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Wetland Delineation and Stream Identification Report

Spire STL Pipeline LLC
Spire STL Pipeline Project
Scott, Greene, and Jersey Counties, Illinois and
St. Charles and St. Louis Counties, Missouri

GAI Project Number: E160438.00

December 2016

Prepared by: GAI Consultants, Inc.
Canton Office
3720 Dressler Road NW
Canton, Ohio 44718

Prepared for: Spire STL Pipeline LLC
700 Market Street
St. Louis, Missouri 63101

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1.0 Introduction

Spire STL Pipeline, LLC (Spire) is proposing the Spire STL Pipeline Project (Project), located in Scott, Greene, and Jersey Counties, Illinois (IL), and St. Charles and St. Louis Counties, Missouri (MO) (Figure 1). The proposed Project consists of the installation of approximately 58 miles of new 24-inch diameter steel pipeline, a launcher/receiver site, three metering and regulation stations, one standalone regulation station, and one odorization station. Additionally, the Project will involve upgrades to approximately 7.1 miles of existing 20-inch diameter pipeline known as Line 880.

GAI Consultants, Inc. (GAI), on behalf of Spire, conducted field and desktop wetland delineations and stream investigations of the Project study area in September through November 2016. GAI identified the boundaries of waterbodies and wetlands located within an approximately 300-foot wide corridor, generally centered on the proposed pipeline centerline. Field delineations were completed across parcels with landowner-granted access and desktop delineation methods were used where permission was not granted at the time of survey. This report describes the methods and results of the environmental field survey and desktop delineation within the Project study area.

2.0 Methods

Within accessible properties along the Project route, stream and wetland delineations were conducted in accordance with the 1987 United States Army Corps of Engineers (USACE) *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region Version 2.0* (USACE, 2012). Wetlands were classified using the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al., 1979). Classification of the indicator status of vegetation is based on the *National Wetland Plant List: 2016 wetland ratings* (Lichvar, 2016). Existing stream conditions were recorded on worksheets that incorporate Missouri Stream Mitigation Method assessment factors (USACE, et al., 2013).

The growing season in the Project area is typically between March and November (USDA-NRCS, 2016). Field observations were supplemented with an intensive review of existing United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping, United States Department of Agriculture, Natural Resource Conservation Service (USDA-NRCS) soils mapping, historical aerial photography (Google Earth), and local landscape topography/morphology to provide a determination of potential wetlands present within the study area. Professional judgment was used to determine wetland status in problematic areas identified during the field investigation.

Due to concerns regarding atypical conditions encountered within agricultural fields throughout the Project area, the USACE recommends utilizing the conditions for atypical situations outlined in the Midwest Regional Supplement. These conditions outline the procedure for making a wetland determination when one or more wetland indicators are not present due to natural or human influenced disturbance. Prior to field investigations, GAI performed a desktop review of USFWS NWI mapping, USDA-NRCS soils mapping, USDA-NRCS annual WETS precipitation data, historical aerial imagery (Google Earth), and local landscape topography/morphology to determine the presence and location of potential wetlands within the study corridor. This information was also used to make remote determinations in areas that were inaccessible to survey due to landowner permissions.

NWI mapping, USDA-NRCS soil surveys, and historical aerial photographs were the primary sources of data for initially locating potentially wet areas. These areas were generally identified around areas of persistent inundation, irregular shapes of visible saturation in agricultural fields ("wet signatures"), drain-tile outlets, and floodplains. Additional data was collected in these potentially wet areas during the field investigation, including the addition of several soil test pits. Data forms for the additional soil test pits have been included in Appendix D.

Each wetland and waterbody feature was given a unique map designation and each boundary point was recorded using a global positioning system (GPS) unit capable of sub-meter accuracy. Streams were delineated by locating the centerline of the stream channel for any stream that has a top-of-bank width of 10 feet or less. For any stream that has a width greater than 10 feet, both top-of-banks of the stream were delineated. Wetland and stream boundaries were not flagged with survey flagging in the field due to the agricultural nature of the study area. Additional soil test pits were collected within the study corridor at the discretion of the delineator to confirm the absence of wetlands in areas that displayed one or more wetland indicators.

3.0 Results

Project study area topography generally consisted of low-relief till plains and dissected till plains within the Central Lowland Province of the Interior Plains physiographic region. Land use consists primarily of agricultural lands and areas flooded to enhance wildlife habitat. The southern portion of the Project is primarily located within suburban residential communities.

The Project study area is found within sixteen watersheds:

- ▶ Lower Piasa Creek (Hydrologic Unit Code [HUC] 071100090204),
- ▶ Marais Temps Clair-Mississippi River (HUC 071100090401),
- ▶ City of Alton-Mississippi River (HUC 071100090402),
- ▶ North Little Sandy Creek (HUC 071300110503),
- ▶ Little Sandy Creek (HUC 071300110504),
- ▶ Whitaker Creek-Apple Creek (HUC 071300110702),
- ▶ Coates Creek-Apple Creek (HUC 071300110703),
- ▶ Hurricane Creek (HUC 071300110806),
- ▶ Sandy Creek-Otter Creek (HUC 071300110901),
- ▶ Shilow Hollow-South Fork Otter Creek (HUC 071300110902),
- ▶ De Arcy Branch-Phils Creek (HUC 071300120502),
- ▶ Link Branch-Lower Macoupin Creek (HUC 071300120602),
- ▶ Wines Branch-Lower Macoupin creek (HUC 071300120603),
- ▶ Maline Creek-Mississippi River (HUC 071401010401),
- ▶ Coldwater Creek (HUC 103002000803), and
- ▶ Outlet Missouri River (HUC 103002000804).

As per Missouri Nationwide Permit Regional Conditions under Section 404 of the Clean Water Act:

- ▶ The Project will follow stream crossing guidelines outlined in Regional Condition 1. No new culverts or low water crossings are proposed.
- ▶ No Project area waters are listed on the Missouri Combined Stream Spawning List restricted waterbodies (Available at: <http://www.nwk.usace.army.mil/Portals/29/docs/regulatory/nationwidepermits/2012/SpawningList.pdf>);
- ▶ Invasive and exotic species will not be utilized for revegetation following construction of the Project. (Available at: <http://www.nwk.usace.army.mil/Portals/29/docs/regulatory/nationwidepermits/2012/MOInvasivePlants.pdf>);
- ▶ Only suitable material will be used for backfill within all Waters of the U.S.;

- ▶ The Project area is not located within a Priority Watershed (Available at: <http://www.nwk.usace.army.mil/Portals/29/docs/regulatory/nationwidepermits/2012/PriorityWatersheds.pdf>);
- ▶ No Project area wetlands have been classified via field or desktop as a jurisdictional fen, seep or bog as defined by the Environmental Protection Agency (Available at: <https://www.epa.gov/wetlands/wetlands-classification-and-types#bogs>); and
- ▶ No Project area waters are considered Sensitive Aquatic Species Waters (Available at: <http://www.nwk.usace.army.mil/Portals/29/docs/regulatory/nationwidepermits/2012/MORC7AquaticSpecies.pdf>).

As per Missouri Department of Natural Resources Section 401 Water Quality Certification General and Specific Conditions:

- ▶ No springs were identified within the Project study area;
- ▶ No Project waterbody is listed as impaired by inorganic sediment, aquatic habitat alteration, or unknown impairment as listed on the most current Section 305(b) waterbody report (Available at: <http://dnr.mo.gov/env/wpp/waterquality/303d/303d.htm>);
- ▶ The Project is not located within or within two miles upstream of a designated outstanding state or national resource water (10 CSR 20-7 Table D or Table E); and
- ▶ The Project is located within the Coldwater Creek Metropolitan No-Discharge stream watershed (10 CSR 20-7 Table F). Crossings are proposed within this watershed and therefore requires Individual Water Quality Certification.

