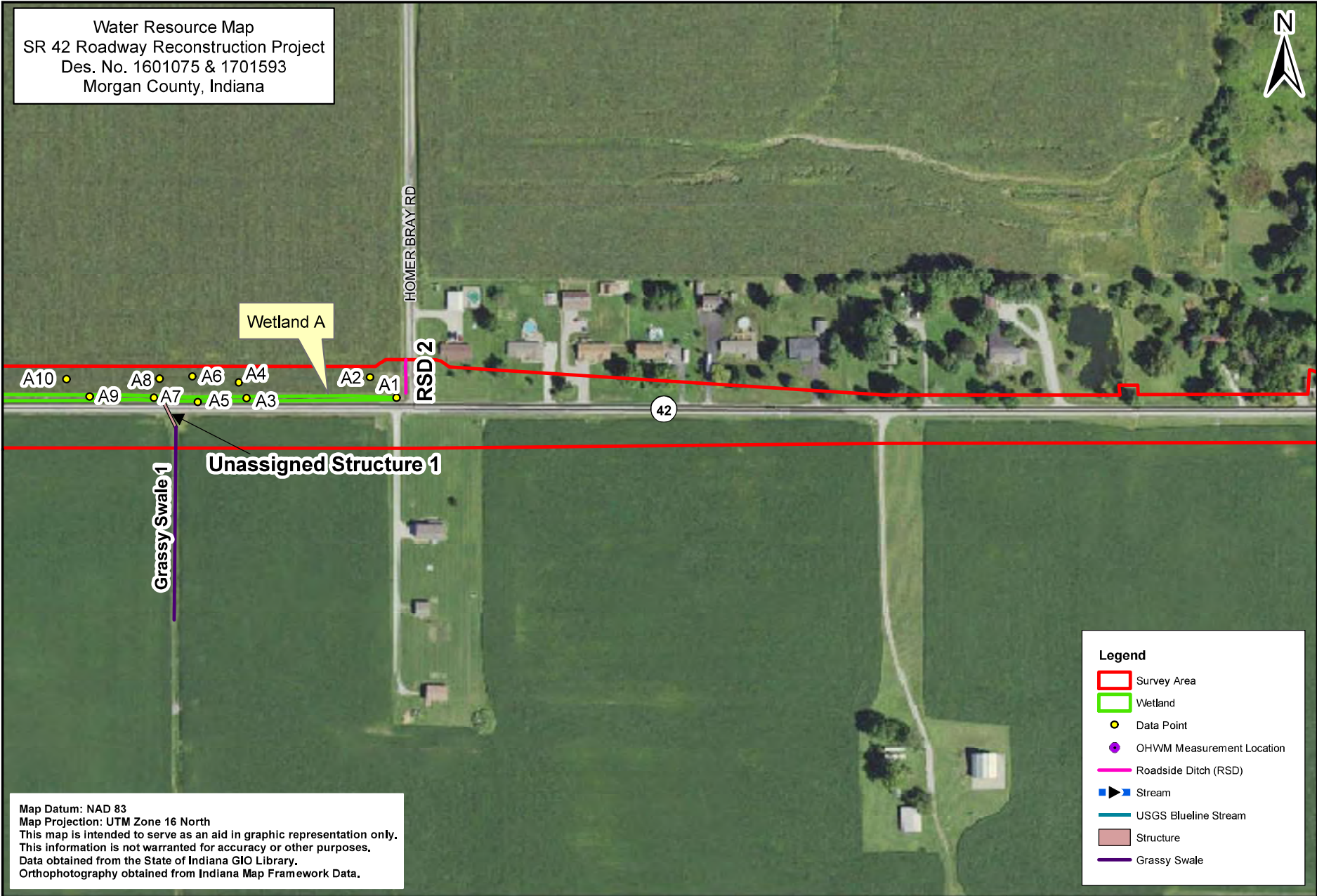


Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
 This information is not warranted for accuracy or other purposes.  
 Data obtained from the State of Indiana GIO Library,  
 Orthophotography obtained from Indiana Map Framework Data.

**Legend**

- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- ▶ Stream
- USGS Blueline Stream
- Structure
- Grassy Swale

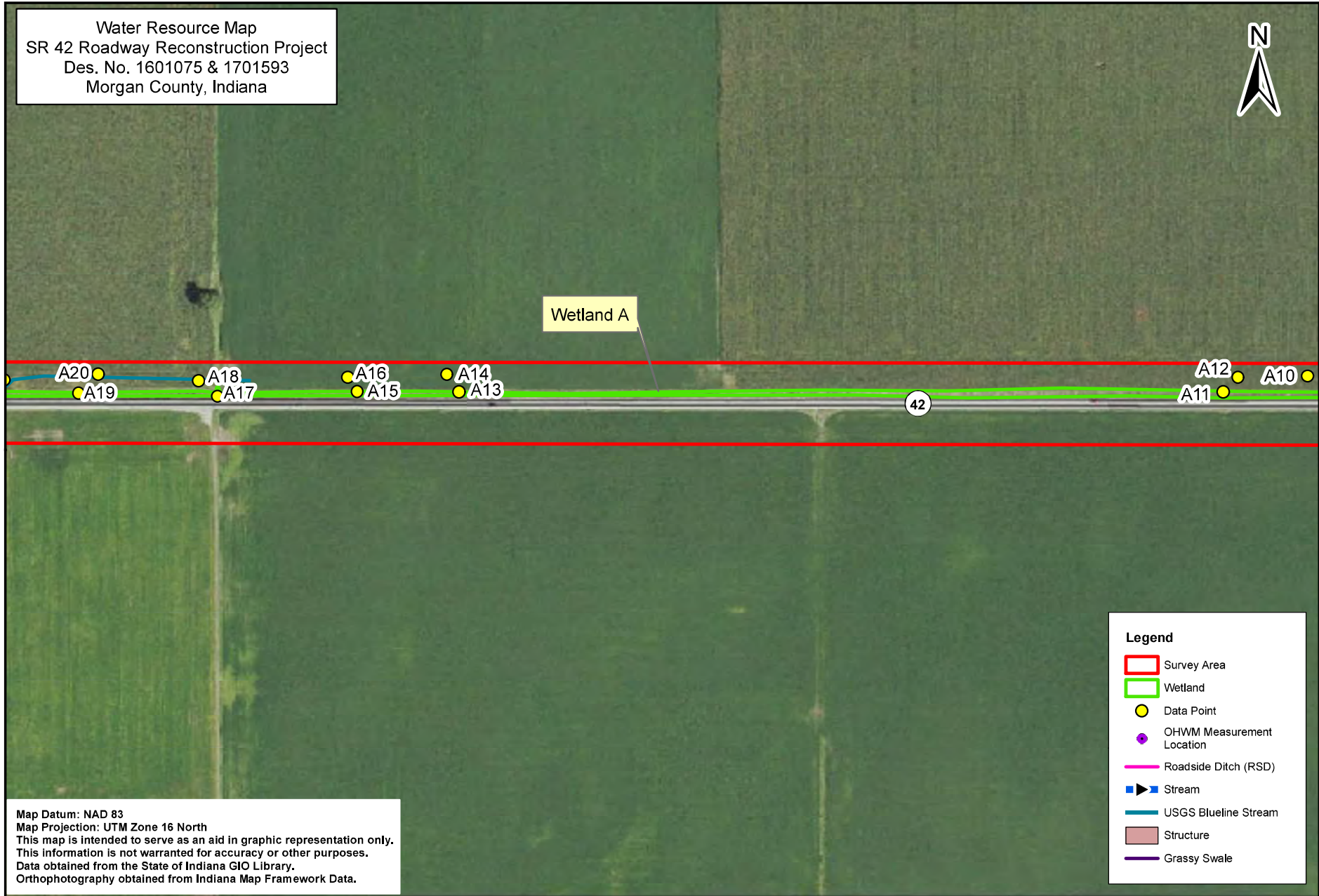


**Water Resource Map 2 of 31**

0      212.5      425      850      1,275      Feet

Location: SR 42  
 Township: Monroe  
 County: Morgan  
 Date: 02/28/2020

Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
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 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.

**Legend**

- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- ▶ Stream
- USGS Blueline Stream
- Structure
- Grassy Swale

	Water Resource Map 3 of 31	Location: SR 42 Township: Monroe County: Morgan Date: 02/28/2020
		



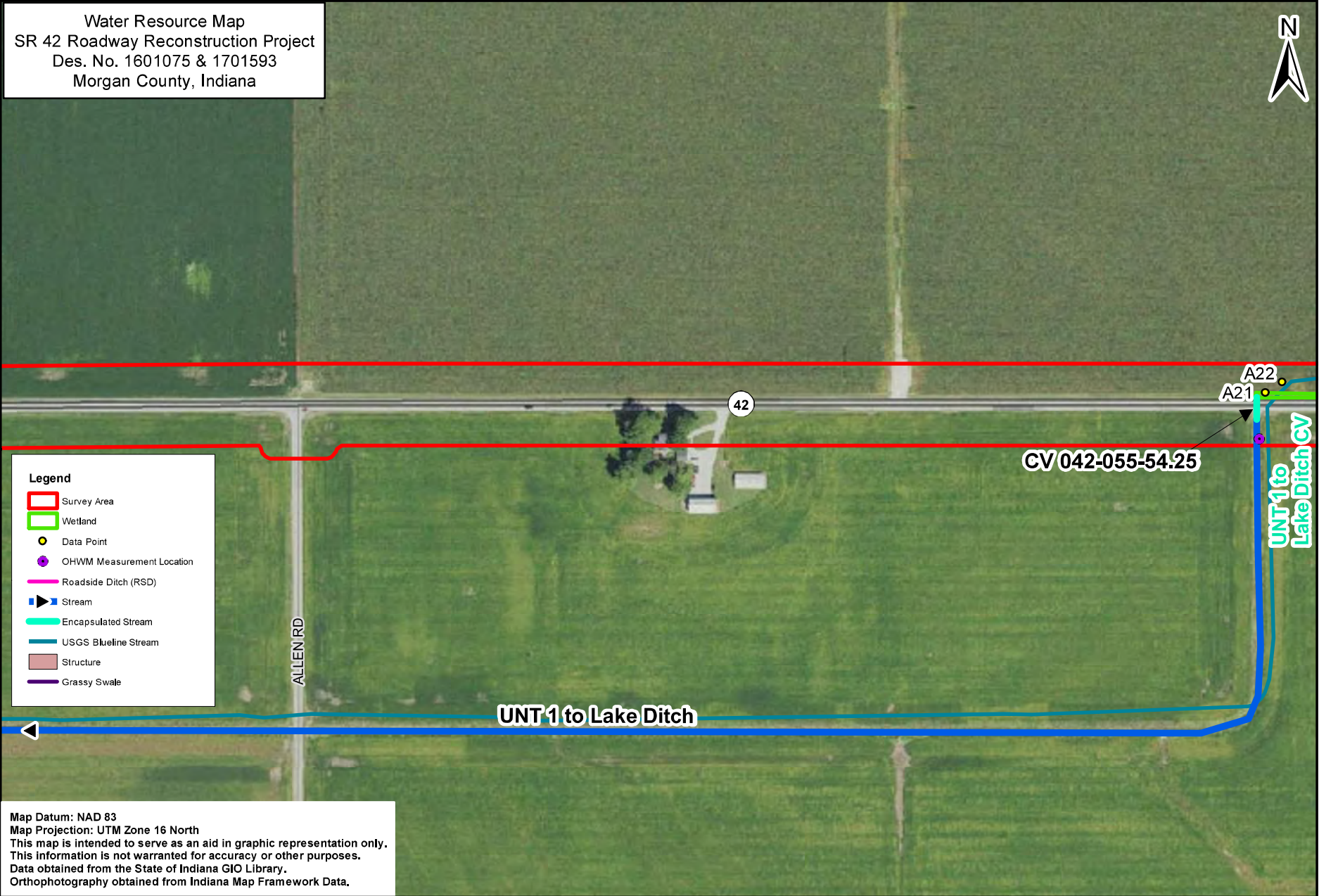
Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



**Legend**

- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- Stream
- Encapsulated Stream
- USGS Blueline Stream
- Structure
- Grassy Swale

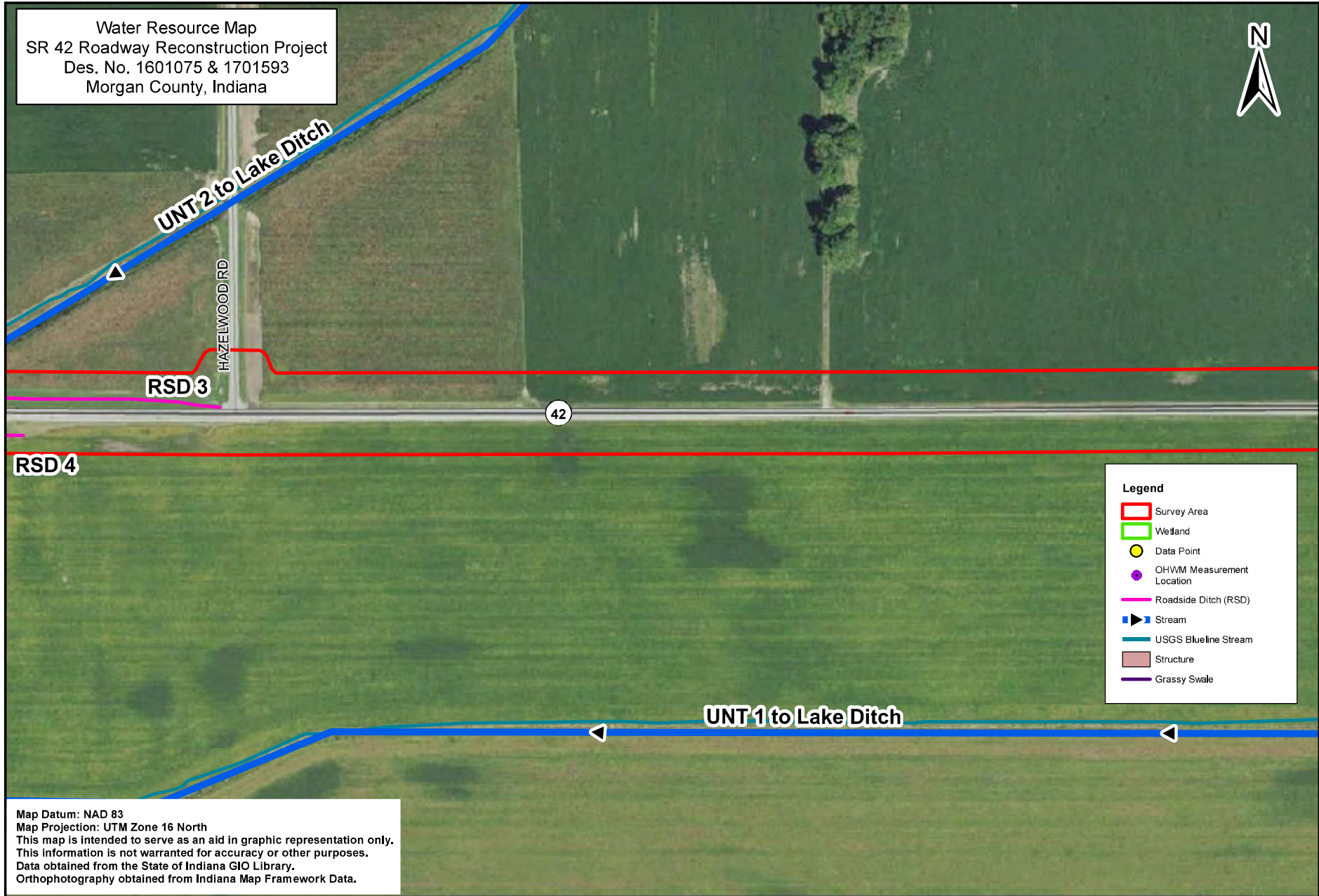
Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
 This information is not warranted for accuracy or other purposes.  
 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.



	Water Resource Map 4 of 31	Location: SR 42 Township: Monroe County: Morgan Date: 02/28/2020
		



Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



**Legend**

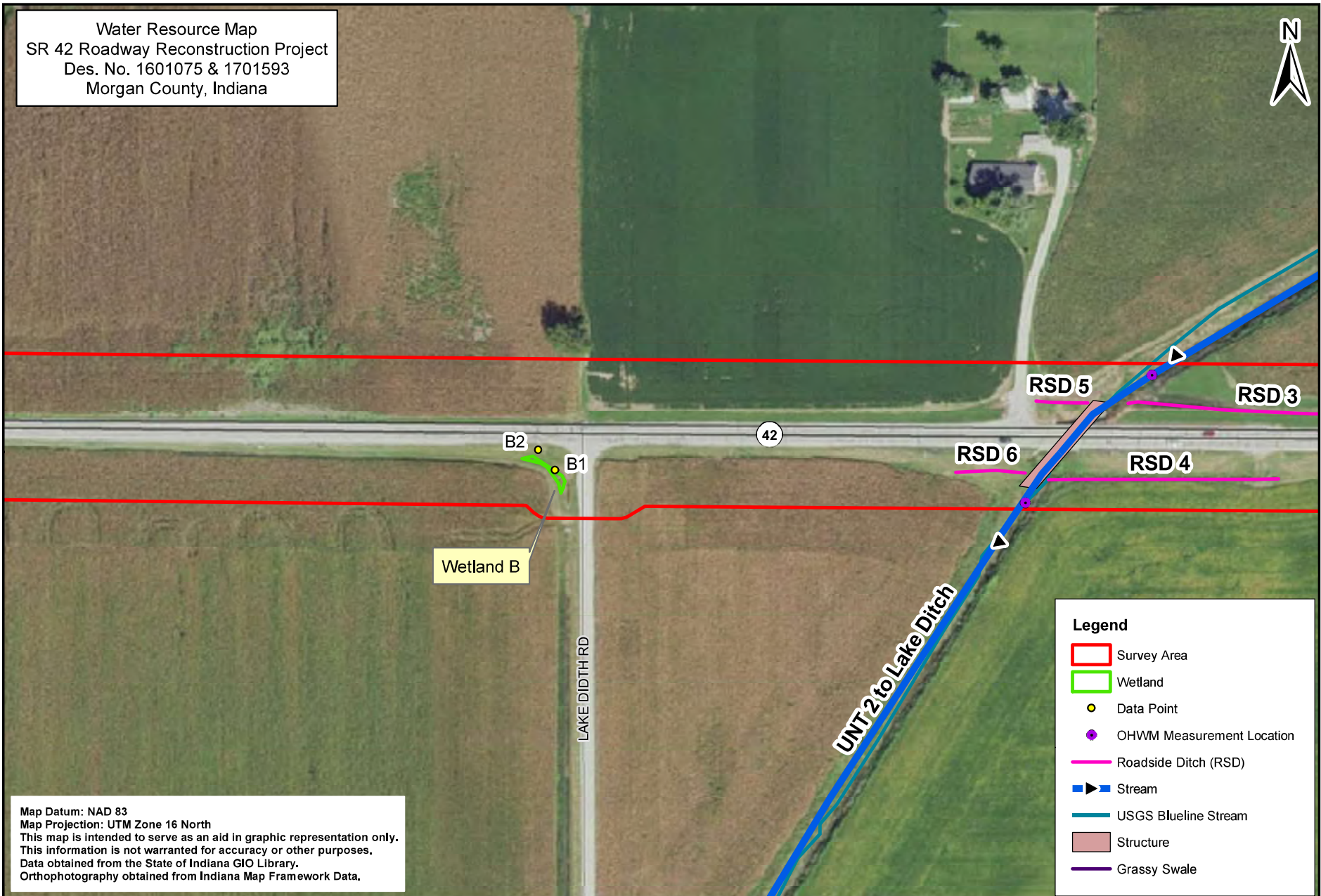
- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- Stream
- USGS Blueline Stream
- Structure
- Grassy Swale

Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
 This information is not warranted for accuracy or other purposes.  
 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.

	Water Resource Map 5 of 31	Location: SR 42 Township: Monroe County: Morgan Date: 02/28/2020
		



Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
 This information is not warranted for accuracy or other purposes.  
 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.

**Legend**

- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- ▶ Stream
- USGS BlueLine Stream
- Structure
- Grassy Swale



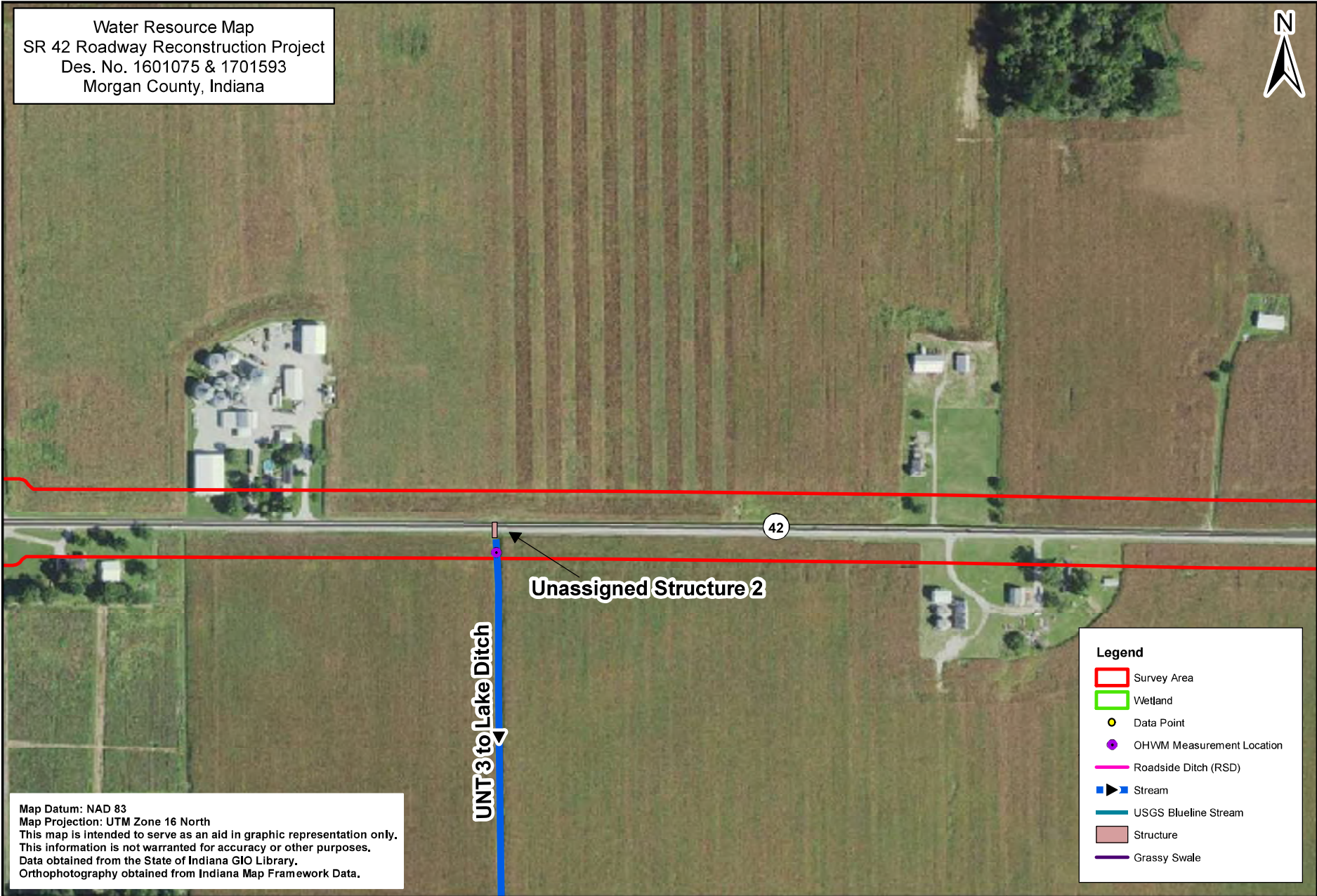
**Water Resource Map 6 of 31**

0      120      240      480      720 Feet

Location: SR 42  
 Township: Monroe  
 County: Morgan  
 Date: 02/28/2020



Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
 This information is not warranted for accuracy or other purposes.  
 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.

**Legend**

- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- ▶ Stream
- USGS Blueline Stream
- Structure
- Grassy Swale



**Water Resource Map 7 of 31**

0      260      520      1,040      1,560      Feet

Location: SR 42  
 Township: Monroe  
 County: Morgan  
 Date: 02/28/2020



Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
 This information is not warranted for accuracy or other purposes.  
 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.

**Legend**

- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- Stream
- USGS Blueline Stream
- Structure
- Grassy Swale



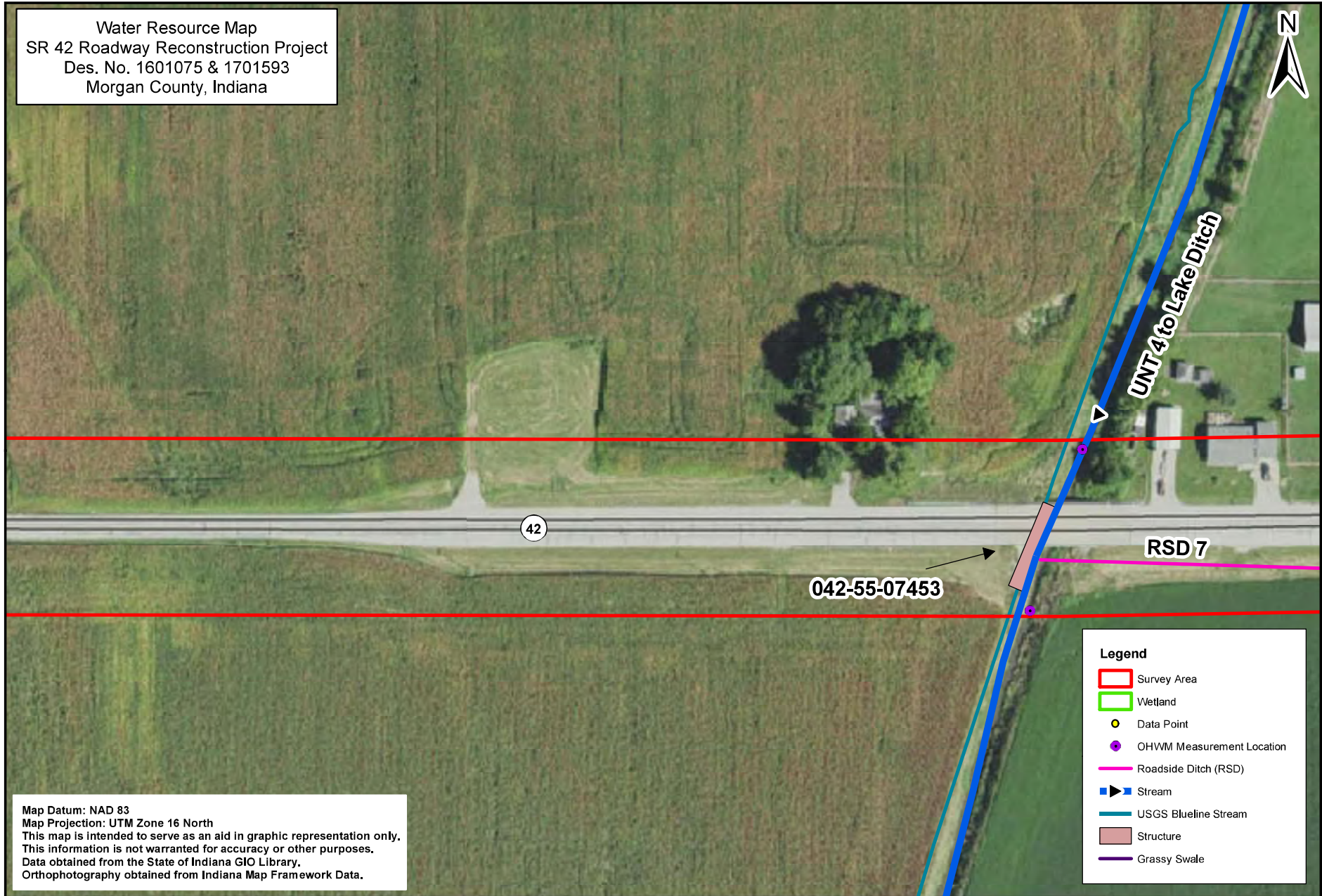
**Water Resource Map 8 of 31**

0      130      260      520      780      Feet

Location: SR 42  
 Township: Monroe  
 County: Morgan  
 Date: 02/28/2020



Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
 This information is not warranted for accuracy or other purposes.  
 Data obtained from the State of Indiana GIO Library,  
 Orthophotography obtained from Indiana Map Framework Data.

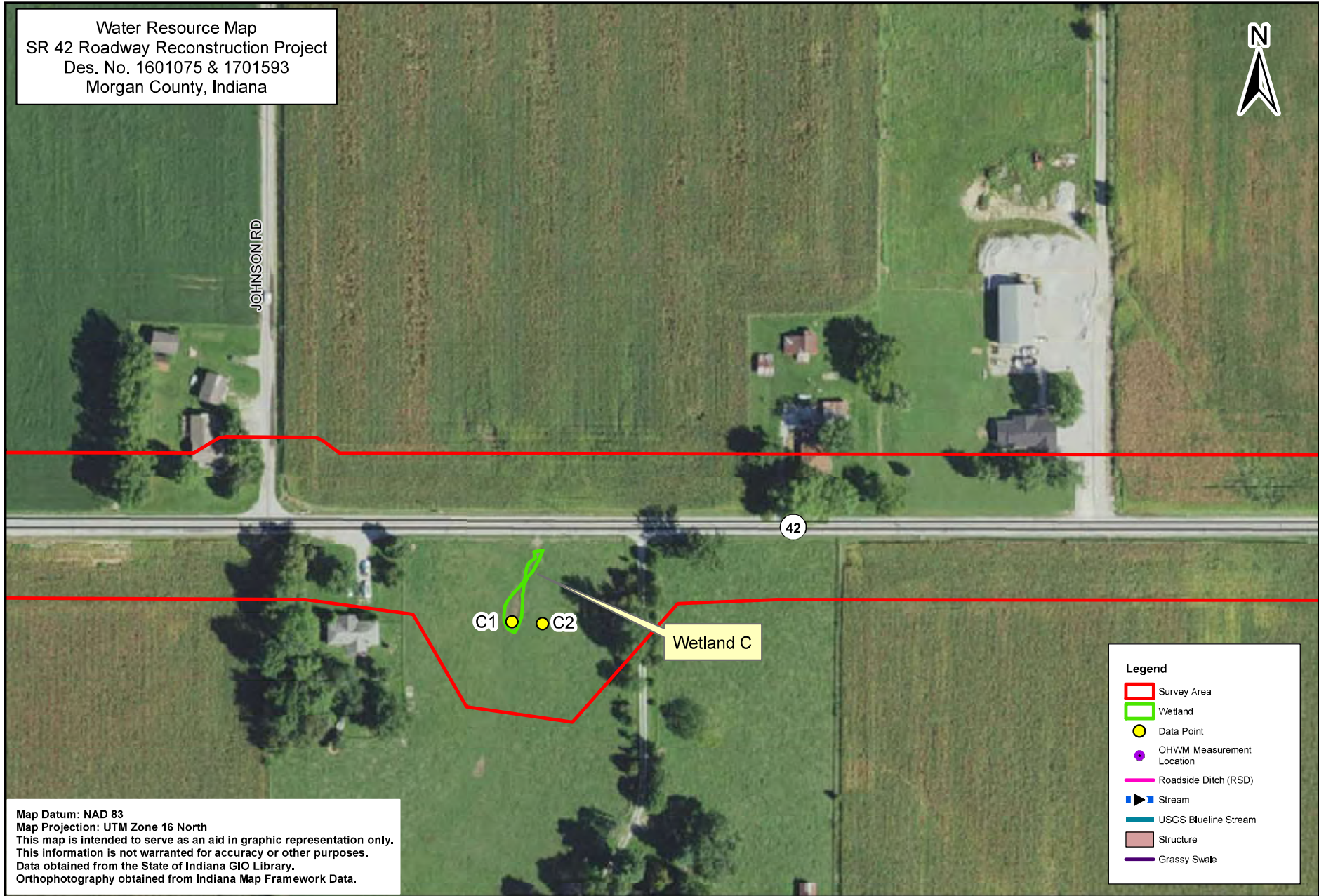
**Legend**

- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- ▶ Stream
- USGS Blueline Stream
- Structure
- Grassy Swale

	Water Resource Map 9 of 31	Location: SR 42 Township: Monroe County: Morgan Date: 02/28/2020
		



Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
 This information is not warranted for accuracy or other purposes.  
 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.

