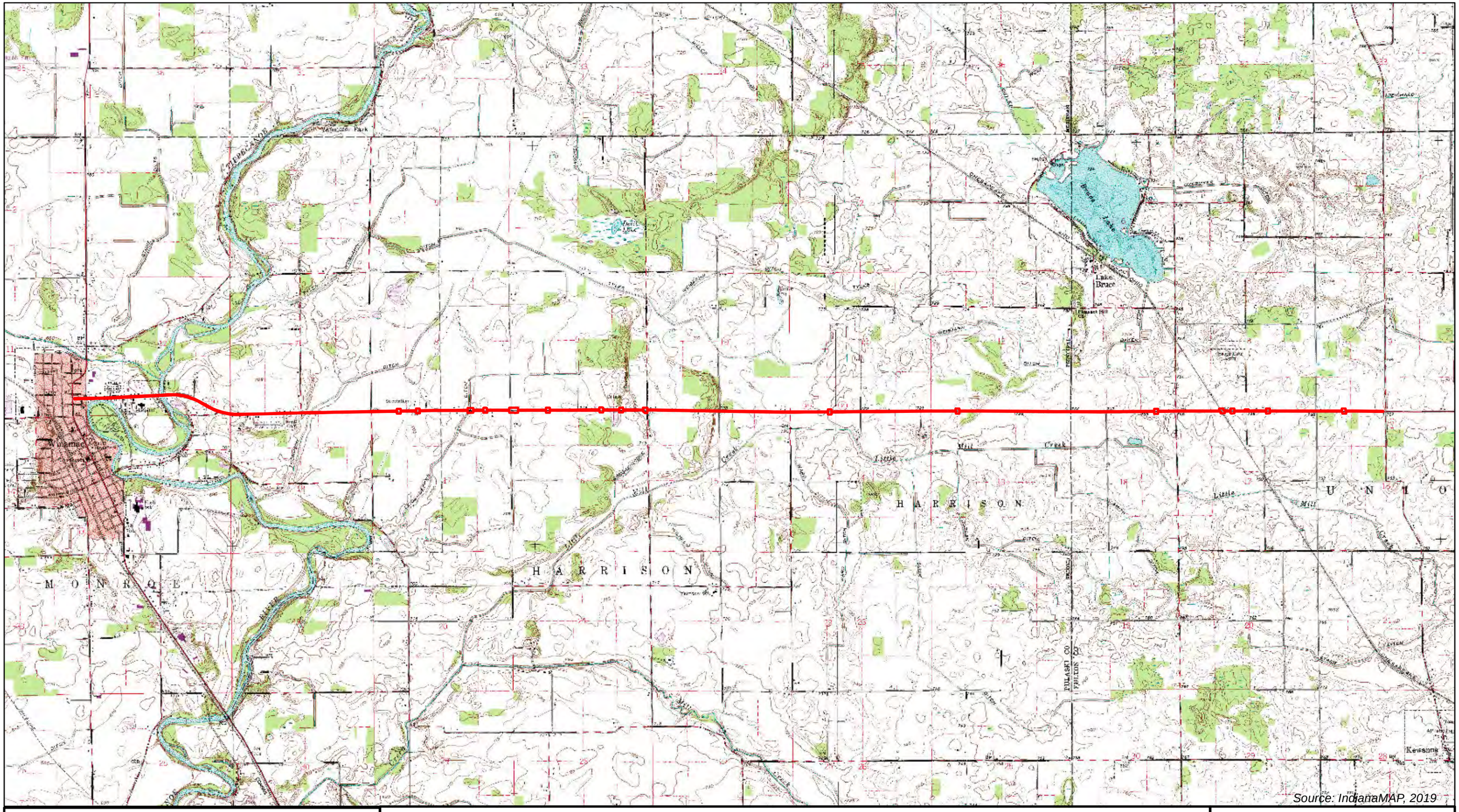

Figure 3a
USGS Map
SR 14
Pavement and Culvert Work
Pulaski and Fulton County, IN
Des. 1800182

Investigated Area

0 3,250 6,500 Feet

Map Created 10/14/2020

N

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Figure 4
USGS-NRCS Soil Map
SR 14 Pavement and Culvert Work
Pulaski and Fulton County, IN
Des. 1800182

- Investigated Area
- Culverts
- Not Hydric (0%)
- Hydric (1 to 32%)
- Hydric (66 to 99%)
- Hydric (100%)