As per Illinois Nationwide Permit Regional Conditions under Section 404 of the Clean Water Act:

- ▶ The Project does not propose Stormwater management facilities located within streams; and
- ▶ No newly constructed stream channels are proposed as part of the Project.

As per Illinois Environmental Protection Agency Section 401 Water Quality Certification General and Regional Conditions:

- ▶ No Outstanding Resource Waters were identified within the Project area;
- ▶ No Project waterbody is listed as impaired by inorganic sediment, aquatic habitat alteration, or unknown impairment as listed on the most current Section 305(b) waterbody report (Available at: <http://www.epa.illinois.gov/topics/water-quality/watershed-management/tmdls/303d-list/index>);
- ▶ Consultation with the Illinois Department of Natural Resources has been initiated to address potential State threatened or endangered species;
- ▶ Adequate planning and supervision will be provided during construction of the Project to ensure no violations occur under the Illinois Environmental Protection Act.
- ▶ Excavated material shall not be sidecast into waters of the State for a period longer than 20 calendar days. Material shall not be placed in a manner that dispersion could occur.
- ▶ Backfill material shall consist of clean course aggregate which will not cause siltation. Excavated material may be used only under dry conditions, and when particle size analysis demonstrates material to be 80% sand or larger using a #230 U.S. sieve.
- ▶ Trenching activities within wetlands shall utilize excavated material to the extent practicable, with the upper six to twelve inches backfilled with the topsoil obtained during the excavation.
- ▶ All excavated material not utilized as backfill shall be stored or disposed of with no discharge to waters of the State.
- ▶ Oil and Gas construction projects are exempt from Illinois NPDES Stormwater permitting. Erosion control measures consistent with the Illinois Urban Manual shall be implemented.

- ▶ All crossings utilizing a horizontal direction drill are certified provided that all pits and construction is located outside surface waters of the State, all drilling fluids are adequately contained from discharge to waters of the State, and erosion and sediment control is provided for the activity.
- ▶ Temporary fills for work pads and access roads shall be constructed of clean course aggregate or non-erodible fill that will not cause siltation.
- ▶ All temporary in-stream work must be designed to maintain normal flows.
- ▶ Permanent access roads shall be constructed of clean course aggregate or non-erodible fill that will not cause siltation. These roads must maintain flow by utilizing culverts, bridges, or similar structures.

120 wetlands, 194 waterbodies, and 9 ponds were identified within the study area (Figure 2). Delineations were conducted during the growing season in order to effectively identify vegetation located within the study area.

Functions and values of existing wetlands within the Project study area may include food chain production, general habitat, nesting, spawning, rearing, and resting sites for aquatic and/or land species; maintaining natural drainage characteristics, sedimentation patterns, flushing characteristics, or natural water filtration processes, minimizing erosion or storm damage; serving as storage areas for storm or flood waters; providing groundwater discharge areas that maintain minimum baseflows; serving as natural recharge areas where surface water and groundwater directly interconnect; preventing pollution; and providing recreation.

In support of field findings, identified wetlands and waterbodies are summarized in Tables 1 and 2. Color photographs of each feature accompany these tables. Wetland and upland data forms corresponding with each identified feature or soil test pit are provided in Appendices A and B, respectively. Stream data forms are provided in Appendix C. The resumes of the personnel conducting the wetland delineation are available in Appendix E. Soil map units are provided on Figure 2 and correspond with soil descriptions found in Appendix F.

4.0 Conclusions

Wetland delineations and stream investigations within the Spire STL Pipeline Project study area were conducted in September through November 2016 within an approximately 300-foot wide corridor, generally centered on the proposed pipeline centerline. Field delineations were completed across parcels with landowner-granted access and desktop delineation methods were used where permission was not granted at the time of survey. 120 wetlands, 194 waterbodies, and 9 ponds were identified within the study area. The results of the field study are provided in this report.

All statements in this document pertaining to the jurisdictional status of streams and wetlands with regard to USACE and state regulations represent the opinion of GAI and are based on current USACE guidance. The jurisdictional status of these features may be confirmed by a USACE Jurisdictional Determination.

5.0 References

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- United States Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, U.S. Department of Agriculture Natural Resources Conservation Service, Missouri Department of Natural Resources, Missouri Department of Conservation, and the Missouri Department of Transportation. 2013. *State of Missouri Stream Mitigation Method*. Available at: <http://www.mvs.usace.army.mil/Portals/54/docs/regulatory/mitigation/Amended%20Missouri%20Stream%20Mitigation%20Method%20April%202013.pdf>

TABLE 1
Wetlands Identified Within the Project Study Area

Table 1
Wetlands Identified Within the Project Study Area

Feature Designation ¹	State	Latitude ²	Longitude ²	Cowardin Classification ³	NWI Wetland ⁴	Approximate Size (acres) ⁵
WIL-CDK-006	Illinois	39.110396	-90.388503	PEM	N/A	0.02
WIL-CDK-007	Illinois	39.091215	-90.386995	PUB	PFO1A	0.12
WIL-CDK-008	Illinois	39.090824	-90.387410	PEM	N/A	0.08
WIL-CDK-010	Illinois	39.137757	-90.389500	PEM	R4SBC	0.57
WIL-CDK-012	Illinois	39.070722	-90.389764	PEM	N/A	0.02
WIL-CDK-013	Illinois	39.070667	-90.389265	PEM	N/A	0.01
WIL-DFW-002	Illinois	38.973415	-90.368763	PEM	N/A	0.19
WIL-JJP-001	Illinois	39.376820	-90.411355	PEM	N/A	0.42
WIL-JJP-002	Illinois	39.552118	-90.422207	PEM	N/A	0.02
WIL-JJP-005	Illinois	39.522644	-90.430902	PFO	PFO1A	0.28
WIL-JJP-006	Illinois	39.518091	-90.429976	PEM	N/A	0.15
WIL-JJP-007	Illinois	39.515762	-90.430480	PEM	N/A	0.03
WIL-JJP-009	Illinois	39.507946	-90.430584	PEM	R4SBC	0.02
WIL-JJP-010	Illinois	39.498372	-90.430856	PEM	N/A	0.01
WIL-JJP-011	Illinois	39.491215	-90.431107	PEM	N/A	0.01
WIL-JJP-012	Illinois	39.490357	-90.431126	PFO	R4SBC	0.22
WIL-JJP-012A	Illinois	39.490739	-90.430907	PEM	R4SBC	0.18
WIL-JJP-013	Illinois	39.489242	-90.430912	PEM	R4SBC	0.24
WIL-JJP-015	Illinois	39.419449	-90.422040	PSS	R4SBC	0.25
WIL-JJP-015A	Illinois	39.419089	-90.422324	PEM	R4SBC	0.36
WIL-JJP-015B	Illinois	39.419343	-90.422187	PEM	R4SBC	0.05
WIL-JJP-100	Illinois	39.378327	-90.412062	PFO	PFO1A	0.22