**Legend**

- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- Stream
- USGS Blueline Stream
- Structure
- Grassy Swale



**Water Resource Map 10 of 31**

0      120      240      480      720      Feet

Location: SR 42  
 Township: Monroe  
 County: Morgan  
 Date: 02/28/2020



Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



JOHNSON RD

HERBEMONT RD

42


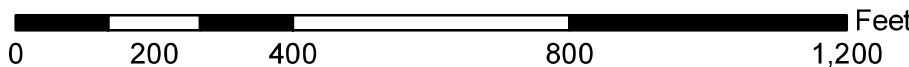
CV 042-055-51.40

UNT 5 to Lake Ditch  
 UNT 5 to Lake Ditch CV  
 UNT 5 to Lake Ditch

**Legend**

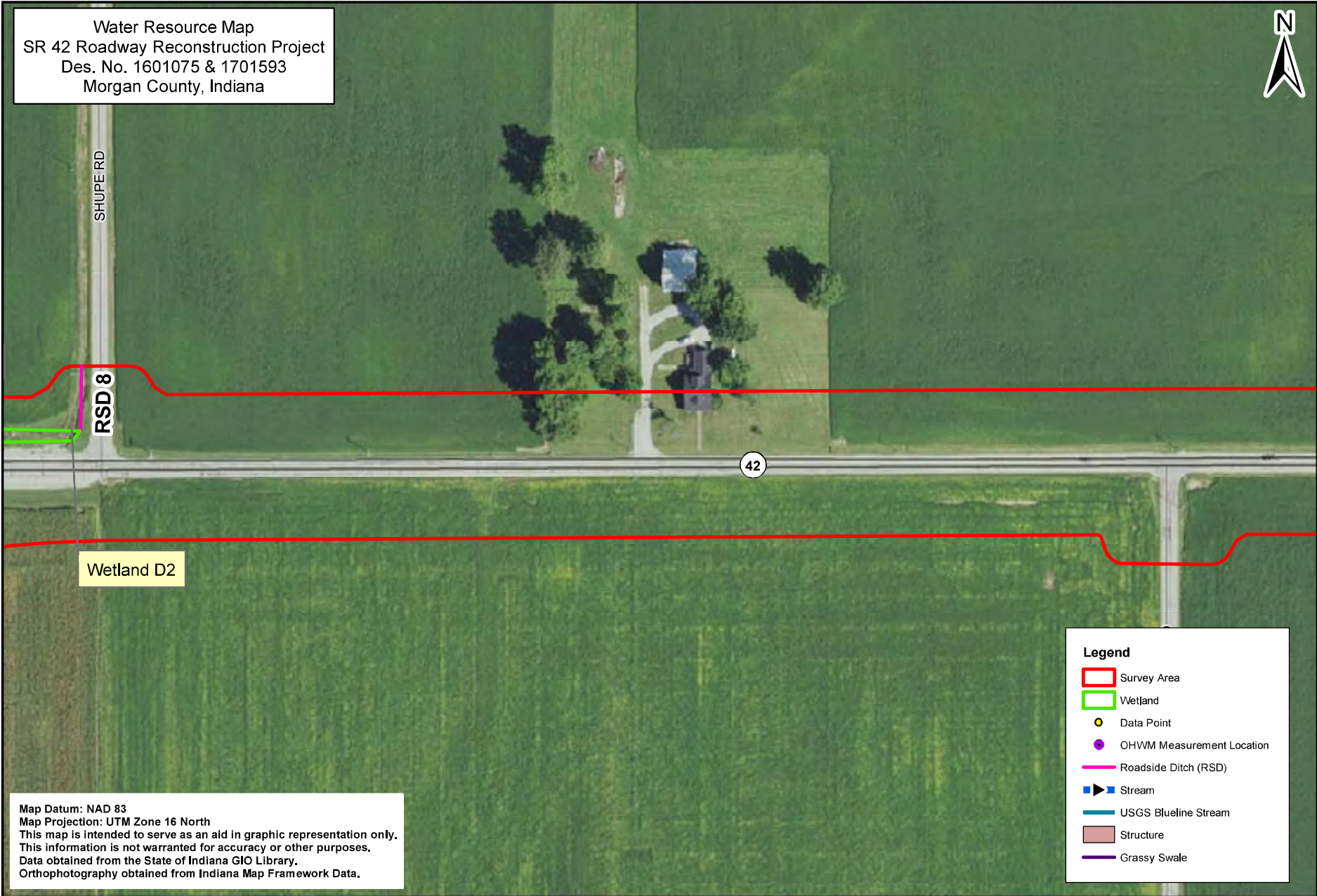
- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- ▶ Stream
- Encapsulated Stream
- USGS Blueline Stream
- Structure
- Grassy Swale

Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
 This information is not warranted for accuracy or other purposes.  
 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.

	Water Resource Map 11 of 31	Location: SR 42 Township: Monroe & Adams County: Morgan Date: 02/28/2020
		



Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
 This information is not warranted for accuracy or other purposes.  
 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.

**Legend**

- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- ▶ Stream
- USGS Blueline Stream
- Structure
- Grassy Swale



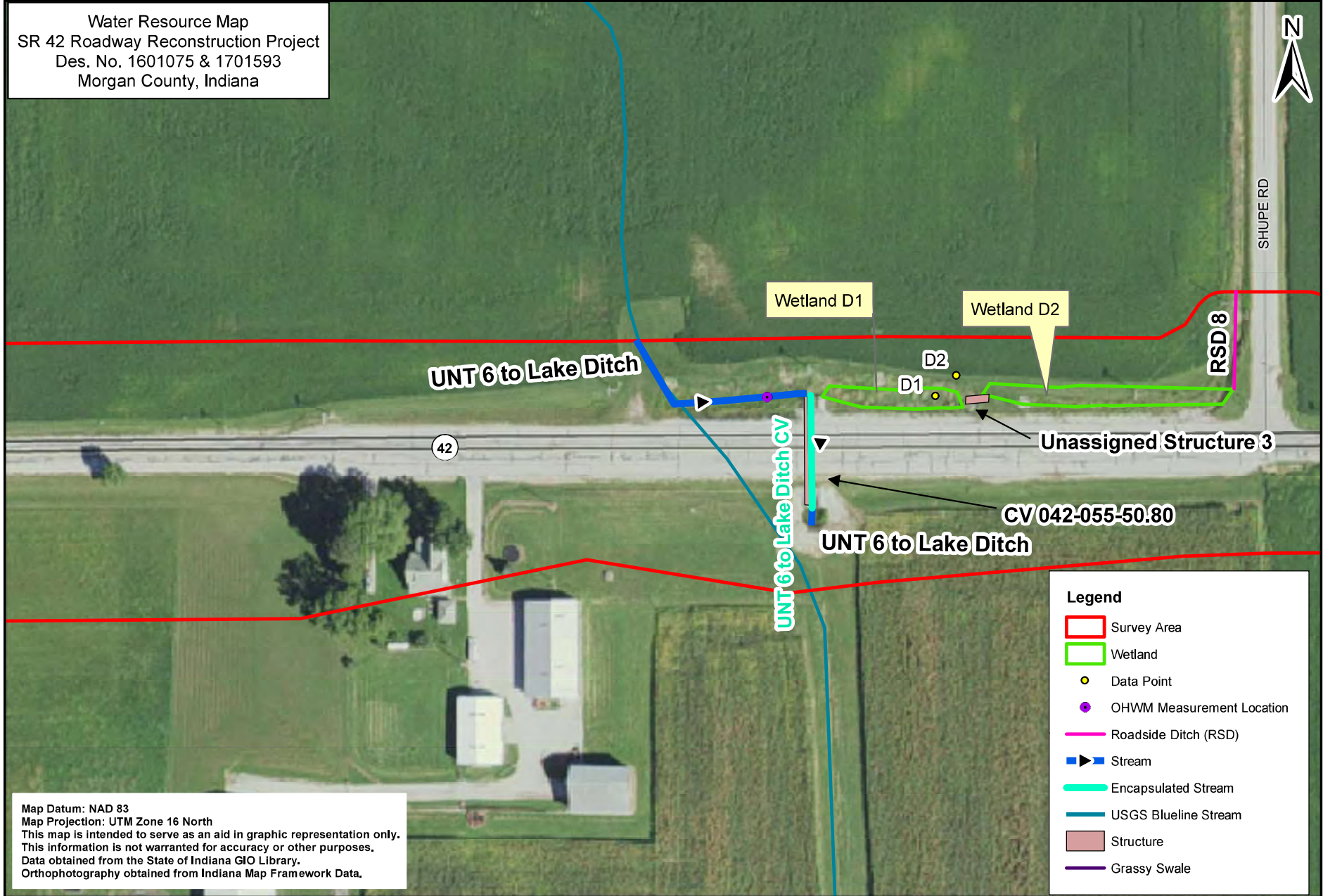
Water Resource Map 12 of 31

0      120      240      480      720      Feet

Location: SR 42  
 Township: Adams  
 County: Morgan  
 Date: 02/28/2020



Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
 This information is not warranted for accuracy or other purposes.  
 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.

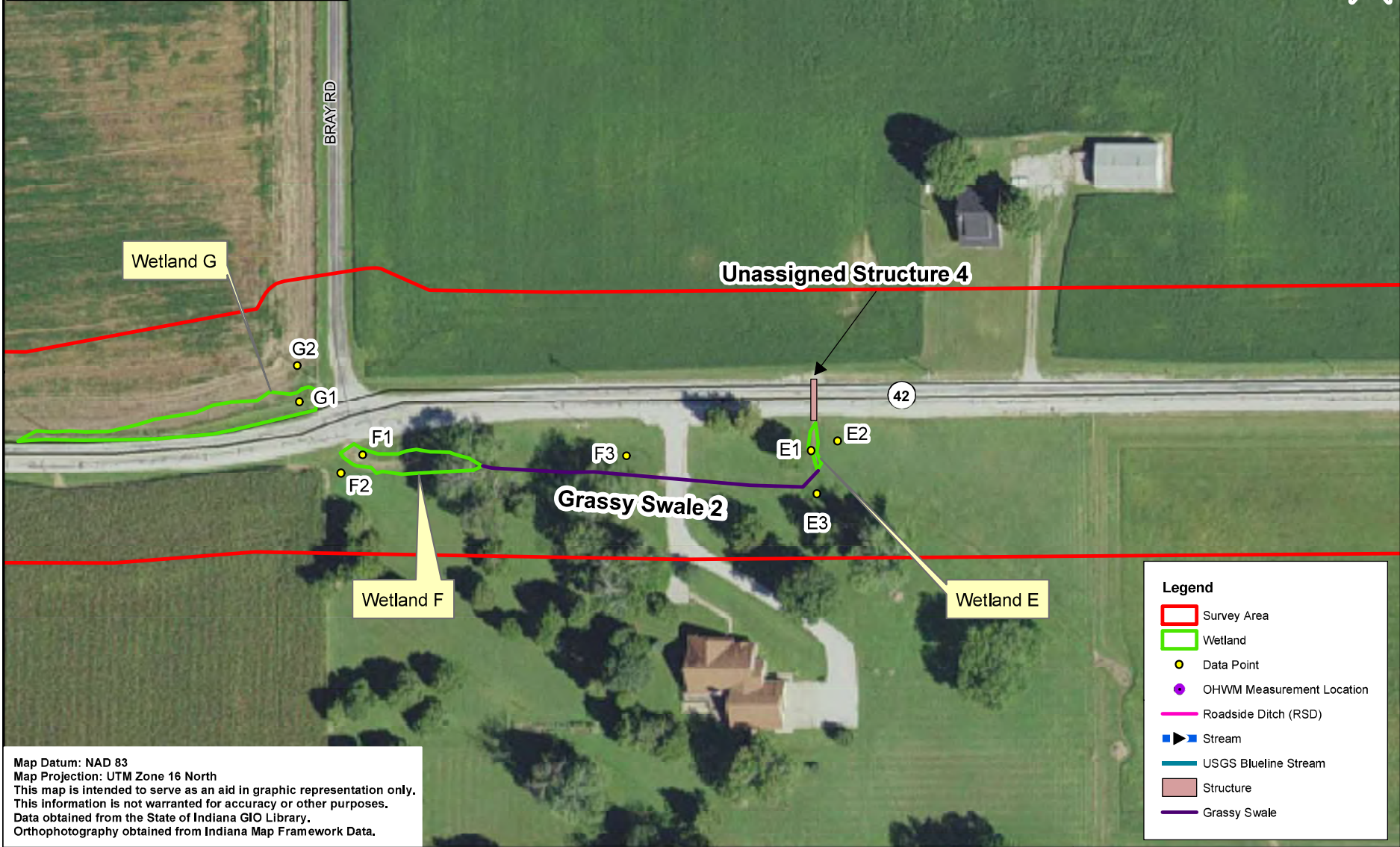
**Legend**

- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- Stream
- Encapsulated Stream
- USGS Blueline Stream
- Structure
- Grassy Swale

	Water Resource Map 13 of 31	Location: SR 42 Township: Adams County: Morgan Date: 02/28/2020



Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
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 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.

**Legend**

- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- ▶ Stream
- USGS Blueline Stream
- Structure
- Grassy Swale



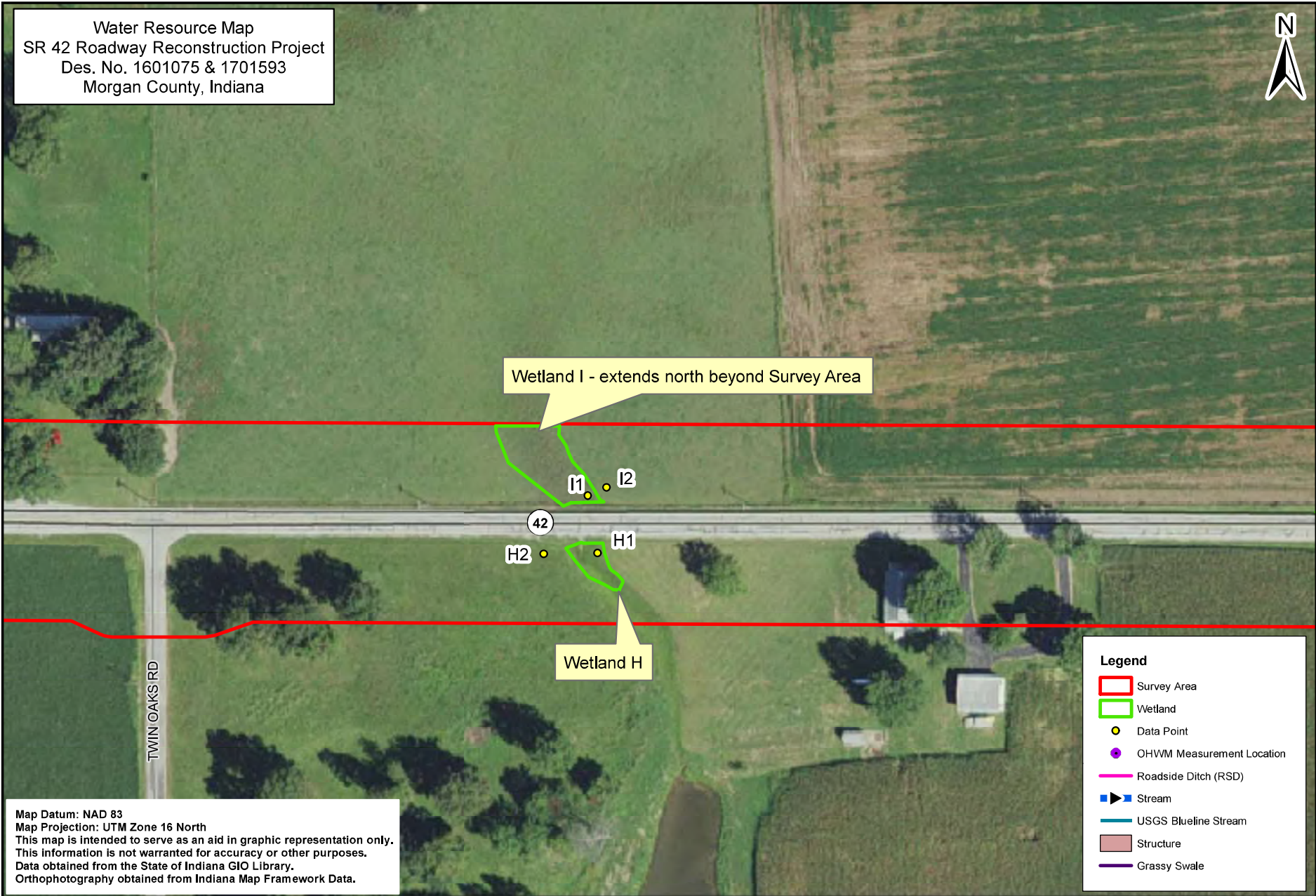
**Water Resource Map 14 of 31**

0      87.5      175      350      525      Feet

Location: SR 42  
 Township: Adams  
 County: Morgan  
 Date: 02/28/2020



Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
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 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.

**Legend**

- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- ▶ Stream
- USGS Blueline Stream
- Structure
- Grassy Swale



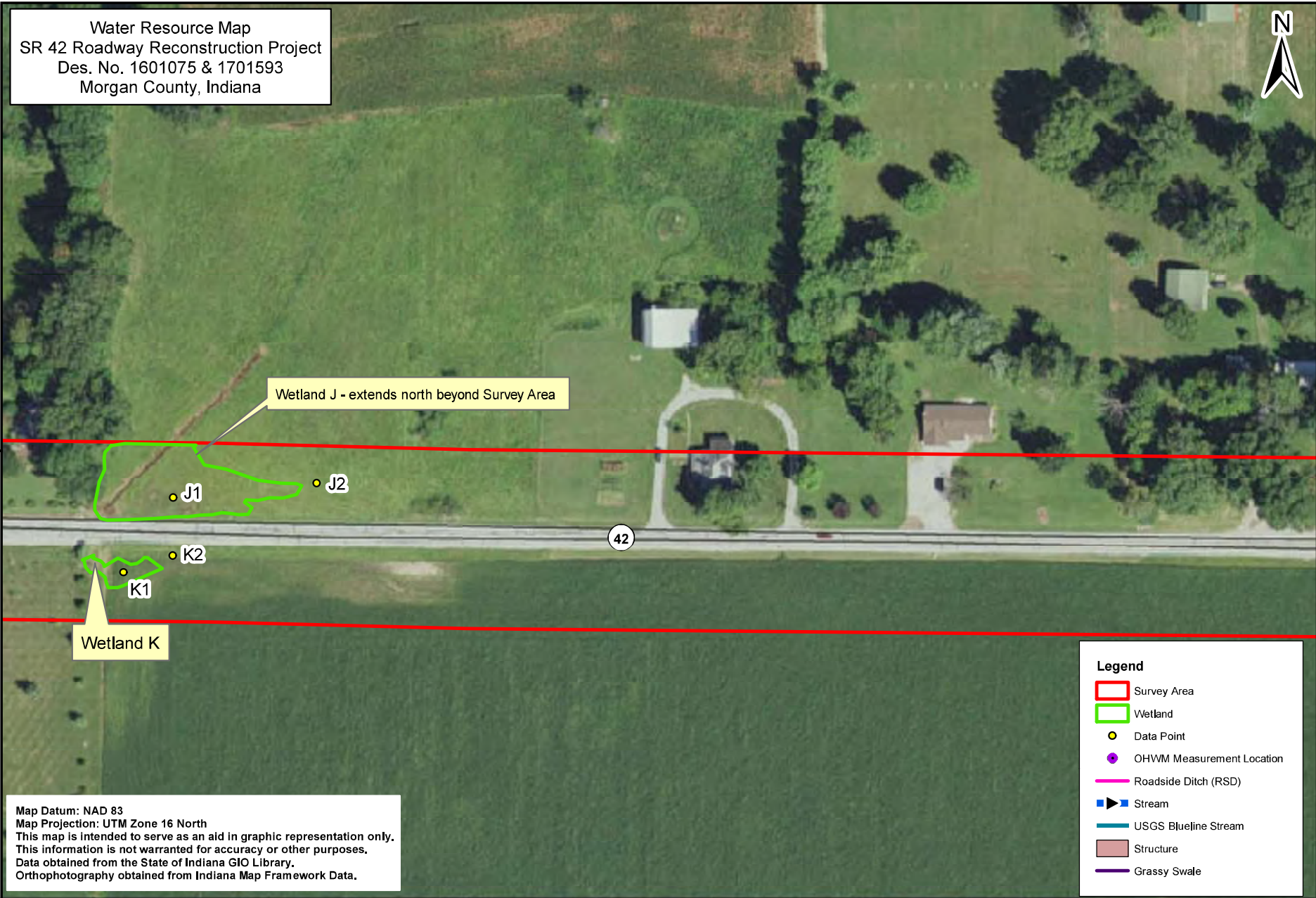
**Water Resource Map 15 of 31**

0      87.5      175      350      525      Feet

Location: SR 42  
 Township: Adams  
 County: Morgan  
 Date: 02/28/2020



Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



**Legend**

- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- ▶ Stream
- USGS Blueline Stream
- Structure
- Grassy Swale

Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
 This information is not warranted for accuracy or other purposes.  
 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.



**Water Resource Map 16 of 31**

0      95      190      380      570 Feet

Location: SR 42  
 Township: Adams  
 County: Morgan  
 Date: 02/28/2020



Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana

SIMPSON RD

42

Wetland J - extends north beyond Survey Area

Wetland K



Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
 This information is not warranted for accuracy or other purposes.  
 Data obtained from the State of Indiana GIO Library,  
 Orthophotography obtained from Indiana Map Framework Data.

**Legend**

- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- ▶ Stream
- USGS Blueline Stream
- Structure
- Grassy Swale



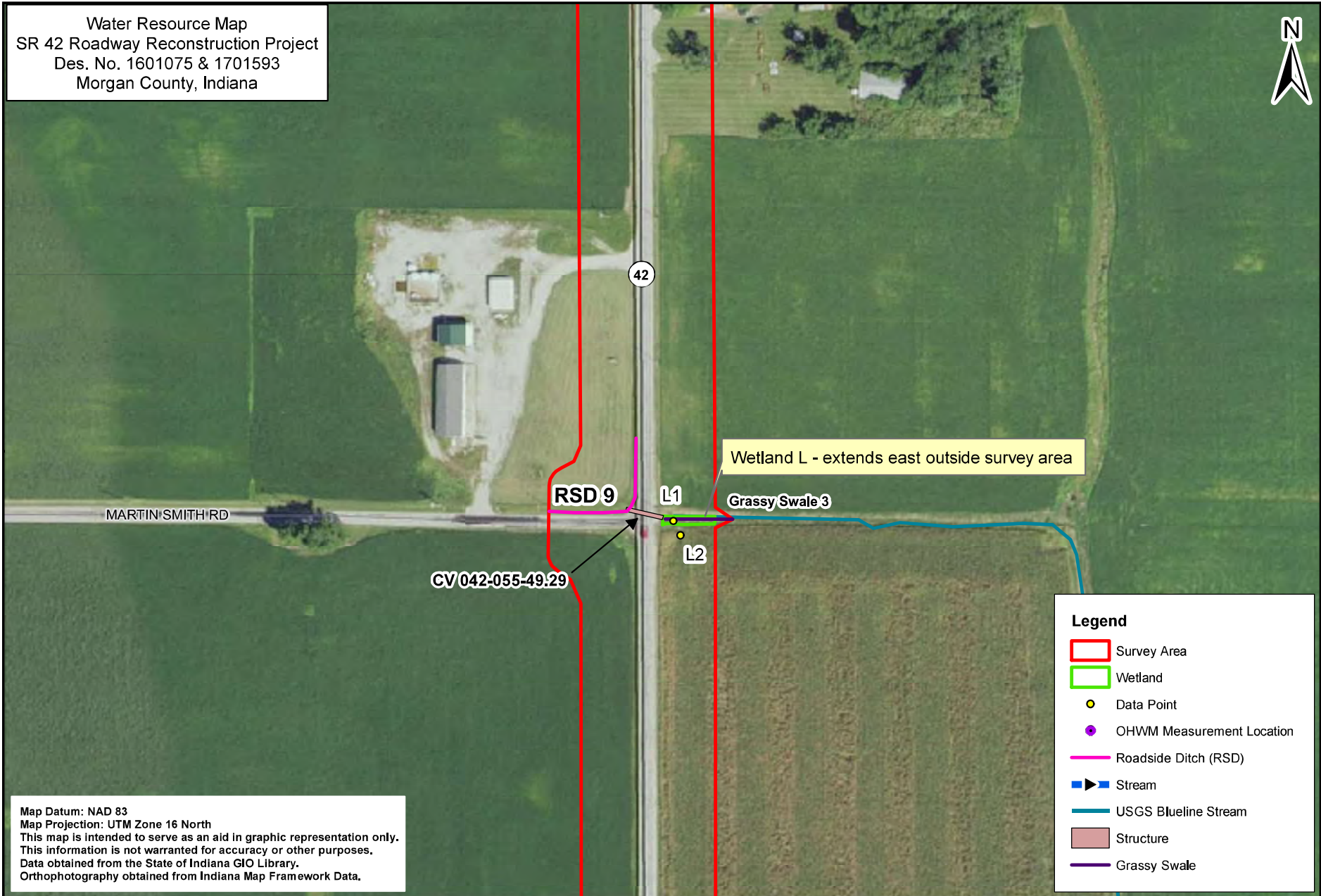
**Water Resource Map 17 of 31**

0      240      480      960      1,440 Feet

Location: SR 42  
 Township: Adams  
 County: Morgan  
 Date: 02/28/2020



Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
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 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.

**Legend**

- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- ▶ Stream
- USGS Blueline Stream
- Structure
- Grassy Swale

	Water Resource Map 18 of 31	Location: SR 42 Township: Adams County: Morgan Date: 02/28/2020



Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



Wetland M - extends west beyond Survey Area

Wetland N

Wetland O

M2  
 M1  
 N2  
 N1  
 O2  
 O1

42

**Legend**

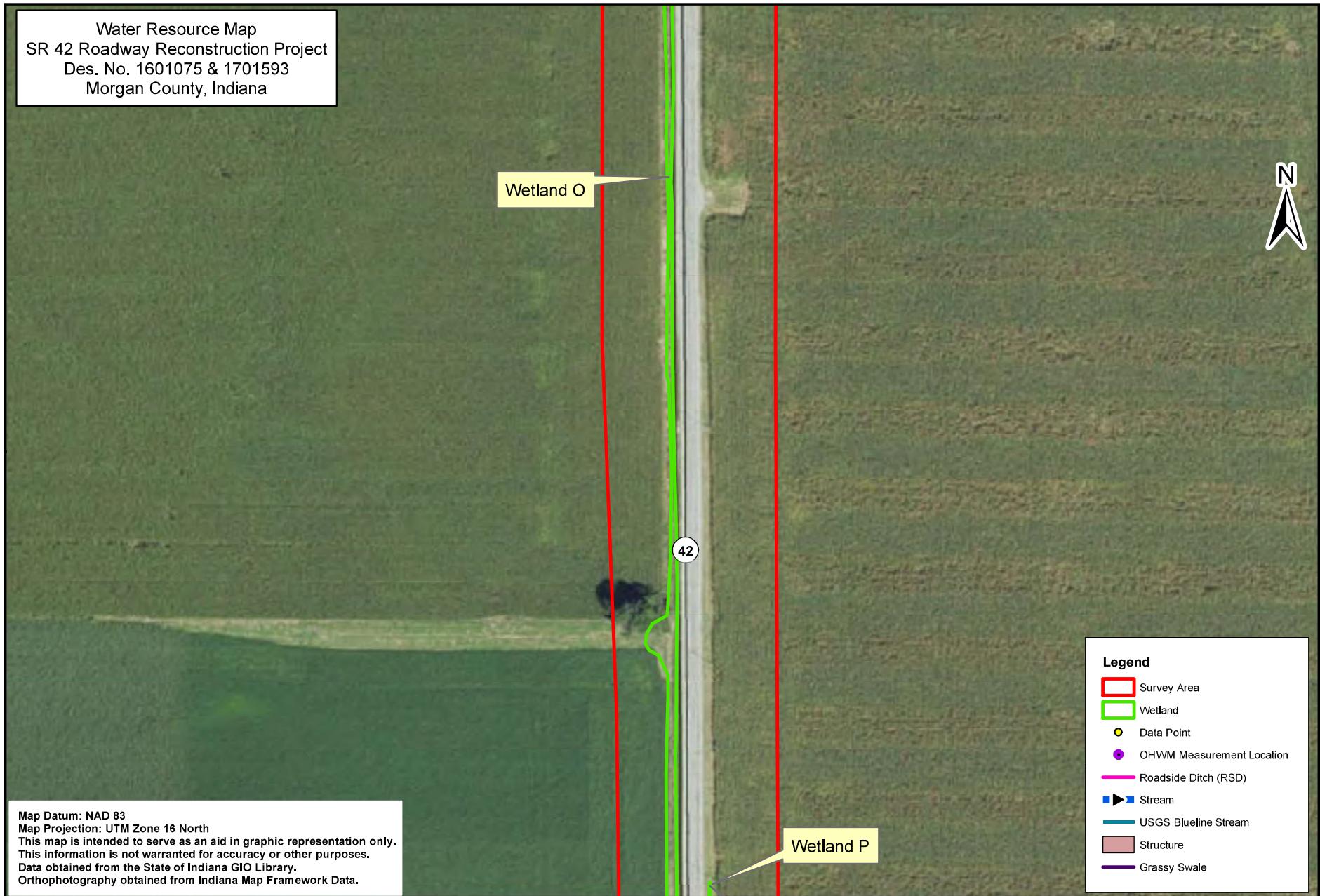
- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- ▶ Stream
- USGS BlueLine Stream
- Structure
- Grassy Swale

Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
 This information is not warranted for accuracy or other purposes.  
 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.

	Water Resource Map 19 of 31	Location: SR 42 Township: Adams County: Morgan Date: 02/28/2020
		



Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
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 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.