0 500 1,000 Feet

N

Page 1 of 10
Map Created: 10/14/2020

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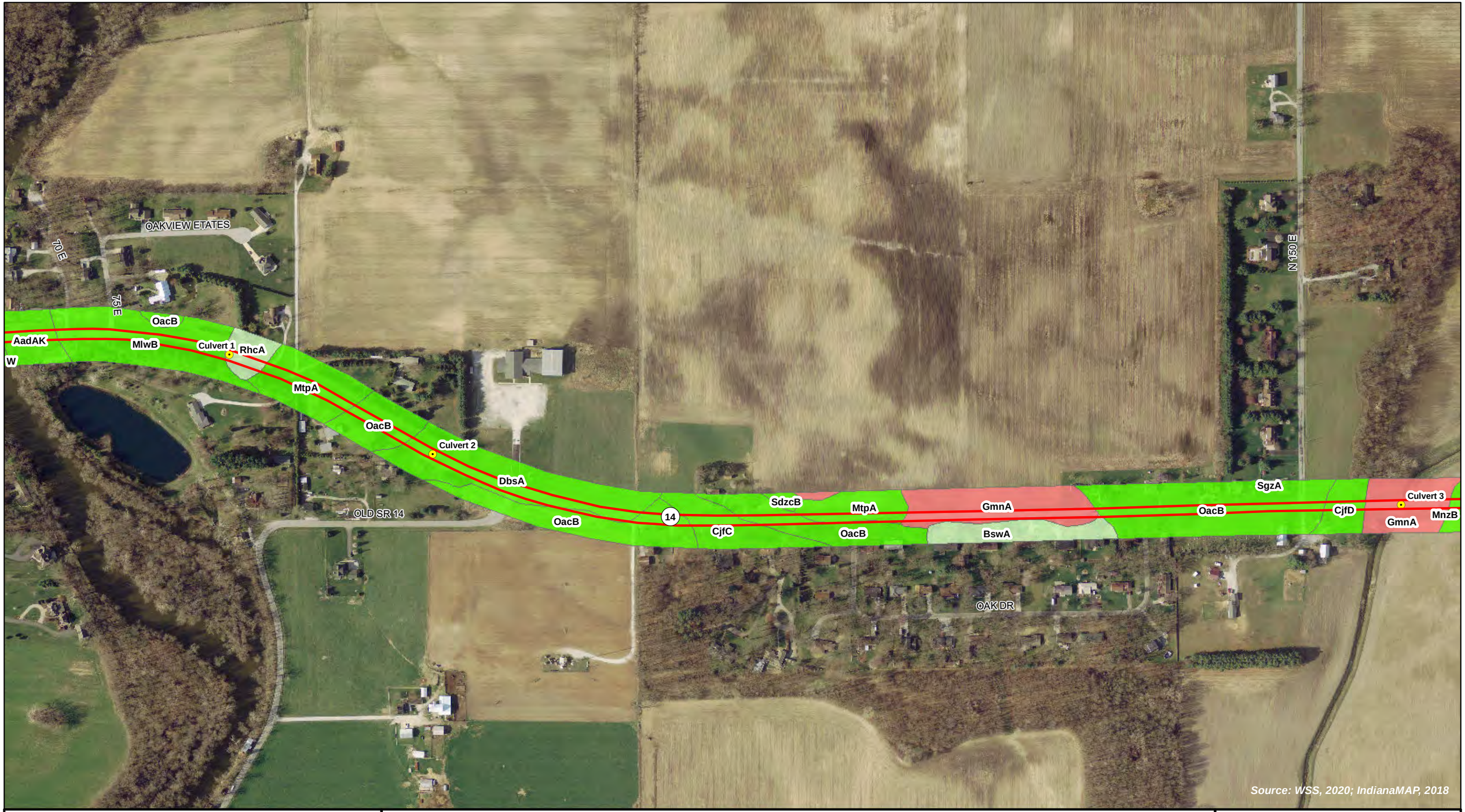

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SR 14 Pavement and Culvert Work
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N

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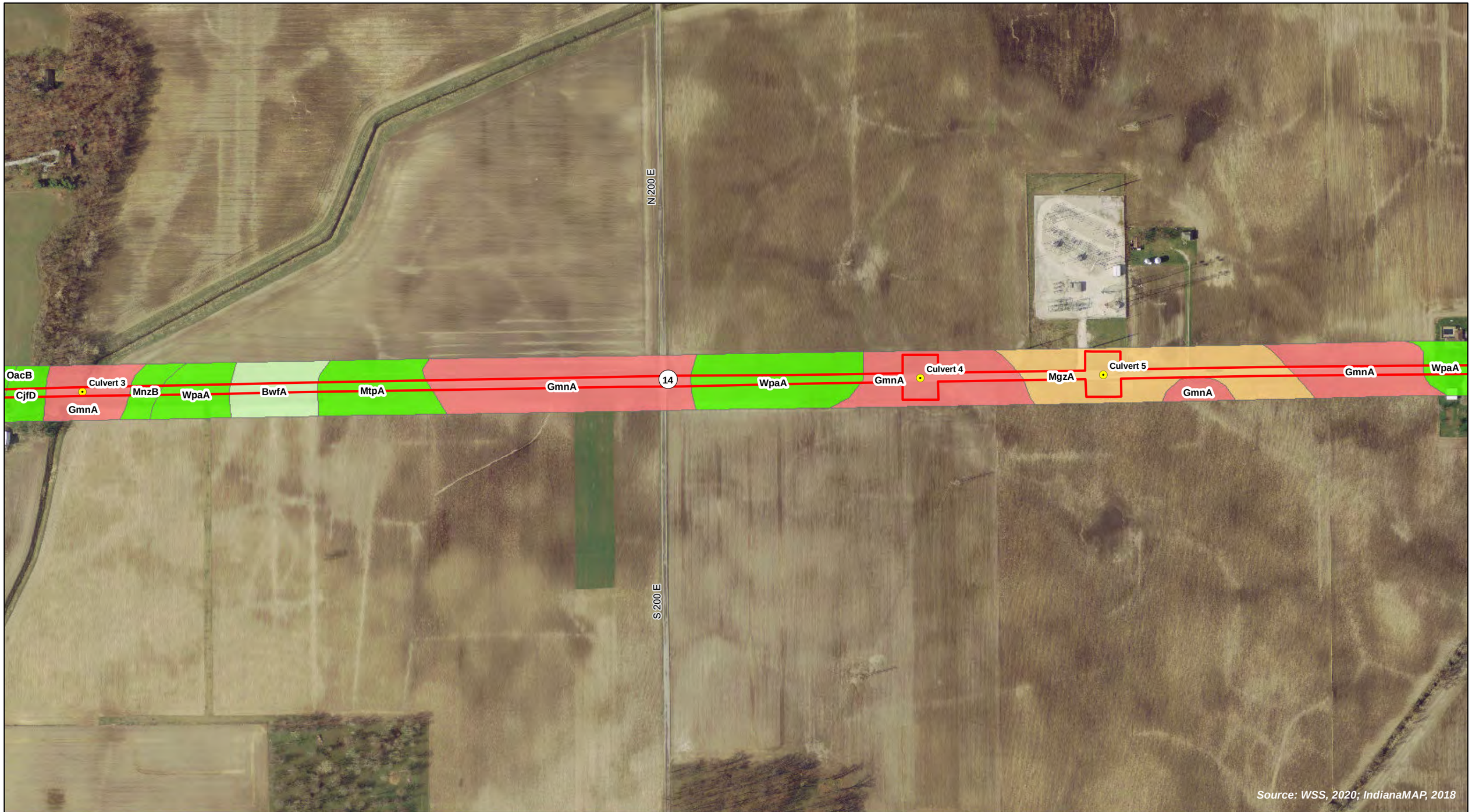