Feature Designation ¹	State	Latitude ²	Longitude ²	Cowardin Classification ³	NWI Wetland ⁴	Approximate Size (acres) ⁵
WIL-JJP-100A	Illinois	39.378773	-90.412063	PEM	N/A	0.44
WIL-JJP-101	Illinois	39.377576	-90.411831	PEM	PFO1A	1.19
WIL-JJP-101A	Illinois	39.377213	-90.411773	PFO	PFO1A	0.29
WIL-JJP-102	Illinois	39.183355	-90.389803	PEM	N/A	0.30
WIL-JJP-103	Illinois	39.218493	-90.396164	PEM	R4SBC	0.03
WIL-JJP-104	Illinois	39.224666	-90.399241	PEM	N/A	0.84
WIL-JJP-105	Illinois	39.228888	-90.400381	PEM	N/A	1.90
WIL-JJP-107	Illinois	39.390902	-90.410754	PEM	N/A	0.10
WIL-JJP-108	Illinois	39.475038	-90.431296	PEM	N/A	0.05
WIL-JJP-109	Illinois	39.087281	-90.387789	PEM	N/A	0.12
WIL-JJP-110	Illinois	39.082536	-90.389045	PEM	N/A	0.35
WIL-JJP-112	Illinois	39.034920	-90.388212	PEM	N/A	0.03
WIL-JJP-113	Illinois	39.009532	-90.378175	PEM	N/A	0.09
WIL-JJP-114	Illinois	39.008919	-90.377922	PEM	N/A	0.19
WIL-JJP-115	Illinois	39.063214	-90.388899	PEM	N/A	0.12
WIL-JJP-116	Illinois	39.062507	-90.389141	PEM	N/A	0.05
WIL-JJP-117	Illinois	39.266172	-90.417569	PEM	N/A	0.04
WIL-JTR-001	Illinois	39.239057	-90.410776	PEM	N/A	0.05
WIL-JTR-002	Illinois	39.202264	-90.394953	PFO	R4SBC	0.10
WIL-TMA-002	Illinois	39.523149	-90.430870	PFO	R2UBH	0.03
WIL-TMA-004	Illinois	39.490792	-90.430455	PEM	R4SBC	0.02
WIL-TMA-005	Illinois	39.489397	-90.430493	PEM	R4SBC	0.05
WIL-TMA-006	Illinois	39.374925	-90.412656	PEM	N/A	0.57
WIL-TMA-007	Illinois	39.370913	-90.413288	PEM	PUBGx	2.14

Feature Designation ¹	State	Latitude ²	Longitude ²	Cowardin Classification ³	NWI Wetland ⁴	Approximate Size (acres) ⁵
WIL-TMA-008	Illinois	39.371018	-90.413893	PEM	N/A	1.27
WIL-TMA-009	Illinois	39.334282	-90.422017	PEM	R4SBC	0.33
WIL-TMA-010	Illinois	39.232716	-90.404578	PEM	PFO1A	0.00
WIL-TMA-011	Illinois	39.230629	-90.401947	PFO	PFO1A	0.01
WIL-TMA-012	Illinois	39.230709	-90.401832	PFO	PFO1A	0.01
WIL-TMA-013	Illinois	39.230530	-90.402113	PFO	PFO1A	0.01
WIL-TMA-014	Illinois	39.233227	-90.405551	PEM	N/A	0.54
WIL-TMA-015	Illinois	39.232661	-90.404882	PSS	PFO1A	0.04
WIL-TMA-016	Illinois	39.236826	-90.408430	PEM	PUBGh	0.17
WIL-TMA-017	Illinois	39.237647	-90.410783	PEM	N/A	0.06
WIL-TMA-018	Illinois	39.218361	-90.399653	PEM	N/A	0.05
WIL-TMA-019	Illinois	39.218518	-90.398331	PEM	N/A	0.53
WIL-TMA-020	Illinois	39.221532	-90.397924	PEM	R4SBC	0.32
WIL-TMA-021	Illinois	39.222452	-90.399537	PEM	R4SBC	0.19
WIL-TMA-022	Illinois	39.229994	-90.401515	PEM	PFO1A	0.43
WIL-TMA-023	Illinois	39.230196	-90.401750	PFO	PFO1A	0.14
WIL-TMA-025	Illinois	39.505768	-90.430873	PFO	R4SBC	0.04
WIL-TMA-026	Illinois	39.084517	-90.388324	PEM	N/A	0.10
WIL-TMA-027	Illinois	39.038279	-90.387644	PEM	R4SBC	0.02
WIL-TMA-028	Illinois	39.007043	-90.377830	PEM	N/A	0.14
WIL-TMA-029	Illinois	39.566813	-90.420864	PFO	R4SBC	0.12
WIL-WJW-001	Illinois	39.248473	-90.414091	PEM	N/A	0.11
WMO-CDK-001	Missouri	38.840565	-90.237013	PEM	N/A	0.06
WMO-CDK-002	Missouri	38.840899	-90.237648	PSS	N/A	0.01

Feature Designation ¹	State	Latitude ²	Longitude ²	Cowardin Classification ³	NWI Wetland ⁴	Approximate Size (acres) ⁵
WMO-CDK-003	Missouri	38.841033	-90.243851	PEM	N/A	0.02
WMO-CDK-004	Missouri	38.841628	-90.243261	PEM	N/A	0.04
WMO-CDK-005	Missouri	38.842024	-90.242735	PEM	N/A	0.02
WMO-CDK-006	Missouri	38.843312	-90.242760	PUB	N/A	0.06
	Missouri	38.843130	-90.242724	PSS	N/A	0.05
WMO-CDK-007	Missouri	38.837777	-90.248434	PEM	N/A	0.01
WMO-CDK-009	Missouri	38.907745	-90.326329	PEM	N/A	0.08
WMO-DFW-002	Missouri	38.806245	-90.212349	PEM	N/A	0.07
WMO-DFW-003	Missouri	38.789855	-90.205661	PEM	N/A	0.04
WMO-DFW-004	Missouri	38.790817	-90.205564	PEM	N/A	0.02
WMO-DFW-005	Missouri	38.790873	-90.205264	PSS	N/A	0.06
WMO-DFW-006	Missouri	38.789880	-90.205476	PEM	N/A	0.04
	Missouri	38.789764	-90.205455	PSS	N/A	0.03
WMO-DFW-007	Missouri	38.779578	-90.185289	PEM	N/A	0.04
WMO-DFW-008	Missouri	38.779555	-90.184589	PEM	N/A	0.01
WMO-DFW-009	Missouri	38.778733	-90.179724	PFO	N/A	0.07
WMO-JJP-001	Missouri	38.944499	-90.382103	PEM	PFO1Ah	0.18
WMO-JJP-001A	Missouri	38.944446	-90.381957	PFO	PEM1Ah	0.07
WMO-JJP-001B	Missouri	38.944502	-90.382216	PFO	PFO1Ah	0.08
WMO-JJP-002	Missouri	38.871473	-90.238207	PEM	N/A	0.35
WMO-JJP-005	Missouri	38.863393	-90.233723	PEM	N/A	1.16
WMO-JJP-006	Missouri	38.859737	-90.235000	PEM	N/A	0.43
WMO-JJP-007	Missouri	38.886789	-90.271736	PEM	N/A	0.60
WMO-JJP-009	Missouri	38.940723	-90.380833	PFO	N/A	0.02