**Legend**

- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- ▶ Stream
- USGS Blueline Stream
- Structure
- Grassy Swale

	Water Resource Map 20 of 31	Location: SR 42 Township: Adams County: Morgan Date: 02/28/2020
		

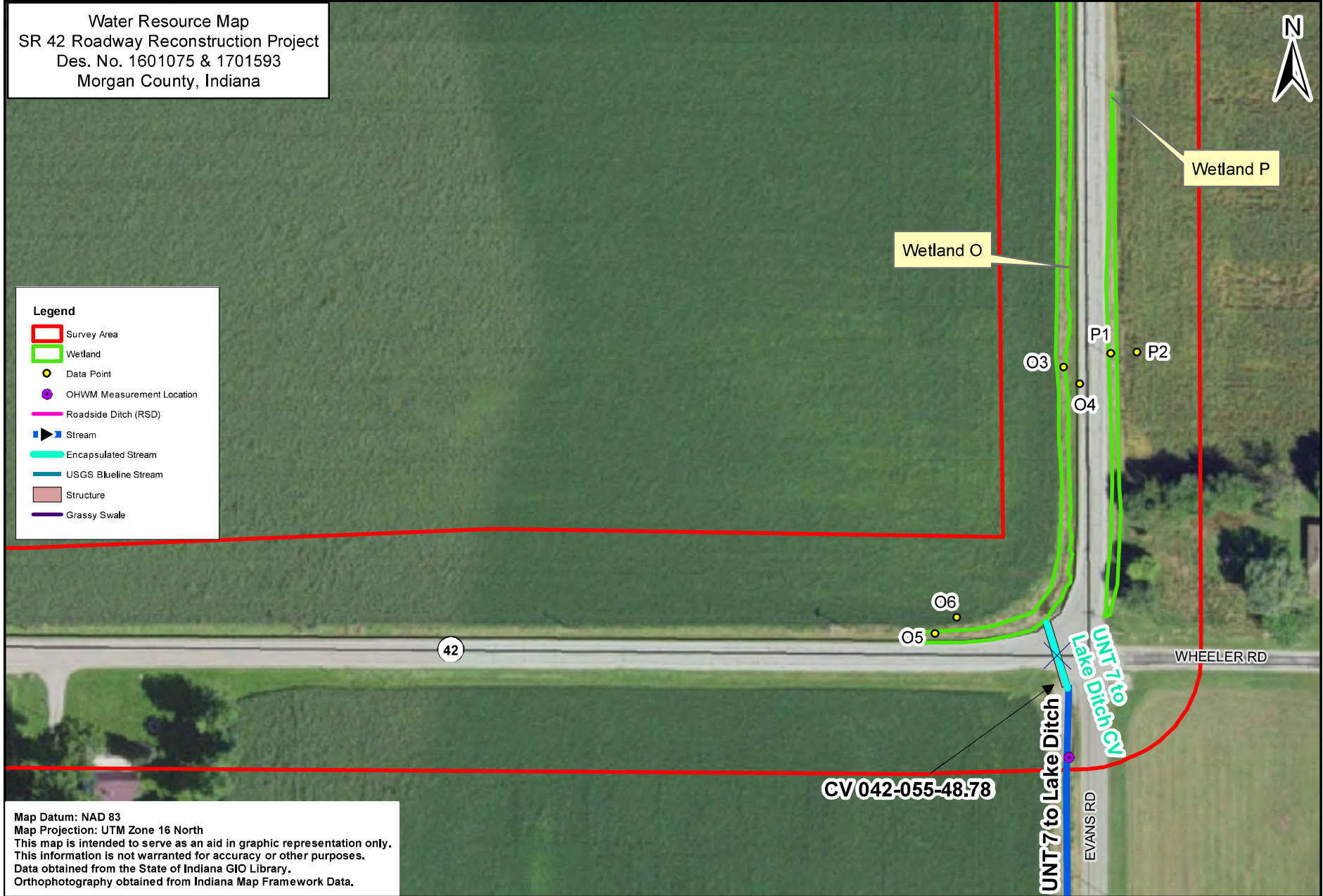


Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana




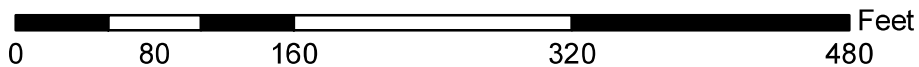
**Legend**

- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- ▶ Stream
- Encapsulated Stream
- USGS Blueline Stream
- Structure
- Grassy Swale



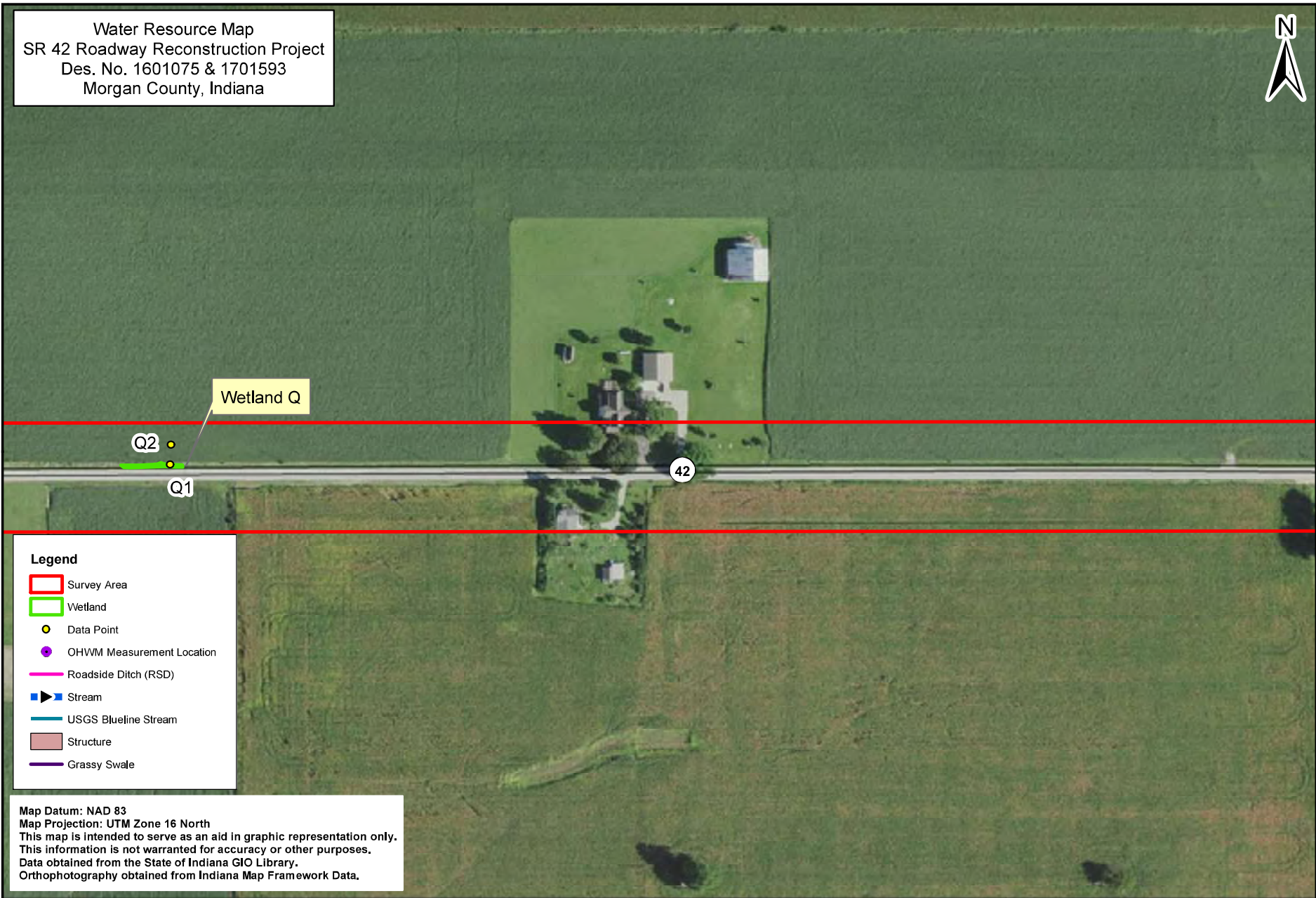
CV 042-055-48.78

Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
 This information is not warranted for accuracy or other purposes.  
 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.

	Water Resource Map 21 of 31	Location: SR 42 Township: Adams County: Morgan Date: 02/28/2020
		



Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



**Legend**

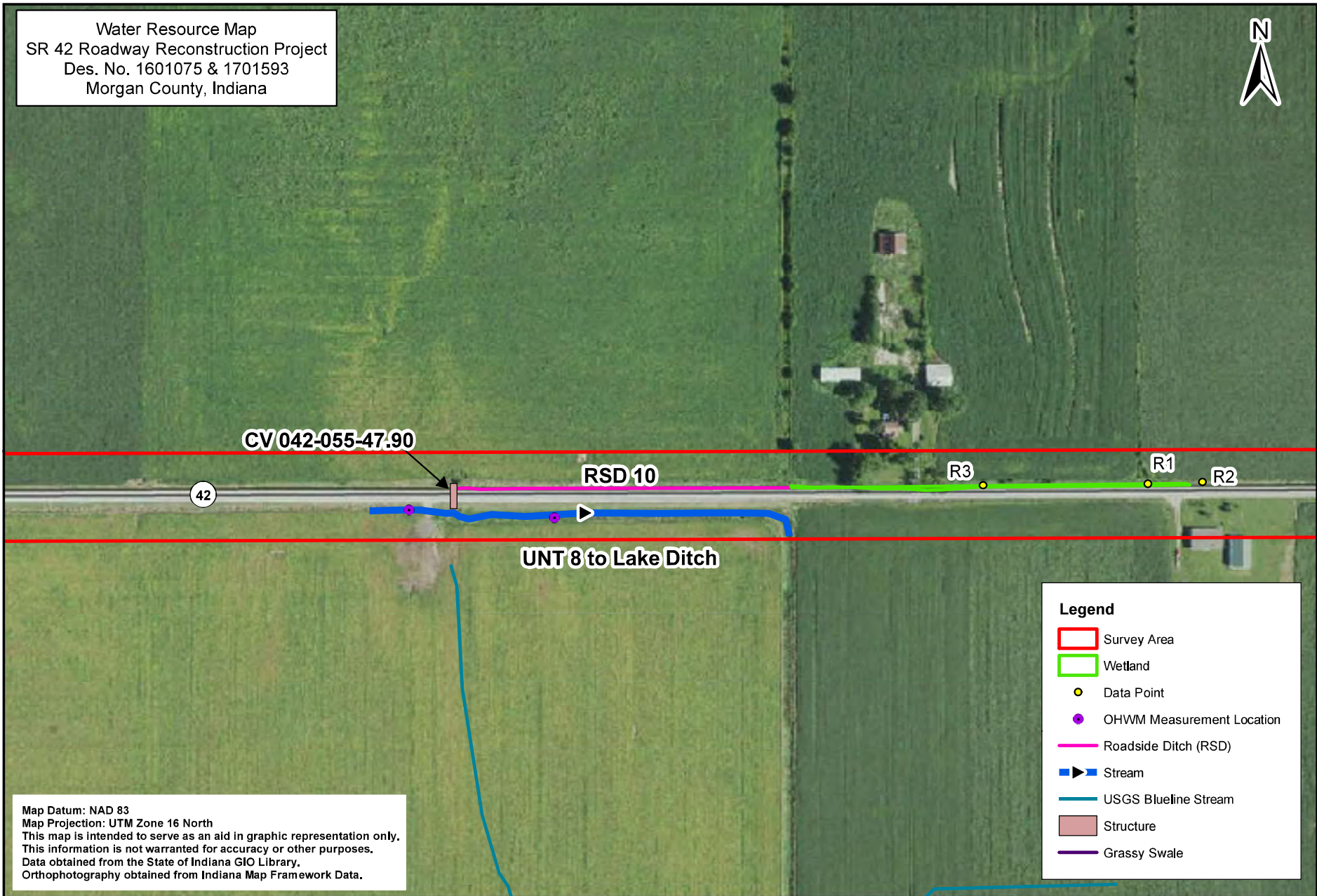
- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- ▶ Stream
- USGS Blueline Stream
- Structure
- Grassy Swale

Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
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 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.

	Water Resource Map 22 of 31	Location: SR 42 Township: Adams County: Morgan Date: 02/28/2020
		




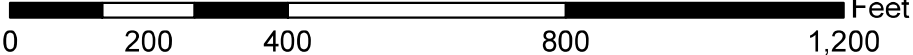
Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
 This information is not warranted for accuracy or other purposes.  
 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.

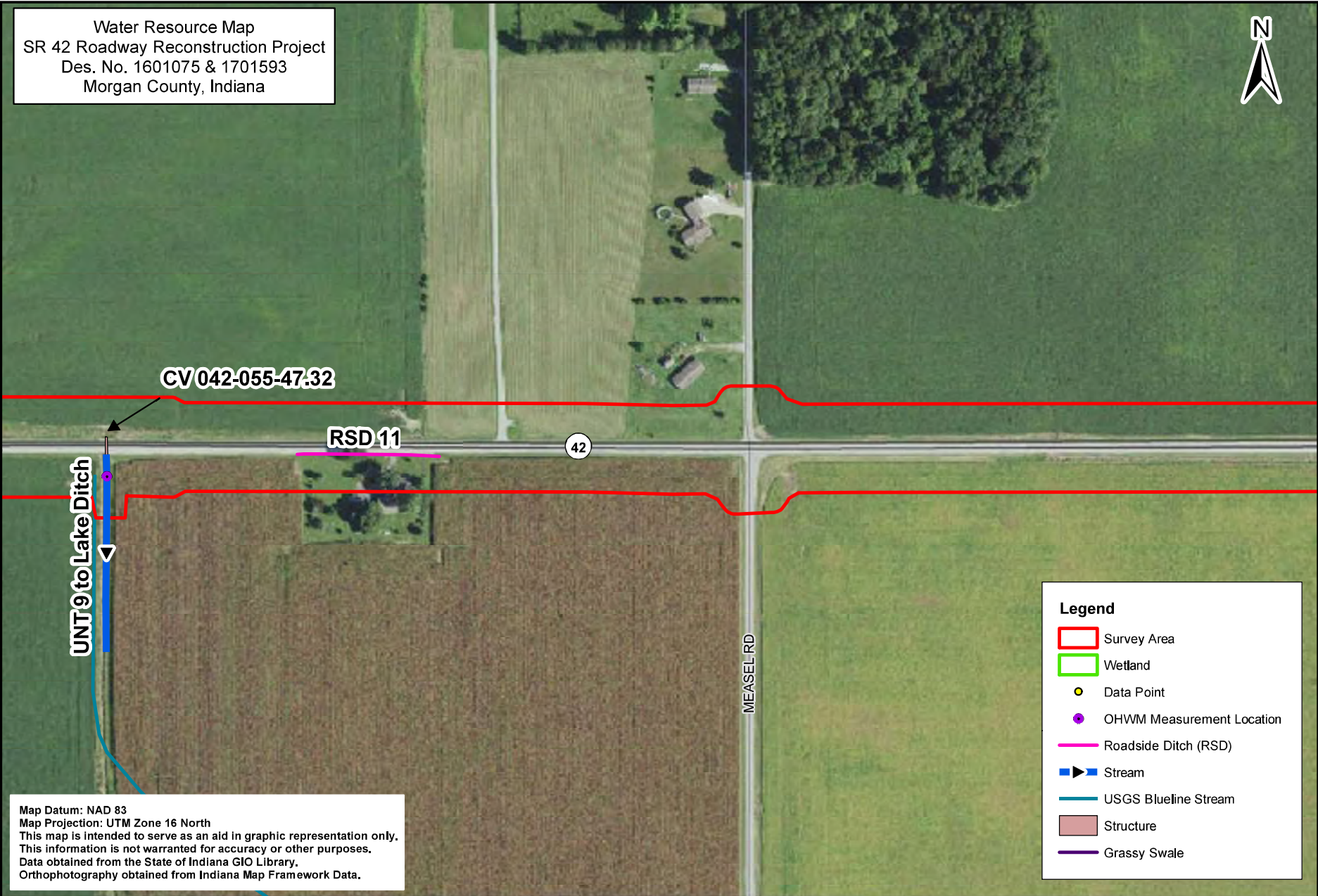
**Legend**

- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- Stream
- USGS Blueline Stream
- Structure
- Grassy Swale

	Water Resource Map 23 of 31	Location: SR 42 Township: Adams County: Morgan Date: 02/28/2020
		



Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



**Legend**

- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- ▶ Stream
- USGS Blueline Stream
- Structure
- Grassy Swale

Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
 This information is not warranted for accuracy or other purposes.  
 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.



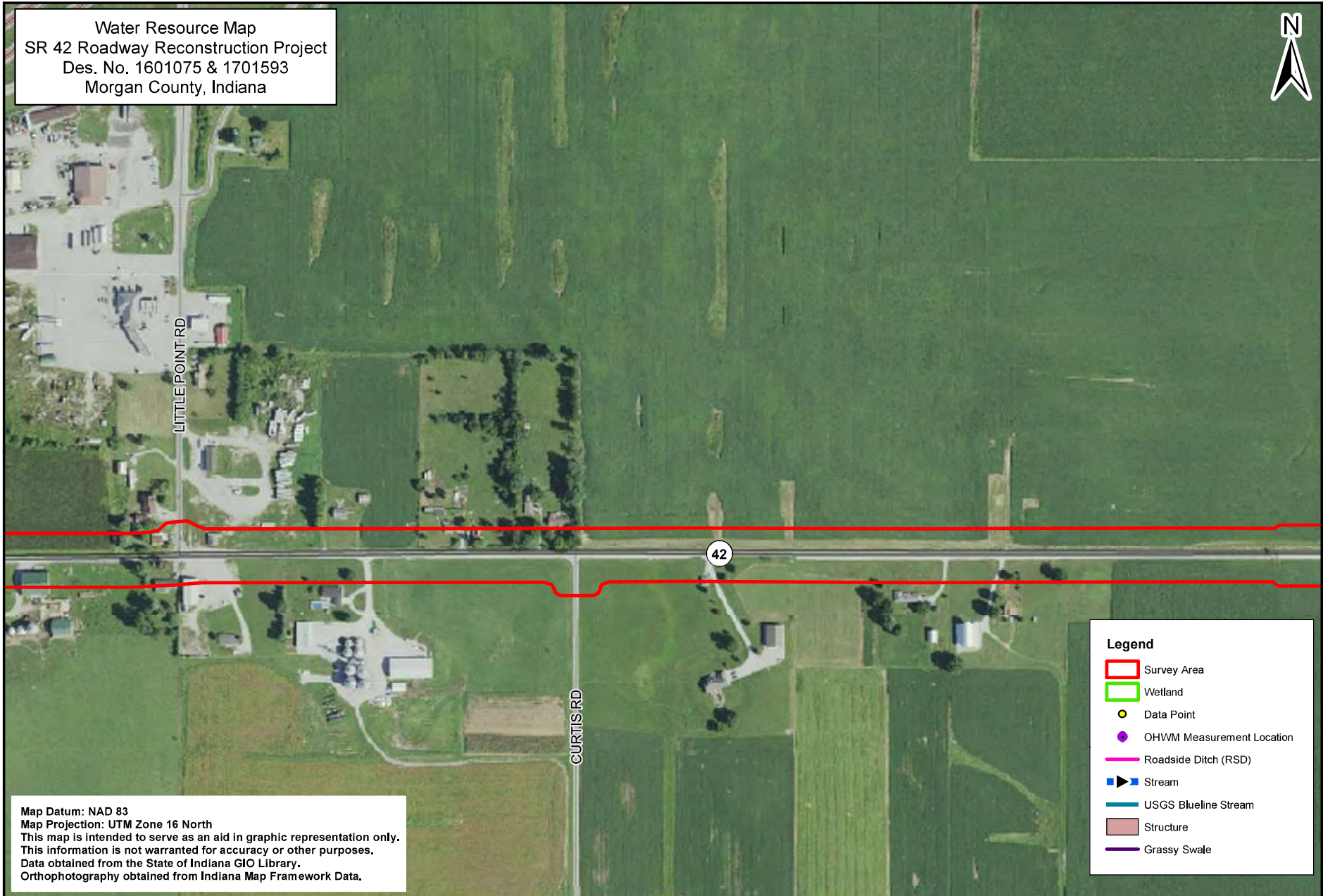
**Water Resource Map 24 of 31**

0      195      390      780      1,170      Feet

Location: SR 42  
 Township: Adams  
 County: Morgan  
 Date: 02/28/2020



Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
 This information is not warranted for accuracy or other purposes.  
 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.

**Legend**

- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- ▶ Stream
- USGS Blueline Stream
- Structure
- Grassy Swale



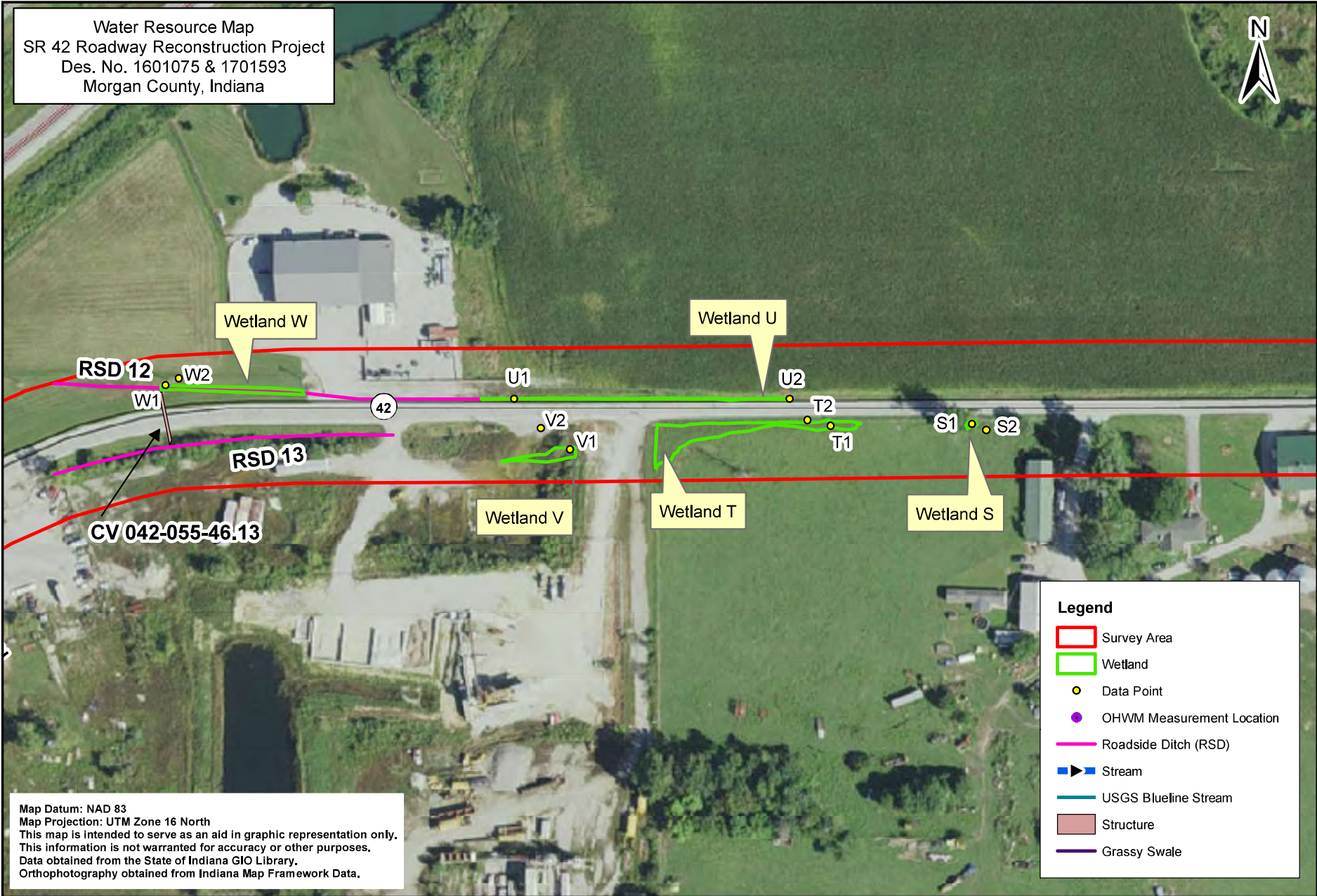
**Water Resource Map 25 of 31**

0      325      650      1,300      1,950      Feet

Location: SR 42  
 Township: Adams  
 County: Morgan  
 Date: 02/28/2020



Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
 This information is not warranted for accuracy or other purposes.  
 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.

**Legend**

- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- ▶ Stream
- USGS Blueline Stream
- Structure
- Grassy Swale



**Water Resource Map 26 of 31**

0      130      260      520      780      Feet

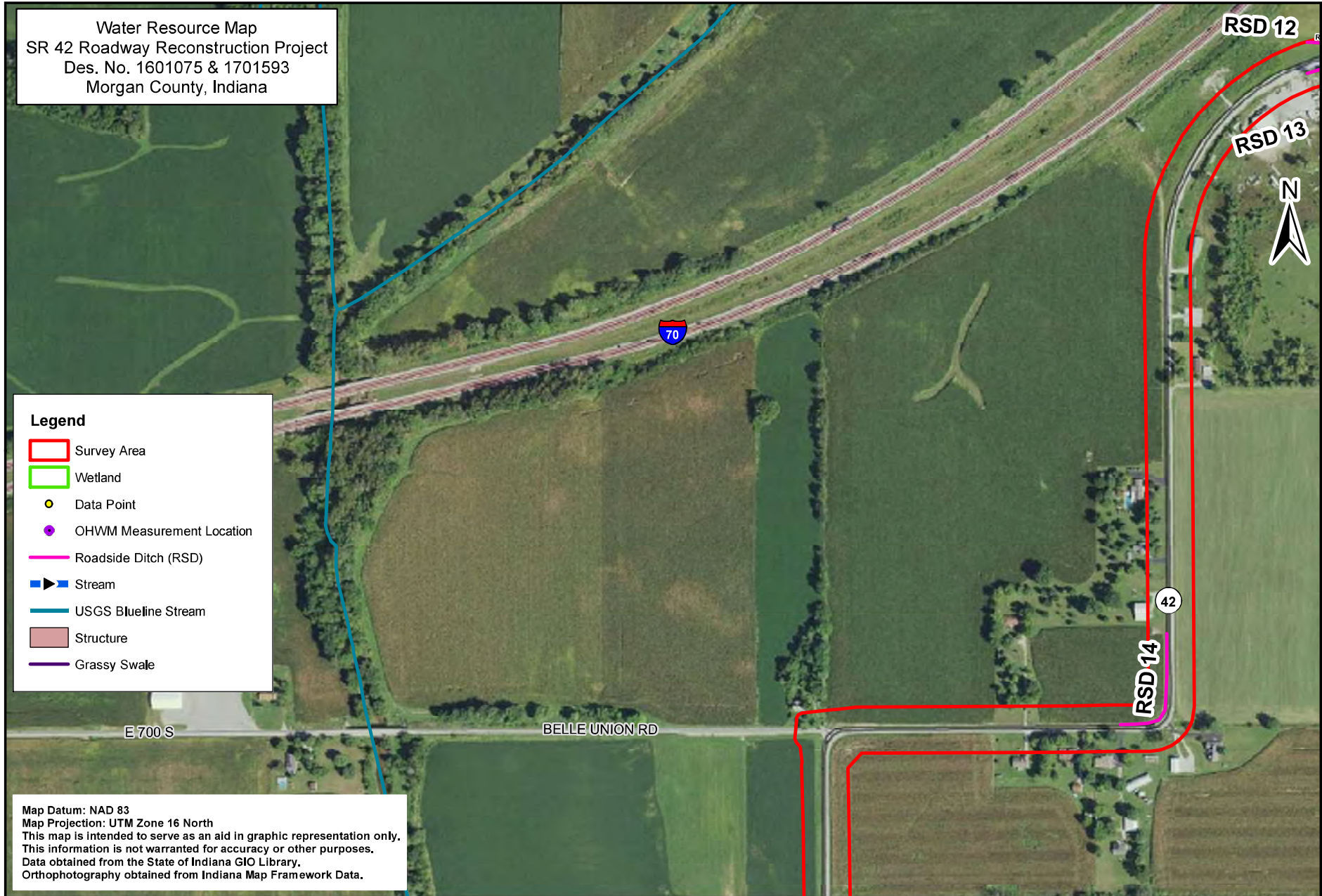
Location: SR 42  
 Township: Adams  
 County: Morgan  
 Date: 02/28/2020



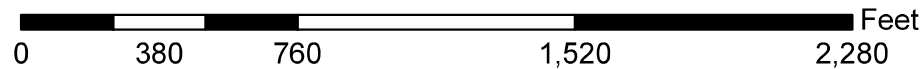
Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana

- Legend**
- Survey Area
  - Wetland
  - Data Point
  - OHWM Measurement Location
  - Roadside Ditch (RSD)
  - ▶ Stream
  - USGS Blueline Stream
  - Structure
  - Grassy Swale

Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
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 Data obtained from the State of Indiana GIO Library,  
 Orthophotography obtained from Indiana Map Framework Data.



### Water Resource Map 27 of 31



Location: SR 42  
 Township: Adams  
 County: Morgan  
 Date: 02/28/2020



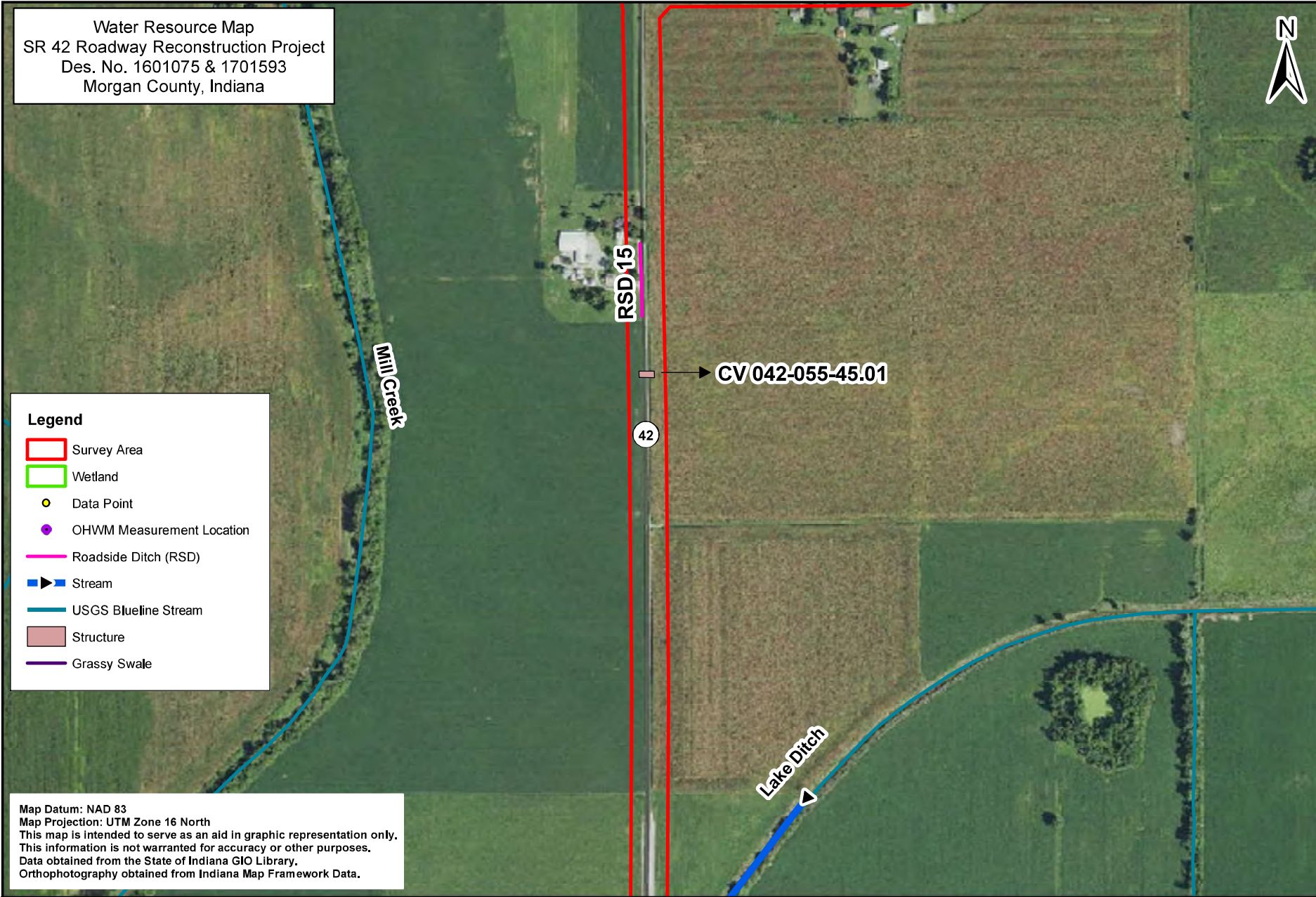
Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



**Legend**

- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- ▶ Stream
- USGS Blueline Stream
- Structure
- Grassy Swale

Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
 This information is not warranted for accuracy or other purposes.  
 Data obtained from the State of Indiana GIO Library,  
 Orthophotography obtained from Indiana Map Framework Data.