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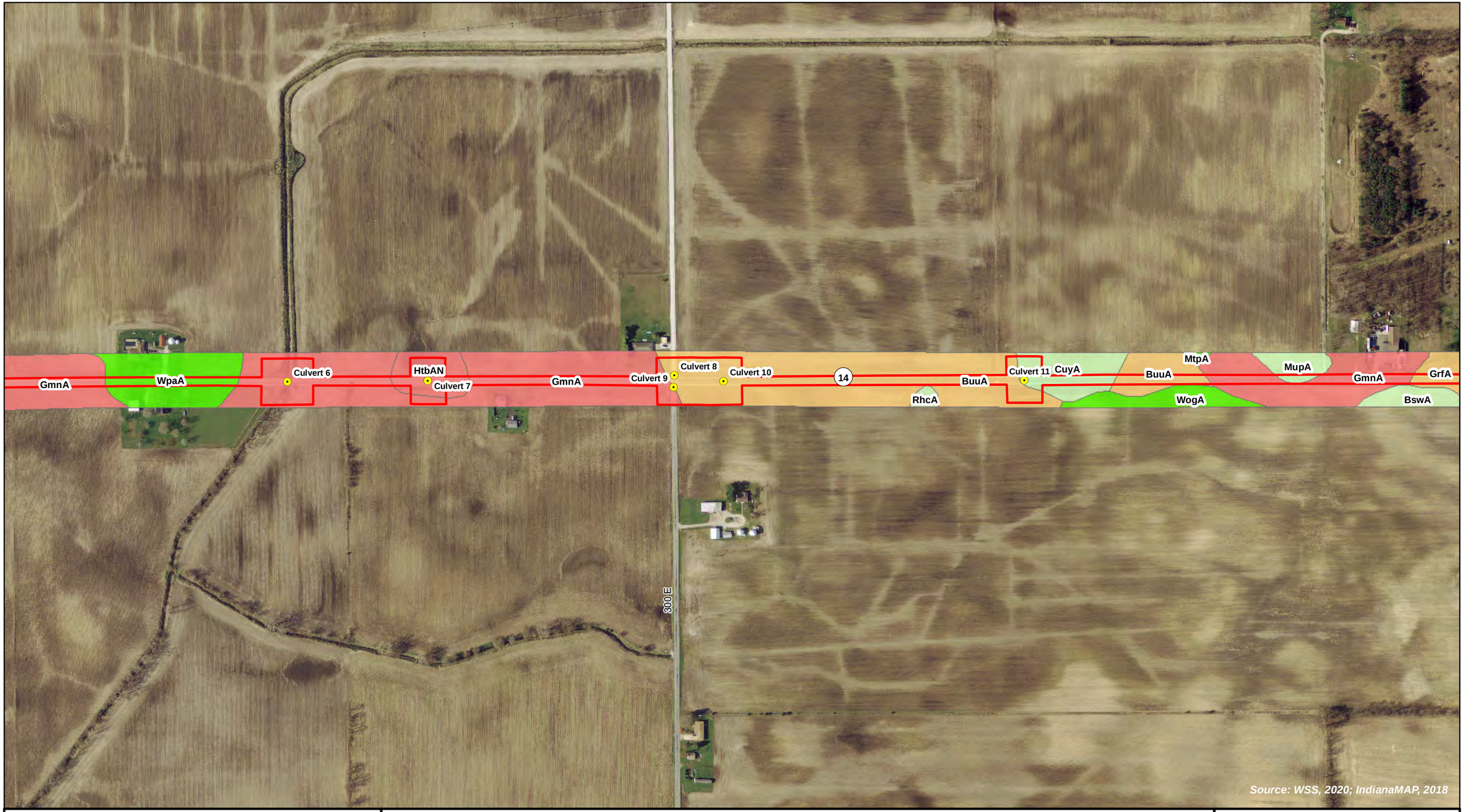