Feature Designation ¹	State	Latitude ²	Longitude ²	Cowardin Classification ³	NWI Wetland ⁴	Approximate Size (acres) ⁵
WMO-JJP-010	Missouri	38.912800	-90.328255	PEM	N/A	0.33
WMO-JJP-011	Missouri	38.914483	-90.328708	PEM	N/A	0.07
WMO-JJP-012	Missouri	38.916859	-90.333608	PEM	PFO1Ah	9.38
WMO-TMA-001	Missouri	38.848006	-90.238360	PEM	R2UBH	0.27
WMO-TMA-001A	Missouri	38.848245	-90.238218	PFO	PFO1A	1.03
WMO-TMA-002	Missouri	38.854126	-90.233848	PEM	N/A	0.60
WMO-TMA-003	Missouri	38.856453	-90.231999	PUB	PEM1A	0.65
WMO-TMA-003A	Missouri	38.856812	-90.232621	PEM	PEM1A	0.78
WMO-TMA-004	Missouri	38.856601	-90.234269	PEM	N/A	0.22
WMO-TMA-005	Missouri	38.872768	-90.241860	PUB	PUBF	1.32
WMO-TMA-005A	Missouri	38.872783	-90.241985	PEM	PUBF	1.42
WMO-TMA-006	Missouri	38.880174	-90.257678	PEM	N/A	0.72
WMO-TMA-007	Missouri	38.880774	-90.258534	PEM	N/A	0.05
WMO-TMA-009	Missouri	38.898374	-90.298408	PEM	N/A	0.04
WMO-TMA-010	Missouri	38.915638	-90.330086	PEM	N/A	0.41
WMO-TMA-011	Missouri	38.926336	-90.363030	PEM	N/A	0.10
WMO-WJW-001	Missouri	38.943407	-90.382169	PFO	PFO1Ah	1.72
NWI-051*	Illinois	39.313428	-90.430194	PFO1A	PFO1A	0.14
NWI-071*	Illinois	39.209699	-90.399668	PEM1Fh	PEM1Fh	0.41
NWI-172*	Illinois	39.207734	-90.397141	PUBGh	PUBGh	0.25
NWI-173*	Illinois	38.968776	-90.369426	PUBGh	PUBGh	0.17
NWI-505*	Illinois	38.950995	-90.377495	L1UBHh	L1UBHh	27.02
NWI-105*	Missouri	38.947785	-90.379679	PFO1Ah	PFO1Ah	4.24
NWI-102*	Missouri	38.945710	-90.380536	PFO1Ah	PFO1Ah	0.38

Feature Designation ¹	State	Latitude ²	Longitude ²	Cowardin Classification ³	NWI Wetland ⁴	Approximate Size (acres) ⁵
NWI-106*	Missouri	38.934773	-90.385301	PSS1Ch	PSS1Ch	0.12
NWI-136*	Missouri	38.880505	-90.257102	PEM1Ad	PEM1Ad	0.16
NWI-137*	Missouri	38.880261	-90.256523	PEM1C	PEM1C	0.001
NWI-141*	Missouri	38.876218	-90.247747	PEM1C	PEM1C	0.00002
PIL-DFW-001	Illinois	38.972195	-90.369090	PUB	PEM1C	0.17
PIL-JJP-002	Illinois	39.221099	-90.399751	PUB	PUBGh	0.09
PIL-JJP-003	Illinois	39.238985	-90.405336	PUB	PUBGx	0.15
PIL-TMA-001	Illinois	39.515963	-90.430210	PUB	N/A	0.26
PIL-TMA-002	Illinois	39.374407	-90.412156	PUB	PUBGx	0.07
PIL-TMA-003	Illinois	39.507454	-90.430897	PUB	R4SBC	0.03
PMO-DFW-001	Missouri	38.834415	-90.244363	PUB	PUBGh	0.16
PMO-DFW-002	Missouri	38.796834	-90.205497	PUB	N/A	0.02
PMO-TMA-001	Missouri	38.881783	-90.261671	PUB	PEM1Ad	0.60

Notes:

- 1 GAI map designation. Features designated with an asterisk (*) were located using desktop methods and have not been field verified due to property access constraints.
- 2 Coordinates provided in NAD 83.
- 3 Palustrine system wetlands were classified as emergent (PEM), forested (PFO), scrub-shrub (PSS), or unconsolidated Bottom (PUB).
- 4 National Wetlands Inventory (NWI) wetland as mapped by the United States Fish and Wildlife Service.
- 5 Extent of wetland within study area. Wetland may extend beyond the limits of the delineation survey.

WETLAND PHOTOGRAPHS

Wetland Photographs

Photos Taken Within The Study Area Unless Otherwise Noted.