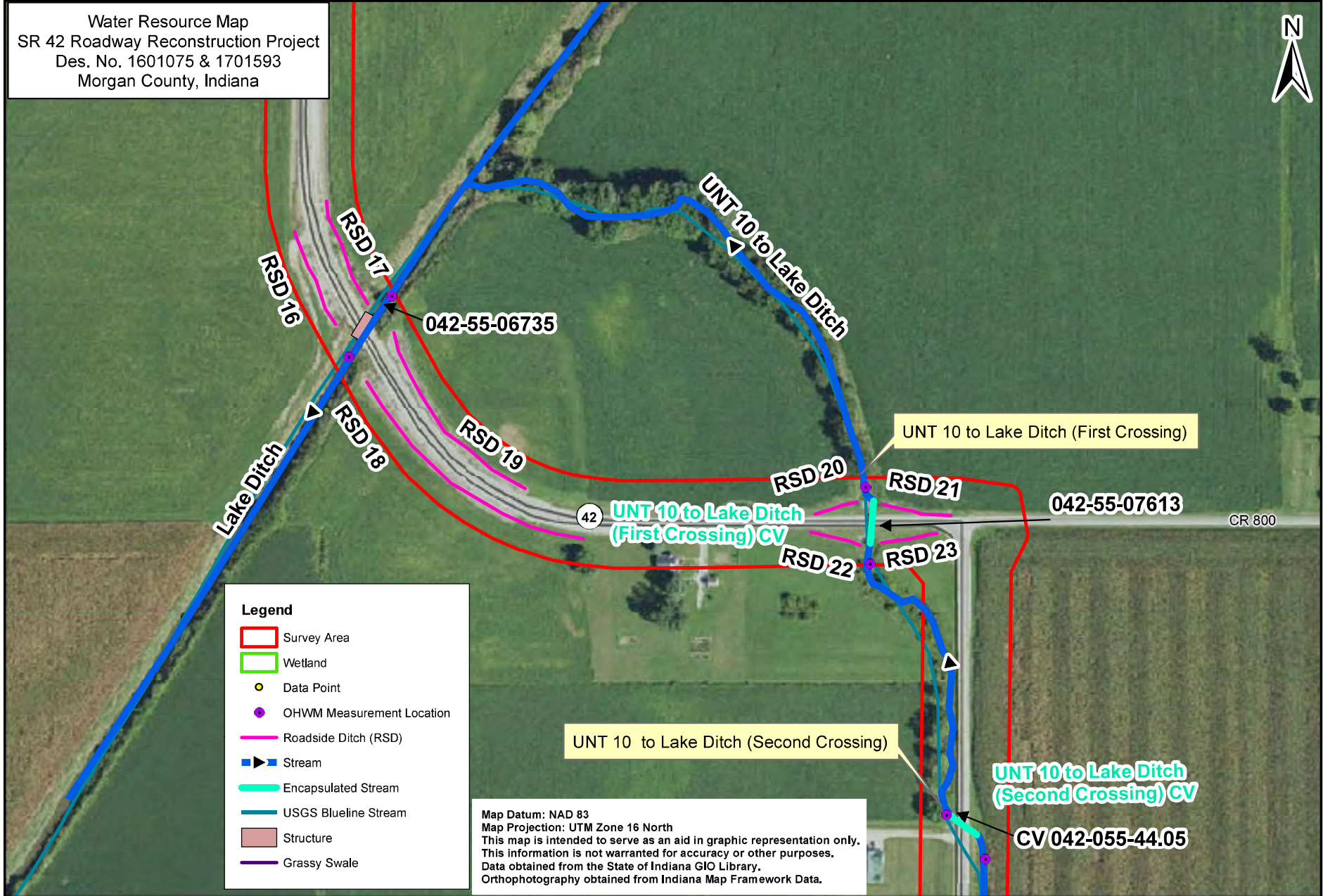
**Water Resource Map 28 of 31**

0      475      950      1,900      2,850      Feet

Location: SR 42  
 Township: Adams  
 County: Morgan  
 Date: 02/28/2020



Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



**Legend**

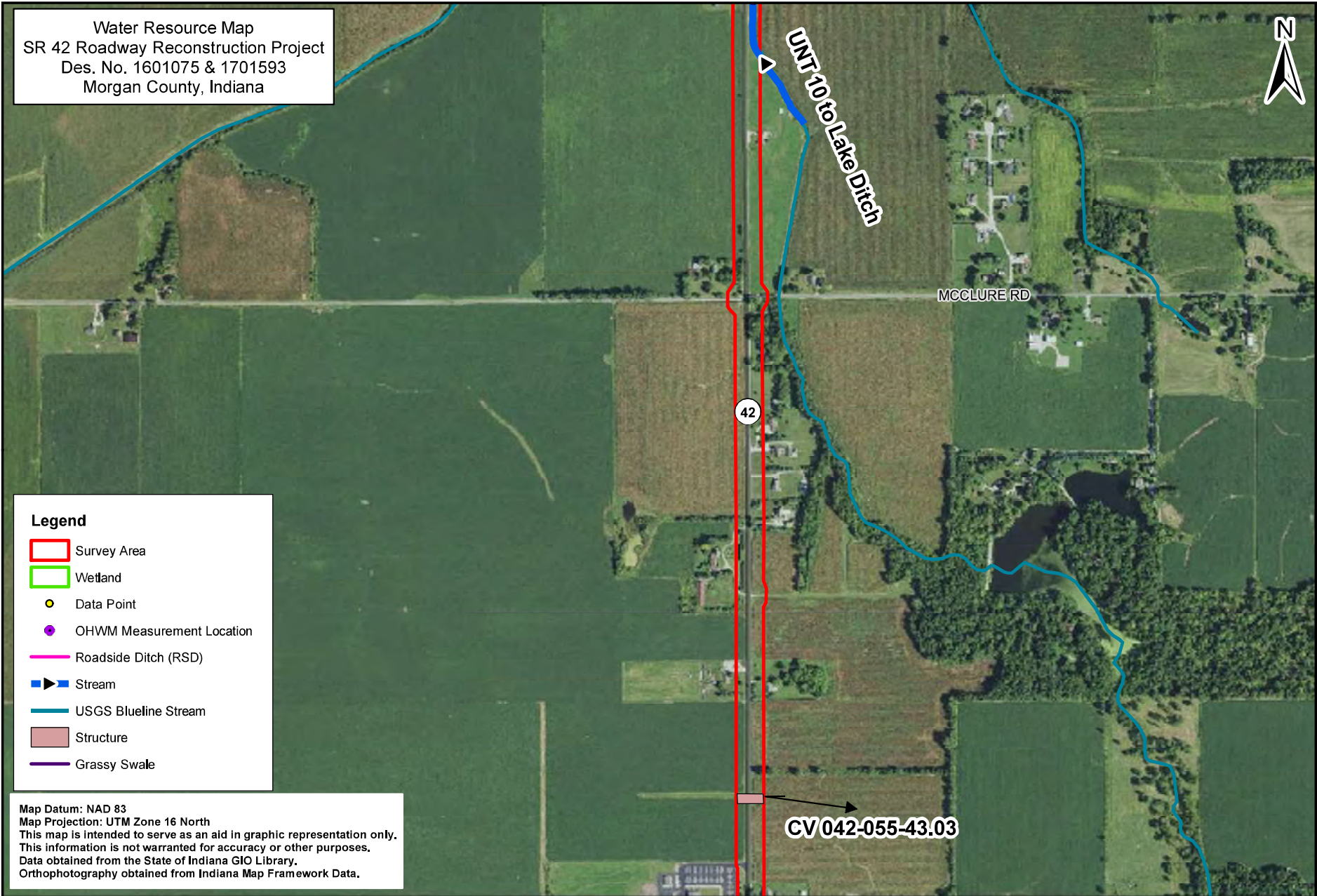
- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- ▶ Stream
- Encapsulated Stream
- USGS Blueline Stream
- Structure
- Grassy Swale

Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
 This information is not warranted for accuracy or other purposes.  
 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.

	Water Resource Map 29 of 31	Location: SR 42 Township: Adams County: Morgan Date: 02/28/2020



Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



**Legend**

- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- ▶ Stream
- USGS Blueline Stream
- Structure
- Grassy Swale

Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
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 Data obtained from the State of Indiana GIO Library,  
 Orthophotography obtained from Indiana Map Framework Data.



**Water Resource Map 30 of 31**

0      625      1,250      2,500      3,750      Feet

Location: SR 42  
 Township: Adams  
 County: Morgan  
 Date: 02/28/2020



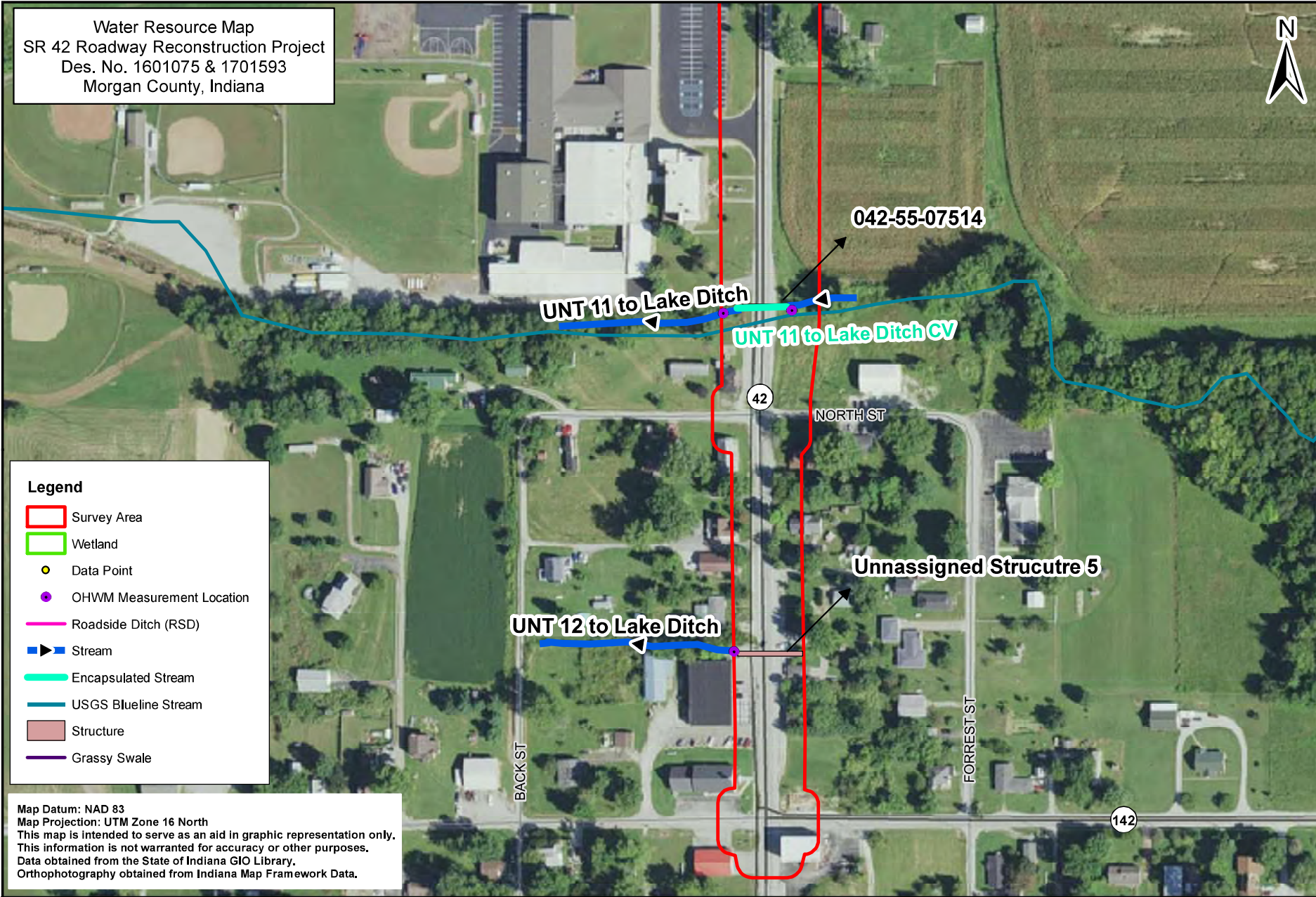
Water Resource Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



**Legend**

- Survey Area
- Wetland
- Data Point
- OHWM Measurement Location
- Roadside Ditch (RSD)
- ▶ Stream
- Encapsulated Stream
- USGS Blueline Stream
- Structure
- Grassy Swale

Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
 This information is not warranted for accuracy or other purposes.  
 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.



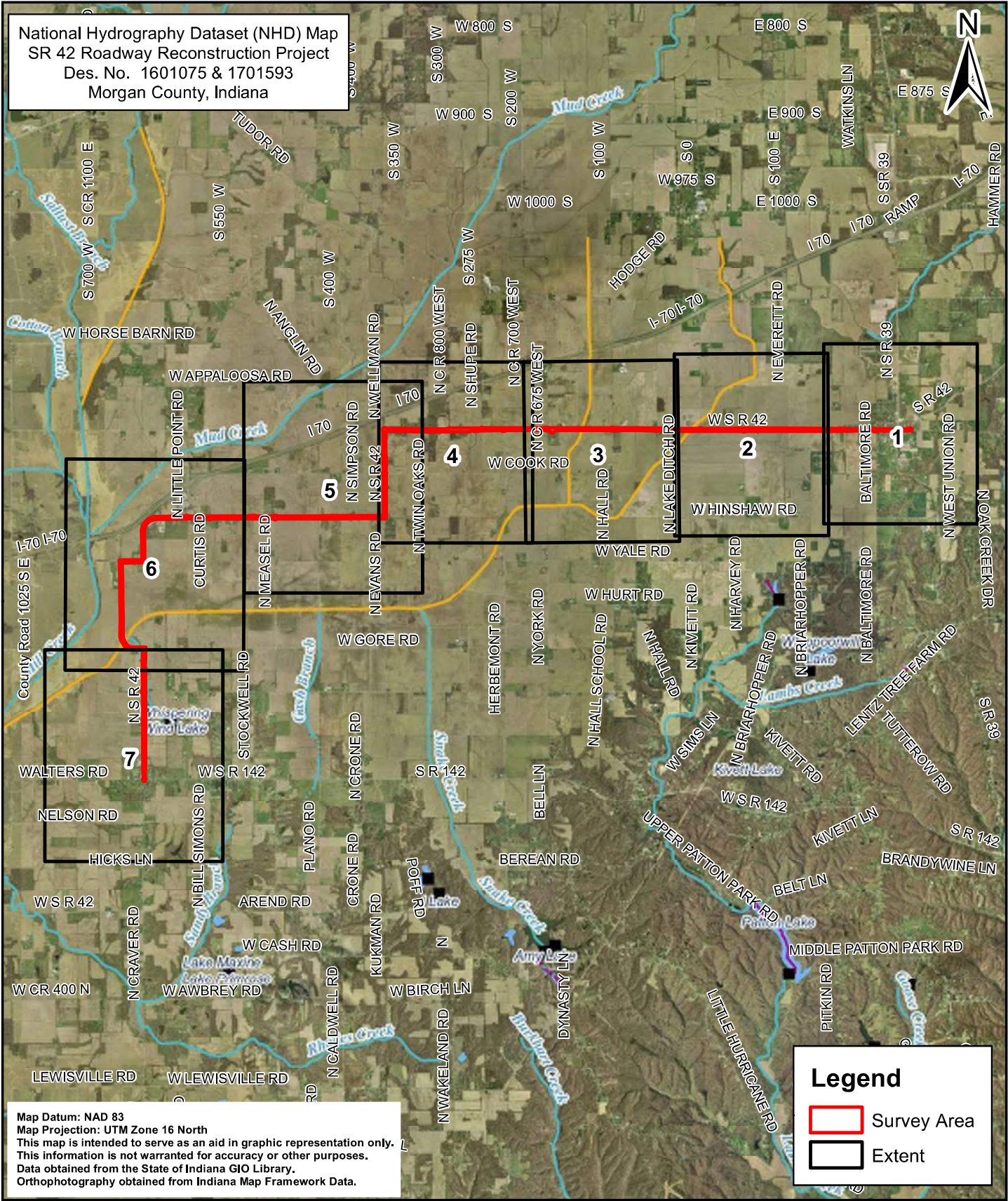
**Water Resource Map 31 of 31**

0      165      330      660      990      Feet

Location: SR 42  
 Township: Adams  
 County: Morgan  
 Date: 02/28/2020



National Hydrography Dataset (NHD) Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



**Legend**

- Survey Area
- Extent

Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
 This information is not warranted for accuracy or other purposes.  
 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.



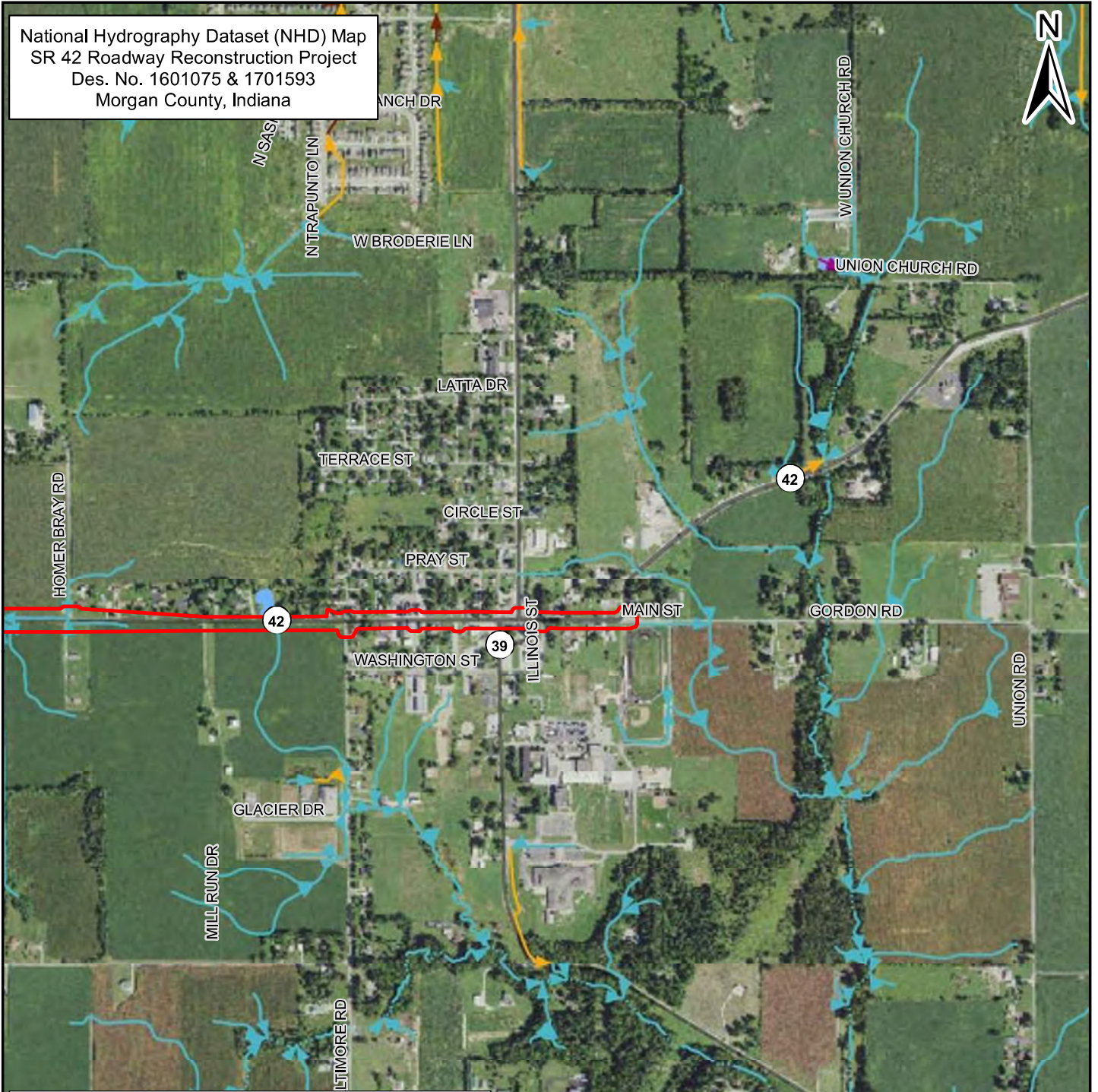
**NHD Index Map**

0      1      2      4 Miles

Location: SR 42  
 Township: Adams & Monroe  
 County: Morgan  
 Date: 01/01/2020



National Hydrography Dataset (NHD) Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



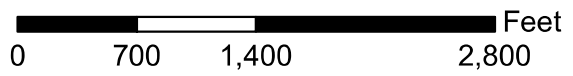
**Legend**

- Survey Area
- Perennial
- - - Intermittent
- Artificial Path
- Canal Ditch
- Pipeline
- Connector
- Underground Conduit
- Lake/Pond
- Swamp/Marsh

Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
 This information is not warranted for accuracy or other purposes.  
 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.



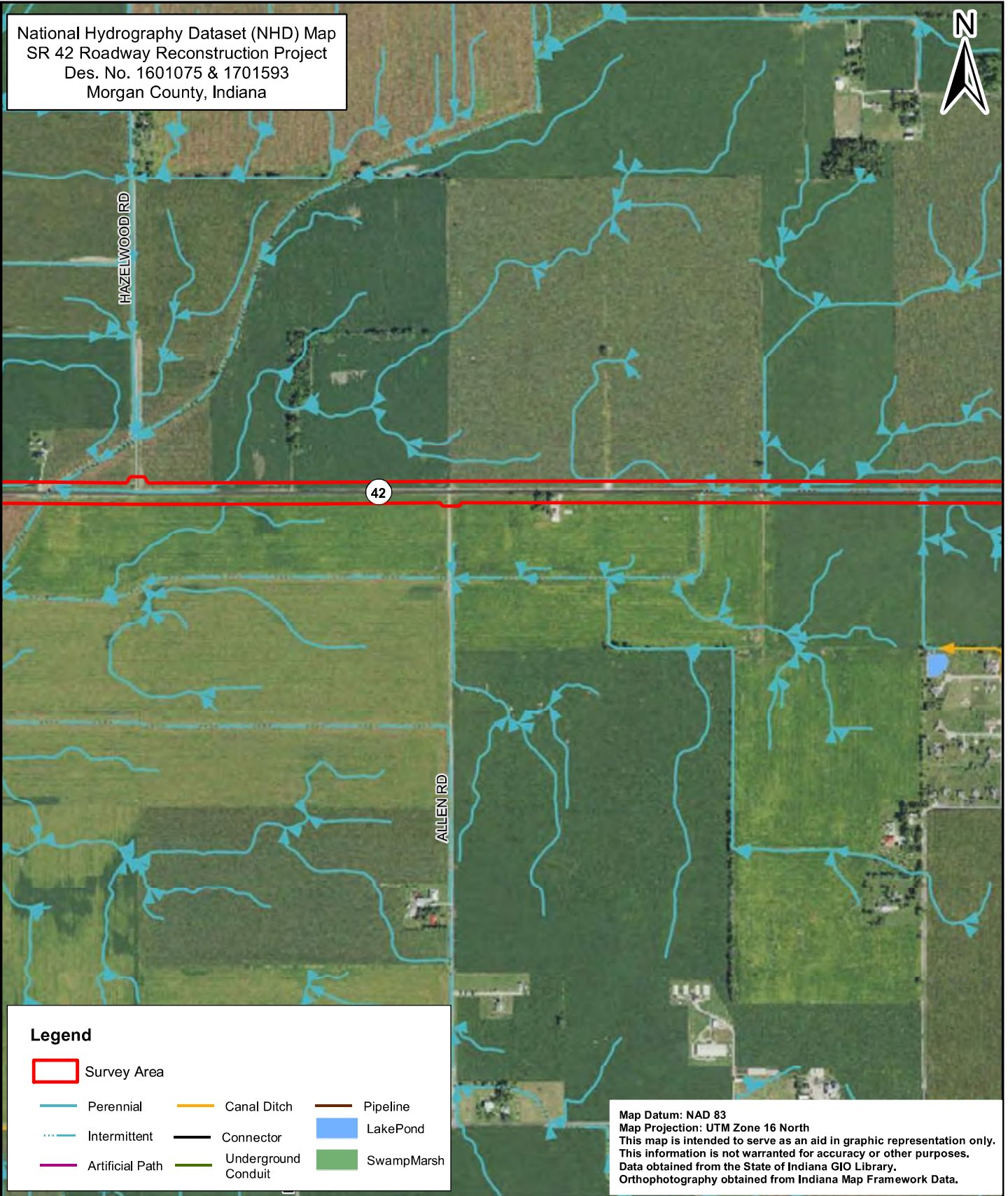
**NHD Map 1 of 7**



Location: SR 42  
 Township: Monroe  
 County: Morgan  
 Date: 01/01/2020



National Hydrography Dataset (NHD) Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



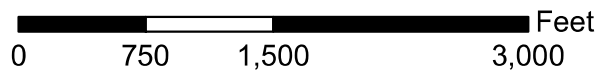
**Legend**

- Survey Area
- Perennial
- - - Intermittent
- Artificial Path
- Canal Ditch
- Connector
- Underground Conduit
- Pipeline
- Lake/Pond
- Swamp/Marsh

Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
 This information is not warranted for accuracy or other purposes.  
 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.



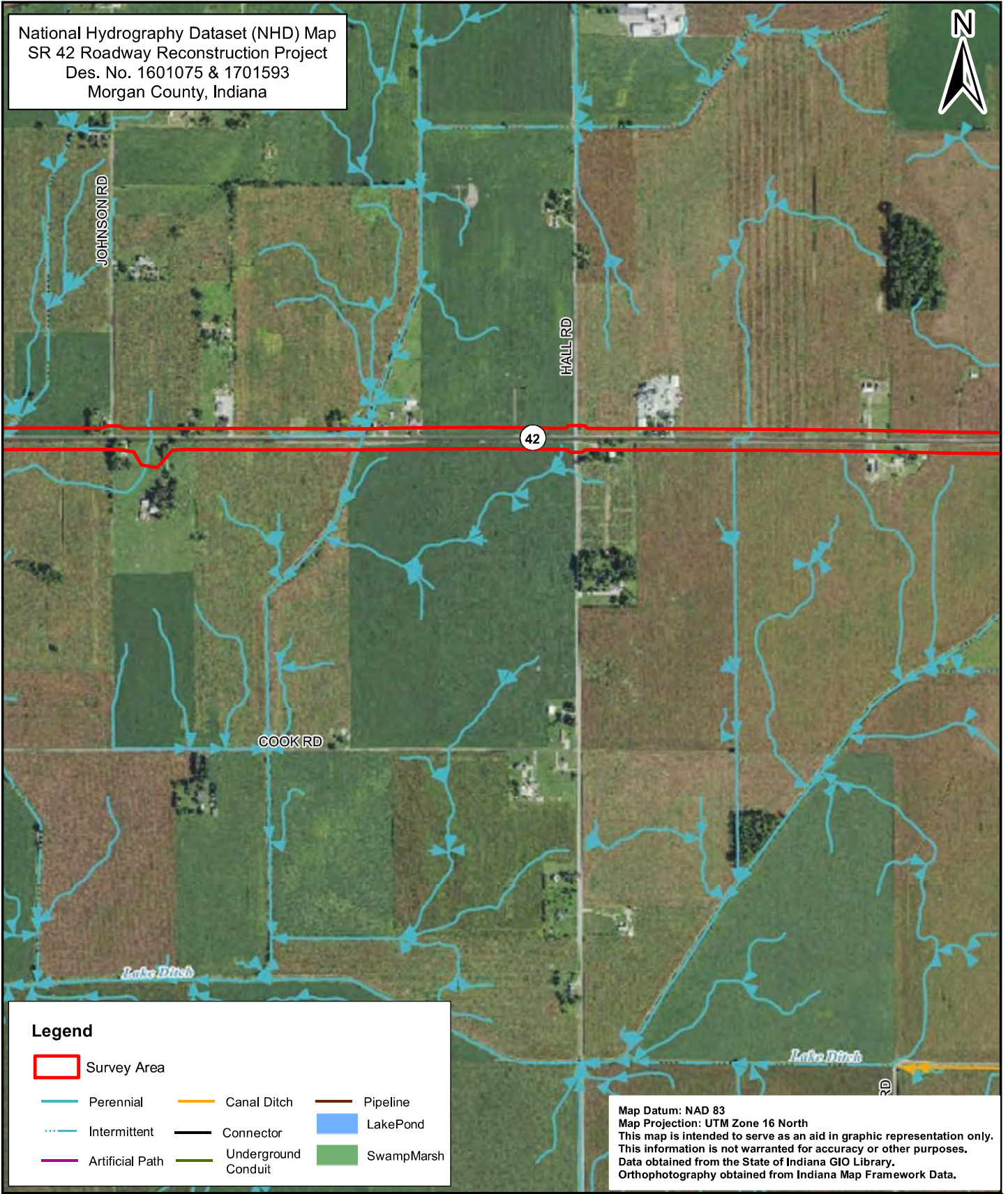
**NHD Map 2 of 7**



Location: SR 42  
 Township: Monroe  
 County: Morgan  
 Date: 01/01/2020



National Hydrography Dataset (NHD) Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



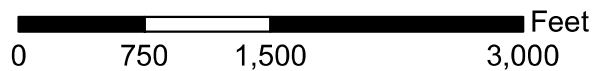
**Legend**

- Survey Area
- Perennial
- - - Intermittent
- Artificial Path
- Canal Ditch
- Pipeline
- Connector
- Underground Conduit
- Lake/Pond
- Swamp/Marsh

Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
 This information is not warranted for accuracy or other purposes.  
 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.



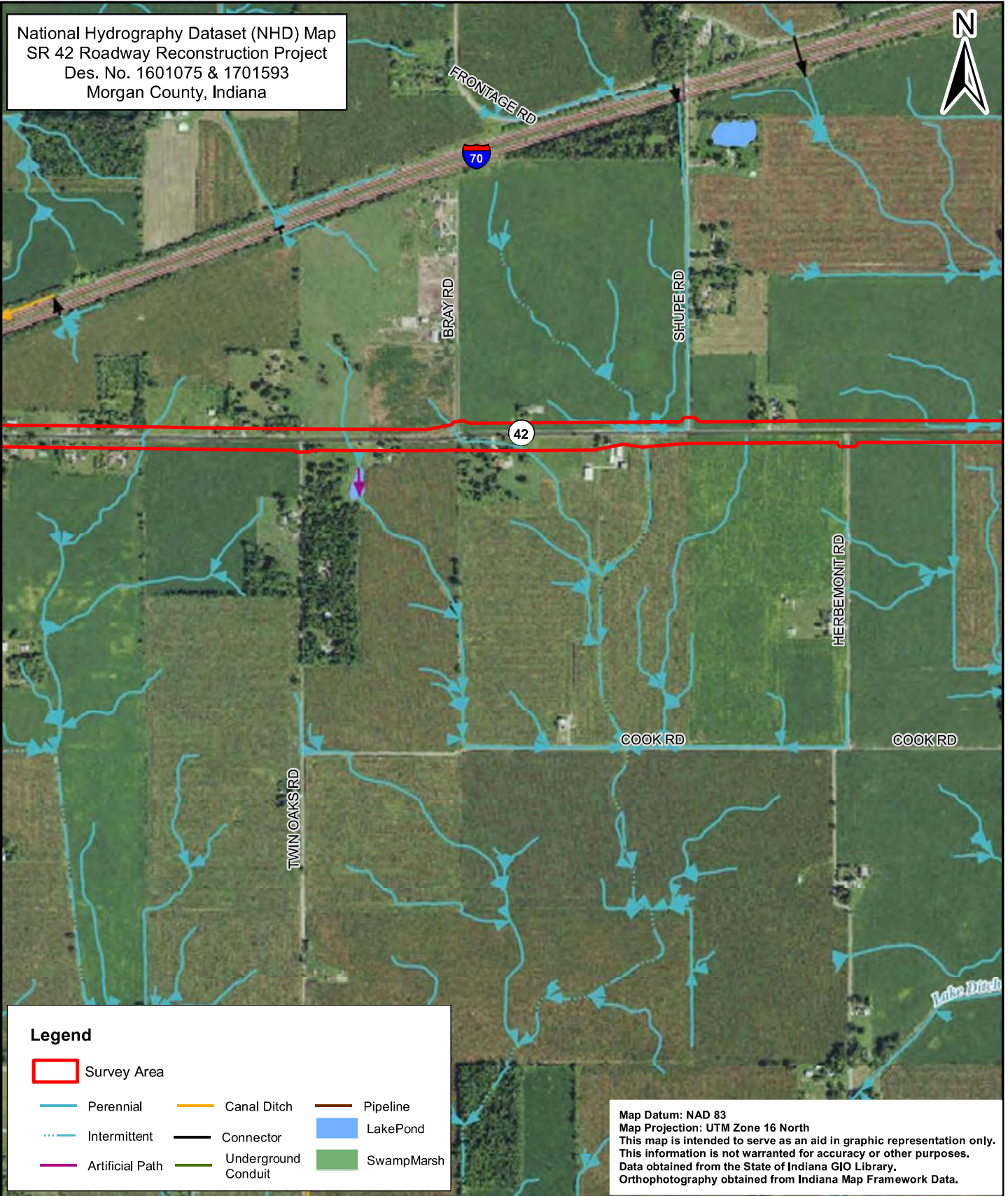
**NHD Map 3 of 7**



Location: SR 42  
 Township: Monroe  
 County: Morgan  
 Date: 01/01/2020



National Hydrography Dataset (NHD) Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



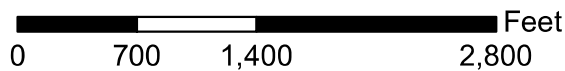
**Legend**

- Survey Area
- Perennial
- - - Intermittent
- Artificial Path
- Canal Ditch
- Connector
- Underground Conduit
- Pipeline
- Lake/Pond
- Swamp/Marsh

Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
 This information is not warranted for accuracy or other purposes.  
 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.