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Hydric (66 to 99%)
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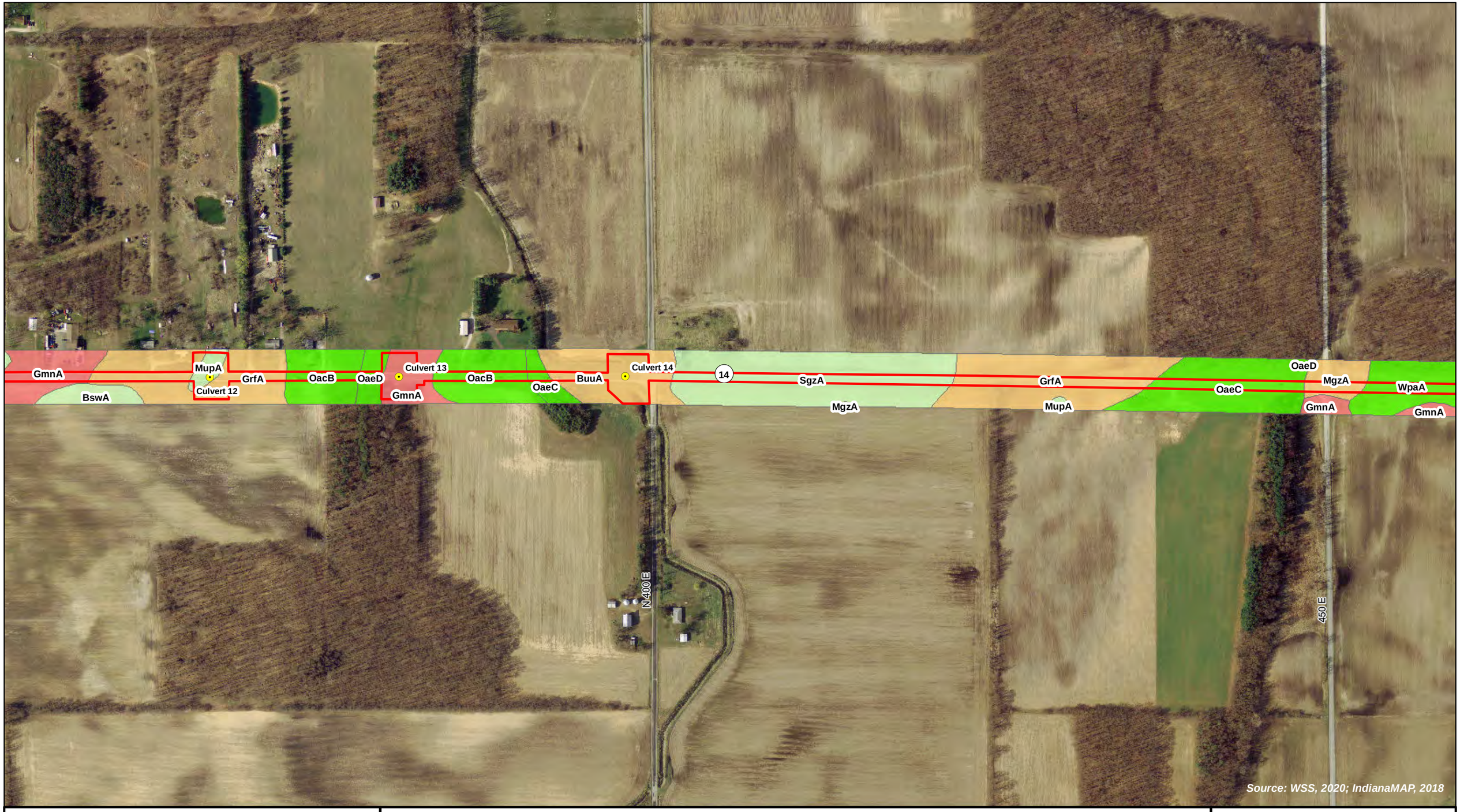

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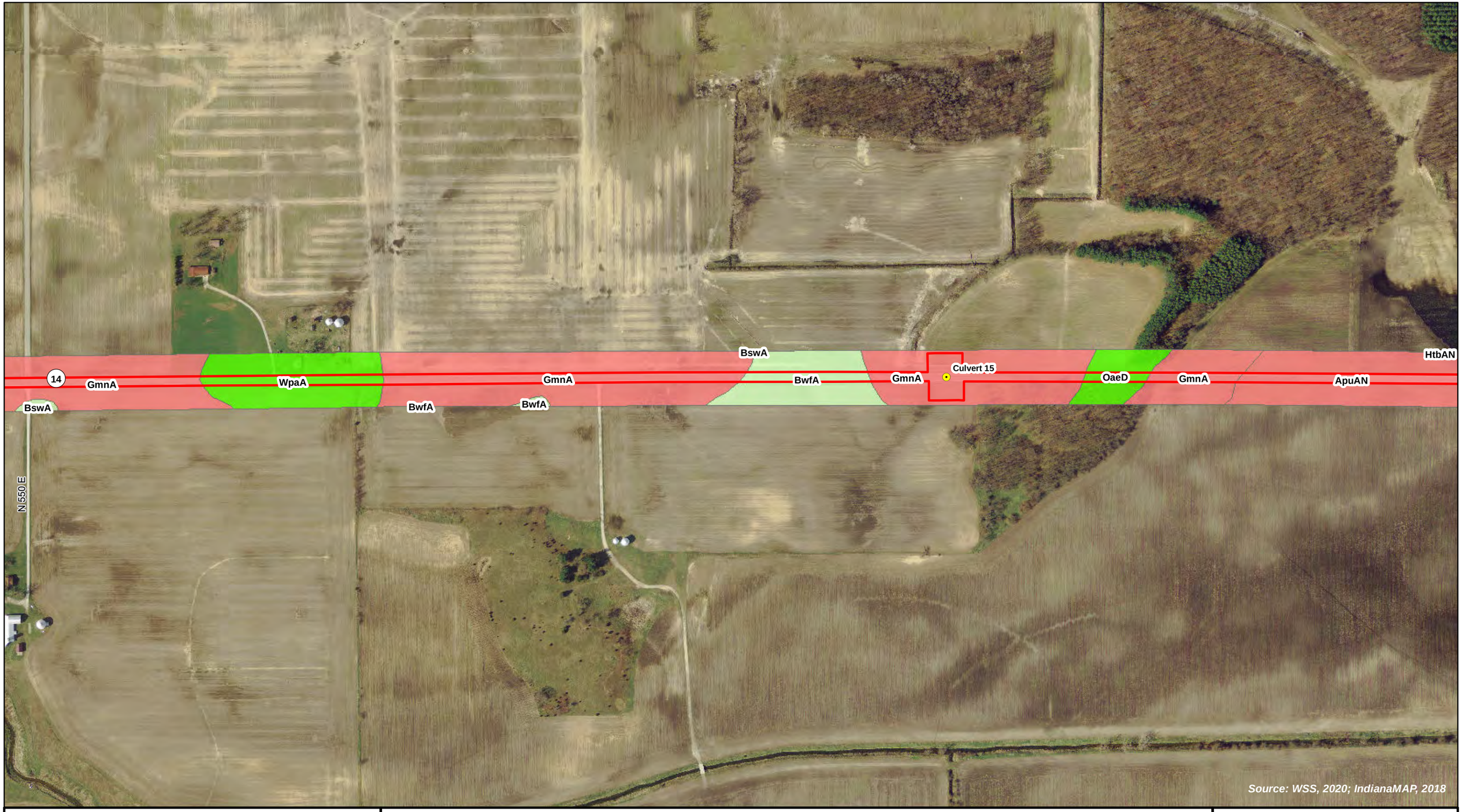