**Wetland WIL-CDK-006, PEM,
Facing North (11/2/16)**



**Wetland WIL-CDK-006, PEM,
Facing South (11/2/16)**



**Wetland WIL-CDK-007, PUB,
Facing South (11/3/16)**



**Wetland WIL-CDK-007, PUB,
Facing West (11/3/16)**



**Wetland WIL-CDK-008, PEM,
Facing South (11/3/16)**



**Wetland WIL-CDK-008, PEM,
Facing East (11/3/16)**



**Wetland WIL-CDK-010, PEM,
Facing North (11/3/16)**



**Wetland WIL-CDK-010, PEM,
Facing South (11/3/16)**



**Wetland WIL-CDK-012, PEM,
Facing North (11/5/16)**



**Wetland WIL-CDK-012, PEM,
Facing South (11/5/16)**



**Wetland WIL-CDK-013, PEM,
Facing North (11/5/16)**



**Wetland WIL-CDK-013, PEM,
Facing East (11/5/16)**



**Wetland WIL-DFW-002, PEM,
Facing North (9/23/16)**



**Wetland WIL-DFW-002, PEM,
Facing South (9/23/16)**



**Wetland WIL-JJP-001, PEM,
Facing East (9/7/16)**



**Wetland WIL-JJP-001, PEM,
Facing West (9/7/16)**



**Wetland WIL-JJP-002, PEM,
Facing South (9/8/16)**



**Wetland WIL-JJP-002, PEM,
Facing East (9/8/16)**



**Wetland WIL-JJP-005, PFO,
Facing West (9/10/16)**



**Wetland WIL-JJP-005, PFO,
Facing East (9/10/16)**



**Wetland WIL-JJP-006, PEM,
Facing East (9/12/16)**



**Wetland WIL-JJP-006, PEM,
Facing West (9/12/16)**



**Wetland WIL-JJP-007, PEM,
Facing South (9/12/16)**



**Wetland WIL-JJP-007, PEM,
Facing North (9/12/16)**



**Wetland WIL-JJP-009, PEM,
Facing North (9/13/16)**



**Wetland WIL-JJP-009, PEM,
Facing South (9/13/16)**



**Wetland WIL-JJP-010, PEM,
Facing East (9/13/16)**



**Wetland WIL-JJP-010, PEM,
Facing West (9/13/16)**



**Wetland WIL-JJP-011, PEM,
Facing South (9/13/16)**



**Wetland WIL-JJP-011, PEM,
Facing West (9/13/16)**



**Wetland WIL-JJP-012, PFO,
Facing South (9/13/16)**



**Wetland WIL-JJP-012, PFO,
Facing East (9/13/16)**



**Wetland WIL-JJP-012A, PEM,
Facing Southwest (9/13/16)**



**Wetland WIL-JJP-012A, PEM,
Facing Northeast (9/13/16)**



**Wetland WIL-JJP-013, PEM,
Facing South (9/14/16)**



**Wetland WIL-JJP-013, PEM,
Facing West (9/14/16)**



**Wetland WIL-JJP-015, PSS,
Facing North (9/15/16)**



**Wetland WIL-JJP-015, PSS,
Facing West (9/15/16)**



**Wetland WIL-JJP-015A, PEM,
Facing North (9/15/16)**



**Wetland WIL-JJP-015A, PEM,
Facing West (9/15/16)**



**Wetland WIL-JJP-015B, PEM,
Facing North (9/15/16)**



**Wetland WIL-JJP-015B, PEM,
Facing East (9/15/16)**



**Wetland WIL-JJP-100, PFO,
Facing North (10/19/16)**



**Wetland WIL-JJP-100, PFO,
Facing East (10/19/16)**



**Wetland WIL-JJP-100A, PEM,
Facing North (10/19/16)**



**Wetland WIL-JJP-100A, PEM,
Facing South (10/19/16)**



**Wetland WIL-JJP-101, PEM,
Facing East (10/19/16)**



**Wetland WIL-JJP-101, PEM,
Facing West (10/19/16)**



**Wetland WIL-JJP-101A, PFO,
Facing South (10/19/16)**



**Wetland WIL-JJP-101A, PFO,
Facing West (10/19/16)**



**Wetland WIL-JJP-102, PEM,
Facing North (10/20/16)**



**Wetland WIL-JJP-102, PEM,
Facing South (10/20/16)**



**Wetland WIL-JJP-103, PEM,
Facing West (10/20/16)**



**Wetland WIL-JJP-103, PEM,
Facing East (10/20/16)**



**Wetland WIL-JJP-104, PEM,
Facing North (10/21/16)**



**Wetland WIL-JJP-104, PEM,
Facing South (10/21/16)**



**Wetland WIL-JJP-105, PEM,
Facing South (10/21/16)**



**Wetland WIL-JJP-105, PEM,
Facing West (10/21/16)**



**Wetland WIL-JJP-107, PEM,
Facing North (10/22/16)**



**Wetland WIL-JJP-107, PEM,
Facing South (10/22/16)**



**Wetland WIL-JJP-108, PEM,
Facing South (10/24/16)**



**Wetland WIL-JJP-108, PEM,
Facing West (10/24/16)**



**Wetland WIL-JJP-109, PEM,
Facing West (11/15/16)**



**Wetland WIL-JJP-109, PEM,
Facing North (11/15/16)**



**Wetland WIL-JJP-110, PEM,
Facing East (11/15/16)**



**Wetland WIL-JJP-110, PEM,
Facing West (11/15/16)**



**Wetland WIL-JJP-112, PEM,
Facing North (11/18/16)**



**Wetland WIL-JJP-112, PEM,
Facing South (11/18/16)**



**Wetland WIL-JJP-113, PEM,
Facing West (11/18/16)**



**Wetland WIL-JJP-113, PEM,
Facing North (11/18/16)**



**Wetland WIL-JJP-114, PEM,
Facing East (11/18/16)**



**Wetland WIL-JJP-114, PEM,
Facing South (11/18/16)**



**Wetland WIL-JJP-115, PEM,
Facing South (11/19/16)**



**Wetland WIL-JJP-115, PEM,
Facing East (11/19/16)**



**Wetland WIL-JJP-116, PEM,
Facing South (11/19/16)**



**Wetland WIL-JJP-116, PEM,
Facing West (11/19/16)**



**Wetland WIL-JJP-117, PEM,
Facing North (11/20/16)**



**Wetland WIL-JJP-117, PEM,
Facing East (11/20/16)**



**Wetland WIL-JTR-001, PEM,
Facing North (11/7/16)**



**Wetland WIL-JTR-001, PEM,
Facing South (11/7/16)**



**Wetland WIL-JTR-002, PFO,
Facing South (11/7/16)**



**Wetland WIL-JTR-002, PFO,
Facing East (11/7/16)**



**Wetland WIL-TMA-002, PFO,
Facing East (9/10/16)**



**Wetland WIL-TMA-002, PFO,
Facing West (9/10/16)**



**Wetland WIL-TMA-004, PEM,
Facing North (9/13/16)**



**Wetland WIL-TMA-004, PEM,
Facing West (9/13/16)**



**Wetland WIL-TMA-005, PEM,
Facing West (9/14/16)**



**Wetland WIL-TMA-005, PEM,
Facing North (9/14/16)**



**Wetland WIL-TMA-006, PEM,
Facing North (9/20/16)**



**Wetland WIL-TMA-006, PEM,
Facing South (9/20/16)**



**Wetland WIL-TMA-007, PEM,
Facing East (9/20/16)**



**Wetland WIL-TMA-007, PEM,
Facing West (9/20/16)**



**Wetland WIL-TMA-008, PEM,
Facing South (9/21/16)**



**Wetland WIL-TMA-008, PEM,
Facing West (9/21/16)**



**Wetland WIL-TMA-009, PEM,
Facing North (9/21/16)**



**Wetland WIL-TMA-009, PEM,
Facing West (9/21/16)**



**Wetland WIL-TMA-010, PEM,
Facing North (9/22/16)**



**Wetland WIL-TMA-010, PEM,
Facing West (9/22/16)**



**Wetland WIL-TMA-011, PFO,
Facing South (9/22/16)**