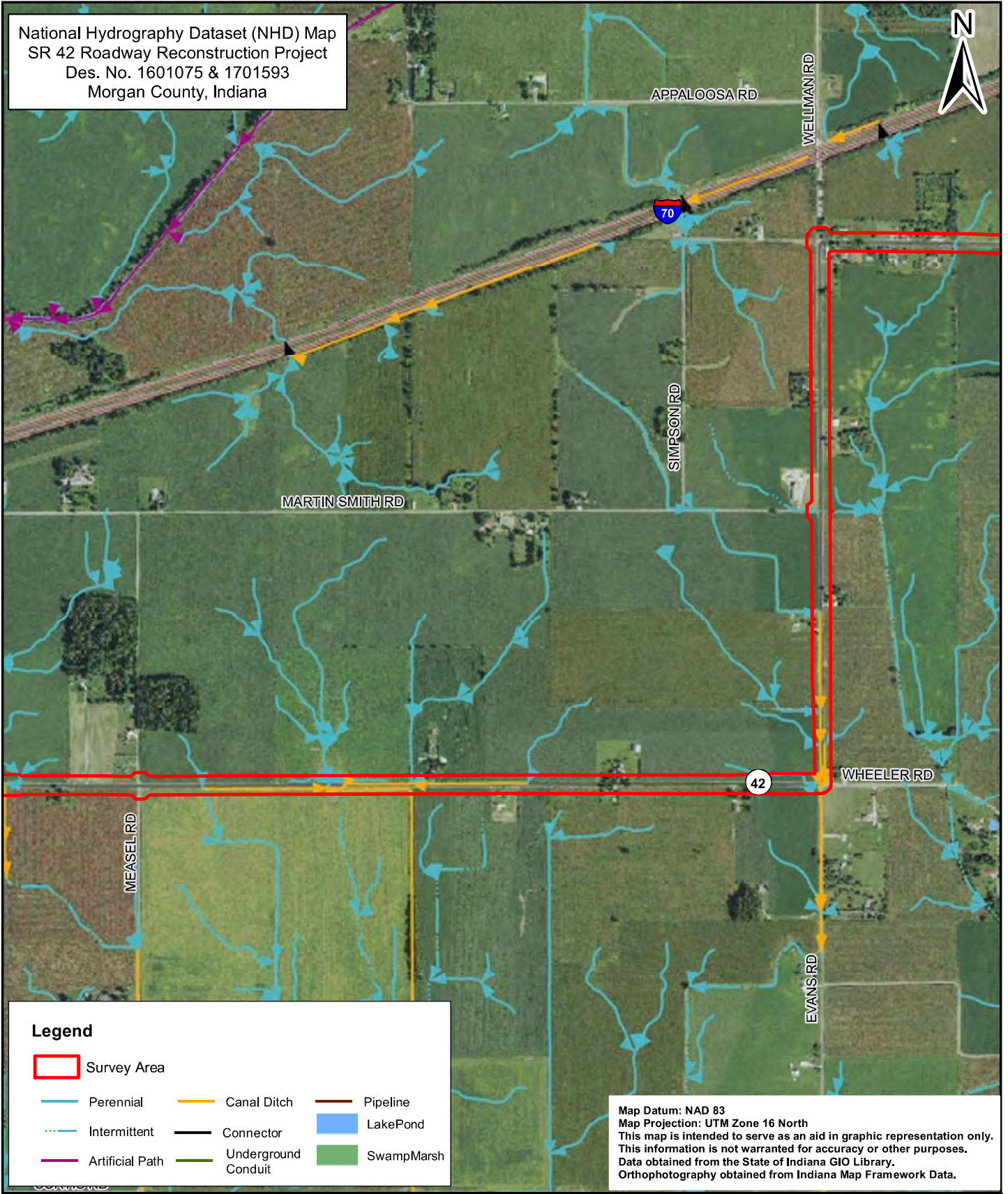
**NHD Map 4 of 7**



Location: SR 42  
 Township: Adams & Monroe  
 County: Morgan  
 Date: 01/01/2020



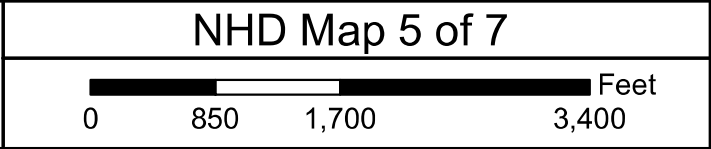
National Hydrography Dataset (NHD) Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



**Legend**

- Survey Area
- Perennial
- Canal Ditch
- Pipeline
- Intermittent
- Connector
- Lake/Pond
- Artificial Path
- Underground Conduit
- Swamp/Marsh

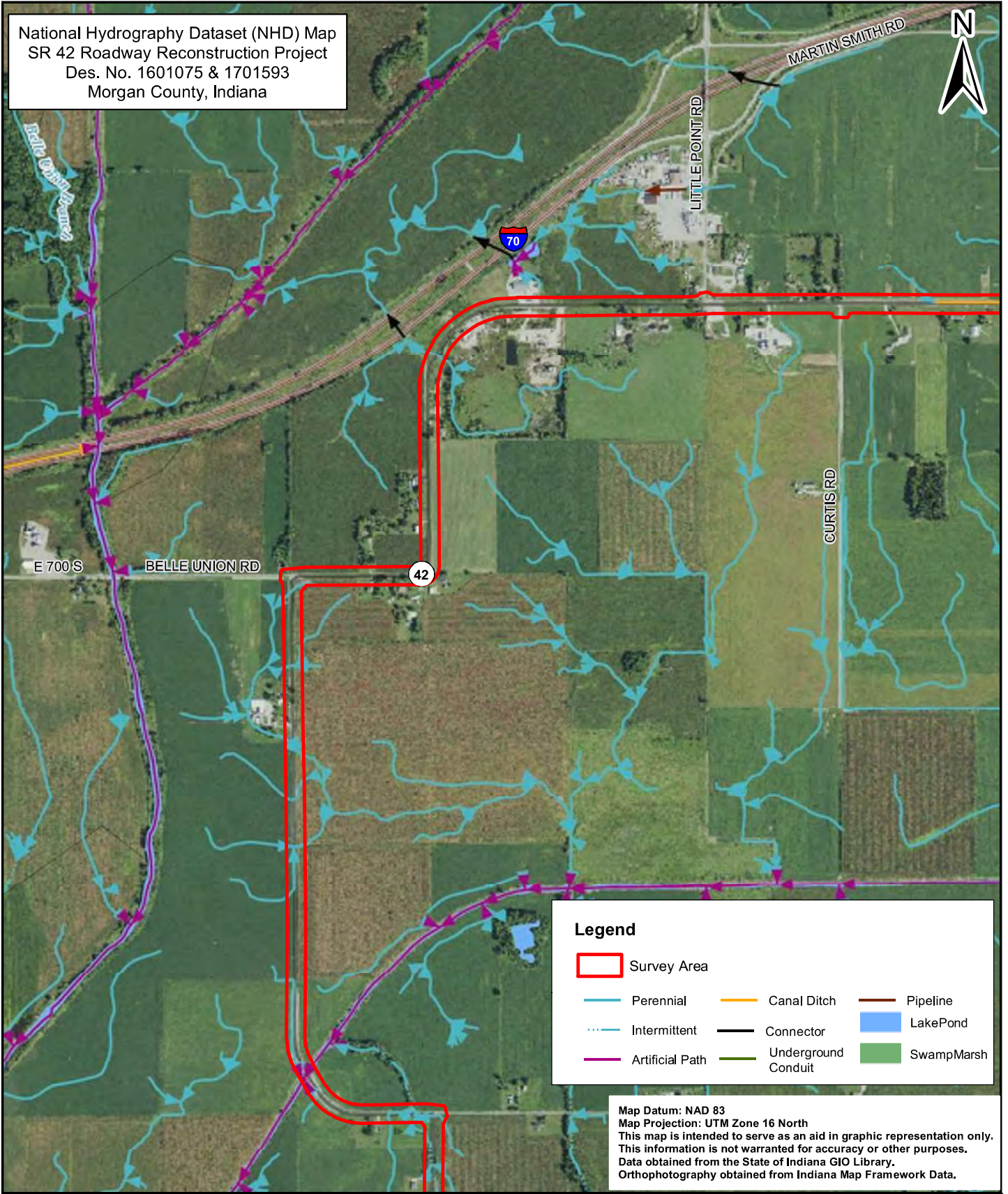
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 This map is intended to serve as an aid in graphic representation only.  
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 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.



Location: SR 42  
 Township: Adams  
 County: Morgan  
 Date: 01/01/2020



National Hydrography Dataset (NHD) Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



**Legend**

Survey Area	Canal Ditch	Pipeline
Perennial	Connector	Lake/Pond
Intermittent	Underground Conduit	Swamp/Marsh
Artificial Path		

Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
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 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.



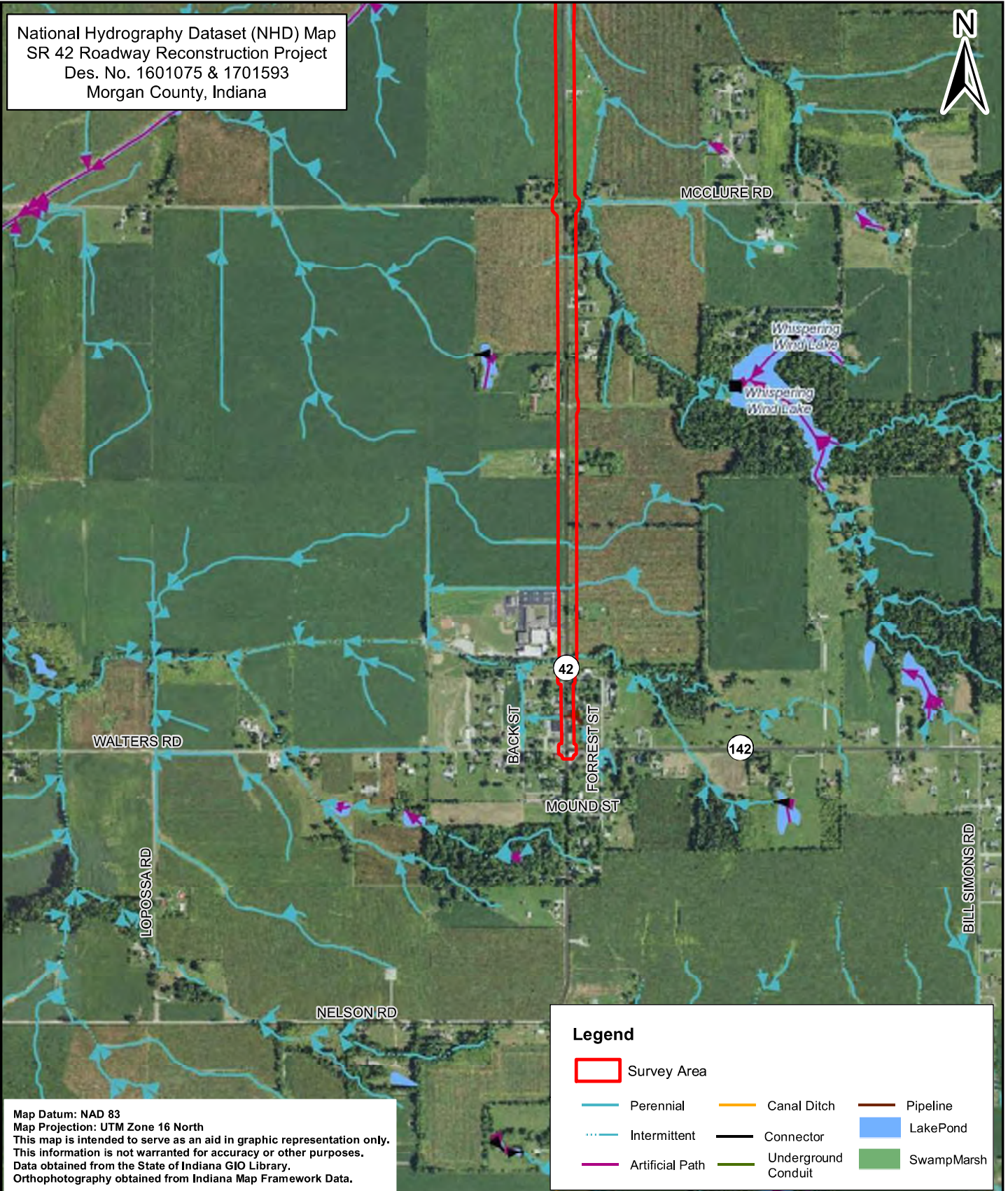
**NHD Map 6 of 7**

0      850      1,700      3,400      Feet

Location: SR 42  
 Township: Adams  
 County: Morgan  
 Date: 01/01/2020



National Hydrography Dataset (NHD) Map  
 SR 42 Roadway Reconstruction Project  
 Des. No. 1601075 & 1701593  
 Morgan County, Indiana



Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
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 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.

**Legend**

Survey Area	Canal Ditch	Pipeline
Perennial	Connector	Lake/Pond
Intermittent	Underground Conduit	Swamp/Marsh
Artificial Path		



**NHD Map 7 of 7**

0      850      1,700      3,400 Feet

Location: SR 42  
 Township: Adams  
 County: Morgan  
 Date: 01/01/2020



**From:** [Mcgill, Justus](#)  
**To:** [Brooke Fox](#); [Joseph Dabkowski](#)  
**Cc:** [Rehder, Crystal](#); [Mcdaniel, Kaitlyn](#)  
**Subject:** [EXT] RE: [EXT] RE: [EXT] RE: Draft WOUS Report Submittal for Des. No. 1601075 & 1701075: SR 42 Roadway Reconstruction Project in Morgan County  
**Date:** Thursday, July 29, 2021 8:52:22 AM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)

---

**\*\*\*\* Please use caution this is an externally originating email. \*\*\*\***  
**Do not click on links or open attachments unless you recognize the sender and know the contents is safe.**

Hello All,

Thank you for submitting the waters report for **SR 42 HMA Overlay Minor Structural, DES 1601075**. The approved report is attached via the link below and can also be found on Projectwise through this link: [Wetland - Waters](#). It is the responsibility of the Project Manager to forward a copy of this report to the Project Designer.

Please note that this version does included the EWPO specialist approval signature. Make sure to use this version with any document submittals.

The information in the Waters Report should be used by the Designer to determine if Waters of the U.S. or wetlands will be impacted by the project. Avoidance and minimization must occur before mitigation will be considered. If mitigation is required, the Project manager or Designer must include the mitigation work in their project design, request Environmental Services to work on the mitigation, or include the mitigation work in the design contract (if the design of the project is let).

<https://documentcloud.adobe.com/link/track?uri=urn:aaid:scds:US:d722538a-10c8-4b0a-b84c-9aa75a2212fb>

Thanks,

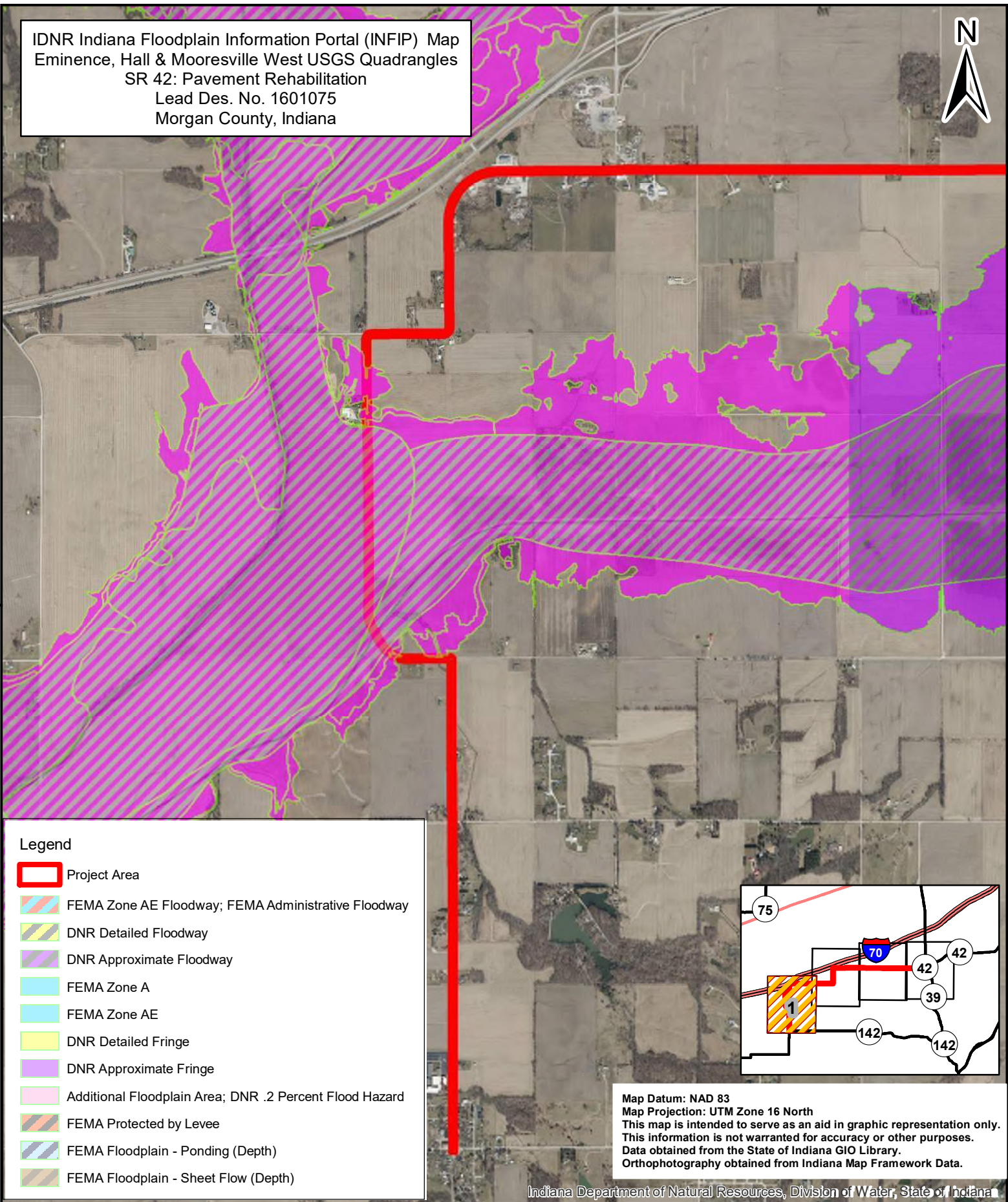
**Justus McGill**

Ecology and Waterway Permitting Office (Crawfordsville District)  
100 N Senate Ave. Indianapolis, IN 46204  
**Office:** (317)-509-7296  
**Office Hours:** Mon to Fri 6:30am to 2:30pm.  
**Email:** [jmcgill@indot.in.gov](mailto:jmcgill@indot.in.gov)















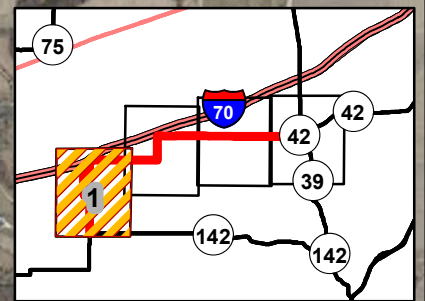


IDNR Indiana Floodplain Information Portal (INFIP) Map  
 Eminence, Hall & Mooresville West USGS Quadrangles  
 SR 42: Pavement Rehabilitation  
 Lead Des. No. 1601075  
 Morgan County, Indiana



Legend

-  Project Area
-  FEMA Zone AE Floodway; FEMA Administrative Floodway
-  DNR Detailed Floodway
-  DNR Approximate Floodway
-  FEMA Zone A
-  FEMA Zone AE
-  DNR Detailed Fringe
-  DNR Approximate Fringe
-  Additional Floodplain Area; DNR .2 Percent Flood Hazard
-  FEMA Protected by Levee
-  FEMA Floodplain - Ponding (Depth)
-  FEMA Floodplain - Sheet Flow (Depth)

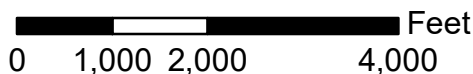


Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
 This information is not warranted for accuracy or other purposes.  
 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.

Indiana Department of Natural Resources, Division of Water, State of Indiana



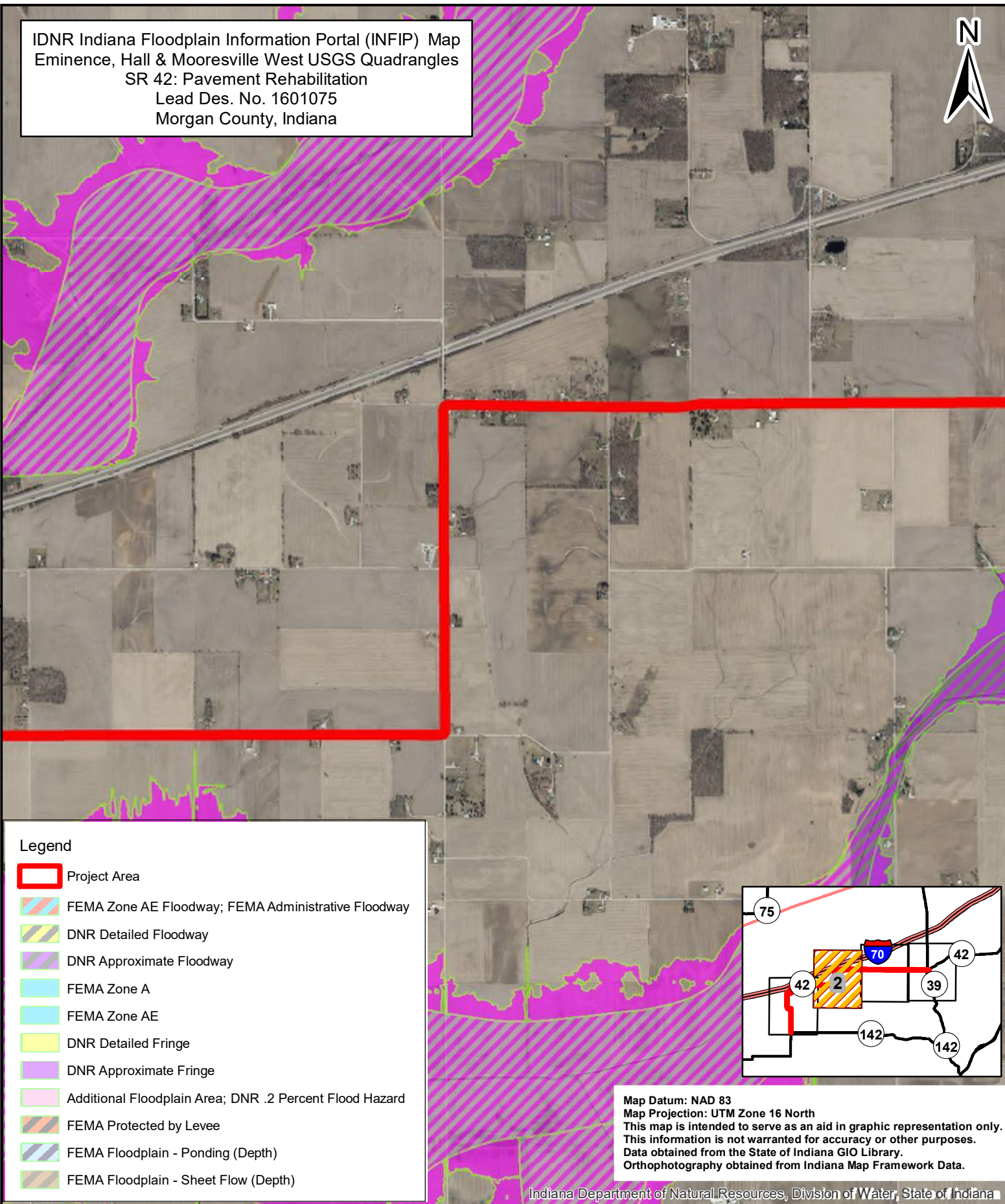
IDNR INFIP Map 1 of 4



Location: SR 42  
 Township: Adams and Monroe  
 County: Morgan

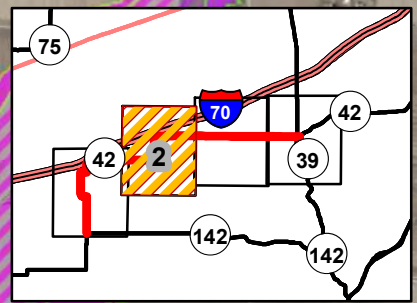


IDNR Indiana Floodplain Information Portal (INFIP) Map  
 Eminence, Hall & Mooresville West USGS Quadrangles  
 SR 42: Pavement Rehabilitation  
 Lead Des. No. 1601075  
 Morgan County, Indiana



Legend

- Project Area
- FEMA Zone AE Floodway; FEMA Administrative Floodway
- DNR Detailed Floodway
- DNR Approximate Floodway
- FEMA Zone A
- FEMA Zone AE
- DNR Detailed Fringe
- DNR Approximate Fringe
- Additional Floodplain Area; DNR .2 Percent Flood Hazard
- FEMA Protected by Levee
- FEMA Floodplain - Ponding (Depth)
- FEMA Floodplain - Sheet Flow (Depth)

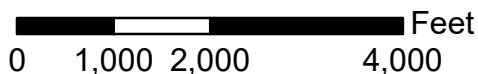


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Indiana Department of Natural Resources, Division of Water, State of Indiana



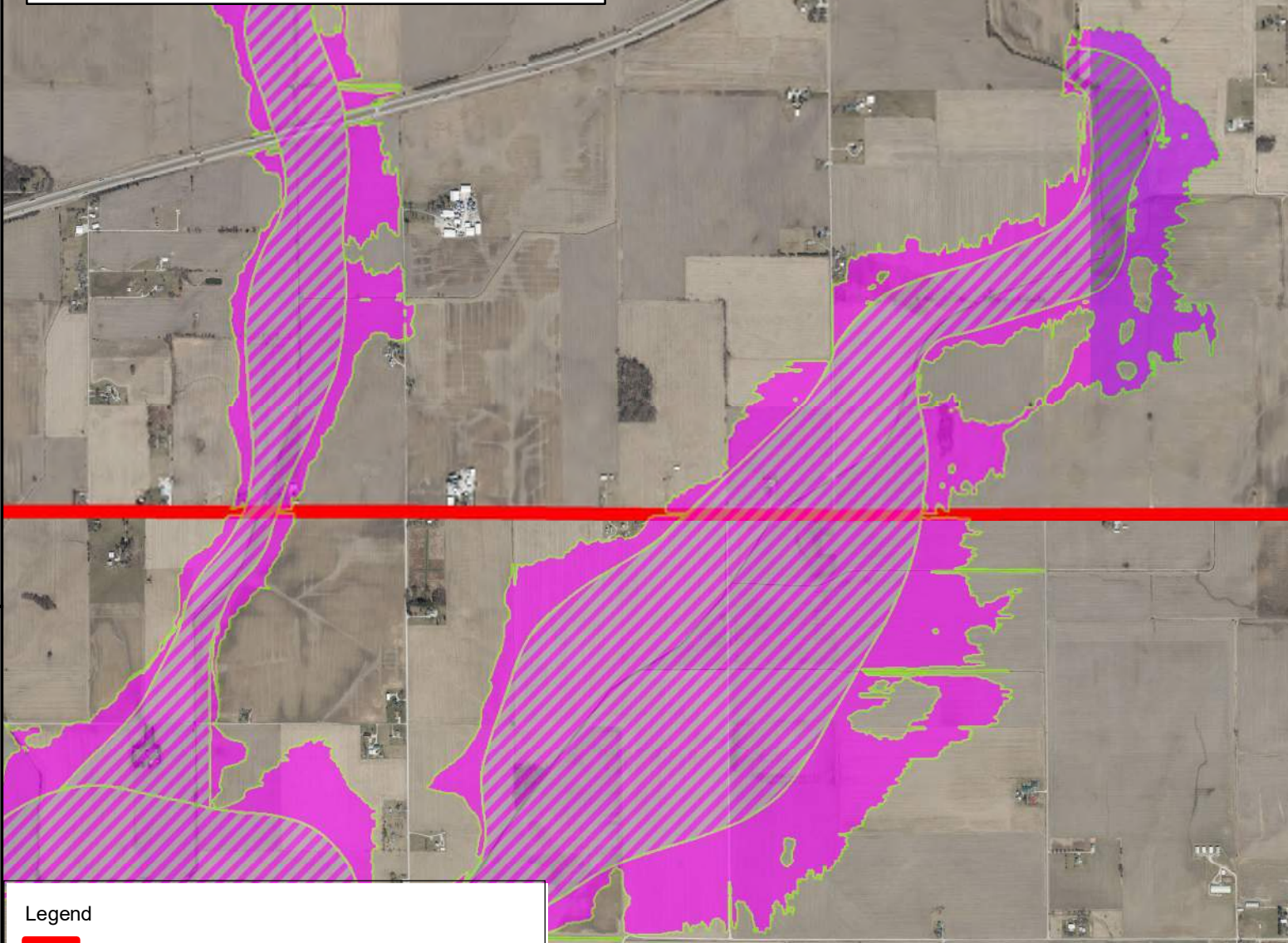
IDNR INFIP Map 2 of 4



Location: SR 42  
 Township: Adams and Monroe  
 County: Morgan

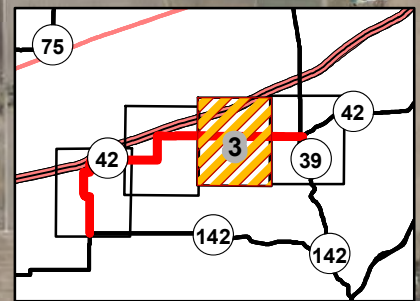


IDNR Indiana Floodplain Information Portal (INFIP) Map  
 Eminence, Hall & Mooresville West USGS Quadrangles  
 SR 42: Pavement Rehabilitation  
 Lead Des. No. 1601075  
 Morgan County, Indiana



Legend

- Project Area
- FEMA Zone AE Floodway; FEMA Administrative Floodway
- DNR Detailed Floodway
- DNR Approximate Floodway
- FEMA Zone A
- FEMA Zone AE
- DNR Detailed Fringe
- DNR Approximate Fringe
- Additional Floodplain Area; DNR .2 Percent Flood Hazard
- FEMA Protected by Levee
- FEMA Floodplain - Ponding (Depth)
- FEMA Floodplain - Sheet Flow (Depth)

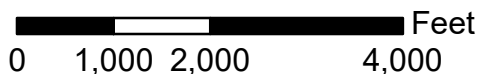


Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
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 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.