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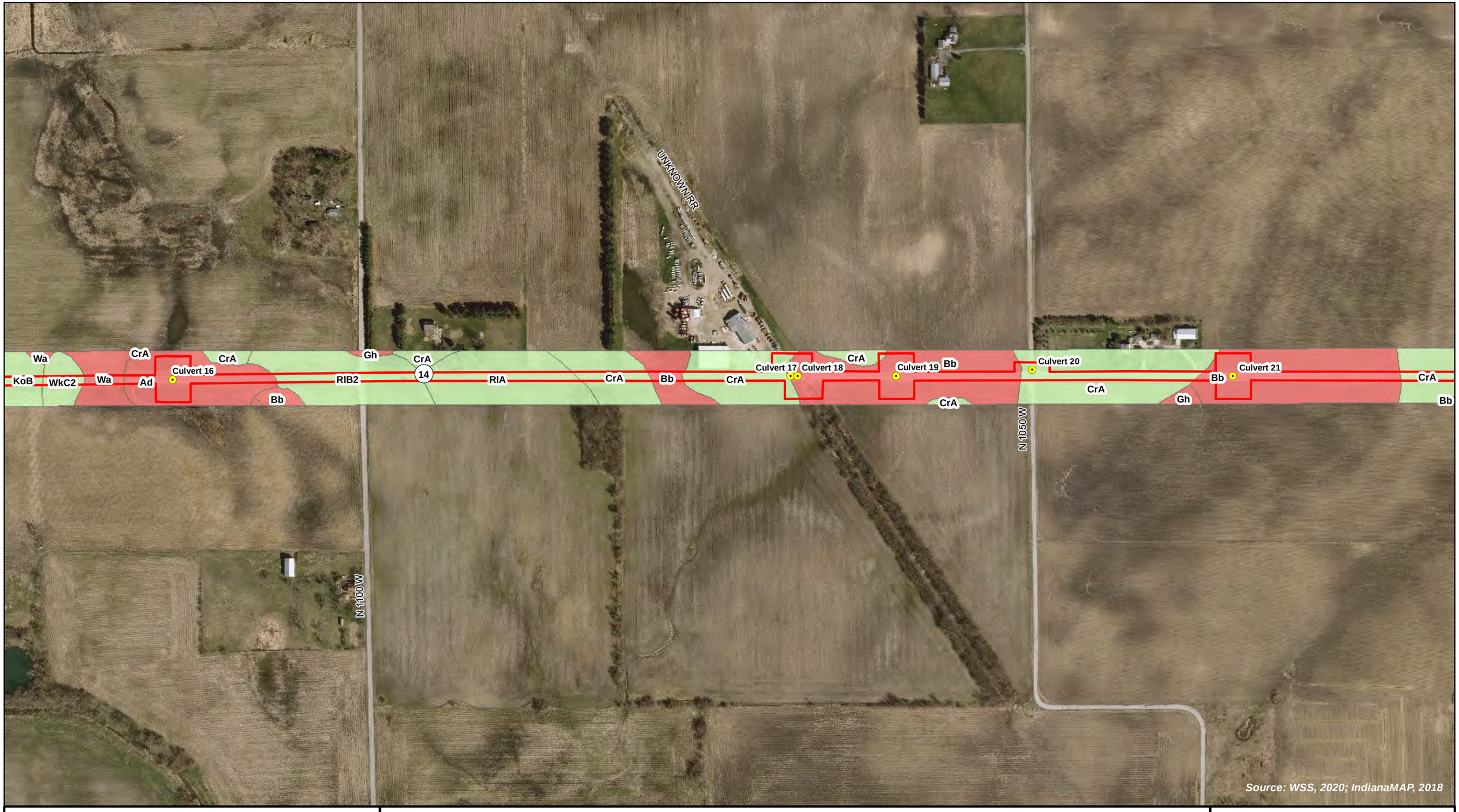

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Figure 5
USGS National Hydrography Data Map
SR 14 Pavement and Culvert Work
Pulaski and Fulton County, IN
Des. 1800182