**Wetland WIL-TMA-011, PFO,
Facing East (9/22/16)**



**Wetland WIL-TMA-012, PFO,
Facing North (9/22/16)**



**Wetland WIL-TMA-012, PFO,
Facing East (9/22/16)**



**Wetland WIL-TMA-013, PFO,
Facing North (9/22/16)**



**Wetland WIL-TMA-013, PFO,
Facing South (9/22/16)**



**Wetland WIL-TMA-014, PEM,
Facing West (9/22/16)**



**Wetland WIL-TMA-014, PEM,
Facing North (9/22/16)**



**Wetland WIL-TMA-015, PSS,
Facing East (9/23/16)**



**Wetland WIL-TMA-015, PSS,
Facing West (9/23/16)**



**Wetland WIL-TMA-016, PEM,
Facing North (9/23/16)**



**Wetland WIL-TMA-016, PEM,
Facing East (9/23/16)**



**Wetland WIL-TMA-017, PEM,
Facing Southwest (9/23/16)**



**Wetland WIL-TMA-017, PEM,
Facing Northeast (9/23/16)**



**Wetland WIL-TMA-018, PEM,
Facing East (10/20/16)**



**Wetland WIL-TMA-018, PEM,
Facing West (10/20/16)**



**Wetland WIL-TMA-019, PEM,
Facing East (10/20/16)**



**Wetland WIL-TMA-019, PEM,
Facing West (10/20/16)**



**Wetland WIL-TMA-020, PEM,
Facing East (10/20/16)**



**Wetland WIL-TMA-020, PEM,
Facing West (10/20/16)**



**Wetland WIL-TMA-021, PEM,
Facing North (10/21/16)**



**Wetland WIL-TMA-021, PEM,
Facing South (10/21/16)**



**Wetland WIL-TMA-022, PEM,
Facing Northeast (10/21/16)**



**Wetland WIL-TMA-022, PEM,
Facing Southwest (10/21/16)**



**Wetland WIL-TMA-023, PFO,
Facing West (10/21/16)**



**Wetland WIL-TMA-023, PFO,
Facing East (10/21/16)**



**Wetland WIL-TMA-025, PFO,
Facing West (10/24/16)**



**Wetland WIL-TMA-026, PEM,
Facing South (11/15/16)**



**Wetland WIL-TMA-026, PEM,
Facing West (11/15/16)**



**Wetland WIL-TMA-027, PEM,
Facing East (11/18/16)**



**Wetland WIL-TMA-027, PEM,
Facing South (11/18/16)**



**Wetland WIL-TMA-028, PEM,
Facing East (11/18/16)**



**Wetland WIL-TMA-028, PEM,
Facing West (11/18/16)**



**Wetland WIL-TMA-029, PFO,
Facing West (11/20/16)**



**Wetland WIL-TMA-029, PFO,
Facing Southeast (11/20/16)**



**Wetland WIL-WJW-001, PEM,
Facing South-Southwest (9/23/16)**



**Wetland WIL-WJW-001, PEM,
Facing West-Northwest (9/23/16)**



**Wetland WMO-CDK-001, PEM,
Facing East (11/09/16)**



**Wetland WMO-CDK-001, PEM,
Facing West (11/09/16)**



**Wetland WMO-CDK-002, PSS,
Facing South (11/09/16)**



**Wetland WMO-CDK-002, PSS,
Facing West (11/09/16)**



**Wetland WMO-CDK-003, PEM,
Facing North (11/09/16)**



**Wetland WMO-CDK-003, PEM,
Facing East (11/09/16)**



**Wetland WMO-CDK-004, PEM,
Facing North (11/09/16)**



**Wetland WMO-CDK-004, PEM,
Facing South (11/09/16)**



**Wetland WMO-CDK-005, PEM,
Facing North (11/09/16)**



**Wetland WMO-CDK-005, PEM,
Facing South (11/09/16)**



**Wetland WMO-CDK-006, PSS,
Facing North (11/09/16)**



**Wetland WMO-CDK-006, PSS,
Facing South (11/09/16)**



**Wetland WMO-CDK-006, PUB,
Facing East (11/09/16)**



**Wetland WMO-CDK-006, PUB,
Facing West (11/09/16)**



**Wetland WMO-CDK-007, PEM,
Facing East (11/09/16)**



**Wetland WMO-CDK-007, PEM,
Facing West (11/09/16)**



**Wetland WMO-CDK-009, PEM,
Facing North (11/12/16)**



**Wetland WMO-CDK-009, PEM,
Facing South (11/12/16)**



**Wetland WMO-DFW-002, PEM,
Facing North (9/21/16)**



**Wetland WMO-DFW-002, PEM,
Facing South (9/21/16)**



**Wetland WMO-DFW-003, PEM,
Facing North (9/21/16)**



**Wetland WMO-DFW-003, PEM,
Facing South (9/21/16)**



**Wetland WMO-DFW-004, PEM,
Facing North (9/21/16)**



**Wetland WMO-DFW-004, PEM,
Facing South (9/21/16)**



**Wetland WMO-DFW-005, PSS,
Facing North (9/21/16)**



**Wetland WMO-DFW-005, PSS,
Facing South (9/21/16)**



**Wetland WMO-DFW-006, PEM,
Facing North (9/21/16)**



**Wetland WMO-DFW-006, PEM,
Facing South (9/21/16)**



**Wetland WMO-DFW-006, PSS,
Facing East (9/21/16)**



**Wetland WMO-DFW-006, PSS,
Facing South (9/21/16)**



**Wetland WMO-DFW-007, PEM,
Facing North (9/22/16)**



**Wetland WMO-DFW-007, PEM,
Facing South (9/22/16)**



**Wetland WMO-DFW-008, PEM,
Facing North (9/22/16)**



**Wetland WMO-DFW-008, PEM,
Facing South (9/22/16)**



**Wetland WMO-DFW-009, PFO,
Facing East (9/22/16)**



**Wetland WMO-DFW-009, PFO,
Facing West (9/22/16)**



**Wetland WMO-JJP-001, PEM,
Facing North (9/7/16)**



**Wetland WMO-JJP-001, PEM,
Facing South (9/7/16)**



**Wetland WMO-JJP-001A, PFO,
Facing South (9/7/16)**



**Wetland WMO-JJP-001A, PFO,
Facing West (9/7/16)**



**Wetland WMO-JJP-001B, PFO,
Facing South (9/7/16)**



**Wetland WMO-JJP-001B, PFO,
Facing West (9/7/16)**



**Wetland WMO-JJP-002, PEM,
Facing Northwest (10/15/16)**



**Wetland WMO-JJP-002, PEM,
Facing Southwest (10/15/16)**



**Wetland WMO-JJP-005, PEM,
Facing North (10/15/16)**



**Wetland WMO-JJP-005, PEM,
Facing West (10/15/16)**



**Wetland WMO-JJP-006, PEM,
Facing East (10/15/16)**



**Wetland WMO-JJP-006, PEM,
Facing West (10/15/16)**



**Wetland WMO-JJP-007, PEM,
Facing East (10/16/16)**



**Wetland WMO-JJP-007, PEM,
Facing West (10/16/16)**



**Wetland WMO-JJP-009, PFO,
Facing South (10/18/16)**



**Wetland WMO-JJP-009, PFO,
Facing East (10/18/16)**



**Wetland WMO-JJP-010, PEM,
Facing North (11/21/16)**



**Wetland WMO-JJP-010, PEM,
Facing South (11/21/16)**



**Wetland WMO-JJP-011, PEM,
Facing North (11/21/16)**



**Wetland WMO-JJP-011, PEM,
Facing South (11/21/16)**



**Wetland WMO-JJP-012, PEM,
Facing North (11/21/16)**



**Wetland WMO-JJP-012, PEM,
Facing South (11/21/16)**



**Wetland WMO-TMA-001, PEM,
Facing North (10/14/16)**



**Wetland WMO-TMA-001, PEM,
Facing South (10/14/16)**



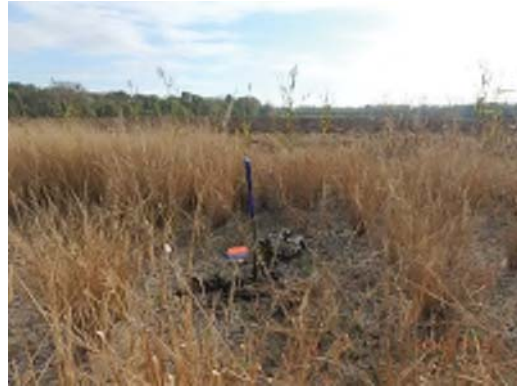
**Wetland WMO-TMA-001A, PFO,
Facing Southeast (10/14/16)**