Indiana Department of Natural Resources, Division of Water, State of Indiana



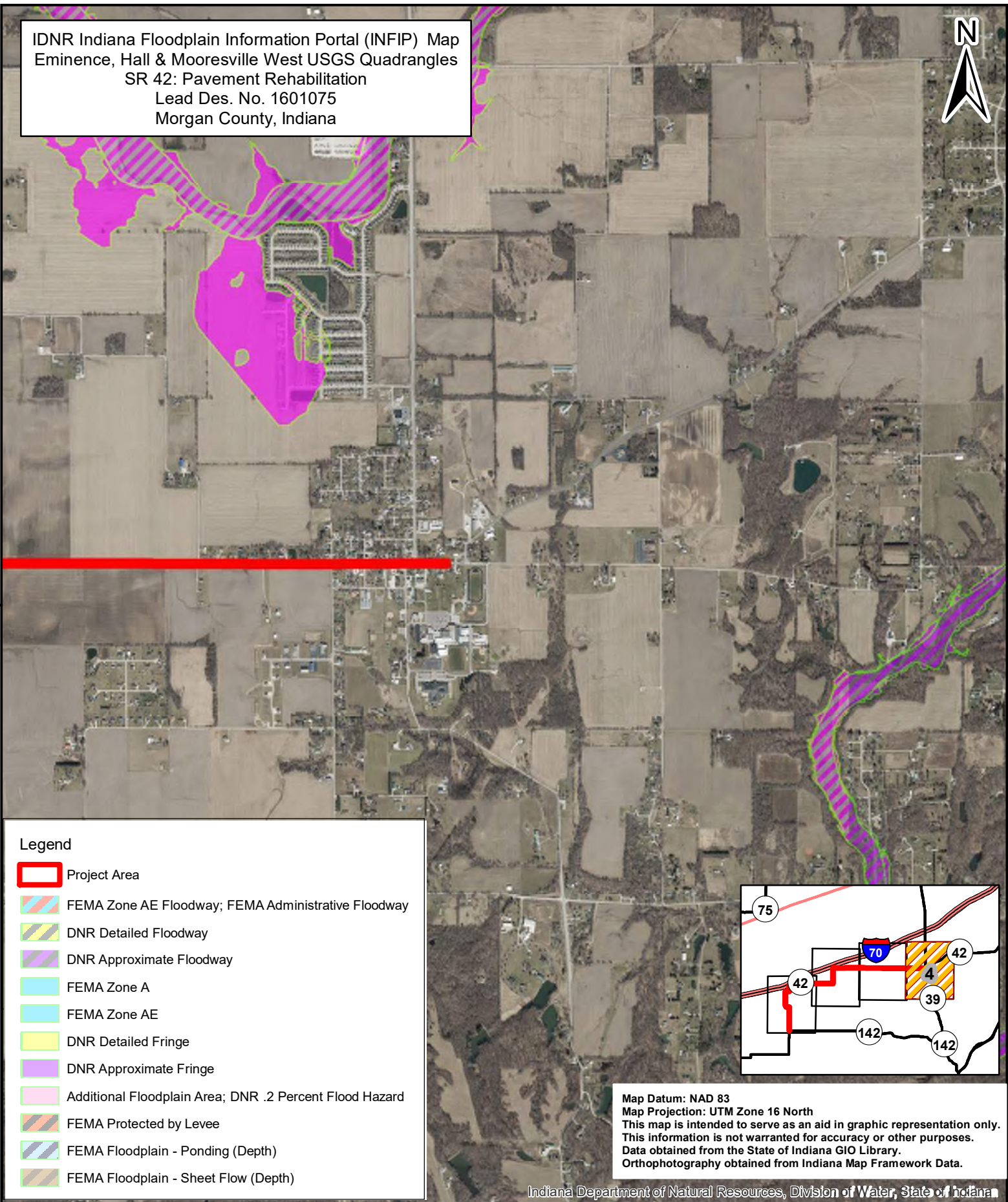
IDNR INFIP Map 3 of 4















Location: SR 42  
 Township: Adams and Monroe  
 County: Morgan

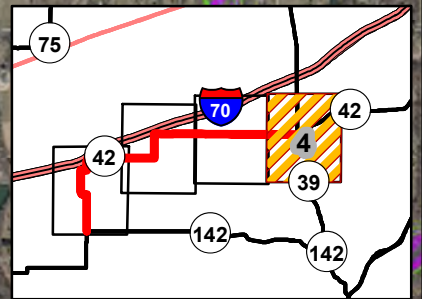


IDNR Indiana Floodplain Information Portal (INFIP) Map  
 Eminence, Hall & Mooresville West USGS Quadrangles  
 SR 42: Pavement Rehabilitation  
 Lead Des. No. 1601075  
 Morgan County, Indiana



Legend

-  Project Area
-  FEMA Zone AE Floodway; FEMA Administrative Floodway
-  DNR Detailed Floodway
-  DNR Approximate Floodway
-  FEMA Zone A
-  FEMA Zone AE
-  DNR Detailed Fringe
-  DNR Approximate Fringe
-  Additional Floodplain Area; DNR .2 Percent Flood Hazard
-  FEMA Protected by Levee
-  FEMA Floodplain - Ponding (Depth)
-  FEMA Floodplain - Sheet Flow (Depth)

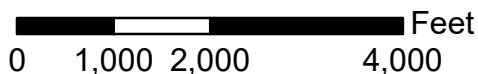


Map Datum: NAD 83  
 Map Projection: UTM Zone 16 North  
 This map is intended to serve as an aid in graphic representation only.  
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 Data obtained from the State of Indiana GIO Library.  
 Orthophotography obtained from Indiana Map Framework Data.

Indiana Department of Natural Resources, Division of Water, State of Indiana



IDNR INFIP Map 4 of 4



Location: SR 42  
 Township: Adams and Monroe  
 County: Morgan



**Categorical Exclusion**  
**Appendix G**  
**Public Involvement**



Example Notice of Survey Letter

February 25, 2019

**Notice of Survey**

RE: SR 42 Road Project

Dear Property Owner,

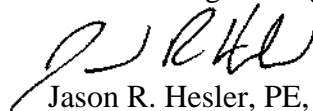
Certified Engineering, Inc., Etica Group, and RQAW Corporation have been selected by INDOT for field and environmental survey of the above referenced project. Our information indicates that you own property near the above proposed roadway project. Certified Engineering, Inc., Etica Group, and RQAW Corporation will be performing a survey of the project area in the near future. **The survey work may include the identification and mapping of wetlands and historic resources, archaeological investigations (which may involve the survey, testing, or excavation of identified archaeological sites) and various other environmental studies.** The information we obtain from these studies is necessary for the proper planning and design of this transportation project. It may be necessary for representatives from Certified Engineering, Inc., Etica Group, or RQAW Corporation to enter your property to complete this work. This is permitted by law per Indiana Code (IC) 8-23-7-26. Anyone performing this type of work has been instructed to identify him or herself, if you are available, before they enter your property. If you no longer own this property or it is currently occupied by someone else, please let us know the name of the new owner or occupant so that we can contact them about the survey.

At this stage, we generally do not know what effect, if any, the project may eventually have on your property. If we later determine that your property is involved, you will be contacted with additional information.

The survey is needed for this roadway 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 Jason Hesler of Certified Engineering, Inc. at (317) 546-1599 or at 3939 Millersville Road, Indianapolis, Indiana 46205. Thank you in advance for your cooperation.

Sincerely,  
Certified Engineering, Inc.



Jason R. Hesler, PE, PLS



**Categorical Exclusion**  
**Appendix H**  
**Air Quality**



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

SPONSOR	CONTR ACT # / 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		
<b>Morgan County</b>																				
Morgan County	2002465	Init.	IR 1001	Bridge Inspections	Countywide Bridge Inspection and Inventory Program for Cycle Years 2020-2025	Seymour	0	STBG	\$349,590.00	Local Bridge Program	PE	\$279,672.00	\$0.00		\$127,769.00	\$20,342.00	\$111,103.00	\$20,458.00		
											Local Funds	PE	\$0.00	\$69,918.00		\$31,942.00	\$5,085.00	\$27,776.00	\$5,115.00	
Performance Measure Impacted: Bridge Condition																				
Martinsville	2100420	Init.	MS NA	HMA Overlay, Preventive Maintenance	BURTON LN, CHERRY ST, CHESTNUT ST, CUNNINGHAM ST, ELLIOTT AV, GARDNER ST.	Seymour	0	STBG	\$790,454.45	Local Funds	CN	\$0.00	\$467,550.00	\$467,550.00						
											Community Crossing Grant Fund	CN	\$467,550.00	\$0.00	\$467,550.00					
Performance Measure Impacted: Pavement Condition																				
Morgan County	2100431	Init.	MS NA	HMA Overlay, Structural	AUGUSTA LN, BOTTOM RD, BRAY RD, CENTER ST, CO RD 340 N, CO RD 360 N.	Seymour	0	STBG	\$1,869,534.85	Community Crossing Grant Fund	CN	\$1,000,000.00	\$0.00	\$1,000,000.00						
											Local Funds	CN	\$0.00	\$1,115,922.00	\$1,115,922.00					
Performance Measure Impacted: Pavement Condition																				
Indiana Department of Transportation	39791 / 1593119	Init.	SR 44	Bridge Deck Overlay	5.10 miles E of SR 37 over South Prong Stotts Creek	Seymour	0	STBG	\$2,037,284.00	Bridge Construction	CN	\$1,410,267.20	\$352,566.80			\$1,762,834.00				
Performance Measure Impacted: Bridge Condition																				
Comments:Include DES 1593119																				
Morgan County	39858 / 1600715	Init.	IR 1004	Bridge Replacement, Other Construction	Bridge # 75 Bowman Road over Rhoades Creek	Crawfordsville	.135	STBG	\$1,522,154.00	Local Bridge Program	CN	\$1,170,000.00	\$0.00	\$1,170,000.00						
											Local Funds	CN	\$0.00	\$242,500.00	\$242,500.00					
Comments:Include DES 1600715																				
Indiana Department of Transportation	40435 / 1700187	Init.	SR 252	Bridge Replacement	01.14 mile W of SR 135 at W Fork Crooked Creek	Seymour	0	STBG	\$2,422,073.00	Bridge ROW	RW	\$17,040.00	\$4,260.00	\$21,300.00						
											Bridge Construction	CN	\$1,568,056.80	\$392,014.20	\$1,960,071.00					
Performance Measure Impacted: Bridge Condition																				
Comments:Include DES 1700071, 1700187																				
Indiana Department of Transportation	40583 / 1601075	Init.	SR 42	HMA Overlay Minor Structural	From SR 142 to 0.19 mi E of SR 39 E Jct in Morgan County	Crawfordsville	12.757	STBG	\$16,701,800.00	Bridge Construction	CN	\$2,371,688.00	\$592,922.00	\$25,000.00	\$2,939,610.00					
											Road ROW	RW	\$2,400,000.00	\$600,000.00	\$3,000,000.00					
											Bridge ROW	RW	\$44,000.00	\$11,000.00	\$55,000.00					

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



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

SPONSOR	CONTR ACT # / 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	40583 / 1601075	Init.	SR 42	HMA Overlay Minor Structural	From SR 142 to 0.19 mi E of SR 39 E Jct in Morgan County	Crawfordsville	12.757	STBG	\$16,701,800.00	Road Consulting	PE	\$76,960.00	\$19,240.00	\$96,200.00				
										Road Construction	CN	\$6,099,888.00	\$1,524,972.00		\$7,624,860.00			
Performance Measure Impacted: Pavement Condition																		
Comments:Include DES 1500136, 1701593, 1800121, 1800122, 2001548, 2001549, 2001550, 2001551, 2001552, 2001553, 2001554, 2001555, 2001557, 2001558, 2001559, 1601075																		
Martinsville	40884 / 1702962	Init.	ST 1025	Road Reconstruction (3R/4R Standards)	Ohio Street from Poston Road to 325 feet North of Garfield Ave.	Seymour	.6	STBG	\$5,622,990.69	Local Funds	CN	\$0.00	\$863,790.00		\$863,790.00			
										Group III Program	CN	\$3,455,160.00	\$0.00		\$3,455,160.00			
Comments:Include DES 1702962																		
Martinsville	40885 / 1702961	Init.	ST 1024	Road Reconstruction (3R/4R Standards)	South Street from Ohio Street to Home Avenue	Seymour	.45	STBG	\$4,892,030.00	Group III Program	CN	\$2,058,800.00	\$0.00	\$2,058,800.00				
										Local Funds	CN	\$0.00	\$877,450.00	\$877,450.00				
Comments:Include DES 1702961																		
Morgan County	40887 / 1702967	Init.	IR 1023	Bridge Replacement	Bridge #52 on Egbert Road over Stotts Creek	Seymour	.21	STBG	\$2,236,150.00	Local Bridge Program	RW	\$48,000.00	\$0.00	\$48,000.00				
										Local Funds	RW	\$0.00	\$12,000.00	\$12,000.00				
										Local Funds	CN	\$0.00	\$374,000.00		\$374,000.00			
										Local Bridge Program	CN	\$1,496,000.00	\$0.00		\$1,496,000.00			
Performance Measure Impacted: Bridge Condition																		
Comments:Include DES 1702967																		
Indiana Department of Transportation	40971 / 1800725	Init.	SR 144	Bridge Deck Overlay	00.48 mile W of SR 37 over White River	Seymour	0	NHPP	\$2,342,148.00	Bridge Construction	CN	\$40,000.00	\$10,000.00			\$50,000.00		
										Performance Measure Impacted: Bridge Condition								
Comments:Include DES 2000300, 2000349, 2000358, 2000363, 1800725																		
Indiana Department of Transportation	41597 / 1800106	Init.	I 70	Replace Superstructure	Little Pointe Rd.( CR 1100 W.) over I-70 EB/WB; 8.56 mi W of SR 39	Crawfordsville	0	NHPP	\$2,790,345.00	Bridge ROW	RW	\$36,000.00	\$4,000.00	\$40,000.00				
										Bridge Construction	CN	\$2,249,104.50	\$249,900.50		\$2,499,005.00			
Performance Measure Impacted: Bridge Condition																		
Comments:Include DES 1800106																		

\*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.



<<Go Back

**HMA Overlay Minor Structural, SR 42 (1601075)**

VERSION		PROJECT TITLE	STATUS	APPROVAL DATE
1	20-15 Q2 2022 INDOT	HMA Overlay Minor Structural, SR 42	Programmed	
2	22-00 2022-2025 TIP	HMA Overlay Minor Structural, SR 42	Programmed	9/20/2021







**Categorical Exclusion**  
**Appendix I**  
**Additional Studies**



**Land and Water Conservation Fund (LWCF) County Property List for Indiana (Last Updated July 2020)**

ProjectNumber	SubProjectCode	County	Property
1800110	1800110	Morgan	Pioneer Park
1800327	1800327G	Morgan	Morgan-Monroe State Forest
1800491	1800491	Morgan	Pioneer Park
1800576	1800576	Morgan	White River Greenway

\*Park names may have changed. If acquisition of publically owned land or impacts to publically owned land is anticipated, coordination with IDNR, Division of Outdoor Recreation, should occur.



CHA Consulting, Inc.  
Union Station, 300 S. Meridian Street  
Indianapolis, IN 46225

February 24, 2020

Attn: Josshe' Palm, Utility Coordinator  
Assistant Engineer I

Re: Morgan County Rural Water Corporation  
SR 42 From SR 142 to 0.19 miles E of SR 39 East Junction in Morgan County  
Verification of Existing Facilities for INDOT Des. No.: 1601075  
MEI #2019021-05

Dear Josshe' Palm:

Sorry for the delay in getting this information to you. On behalf of our client, the Morgan County Rural Water Corporation (MCRWC), and in response to your email/correspondence dated November 26, 2019, we have reviewed the proposed INDOT preliminary plans which you forwarded. MCRWC does have existing water distribution facilities within the limits of the proposed INDOT improvement project within and near the Community of Eminence and the Town of Monrovia.

Within and near Eminence, MCRWC has facilities (3" and 6" mains and service lines/meters) from approximately Sta. 28+00 to 35+00 Line "PR-A". Within and near the Town of Monrovia, MCRWC has facilities (6", 8" and 16" mains and service lines/meters) from approximately Sta. 655+00 to 718+00 Line "PR-A". Enclosed please find a copy of the original Record Drawings for the facilities within and near Eminence (Overall Sheet 5 and Plan Sheet 48A), as well as original Record Drawings and plan sheets for the facilities within and near the Town of Monrovia (Overall Sheet 3 and Plan Sheets 9, 22, 23E, 23D, 23 and 23B). Also included are INDOT Plan and Profile Sheets 6, 7, 50, 51, 52, 53 and 54, which have been highlighted in orange to show the MCRWC facilities. There were some inaccuracies on these INDOT Plan and Profile Sheets as they pertain to MCRWC; they did not show all their facilities accurately.

Please note that the designated contact for the MCRWC is as follows:

Glen Miller, General Manager  
P.O. Box 1575  
Martinsville, IN. 46151  
Phone: (765)-342-0895  
Email: gmiller@mcrw.org

Should you have any questions or need additional information, please feel free to contact me at (812)-295-2800, or Mr. Glen Miller, General Manager of MCRWC, at (765)-342-0895. Thank you.

Respectfully,  
MIDWESTERN ENGINEERS, INC.

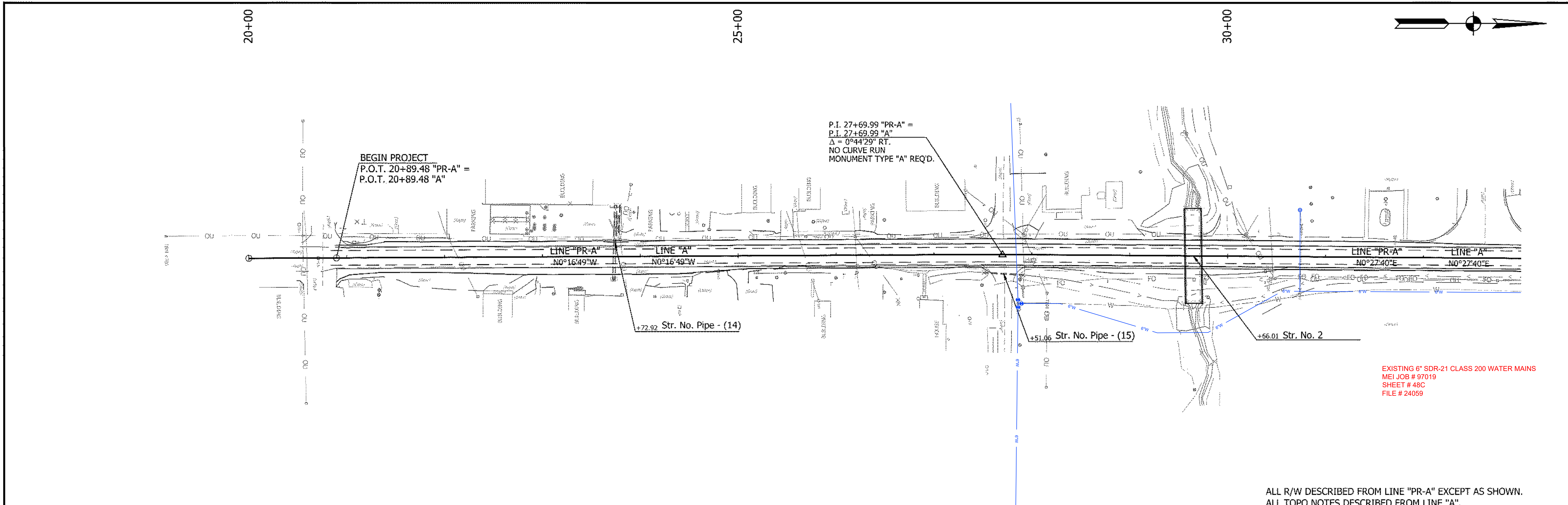
John W. Wetzel, P.E.  
Sr. Project Engineer

JWW/tdb

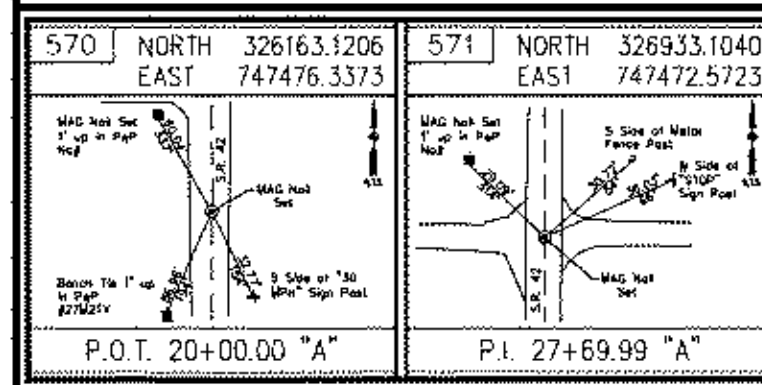
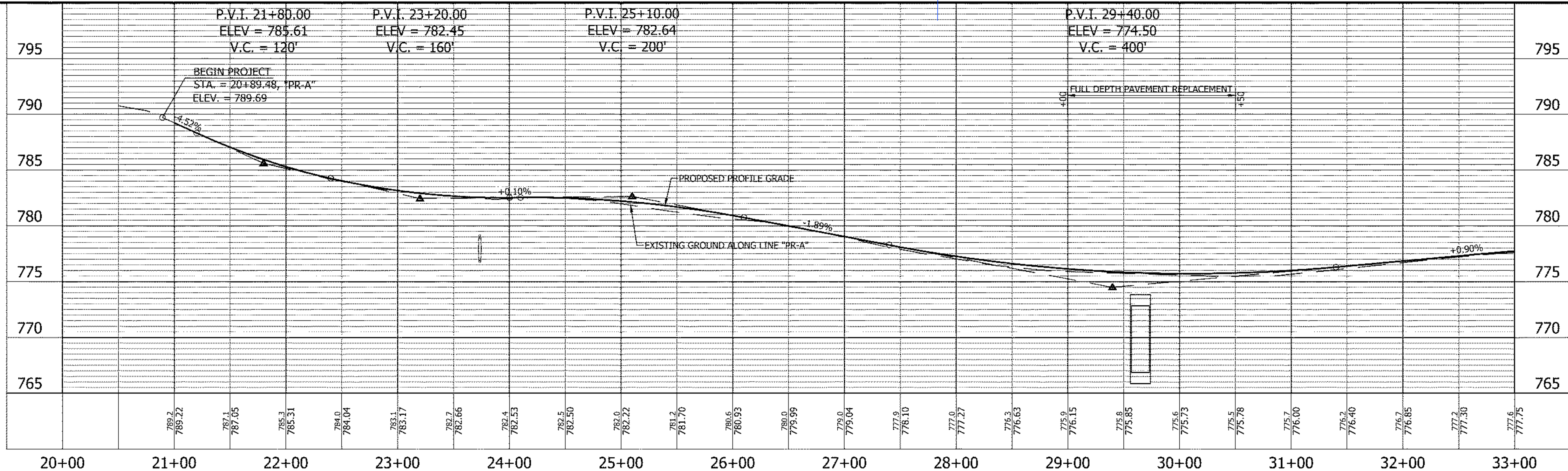
Enclosures

cc: Morgan County Rural Water Corporation c/o Glen Miller  
802 W. BROADWAY ST. • P.O. BOX 295 • LOOGOOTEE, IN 47553 • P: 812-295-2800  
6809 CORPORATE DRIVE • INDIANAPOLIS, IN 46278 • P: 317-334-0262  
meinc@midwesterneng.com • www.midwesterneng.com





ALL R/W DESCRIBED FROM LINE "PR-A" EXCEPT AS SHOWN.  
ALL TOPO NOTES DESCRIBED FROM LINE "A".



RECOMMENDED FOR APPROVAL \_\_\_\_\_  
DESIGN ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

DESIGNED: MSS \_\_\_\_\_ DRAWN: KRU \_\_\_\_\_  
CHECKED: LLC \_\_\_\_\_ CHECKED: MSS \_\_\_\_\_

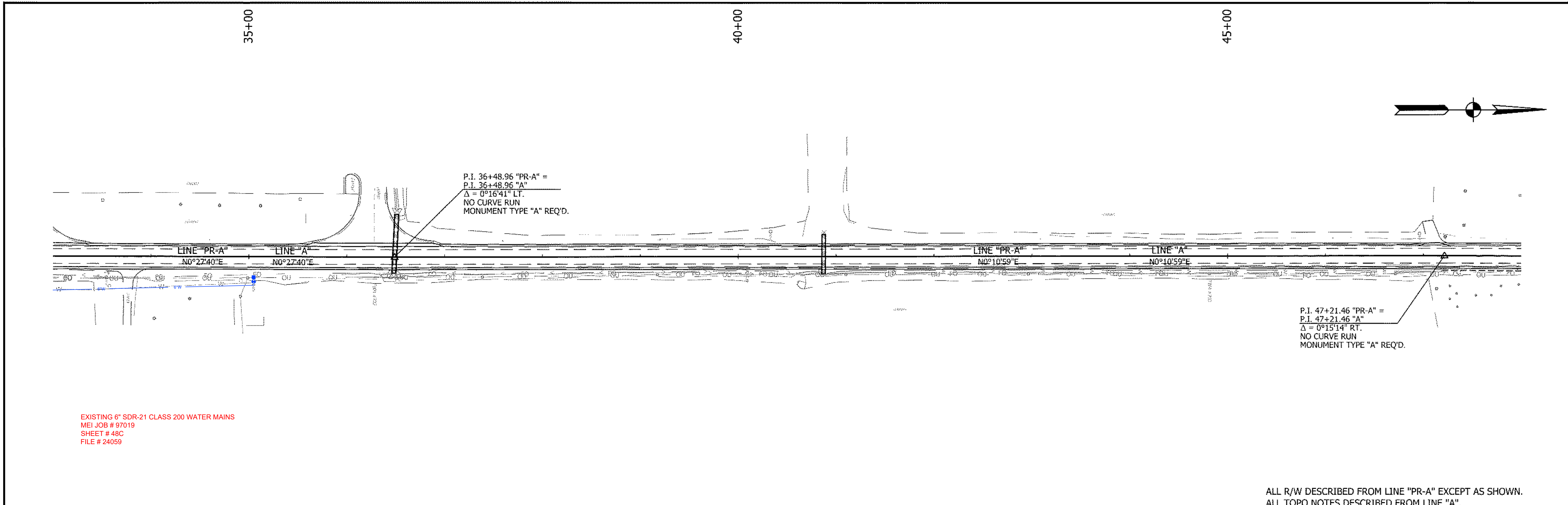
INDIANA  
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE  
STA. 20+00.00 TO 33+00.00 LINE "PR-A"

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VERTICAL SCALE 1" = 5'	DESIGNATION 1601075
SURVEY BOOK	SHEET 6 OF
CONTRACT	PROJECT 1601075

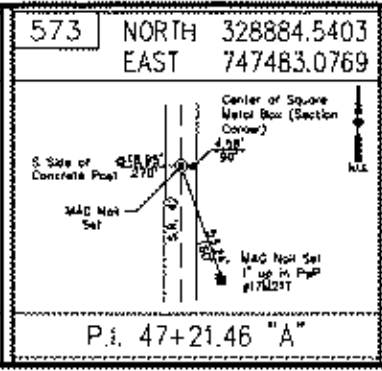
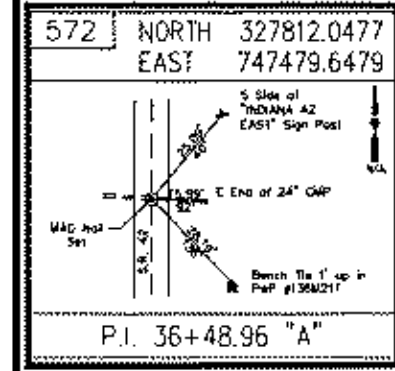
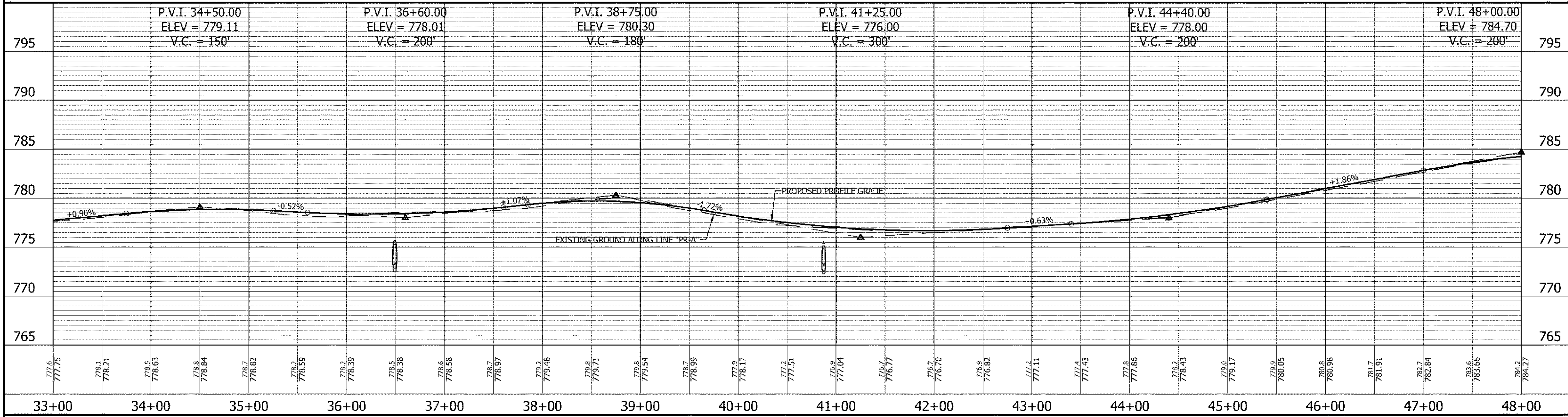
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EXISTING 6" SDR-21 CLASS 200 WATER MAINS  
 MEI JOB # 97019  
 SHEET # 48C  
 FILE # 24059

ALL R/W DESCRIBED FROM LINE "PR-A" EXCEPT AS SHOWN.  
 ALL TOPO NOTES DESCRIBED FROM LINE "A".



RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: MSS	DRAWN: KRU	
CHECKED: LLC	CHECKED: MSS	

**INDIANA DEPARTMENT OF TRANSPORTATION**

**PLAN AND PROFILE**

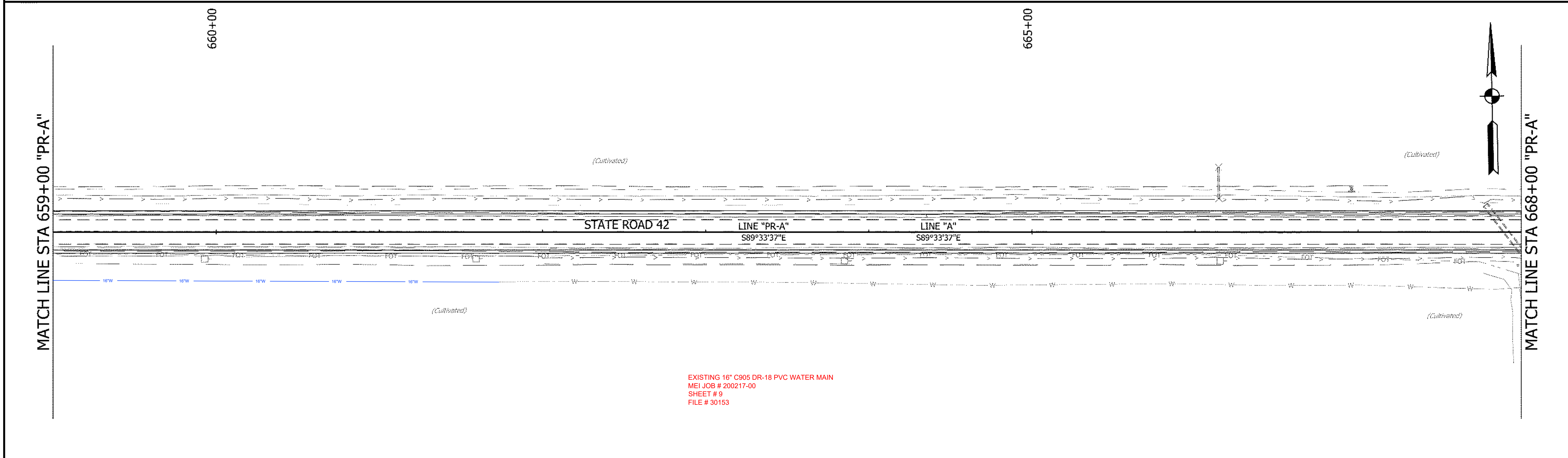
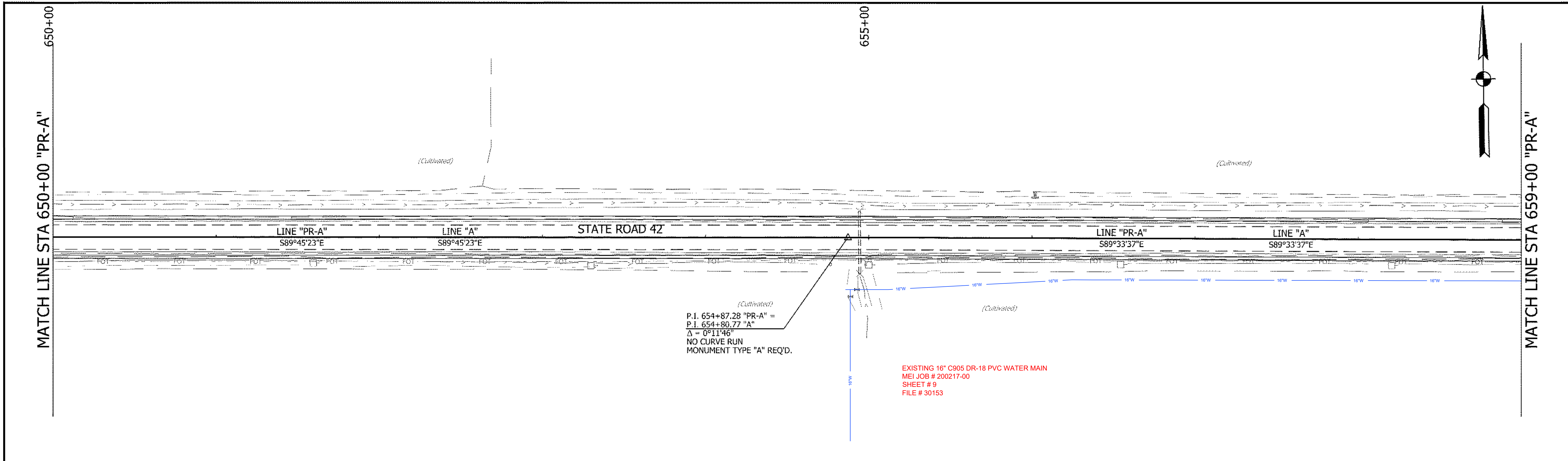
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1" = 50'	
VERTICAL SCALE	DESIGNATION
1" = 5'	1601075
SURVEY BOOK	SHEET
	7 OF
CONTRACT	PROJECT
	1601075

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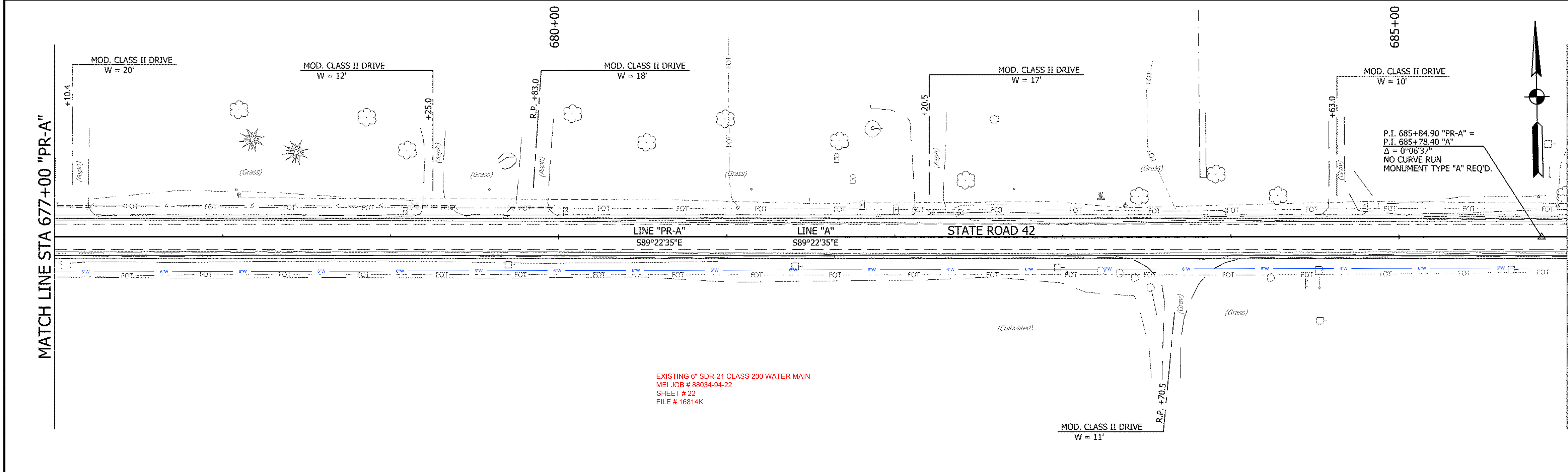
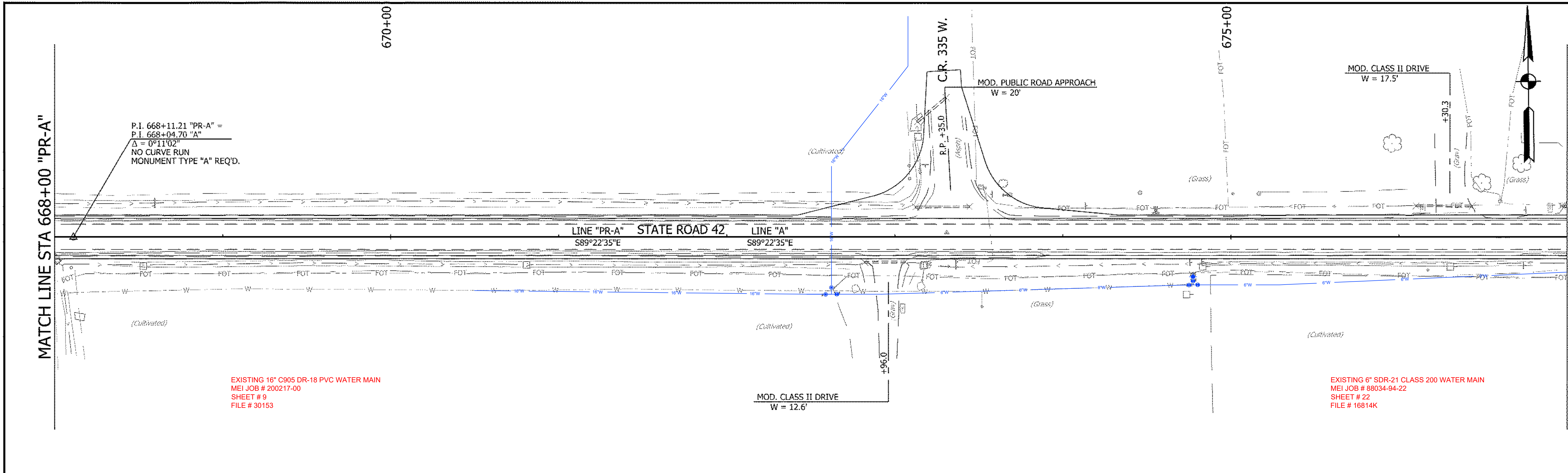


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 DATE: 10/21/19 9:01 AM



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CHECKED: LLC	CHECKED: MSS	STA. 650+00.00 TO 668+00.00 LINE "PR-A"		SHEET 96 of _____
				CONTRACT
				PROJECT 1601075





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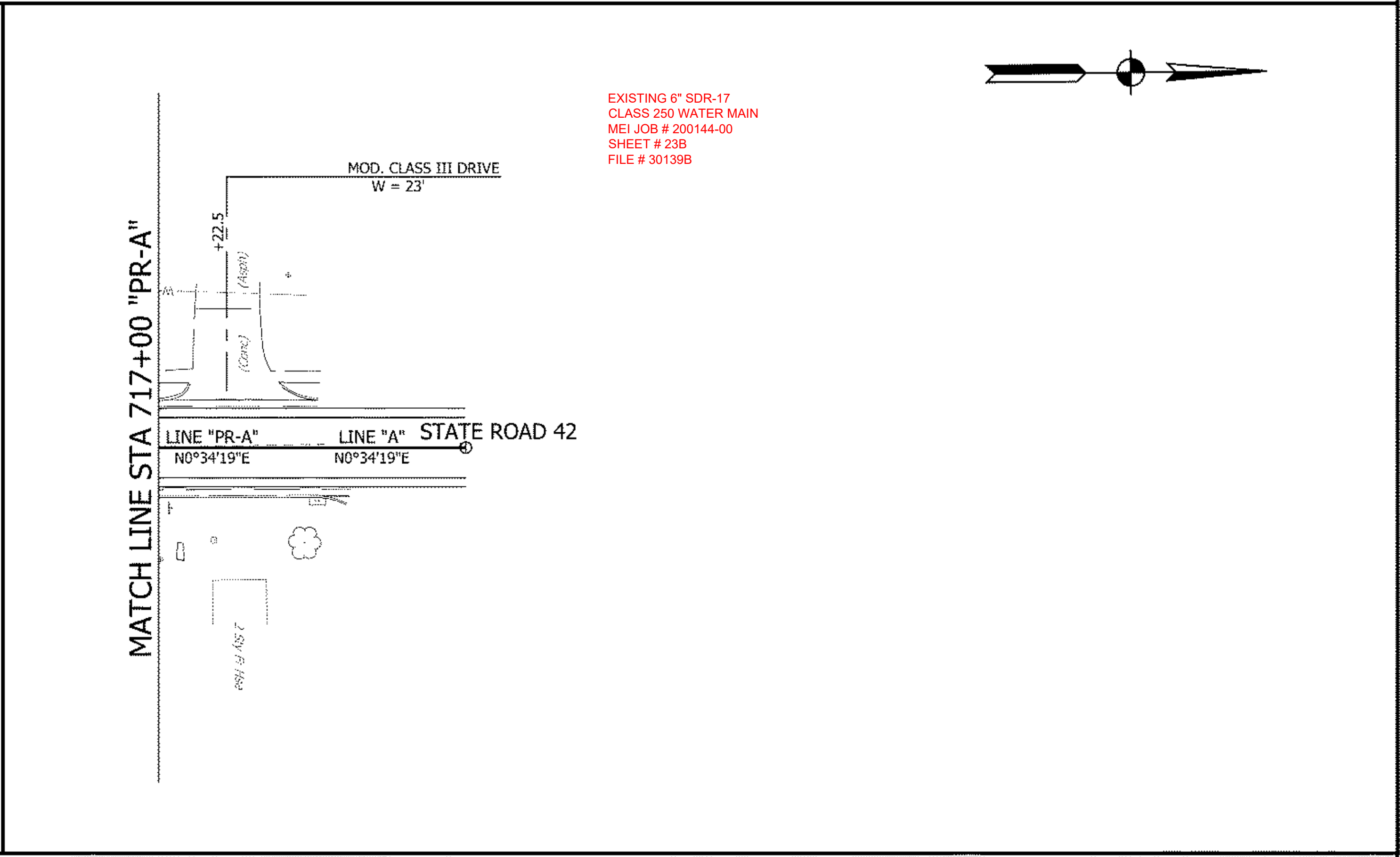
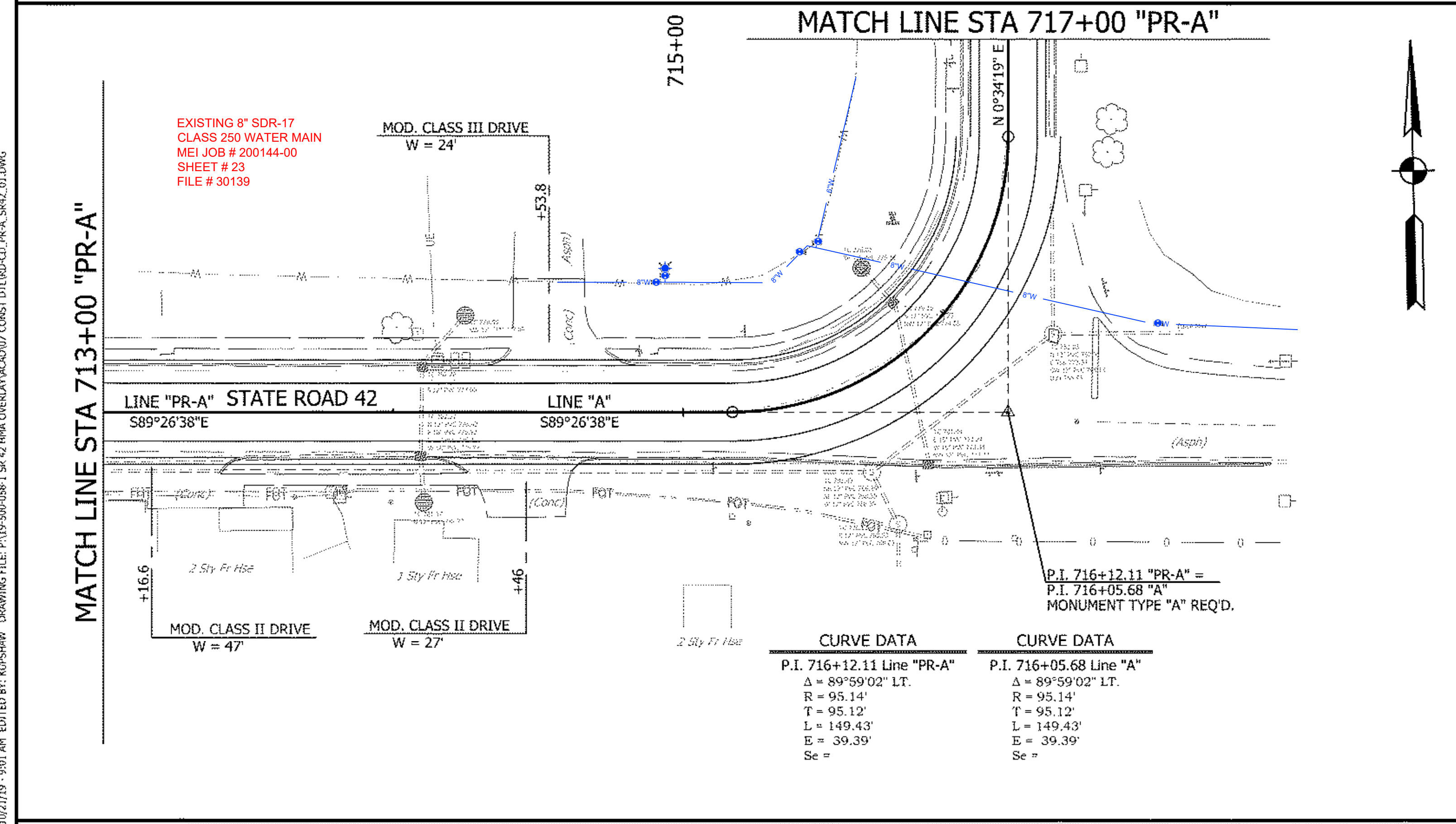
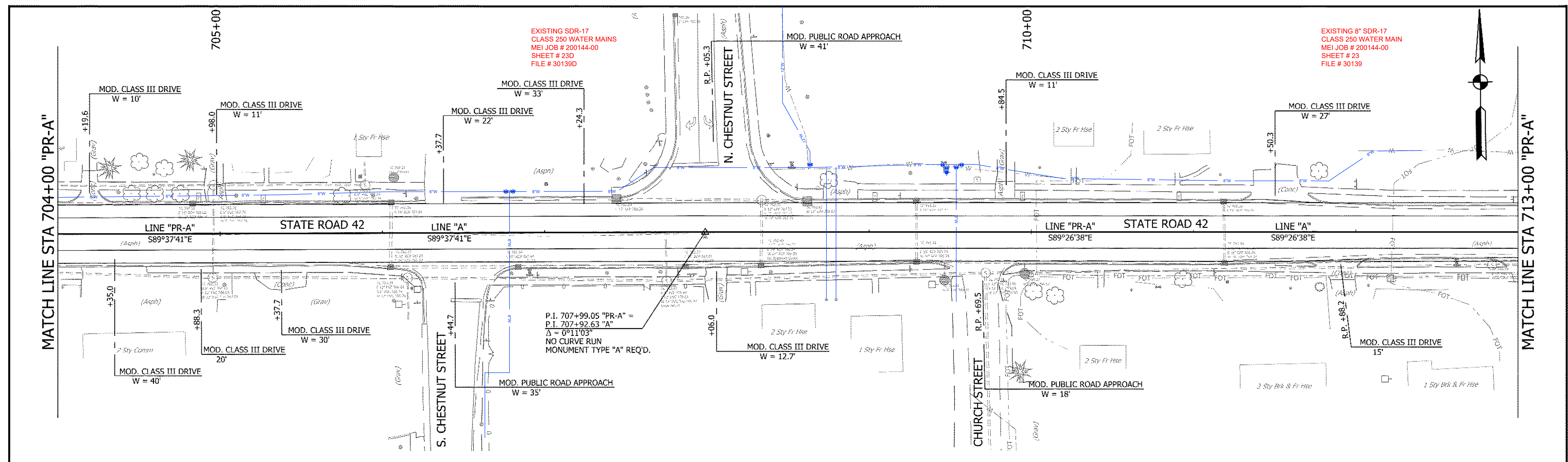
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DESIGNED: <u>MSS</u> DRAWN: <u>KRU</u>	SURVEY BOOK                      SHEET _____                              97                      of		PROJECT 1601075
CHECKED: <u>LLC</u> CHECKED: <u>MSS</u>			







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R = 95.14'	R = 95.14'
T = 95.12'	T = 95.12'
L = 149.43'	L = 149.43'
E = 39.39'	E = 39.39'
Se =	Se =

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE	BRIDGE FILE
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			1601075

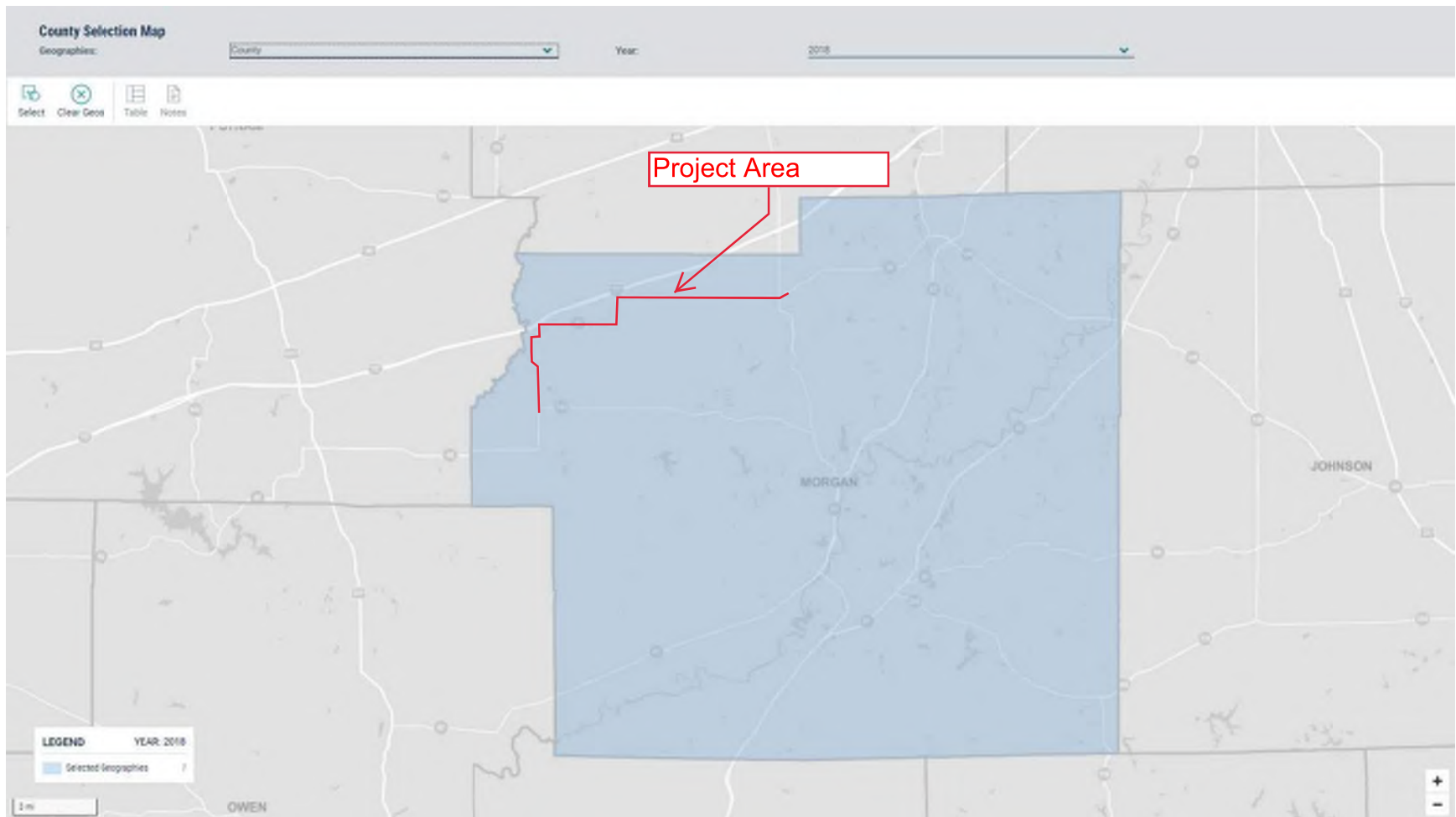


Environmental Justice

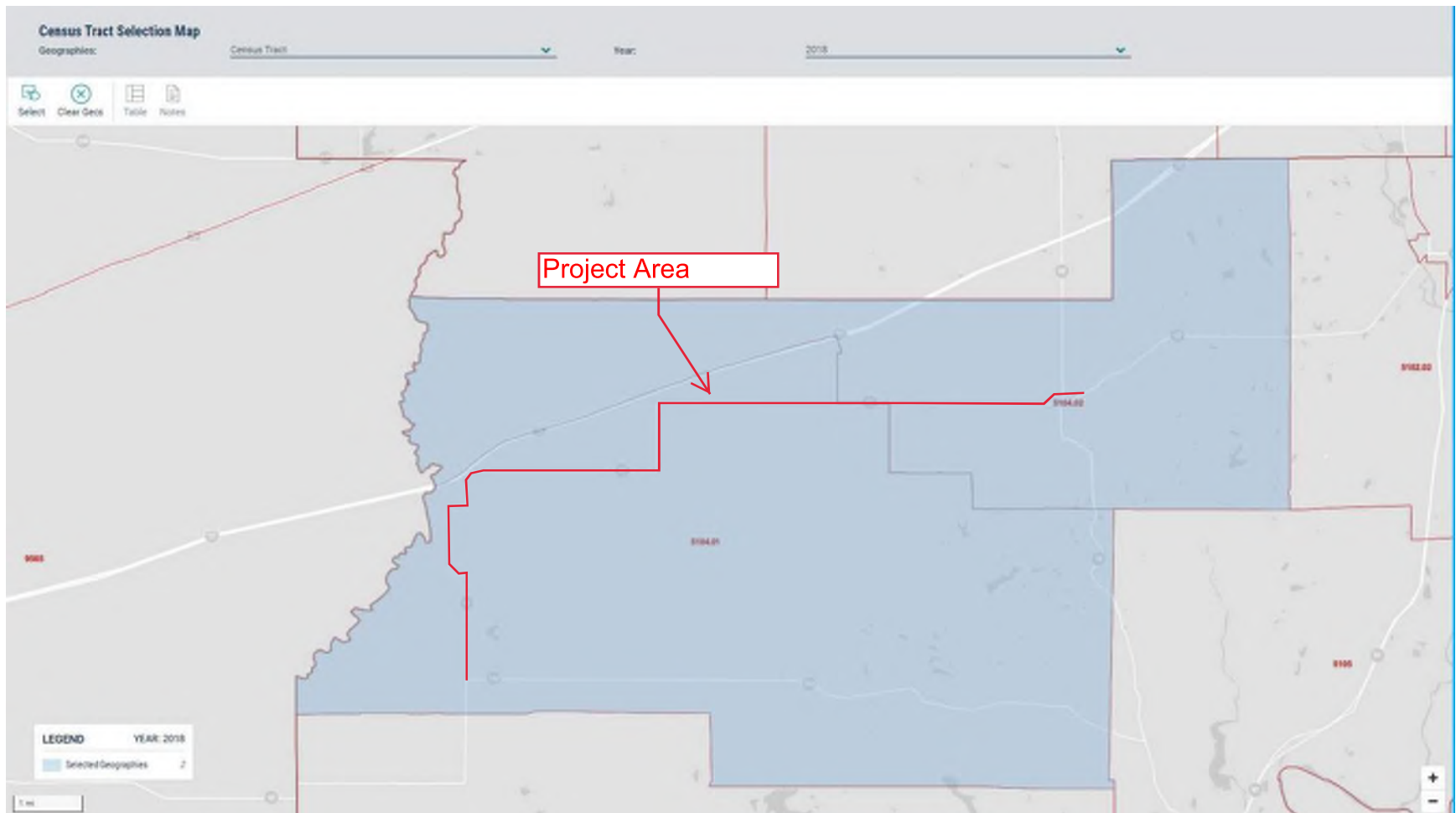
Analysis of Two Census Tracts in Morgan County, Indiana

	COC	AC1	AC2	
	Morgan County, Indiana	Census Tract 5104.01, Morgan County, Indiana	Census Tract 5104.02, Morgan County, Indiana	
<b>LOW-INCOME</b>				
B17001001	Population for whom poverty status is determined: Total	68,318	3,790	5,514
B17001002	Population for whom poverty status is determined: Income in past 12 months below poverty level	7,717	156	534
	<b>Percent Low-income</b>	<b>11.3%</b>	<b>4.1%</b>	<b>9.7%</b>
	<b>125 Percent of COC</b>	<b>14.1%</b>	<b>AC ≤ 125% COC</b>	<b>AC ≤ 125% COC</b>
	<b>Potential Low-income EJ Impact?</b>		<b>No</b>	<b>No</b>
<b>MINORITY</b>				
B03002001	Total population: Total	69727	3795	5597
B03002002	Total population: Not Hispanic or Latino	68674	3760	5441
B03002003	Total population: Not Hispanic or Latino; White alone	67069	3639	5335
B03002004	Total population: Not Hispanic or Latino; Black or African American alone	212	0	0
B03002005	Total population: Not Hispanic or Latino; American Indian and Alaska Native alone	46	0	0
B03002006	Total population: Not Hispanic or Latino; Asian alone	485	0	46
B03002007	Total population: Not Hispanic or Latino; Native Hawaiian and Other Pacific Islander alone	0	0	0
B03002008	Total population: Not Hispanic or Latino; Some other race alone	12	0	0
B03002009	Total population: Not Hispanic or Latino; Two or more races	850	121	60
B03002010	Total population: Hispanic or Latino	1053	35	156
B03002011	Total population: Hispanic or Latino; White alone	911	35	137
B03002012	Total population: Hispanic or Latino; Black or African American alone	0	0	0
B03002013	Total population: Hispanic or Latino; American Indian and Alaska Native alone	0	0	0
B03002014	Total population: Hispanic or Latino; Asian alone	20	0	0
B03002015	Total population: Hispanic or Latino; Native Hawaiian and Other Pacific Islander alone	0	0	0
B03002016	Total population: Hispanic or Latino; Some other race alone	97	0	19
B03002017	Total population: Hispanic or Latino; Two or more races	25	0	0
	<b>Number Non-white/minority (B03002001-B03002003)</b>	<b>2,658</b>	<b>156</b>	<b>262</b>
	<b>Percent Non-white/Minority</b>	<b>3.8%</b>	<b>4.1%</b>	<b>4.7%</b>
	<b>125 Percent of COC</b>	<b>4.8%</b>	<b>AC ≤ 125% COC</b>	<b>AC ≤ 125% COC</b>
	<b>Potential Minority EJ Impact?</b>		<b>No</b>	<b>No</b>









# HISPANIC OR LATINO ORIGIN BY RACE

Survey/Program: American Community Survey  
TableID: 803002

Product: 2018: ACS 5-Year Estimates Detailed Tables  
Universe: Total population

[CUSTOMIZE TABLE](#)

Label	Morgan County, Indiana		Census Tract 5104.01, Morgan County, Indiana		Census Tract 5104.02, Morgan County, Indiana	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
▼ Total:	69,727	*****	3,795	±217	5,597	±128
▼ Not Hispanic or Latino:	68,674	*****	3,760	±207	5,441	±159
White alone	67,069	±11	3,639	±213	5,335	±184
Black or African American alone	212	±82	0	±11	0	±16
American Indian and Alaska Native alone	46	±44	0	±11	0	±16
Asian alone	485	±80	0	±11	46	±67
Native Hawaiian and Other Pacific Islander alone	0	±27	0	±11	0	±16
Some other race alone	12	±21	0	±11	0	±16
▶ Two or more races:	850	±128	121	±117	60	±62
▼ Hispanic or Latino:	1,053	*****	35	±39	156	±105
White alone	911	±82	35	±39	137	±106
Black or African American alone	0	±27	0	±11	0	±16
American Indian and Alaska Native alone	0	±27	0	±11	0	±16
Asian alone	20	±31	0	±11	0	±16
Native Hawaiian and Other Pacific Islander alone	0	±27	0	±11	0	±16
Some other race alone	97	±72	0	±11	19	±30
▶ Two or more races:	25	±36	0	±11	0	±16



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

Survey/Program: American Community Survey  
TableID: B17001

Product: 2018: ACS 5-Year Estimates Detailed Tables  
Universe: Population for whom poverty status is determined

[CUSTOMIZE TABLE](#)

Label	Morgan County, Indiana		Census Tract 5104.01, Morgan County, Indiana		Census Tract 5104.02, Morgan County, Indiana	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
▼ Total:	68,318	±379	3,790	±216	5,514	±128
► Income in the past 12 months below poverty level:	7,717	±978	156	±72	534	±318
► Income in the past 12 months at or above poverty level:	60,601	±989	3,634	±211	4,980	±337

**Engineer's Report**  
**SR 42 HMA Minor Structure Overlay from SR 142 to 0.06**  
**mile east of the east junction of SR 39 in**  
**Morgan County**  
**Des. No. 1601075**

**Prepared for:**  
**Indiana Department of Transportation**  
**Crawfordsville District**

**Prepared by:**



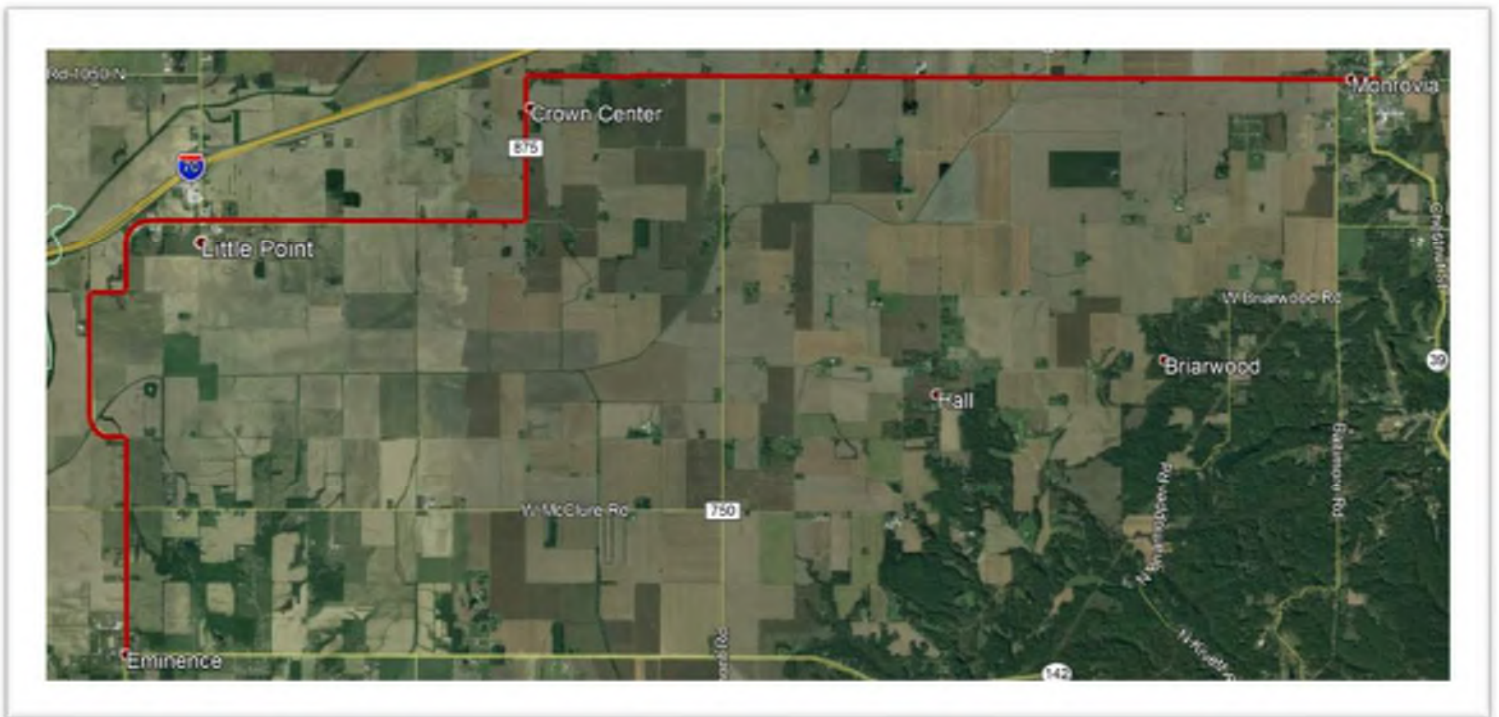


## PURPOSE OF REPORT

This Engineer's Report documents the engineering assessment phase of project development in preparation for the planned roadway improvement to SR 42 in Morgan County. The report outlines the project and is intended to serve as a guide for subsequent survey, design, environmental, right-of-way and other project activities leading to construction. The preferred alternative identified in this document is considered pre-decisional, pending the outcome of the environmental studies.