Investigated Area
Culverts
USGS NHD Flowlines

0 500 1,000 Feet

N

Page 1 of 10
Map Created: 10/14/2020

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Figure 5
USGS National Hydrography Data Map
SR 14 Pavement and Culvert Work
Pulaski and Fulton County, IN
Des. 1800182

Investigated Area
Culverts
USGS NHD Flowlines

0 500 1,000 Feet

N

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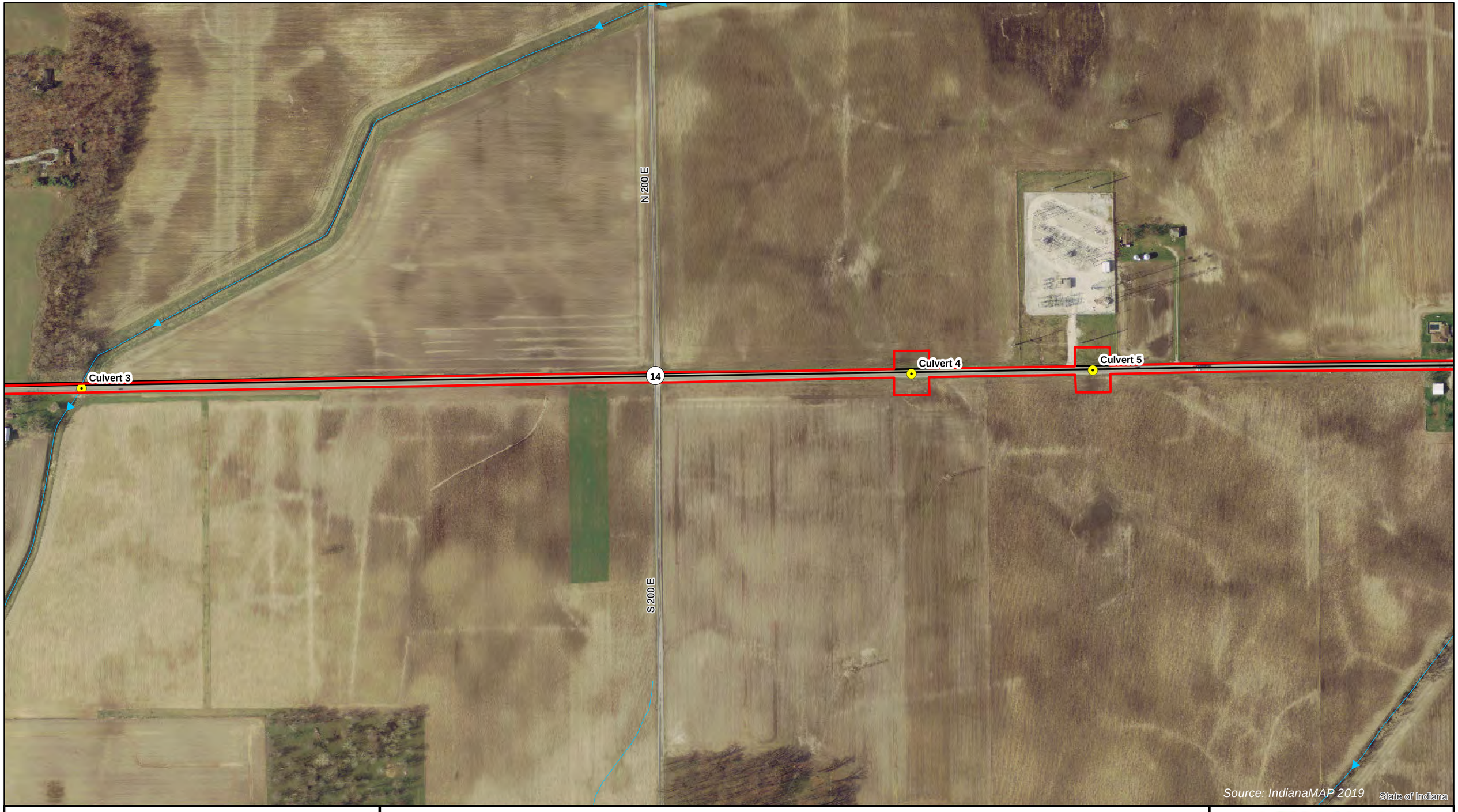