**Wetland WMO-TMA-001A, PFO,
Facing Northeast (10/14/16)**



**Wetland WMO-TMA-002, PEM,
Facing West (10/14/16)**



**Wetland WMO-TMA-002, PEM,
Facing South (10/14/16)**



**Wetland WMO-TMA-003, PUB,
Facing North (10/14/16)**



**Wetland WMO-TMA-003, PUB,
Facing East (10/14/16)**



**Wetland WMO-TMA-003A, PEM,
Facing East (10/14/16)**



**Wetland WMO-TMA-003A, PEM,
Facing West (10/14/16)**



**Wetland WMO-TMA-004, PEM,
Facing South (10/14/16)**



**Wetland WMO-TMA-004, PEM,
Facing East (10/14/16)**



**Wetland WMO-TMA-005, PUB,
Facing West (10/15/16)**



**Wetland WMO-TMA-005, PUB,
Facing South (10/15/16)**



**Wetland WMO-TMA-005A, PEM,
Facing West (10/15/16)**



**Wetland WMO-TMA-005A, PEM,
Facing South (10/15/16)**



**Wetland WMO-TMA-006, PEM,
Facing North (10/15/16)**



**Wetland WMO-TMA-006, PEM,
Facing East (10/15/16)**



**Wetland WMO-TMA-007, PEM,
Facing East (10/15/16)**



**Wetland WMO-TMA-007, PEM,
Facing South (10/15/16)**



**Wetland WMO-TMA-009, PEM,
Facing North (10/19/16)**



**Wetland WMO-TMA-009, PEM,
Facing Southwest (10/19/16)**



**Wetland WMO-TMA-010, PEM,
Facing East (11/21/16)**



**Wetland WMO-TMA-010, PEM,
Facing North (11/21/16)**



**Wetland WMO-TMA-011, PEM,
Facing West (11/21/16)**



**Wetland WMO-TMA-011, PEM,
Facing South (11/21/16)**



**Wetland WMO-WJW-001, PFO,
Facing Southeast (9/22/16)**



**Wetland WMO-WJW-001, PFO,
Facing Southwest (9/22/16)**



**Wetland PIL-DFW-001, PUB,
Facing South (9/23/16)**



**Wetland PIL-DFW-001, PUB,
Facing West (9/23/16)**



**Wetland PIL-JJP-002, PUB,
Facing Northeast (10/21/16)**



**Wetland PIL-JJP-002, PUB,
Facing South (10/21/16)**



**Wetland PIL-JJP-003, PUB,
Facing Southwest (10/22/16)**



**Wetland PIL-JJP-003, PUB,
Facing Northwest (10/22/16)**



**Wetland PIL-TMA-001, PUB,
Facing Southwest (9/12/16)**



**Wetland PIL-TMA-001, PUB,
Facing Southeast (9/12/16)**



**Wetland PIL-TMA-002, PUB,
Facing Southeast (9/20/16)**



**Wetland PIL-TMA-002, PUB,
Facing East (9/20/16)**



**Wetland PIL-TMA-003, PUB,
Facing Northwest (10/24/16)**



**Wetland PIL-TMA-003, PUB,
Facing West (10/24/16)**



**Wetland PMO-DFW-001, PUB,
Facing Southwest (9/20/16)**



**Wetland PMO-DFW-001, PUB,
Facing South (9/20/16)**



**Wetland PMO-DFW-002, PUB,
Facing South (9/21/16)**



**Wetland PMO-DFW-002, PUB,
Facing East (9/21/16)**



**Wetland PMO-TMA-001, PUB,
Facing Northeast (10/15/16)**



**Wetland PMO-TMA-001, PUB,
Facing Southwest (10/15/16)**

TABLE 2
Waterbodies Identified Within the
Project Study Area

**Table 2
 Waterbodies Identified Within the Project Study Area**

Feature Designation ¹	State	Latitude ²	Longitude ²	Waterbody	Stream Type	Listed as Impaired on the 303(d) or 305(b) List ³	Function ⁴	Average Bank-to-Bank Width (Channel) (feet)	Average Channel Depth (feet)	Average Water Width (feet)	Average Water Depth (feet)	Approximate Length Within Study Area (feet) ⁵
SIL-CDK-001	Illinois	39.004084	-90.377758	UNT to South Fork Otter Creek	Perennial		Impaired	25	8	3	0.5	520
SIL-CDK-002	Illinois	39.003900	-90.377640	UNT to South Fork Otter Creek	Intermittent		Impaired	4	2	2	0.08	221
SIL-CDK-003	Illinois	39.002466	-90.377842	UNT to South Fork Otter Creek	Ephemeral		Impaired	5	5	0	0	339
SIL-CDK-012	Illinois	39.090894	-90.386679	UNT to Otter Creek	Perennial		Impaired	20	8	12	1.25	871
SIL-CDK-013	Illinois	39.090772	-90.386840	UNT to Otter Creek	Intermittent		Impaired	3	3	1	0.08	56
SIL-CDK-016	Illinois	39.252976	-90.413357	UNT to Macoupin Creek	Intermittent		Impaired	9	3.5	4	0.1	394
SIL-CDK-017	Illinois	39.252144	-90.413077	UNT to Macoupin Creek	Ephemeral		Impaired	4	5	2.5	0.08	51
SIL-CDK-018	Illinois	39.049146	-90.389550	UNT to Otter Creek	Ephemeral		Moderately	4	4	0	0	636
SIL-CDK-022	Illinois	39.070886	-90.389583	Otter Creek	Perennial	Dissolved Oxygen	Impaired	65	7	20	1.25	347
SIL-CDK-029	Illinois	39.073490	-90.394001	UNT to Otter Creek	Intermittent		Impaired	5	3	3	1	168
SIL-DFW-001	Illinois	39.142616	-90.389398	Wines Branch	Perennial		Impaired	4	1.5	3.5	0.25	329
SIL-DFW-002	Illinois	39.143022	-90.389413	UNT to Wines Branch	Intermittent		Moderately	3.5	1.5	1	0.1	316
SIL-DFW-003	Illinois	39.241498	-90.412083	UNT to Macoupin Creek	Ephemeral		Moderately	3	0.6	0	0	61
SIL-DFW-004	Illinois	39.242951	-90.412215	UNT to Macoupin Creek	Ephemeral		Moderately	3	0.7	0	0	16
SIL-JJP-001	Illinois	39.565511	-90.414675	UNT to N. Little Sandy Creek	Ephemeral		Moderately	4	4	0.5	0.05	22
SIL-JJP-002	Illinois	39.565623	-90.414698	UNT to N. Little Sandy Creek	Ephemeral		Moderately	5	3	0.2	0.05	49
SIL-JJP-003	Illinois	39.550230	-90.423508	UNT to Little Sandy Creek	Intermittent		Fully	10	5	2	0.4	485
SIL-JJP-004	Illinois	39.546570	-90.426894	UNT to Little Sandy Creek	Ephemeral		Moderately	6	4	0.5	<0.04	66
SIL-JJP-009	Illinois	39.531207	-90.430777	UNT to Little Sandy Creek	Ephemeral		Moderately	5	5	0	0	172
SIL-JJP-010	Illinois	39.529867	-90.430623	UNT to Little Sandy Creek	Ephemeral		Impaired	6	4	0	0	102
SIL-JJP-011	Illinois	39.528664	-90.431584	UNT to Little Sandy Creek	Ephemeral		Moderately	6	5	0.3	<0.04	154
SIL-JJP-012	Illinois	39.528798	-90.431495	UNT to Little Sandy Creek	Ephemeral		Moderately	5	4	0	0	80
SIL-JJP-013	Illinois	39.522965	-90.430812	Little Sandy Creek	Perennial		Fully	40	4.5	15	0.8	462
SIL-JJP-014	Illinois	39.523187	-90.430635	UNT to Little Sandy Creek	Ephemeral		Impaired	5	2	0	0	92
SIL-JJP-015	Illinois	39.522200	-90.430619	UNT to Little Sandy Creek	Ephemeral		Moderately	3	1	0	0	249
SIL-JJP-016	Illinois	39.517565	-90.431165	UNT to Little Sandy Creek	Ephemeral		Moderately	4	3	0	0	210
SIL-JJP-017	Illinois	39.520504	-90.431222	UNT to Little Sandy Creek	Ephemeral		Moderately	2	0.5	0	0	77
SIL-JJP-018	Illinois	39.514476	-90.430244	UNT to Little Sandy Creek	Perennial		Moderately	25	5	6	0.8	807
SIL-JJP-024	Illinois	39.510098	-90.430386	UNT to Little Sandy Creek	Ephemeral		Moderately	5	5	0	0	195
SIL-JJP-025	Illinois	39.510018	-90.430405	UNT to Little Sandy Creek	Ephemeral		Impaired	3	4	0	0	20
SIL-JJP-026	Illinois	39.490472	-90.430945	UNT to Hurricane Creek	Intermittent		Impaired	2.5	1	0	0	432
SIL-JJP-027	Illinois	39.489362	-90.430817	UNT to Hurricane Creek	Intermittent		Impaired	4	2	0	0	374
SIL-JJP-028	Illinois	39.479788	-90.431255	UNT to Hurricane Creek	Intermittent		Moderately	9	5	0.5	0.02	305
SIL-JJP-029	Illinois	39.426073	-90.422516	UNT to Seminary Creek	Ephemeral		Impaired	3	3	0	0	125
SIL-JJP-030	Illinois	39.419860	-90.421792	UNT to Seminary Creek	Ephemeral		Impaired	3	1.5	0	0	56
SIL-JJP-031	Illinois	39.426172	-90.422067	UNT to Seminary Creek	Ephemeral		Impaired	4	4.5	0	0	108
SIL-JJP-100	Illinois	39.308368	-90.431635	UNT to Coates Creek	Ephemeral		Impaired	4	2	0	0	106
SIL-JJP-101	Illinois	39.218322	-90.398221	UNT to Macoupin Creek	Ephemeral		Impaired	2.5	1	0	0	10
SIL-JJP-102	Illinois	39.218347	-90.398457	UNT to Macoupin Creek	Ephemeral		Impaired	4	4	0	0	134
SIL-JJP-103	Illinois	39.218395	-90.398216	UNT to Macoupin Creek	Intermittent		Impaired	4	1	0.5	0.08	48
SIL-JJP-104	Illinois	39.222525	-90.399354	UNT to Macoupin Creek	Perennial		Moderately	8	4.5	3	0.8	154
SIL-JJP-109	Illinois	39.238831	-90.412170	UNT to Macoupin Creek	Ephemeral		Impaired	5	5	0	0	459
SIL-JJP-110	Illinois	39.283242	-90.429378	UNT to Macoupin Branch	Perennial		Moderately	7	6	2.5	0.5	446
SIL-JJP-111	Illinois	39.283134	-90.429498	UNT to Link Branch	Ephemeral		Impaired	5	4	0	0	99
SIL-JJP-113	Illinois	39.509950	-90.431030	UNT to Little Sandy Creek	Ephemeral		Fully	5	5	0	0	95