## PROJECT LOCATION

This project area is in Morgan County and begins in the town of Eminence and ends in the town of Monrovia. It is approximately 13.06 miles long and will extend from approximately SR 142 (RP 42+66) to 0.06 mile east of the east junction of SR 39 (RP 55+72). It is further described as being in Adams and Monroe Townships within Sections 12, 13, 14, 15, 16, 21, 28, 33 of Township 13 North and Range 2 West and within Sections 7, 8, 9, 10, 11, 12 of Township 13 North and Range 1 West. The GPS coordinates of the project limits are latitude 39° 31' 17" N; longitude 86° 38' 29" W to latitude 39° 34' 44" N; longitude 86° 28' 42" W. The project is in the INDOT's Crawfordsville District, Cloverdale Sub-District. The town of Monrovia is within the Indianapolis Metropolitan Planning Organization.



See Appendix A-1 for an additional project location map.

**PROJECT PURPOSE AND NEED**

The need for improvement is based on the deteriorating pavement structure and drainage system. The purpose of the project is to improve the pavement structure and address drainage issues.

**EXISTING FACILITY**

The existing roadway facility is classified as a Rural Major Collector and is not part of the US National Highway System (NHS). The roadway is not on the National Truck Network. The posted speed limit is 30 mph in Eminence and Monrovia which transitions to 55 mph outside of the towns. The existing SR 42 lane configuration can be broken into 3 different sections. In the town of Eminence, the SR 42 typical section consists of 2-11-ft lanes, and a paved shoulder that varies from 0-ft to 6-ft. From the edge of Eminence to the edge of Monrovia, the SR 42 typical section consists of 2-9.5-ft lanes with a 2-ft usable shoulder of compacted aggregate on each side. Within the town of Monrovia, the SR 42 typical section consists of 2-10-ft lanes, and 2-8-ft parallel parking lanes on each side of the travel lanes bordered by curb and gutter. The town of Monrovia also has a sidewalk on each side of SR 42 within the project limits.

See Appendix A-2 for the existing typical cross sections.

Roadway

<b>Roadway Information</b>			
<b>Geometric Criteria</b>			
<i>Design Speed</i>	<i>30 to 55 mph</i>	<i>Functional Class</i>	<i>Major Collector</i>
<i>Design Criteria</i>	<i>3R (Non-Freeway)</i>	<i>Rural/Urban</i>	<i>Rural-Begin to Baltimore St/ Urban(Suburban)- Baltimore St to End</i>
<i>Terrain</i>	<i>Level</i>	<i>Access Control</i>	<i>None</i>
<b>Approach Cross Section</b>			
<i>IDM Figure Reference</i>	<i>55-3B / 55-3G</i>	<i>Speed Limit</i>	<i>30 to 55 mph</i>
<i>Travel Lane Count</i>	<i>2</i>	<i>Travel Lane Width (Outside towns)</i>	<i>9.5 ft (Existing) 9.5 ft (Proposed)</i>
<i>Travel Lane Width (Eminence)</i>	<i>11 ft (Existing) 11 ft (Proposed)</i>	<i>Travel Lane Width (Monrovia)</i>	<i>10 ft (Existing) 10 ft (Proposed)</i>
<i>Shoulder Width (Useable)(Outside towns)</i>	<i>2 ft (Existing) 2 ft (Proposed)</i>	<i>Shoulder Width (Paved)(Outside towns)</i>	<i>0 ft (Existing) 0 ft (Proposed)</i>



<i>Shoulder Width (Paved/Useable)(Eminence)</i>	<i>0 to 6 ft (Existing) 0 to 6 ft (Proposed)</i>	<i>Curb Offset (Parking Lane) (Monrovia)</i>	<i>8 ft (Existing) 8 ft (Proposed)</i>
<i>Mainline Pavement</i>	<i>HMA (Existing) HMA (Proposed)</i>	<i>Shoulder Pavement</i>	<i>HMA (Existing) HMA (Proposed)</i>
<b><i>Alignment</i></b>			
<i>Horizontal</i>	<i>Approximately 12 curves do not meet existing design criteria for horizontal curvature. Six curves do not provide adequate stopping sight distances.</i>	<i>Vertical</i>	<i>At least seven vertical curves do not provide adequate stopping sight distance based on the posted speed. Existing maximum grade is within standards.</i>

Road History

SR 42 has undergone structure and pavement overlays as summarized below. Record drawings could not be obtained for the original project completion.

<b><i>SR 42 Pavement History Within Project Limits</i></b>		
<i>Year</i>	<i>Width</i>	<i>Type of Work</i>
<i>2005</i>	<i>19-ft</i>	<i>HMA Overlay from Little Point to Monrovia</i>
<i>1994</i>	<i>19-ft</i>	<i>HMA Overlay</i>
<i>1990</i>	<i>40-ft</i>	<i>Road widening and proposed bridge – 1800 West of CR 600</i>
<i>1990</i>	<i>40-ft</i>	<i>Road and Culvert Widening – West of Lake Valley Rd</i>
<i>1991</i>	<i>33.5-ft</i>	<i>Proposed Road and Bridge realignment- 1400-ft West of W Gore Rd</i>
<i>1990</i>	<i>40-ft</i>	<i>Road and Culvert Widening – 200-ft North of North St (Eminence)</i>
<i>1937</i>	<i>19-ft</i>	<i>State takes over maintenance of the road</i>

Land Use

The primary land use near the project is residential and tillable land outside Eminence and Monrovia, and commercial within the towns. There are also several notable non-residential properties adjacent to the project, including Eminence Baptist Church, Eminence Post Office, Eminence Community School, and Mt. Tabor Christian Church.

Drainage

Existing drainage through the project is primarily conveyed through ditches. Within the town of Monrovia, the drainage is conveyed through a storm sewer network. It will

remain in place, unless deficiencies are found with the system. Existing cross drainage structure will be replaced to meet hydraulic criteria.

**RAILROADS**

There are no railroad crossings within the project limits.

**TRAFFIC DATA**

Traffic counts for the area of study were provided by INDOT. Growth rates were applied to the existing traffic volumes to obtain 2022 and 2042 traffic volumes. Below are the summarized results.

SR 42 from SR 142 to W. McClure Rd

<b>TRAFFIC DATA</b>			
A.A.D.T	(2022)	1,525	V.P.D.
A.A.D.T	(2042)	1,855	V.P.D.
D.H.V	(2042)	202	V.P.H.
DIRECTIONAL DISTRIBUTION		50.10	%
TRUCKS		6.91	% A.A.D.T.
		8.39	% D.H.V.

SR 42 from W. McClure Rd to CR 1100 W

<b>TRAFFIC DATA</b>			
A.A.D.T	(2022)	1,143	V.P.D.
A.A.D.T	(2042)	1,143	V.P.D.
D.H.V	(2042)	143	V.P.H.
DIRECTIONAL DISTRIBUTION		40.77	%
TRUCKS		6.91	% A.A.D.T.
		8.39	% D.H.V.

SR 42 from CR 1100 W to Hazelwood Rd.

<b>TRAFFIC DATA</b>			
A.A.D.T	(2022)	871	V.P.D.
A.A.D.T	(2042)	1123	V.P.D.
D.H.V	(2042)	119	V.P.H.
DIRECTIONAL DISTRIBUTION		46.73	%
TRUCKS		3.90	% A.A.D.T.
		5.44	% D.H.V.



SR 42 from Hazelwood Rd. to Baltimore Rd.

**TRAFFIC DATA**

A.A.D.T	(2022)	2,569	V.P.D.
A.A.D.T	(2042)	3,039	V.P.D.
D.H.V	(2042)	371	V.P.H.
DIRECTIONAL DISTRIBUTION		48.93	%
TRUCKS		14.09	% A.A.D.T.
		12.42	% D.H.V.

SR 42 from Baltimore Rd. to the West Junction of SR 39

**TRAFFIC DATA**

A.A.D.T	(2022)	5,721	V.P.D.
A.A.D.T	(2042)	5,952	V.P.D.
D.H.V	(2042)	530	V.P.H.
DIRECTIONAL DISTRIBUTION		44.35	%
TRUCKS		14.09	% A.A.D.T.
		12.42	% D.H.V.

SR 42 from the West Junction of SR 39. to the East Junction of SR 39

**TRAFFIC DATA**

A.A.D.T	(2022)	8,521	V.P.D.
A.A.D.T	(2042)	9,924	V.P.D.
D.H.V	(2042)	749	V.P.H.
DIRECTIONAL DISTRIBUTION		49.22	%
TRUCKS		10.00	% A.A.D.T.
		5.00	% D.H.V.

SR 42 from the East Junction of SR 39 to End Project

**TRAFFIC DATA**

A.A.D.T	(2022)	2,991	V.P.D.
A.A.D.T	(2042)	2,991	V.P.D.
D.H.V	(2042)	289	V.P.H.
DIRECTIONAL DISTRIBUTION		45.50	%
TRUCKS		4.46	% A.A.D.T.
		4.33	% D.H.V.

A copy of the traffic report may be found in Appendix A-4.

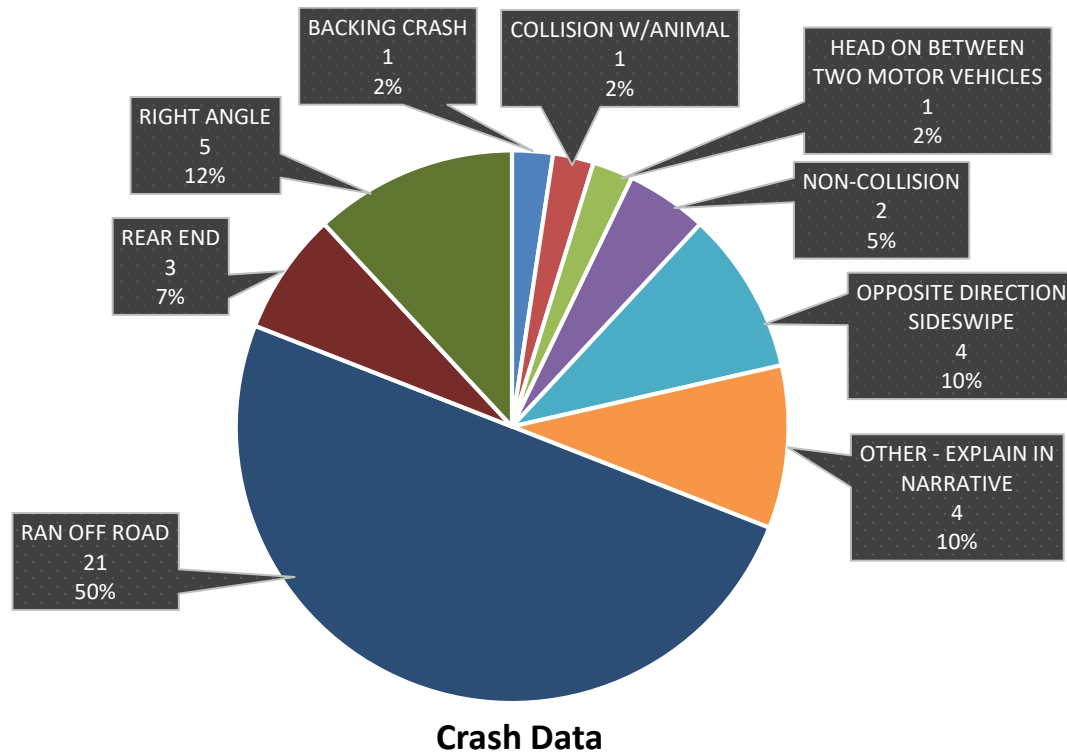
## PROJECT COORDINATION

As part of the project site visits were made to inspect the culverts and resolutions were discussed to resolve some issues. On July 6<sup>th</sup>, 2020 a meeting was held to change to the scope of the project from a widening to an mill and overlay project to reduce costs.

See Appendix A-3 for project site photos and Meeting Minutes.

## CRASH DATA AND ANALYSIS

Crash records between October 2015 and August 2018 were reviewed within the study area. A total of 42 crashes occurred during that period. Out of the 42 crashes, half were ran off the road. Also, out of the 42 crashes, there zero fatalities and 12 crashes with injuries. Below is a summary of the crashes within the corridor:



See Appendix A-5 for crash location and the Index of crash cost and Index of Crash frequency at the worst intersection and the worst segment of SR 42

## ALTERNATIVES AND RECOMMENDATIONS

### Alternatives

Multiple alternatives or scenarios were considered. These included:



- Alternative A: The No-Action (or no build) Alternative
- Alternative B: HMA Overlay with pavement widening
- Alternative C: HMA Overlay with small structure replacement

#### Alternative A: No-Action

The No-Action Alternative involves no disruption to the facility and no additional cost by the continued use of the existing pavement. This alternative does not address the purpose and need of the project; therefore, the **No-Action Alternative is not recommended.**

#### Alternative B: HMA Overlay with pavement widening

The alternative of HMA Overlay with pavement widening meets the purpose and need, but the cost exceeds the project budget by approximately 50%.

#### Alternative C: HMA Intermediate and Surface Overlay with small structure replacements

This alternative meets the need and purpose of the project, stays within budget, and is the preferred alternative.

#### Details of the Preferred Alternate

The **recommended alternative** involves a minor structural overlay with patching as determined necessary on SR 42 through the entire project. The design criteria is 3R (Non-Freeway). The profile will match existing through most of the project but does vary from the existing to provide cover for drainage structures. The existing cross slope will be corrected to 2% normal crown where possible. The roadway geometry will match existing except in isolated areas, where a shoulder will be added. Monrovia also has the sidewalks and curb ramps along SR 42. The curb ramps will be replaced to meet ADA compliance, and coordination with the TAC Committee will take place as necessary. Sidewalks will not be replaced or upgraded with this project, and the drainage structures in town will remain as is.

In accordance with INDOT 3R (Non-Freeway) criteria, the 12 curves were evaluated whether they can remain in place or need to be reconstructed to meet the design speed. Six of the curves do not have any crash history and the remaining six curves required a benefit/cost analysis based on the crash history. The cost benefit analysis is shown in Appendix B-2 for the Evans/Wheeler intersection, since it has the highest crash history. The cost-benefit analysis shows that it would not be cost-efficient to reconstruct this curve or any of the curves along SR 42. Five of the curves will include a 6' shoulder widening to facilitate turning movements around to sharp curves.

Several culvert replacements required significant roadway reconstruction to meet the INDOT criteria for roadway serviceability. As a cost savings measure, the drainage criteria were modified so that the proposed culvert met or improved existing roadway serviceability and backwater.

CV #	Des. No.	Existing Size/Type	Proposed Size/Type	Construction Cost (CN)
CV 042-55-42.83	2001548	103"X79" CMP	16'X6' Rise	\$385,000.00
CV 042-55-43.03	2001550	30" CMP	5'X3' Box	\$75,000.00
CV 042-055-44.05	1800121	144"X94" CMP	14' X 7' Box	\$245,000.00
CV 042-55-44.16	2001551	144"X94" CMP	20'X6' Box	\$355,000.00
CV 042-55-45.01	2001552	18" CMP	49" x 32" RCPE	\$65,000.00
CV 42-55-46.13	2001553	18" CMP	49" X 33" CMPA	\$45,000.00
CV 042-055-47.32	1701593	10.5' X 4.5' Box	14' X 5' Box	\$175,000.00
CV 042-055-47.90	2001554	6ft x 3.68 ft CMP	7' x 3' Box	\$160,000.00
CV 042-55-48.78	2001555	30" CMP	8'X3' Box	\$125,000.00
CV 042-55-49.29	2001557	24" CMP	60"X 38" RCPE	\$65,000.00
CV 042-055-50.80	2001558	2-84"X61" CMP	12' x 5' Box	\$145,000.00
CV 042-055-51.40	1800122	84.2" x 61.1"	11' x 6' Box	\$125,000.00
CV 042-055-54.25	2001559	98" x 69" CMP	10' x 6' Box	\$115,000.00

Refer to Appendix A-4 for Drainage Criteria

Refer to Appendix B-1 for the proposed typical cross sections.

Refer to Appendix B-2 for the Cost Benefit Analysis.

Refer to Appendix B-3 for a Bus Turning Template.

SR 42

**Design Standard:**

3R (Non-Freeway)

Rural Major Collector / Urban (Suburban)- Monrovia  
Figure 55-3B / Figure 55-3G

**Design/Posted Speed**

30-55 mph

**Required Cross Sectional Elements:**

- Lane Width** 11 ft (min.) (From SR 142 to Hazelwood Rd.)  
12 ft (min.) (From Hazelwood Rd. to Baltimore Rd.)  
10 ft (min.) (From Baltimore Rd. to End Project)
- Shoulder Width Paved** 2 ft (min.) (From SR 142 to Baltimore Rd.)
- Curb Offset** 1 ft (min.) (Baltimore Rd.to End Project.)
- Shoulder Width Usable** 3 ft (min) (From SR 142 to Hazelwood Rd.)



	6 ft (min) (From Hazelwood Rd. to Baltimore St)
<b>Obstruction Free Zone:</b>	12-ft (From 0.6 mi North of SR 142 to W McClure Rd. & from Hazelwood Rd. to Baltimore Rd.)
	8-ft (From W. McClure Rd to Hazelwood Rd.)
	0-ft (From Baltimore Rd. to SR 39) (On-street parking)
	1.5 ft (Curbed Section) (From the face of curb)

Since the road will remain the same as the existing except when the profile will need to be raised for the small structure replacements, several Streamlined Level 1 Design exceptions are anticipated for the:

- 9.5 ft travel lanes
- 0 ft usable shoulders
- 0 ft paved shoulders
- Horizontal curves and horizontal stopping sight distance
- Vertical profile and vertical stopping sight distance
- Superelevation rate and transition length

## MAINTENANCE OF TRAFFIC DURING CONSTRUCTION

This project is not considered a mobility significant project per IDM Section 503-2.02. The following is the temporary traffic control plan concept that shall be used for the project: The maintenance of traffic plan from the beginning of the project to the Eminence Community School and from Baltimore St to the end of the project will be performed by phased construction with a moving operation utilizing a flagger. Providing flagger control will allow a one-lane, two-way operation for the milling and overlay. On-street parking will not be available during construction. Pedestrian MOT in Monrovia will also be required during curb ramp reconstruction.

The maintenance of traffic plan from the Eminence Community School to Baltimore St limits will utilize the SR 142 and SR 39 detour. Full closure will occur at the culvert locations. Local access will be maintained during the mill and overlay operations. If local detours are necessary, these will be coordinated with Morgan County and will require an agreement with INDOT for the use of local roads.

A Transportation Management Plan will also be developed to ensure access for emergency services during each phase of construction.

Refer to Appendix B-3 for a Detour Map

## COST ESTIMATE

The cost of Preferred Alternative is as follows:

Construction Cost (CN) Des No. 1601075	\$ 8,200,000
Drainage Cost (Small Structures $\geq$ 36")	\$ 2,410,000
Right-of-Way (RW)	\$ 917,910
Preliminary Engineering (PE)	\$1,692,100
Railroad Coord (RR)	\$0
Utility (UT)	\$150,000
Construction Engineering (CE)	\$200,000
Total Project Cost	\$13,570,010

Refer to Appendix B-4 for the proposed construction cost estimate and cost breakdown by Des No.

## ENVIRONMENTAL ISSUES

Based on aerial imagery and site visits of the project corridor, several streams and wetland areas are present within the project area. Based on the scope of work, impacts to streams and wetlands are anticipated. The project corridor is located within several mapped 100-year floodplains.

Historic resources are mapped within and adjacent to the project corridor. A Section 4(f) De Minimis evaluation will be needed for temporary right-of-way from National Register eligible historic resources. A Section 106 effect finding of "No Adverse Effect" is anticipated. Several hazardous material concerns are mapped within and adjacent to the project corridor. An in-depth Red Flag Investigation and review of the Indiana Department of Environmental Management (IDEM) Virtual File Cabinet (VFC) will be needed to evaluate these mapped hazardous material concerns. The Red Flag Investigation will be reviewed by INDOT Site Assessment & Management (SAM).

A Categorical Exclusion Level 2 (CE-2) or CE-4 environmental document is anticipated. The CE level will be dependent on the amount of impacts to water resources.

U.S. Army Corps of Engineers (USACE) Section 404 and Indiana Department of Environmental Management (IDEM) Section 401 Water Quality Permits are anticipated due to stream and wetland impacts. An Indiana Department of Natural Resources (IDNR) Construction in a Floodway Permit may also be required. A Rule 5 permit will also be required.



## SURVEY REQUIREMENTS

The required topographic survey for this project will be along the SR 42 corridor, from SR 142 to 0.06 mile east of SR 39 E Jct. The width will be approximately 70-ft left and right of the existing centerline.

## RIGHT-OF-WAY IMPACT

The existing right-of-way (ROW) varies, but 38-ft is the minimum and typical for most of the project. Additional ROW will be necessary, specifically around the proposed culverts and for shoulder widening on the sharp curves. Further investigation of the required permanent right-of-way should be conducted during the design phase of the project. Temporary right-of-way is anticipated for the culvert replacements and driveway regrading, which will be determined during the design phase as well.

## RAILROAD IMPACT

There are no railroad crossings within the project limits, so there will not be any railroad impacts.

## UTILITY IMPACT

Multiple utilities are located within the study area. Utility information will be collected and gathered. Notices were given to the utility companies, and a conflict analysis has begun. Once the utility conflict analysis is complete, and workplan request will begin. Enough ROW will be purchased to ensure the utilities can be moved. Country Mark Refining & Logistics, LLC has an easement and is reimbursable. The utilities within the project limits are:

- Endeavor Communications
- Comcast Cable
- Country Mark Refining & Logistics, LLC
- Hendricks Power Cooperative
- New Wave Communications
- Indianapolis Power & Light
- Town of Monrovia
- TDS Telecom
- Morgan County Rural Water Corp.

Refer to Appendix A-3 for the 811 ticket.

## RELATED PROJECTS

As part of this project Des No. 1500136, a SR 42 Small Structure Replacement, will be bundled with this project. The project is approximate 4.5 miles south of the project. There is an overlay project (Des No. 1800560) on SR 39 from SR 42 to US 40 in FY 21. This project will likely be completed before construction begins on 1601075.

**CONCURRENCE**

This document was prepared by:

*Matthew Soto*  
\_\_\_\_\_  
Matthew Soto, P.E.  
Project Manager

*8/10/2020*  
\_\_\_\_\_  
Date

Reviewed by:  
Asset Engineer Review

*Vanessa McCauley*  
\_\_\_\_\_  
Vanessa McCauley  
Roadway Asset Engineer  
Recommend: **APPROVAL**/DISAPPROVAL

*8/21/2020*  
\_\_\_\_\_  
Date

Reviewed by:  
Scope Manager Review

*Michael Eubank*  
\_\_\_\_\_  
Mike Eubank  
Scope Manager  
Recommend: **APPROVAL**/DISAPPROVAL

*8/20/2020*  
\_\_\_\_\_  
Date

Reviewed by:  
SAM Review

*Scott J. Chandler*  
\_\_\_\_\_  
Scott J. Chandler  
System Asset Manager, Crawfordsville District  
Recommend: APPROVAL/DISAPPROVAL

*8-21-2020*  
\_\_\_\_\_  
Date



# Call Application Report Project ( Mini Scope)

<b>Date:</b>	1/3/2017	<b>District:</b>	Crawfordsville	<b>Score:</b>	Unknown
<b>DES:</b>	1601075	<b>Sub-District:</b>	Cloverdale		
<b>Proposed FY:</b>	2022	<b>Asset Group:</b>	Road		

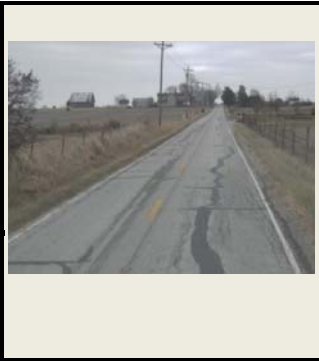
Project Location									
<b>Route:</b>	SR 42	<b>City/Town:</b>	N/A	<b>County:</b>	Morgan		<b>NHS:</b>	NO	
<b>RP Start:</b>	42.66	<b>RP End:</b>	56-v1	<b>AADT FY:</b>	2015	<b>AADT:</b>	2361.0	<b>NBI #:</b>	N/A
<b>Length:</b>	13.24	<b># Lanes:</b>	2	<b>Lane Mi:</b>	26.48	<b>% Trucks:</b>	14.0%	<b>Str #:</b>	N/A
<b>Func. Class:</b>	Major Collector		<b>Area:</b>	Rural	<b>Number of Counties:</b>	1			
<b>Bridge/Culvert Length (FT):</b>	N/A		<b>Bridge Area (SFT):</b>	N/A		<b>Year Built:</b>	N/A		
<b>Location Description:</b>	From SR 142 to 0.19 mi E of SR 39 E Jct in Morgan County								

**Existing Conditions and Description of Problem**

**WHAT IS THE CURRENT AND PROJECTED CONDITION AND WHY IS THIS A PROBLEM (INITIAL STATEMENT OF ESSENTIAL PROJECT NEED) AND CONSIDER DATE AND OTHER ISSUES TO THE PROBLEM (FOCUS ON PROBLEM):**

The existing roadway is experiencing a moderate amount of fatigue cracking in the wheel path, edge cracking (severe in some locations) and longitudinal cracking down the center of the travel way. These distresses indicate the asphalt pavement is age hardened and showing signs of distress beyond that of a preservation treatment. This is a narrow corridor with little to no R/W and shoulders along the travel way. The structure of the pavement is breaking down as indicated by the wheel path and edge cracking. The overall pavement is in marginal to poor condition.

<b>DATE AND TYPE OF LAST MAJOR TREATMENT:</b>	HMA Overlay, PM	<b>DATE:</b>	2006				
<b>PROJECT CONDITION RATINGS:</b>	<b>LOS:</b>	NA	<b>Crash Rate:</b>	NA			
<b>Wearing Surface:</b>	NA	<b>Deck:</b>	NA	<b>Bridge/Culvert Super:</b>	NA		
<b>Bridge/Culvert Sub:</b>	NA	<b>Bridge Scour:</b>	NA	<b>Bridge Paint:</b>	NA		
<b>Type I Culverts/ pipes:</b>	NA	<b>Channel:</b>	NA	<b>Roadway:</b>	NA		
<b>IRI:</b>	145	<b>RUT:</b>	0.14	<b>Cracking-FI %</b>	70	<b>Cracking-SI %</b>	10



**INTENT/ PURPOSE OF PROJECT (INITIAL STATEMENT OF ESSENTIAL PROJECT PURPOSE:**

Add paved, full depth shoulders to provide lateral structural support of the travel lane, address minor structural cracking in the pavement structure, seal the roadway from water infiltration and provide a smooth riding surface to motorists.

**Alternatives**

**PRELIMINARY ALTERNATIVES THAT ARE CONTEMPLATED (ANALYSED) WITH COSTS:**

This project was identified as a good candidate for a pavement rehab project to include a 2-lift overlay in the mainline and to add full depth asphalt shoulders to provide lateral structural support and eliminate fatigue at the edge of pavement. This can be achieved in 2 different ways: 1) asphalt widening of the roadway; surface milling followed by HMA intermediate and surface courses; 2) cold in place recycling to produce the shoulder material followed by HMA intermediate and surface courses. Estimated cost = \$7.60 million; \$19,000/ln mile/year. [Preservation treatments - HMA Overlay, PM / Chip Seal / Pavement Patching - the roadway will be beyond the effectiveness of these treatments in FY 2020. An HMA Overlay, PM or a Chip Seal will seal the pavement from water infiltration but does not address enough the pavement fatigue and deeper distresses in the asphalt. Existing failures will reflect through the proposed treatment prematurely. Design life is anticipated to be half of the typical span (HMA Overlay, PM 5 years @ \$23k/ln mile/year; Chip seal 2 years). Pavement patching is needed but is not enough to handle the amount of fatigue distresses present in the pavement and is insufficient to prevent water infiltration.]

**CONSEQUENCES IF NO ACTION IS TAKEN (DO NOTHING ALTERNATIVE IS SELECTED):**

Currently, the condition of this section of SR 42 can be addressed by adding full depth shoulders and a treating the existing asphalt with a 2-lift overlay. In the near future, a more costly paving treatment will be needed (structural treatment) with the addition of full depth shoulders (\$22,000/ln mile/year - structural overlay).

**SECONDARY CONSIDERATIONS OR GOALS WITH COSTS:**

The town of Monrovia will need ADA features updated as part of this project.

**Attach extra sheets as necessary to fully describe the alternatives.**

<b>Will Further Analysis/Assessment be required beyond this form?</b>	YES	FWD/Coring/Pvmnt Dgn/RW
---	-----	-------------------------

**Project Recommendations and Costs**

**QUANTIFIABLE PRIMARY GOAL(S) OF PROJECT (WHAT ARE WE PURCHASING SUCH AS CONDITION, SERVICE LIFE, LOS, OR CRF):**

Like new condition (IRI = 70, NCR = 100, % Cracking = 0.0); 12-15 year service life; added structural support with new full depth shoulders; improved drainage

Estimated Total Project Costs:	\$8,885,000.00	COMMENTS
In-House Design:	COST: \$0.00	Unknown
R/W:	COST: \$700,000.00	Estimated on previous call projects
PE:	COST: \$610,000.00	Estimated at 8% of CN
GEOTECH:	COST: \$0.00	Unknown
Hydraulics:	COST: \$0.00	Unknown
Maintenance of Traffic:	COST: \$0.00	Part of CN Cost
Railroad:	COST: \$0.00	Unknown
Environmental Study:	COST: \$0.00	Unknown
Utilities:	COST: \$0.00	Unknown
Pavement:	COST: \$0.00	Unknown
CN:	COST: \$7,575,000.00	Includes shoulder widening and ADA costs
Other Considerations:	COST: \$0.00	Unknown

**Other Projects within Limits**

DES:	FY:	Work Type:	Location:
DES:	FY:	Work Type:	Location:
DES:	FY:	Work Type:	Location:

**Miscellaneous Notes**

ANTICIPATED NUMBER OF CONSTRUCTION SEASONS TO COMPLETE(1, 2 or 3 seasons):	1 FY
ANTICIPATED NUMBER OF YEARS TO COMPLETE DESIGN (1, 2 or 3 fiscal years):	3 FY

CALL HISTORY: In previous call for shoulder widening and 2-lift overlay

**Attachments**

Pictures	YES	Asset Team Scoring Sheet:	NO	Mobility History:	NA
Spreadsheets (calcs):	NO	Engineer Assessment:	NO	Pavement Evaluation:	NA
Solution Schematic:	NO	Bridge/Culvert Inspection Report:	NA		
Cost Calculations:	YES	Accident History:	NA		
Location Map:	NO	Pathway Data:	NO		

**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**

Name: <u>Scott J. Chandler</u>	Title: <u>District Pavement Engineer</u>
TSD: <u>Robert E. Montgomery</u>	Approved On: _____

NOTE: Any changes require a re-submittal of Call Application Report.

REVISED: <u>11/18/2013</u>	REVISED BY: <u>Andrew Fitzgerald, PTOE, PE</u>
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