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USGS NHD Flowlines

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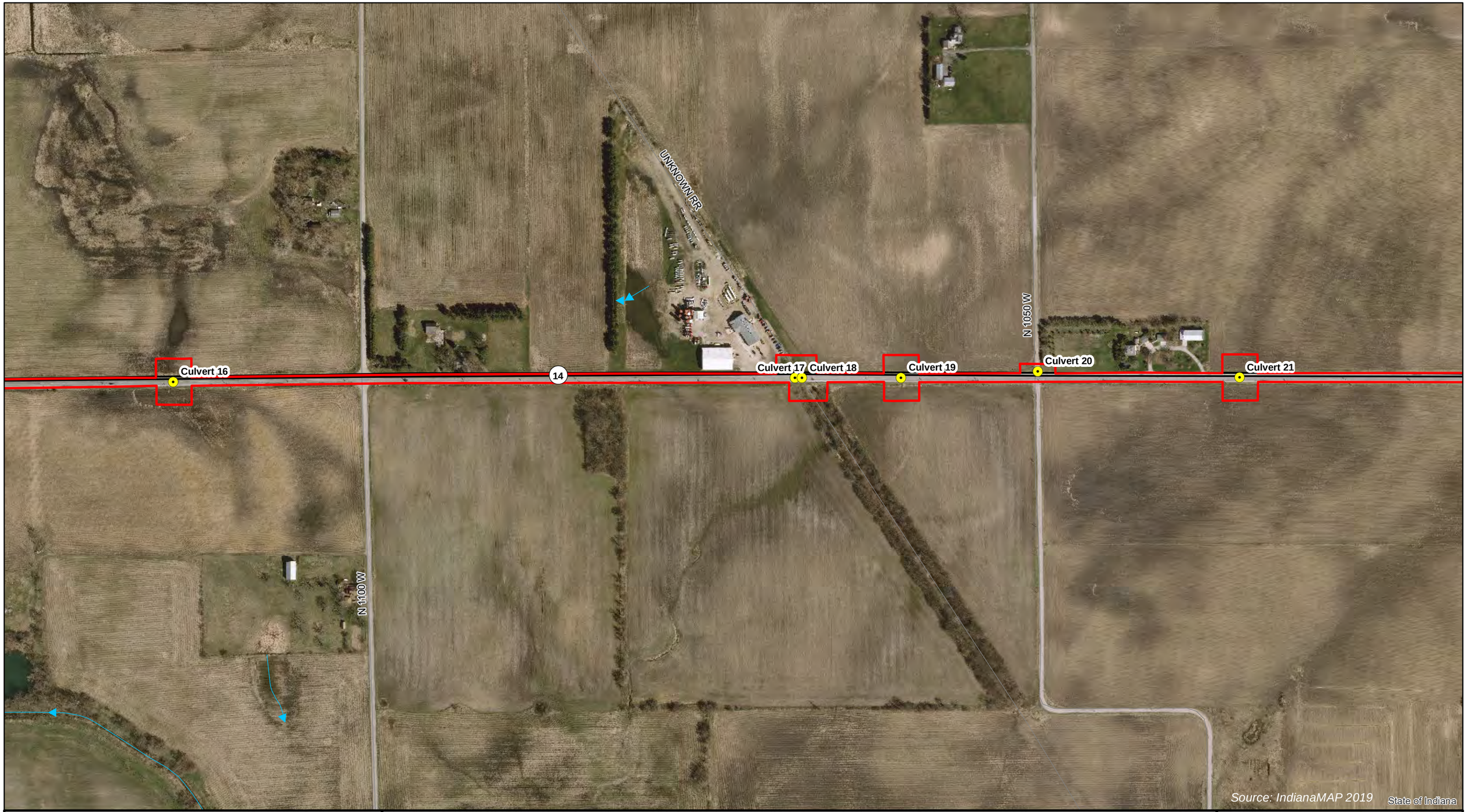

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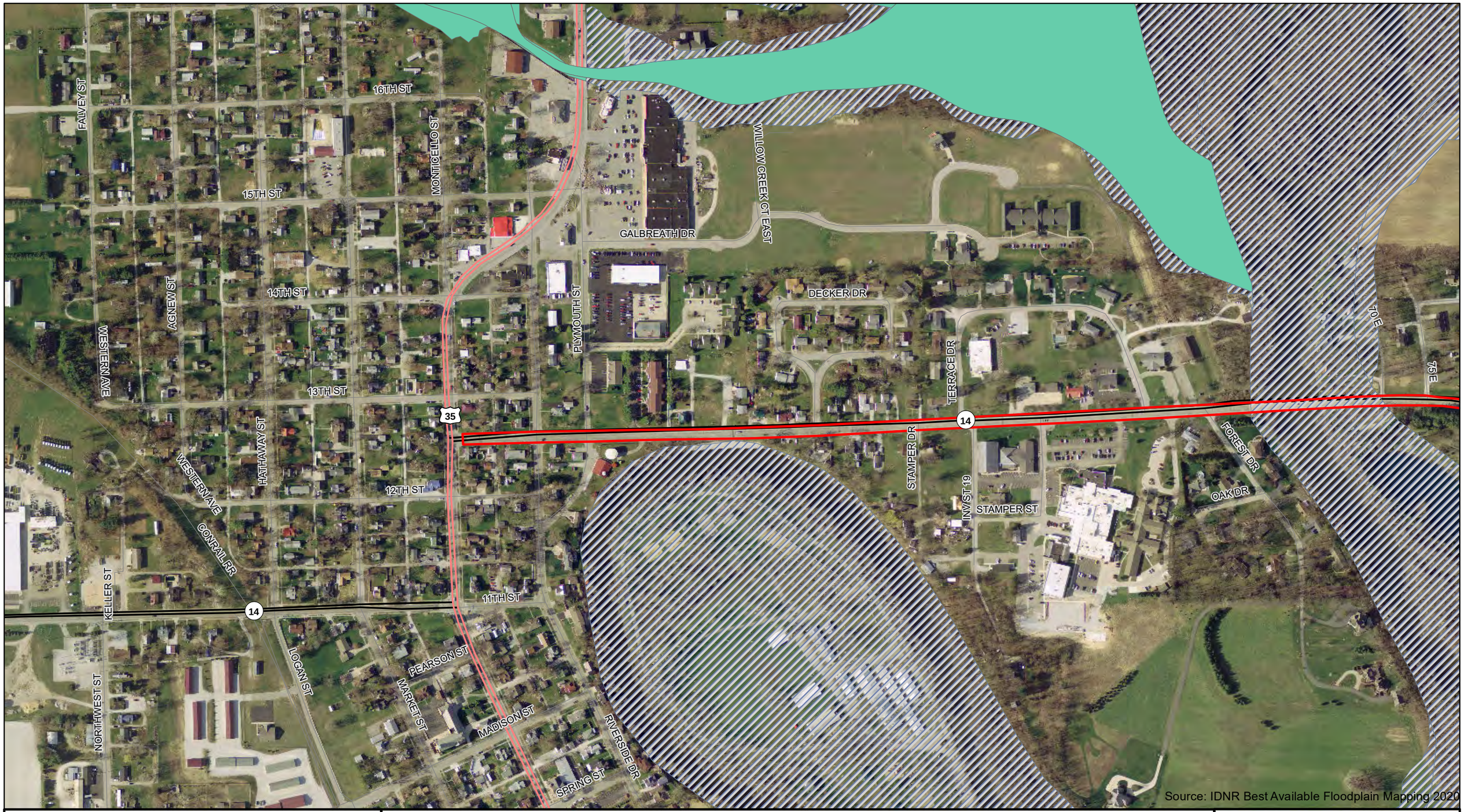

Figure 6
Floodplain Map
SR 14 Pavement and Culvert Work
Pulaski and Fulton County, IN
Des. 1800182

Investigated Area
Culverts
Flood Zone A
Flood Zone AE

0 500 1,000 Feet

N

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Map Created: 10/14/2020

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Figure 6
Floodplain Map
SR 14 Pavement and Culvert Work
Pulaski and Fulton County, IN
Des. 1800182

Investigated Area
Culverts
Flood Zone A
Flood Zone AE

0 500 1,000 Feet

N

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Floodplain Map
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Pulaski and Fulton County, IN
Des. 1800182

Investigated Area
Culverts
Flood Zone A
Flood Zone AE

0 500 1,000 Feet

N

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Investigated Area
Culverts
Flood Zone A
Flood Zone AE

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Investigated Area
Culverts
Flood Zone A
Flood Zone AE

0 500 1,000 Feet

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Investigated Area
Culverts
Flood Zone A
Flood Zone AE

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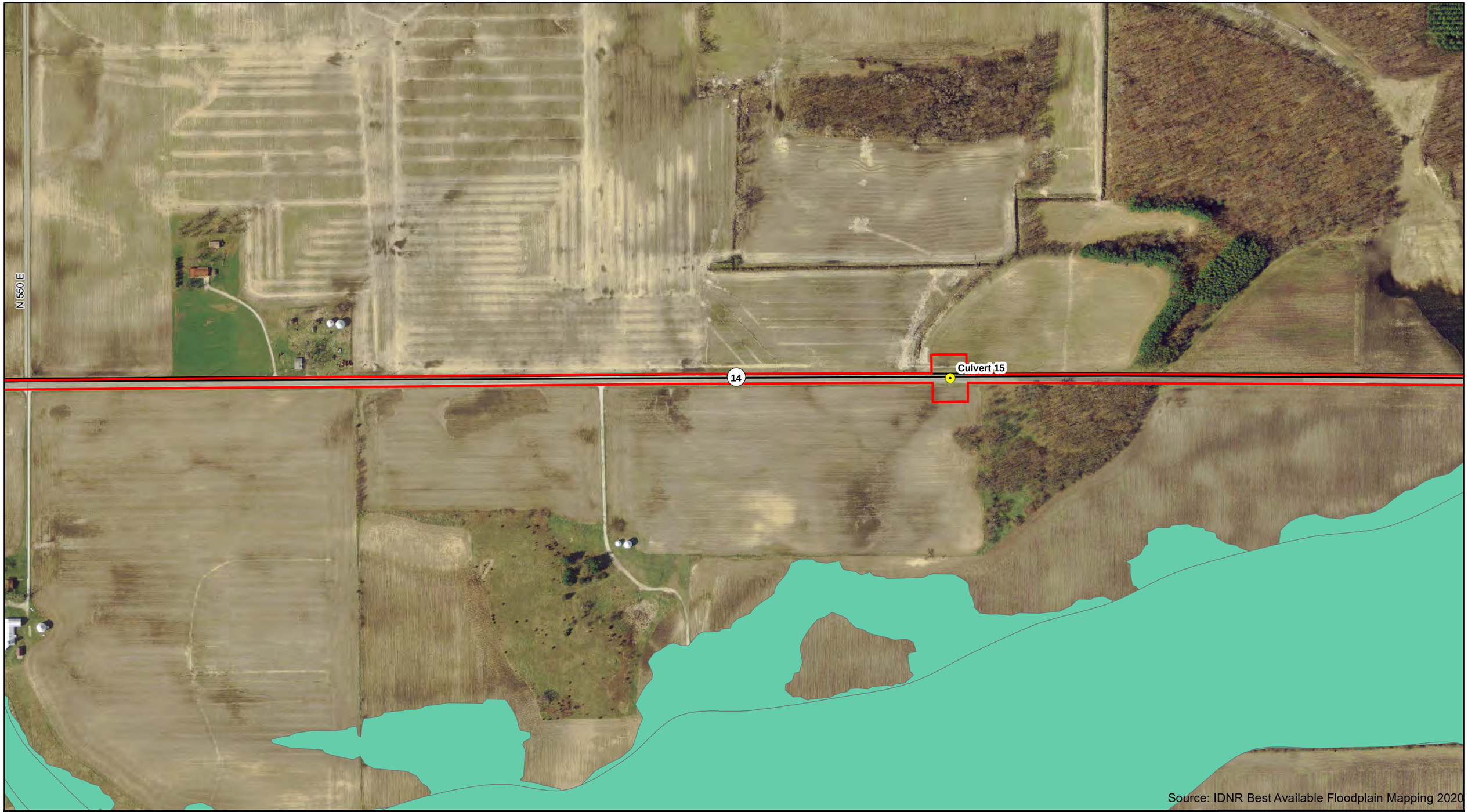

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Culverts
Flood Zone A
Flood Zone AE

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Culverts
Flood Zone A
Flood Zone AE

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