Feature Designation ¹	State	Latitude ²	Longitude ²	Waterbody	Stream Type	Listed as Impaired on the 303(d) or 305(b) List ³	Function ⁴	Average Bank-to-Bank Width (feet)	Average Channel Depth (feet)	Average Water Width (feet)	Average Water Depth (feet)	Approximate Length Within Study Area (feet) ⁵
SIL-JJP-114	Illinois	39.513428	-90.431475	UNT to Little Sandy Creek	Ephemeral		Moderately	5	4	0	0	58
SIL-JJP-115	Illinois	39.475891	-90.431090	UNT to Hurricane Creek	Ephemeral		Impaired	4	3	0	0	44
SIL-JJP-117	Illinois	39.090336	-90.387080	UNT to Otter Creek	Ephemeral		Impaired	6	4.5	0	0	157
SIL-JJP-118	Illinois	39.087207	-90.387852	UNT to Otter Creek	Intermittent		Impaired	3	2.5	0	0	81
SIL-JJP-119	Illinois	39.086997	-90.388174	UNT to Otter Creek	Ephemeral		Impaired	4	3	0	0	58
SIL-JJP-120	Illinois	39.083636	-90.388298	UNT to Otter Creek	Ephemeral		Impaired	5	6	0	0	114
SIL-JJP-121	Illinois	39.079775	-90.389157	UNT to Otter Creek	Ephemeral		Impaired	10	5	1	0.2	323
SIL-JJP-122	Illinois	39.075663	-90.389363	UNT to Otter Creek	Perennial		Moderately	4	4	1	0.2	713
SIL-JJP-123	Illinois	39.068963	-90.389614	UNT to Otter Creek	Ephemeral		Impaired	3	2.5	0	0	195
SIL-JJP-124	Illinois	39.068778	-90.389558	UNT to Otter Creek	Ephemeral		Impaired	1.5	2	0	0	60
SIL-JJP-127	Illinois	39.027748	-90.386282	UNT to South Fork Otter Creek	Ephemeral		Impaired	4	4	0	0	124
SIL-JJP-128	Illinois	39.029493	-90.388540	UNT to South Fork Otter Creek	Ephemeral		Impaired	4	2.5	0	0	70
SIL-JJP-129	Illinois	39.029702	-90.388350	UNT to South Fork Otter Creek	Ephemeral		Impaired	3	2	0	0	121
SIL-JJP-130	Illinois	39.030679	-90.387957	UNT to South Fork Otter Creek	Perennial		Moderately	8	8	1	0.25	358
SIL-JJP-131	Illinois	39.031457	-90.388254	UNT to South Fork Otter Creek	Ephemeral		Impaired	4	2.5	0	0	277
SIL-JJP-132	Illinois	39.031606	-90.388169	UNT to South Fork Otter Creek	Ephemeral		Impaired	4	3	0	0	60
SIL-JJP-133	Illinois	39.031464	-90.388314	UNT to South Fork Otter Creek	Ephemeral		Impaired	5	2.5	0	0	82
SIL-JJP-134	Illinois	39.034760	-90.388005	UNT to South Fork Otter Creek	Perennial		Moderately	8	3	1	0.25	403
SIL-JJP-135	Illinois	39.034795	-90.388218	UNT to South Fork Otter Creek	Ephemeral		Moderately	4	0.5	0.5	0.2	64
SIL-JJP-136	Illinois	39.037971	-90.388250	UNT to South Fork Otter Creek	Ephemeral		Impaired	4	3	0	0	609
SIL-JJP-137	Illinois	39.037382	-90.388402	UNT to South Fork Otter Creek	Ephemeral		Impaired	3	3	0	0	272
SIL-JJP-138	Illinois	39.041797	-90.388470	UNT to South Fork Otter Creek	Intermittent		Impaired	3	2	0.25	<0.08	63
SIL-JJP-139	Illinois	39.006954	-90.378261	UNT to South Fork Otter Creek	Intermittent		Impaired	3	2.5	1	0.5	86
SIL-JTR-001	Illinois	39.245675	-90.412311	UNT to Macoupin Creek	Ephemeral		Impaired	3	0.5	1	<0.08	119
SIL-JTR-002	Illinois	39.245639	-90.412209	UNT to Macoupin Creek	Ephemeral		Impaired	3	2	1.5	<0.08	64
SIL-JTR-003	Illinois	39.244210	-90.412239	UNT to Macoupin Creek	Ephemeral		Impaired	3	2	2	<0.08	41
SIL-JTR-004	Illinois	39.244184	-90.412247	UNT to Macoupin Creek	Ephemeral		Moderately	4	2	0	0	26
SIL-TMA-001	Illinois	39.550439	-90.423132	UNT to Little Sandy Creek	Ephemeral		Moderately	6	4	0	0	61
SIL-TMA-002	Illinois	39.550093	-90.424000	UNT to Little Sandy Creek	Ephemeral		Moderately	5	4	0	0	51
SIL-TMA-005	Illinois	39.532018	-90.431199	UNT to Little Sandy Creek	Intermittent		Moderately	20	15	3	0.25	629
SIL-TMA-006	Illinois	39.530617	-90.430612	UNT to Little Sandy Creek	Ephemeral		Moderately	6	12	0	0	154
SIL-TMA-007	Illinois	39.530520	-90.430563	UNT to Little Sandy Creek	Ephemeral		Moderately	4	4	0	0	50
SIL-TMA-008	Illinois	39.528757	-90.431492	UNT to Little Sandy Creek	Ephemeral		Moderately	7	3.5	1.25	0.1	72
SIL-TMA-009	Illinois	39.523308	-90.430469	UNT to Little Sandy Creek	Ephemeral		Moderately	6	3	1.5	0.1	287
SIL-TMA-010	Illinois	39.520890	-90.430367	UNT to Little Sandy Creek	Ephemeral		Moderately	6	2	0	0	738
SIL-TMA-011	Illinois	39.517571	-90.430357	UNT to Little Sandy Creek	Intermittent		Moderately	8	7	1.5	0.1	659
SIL-TMA-012	Illinois	39.517628	-90.430154	UNT to Little Sandy Creek	Ephemeral		Moderately	4	4	0	0	91
SIL-TMA-015	Illinois	39.513717	-90.430222	UNT to Little Sandy Creek	Ephemeral		Moderately	6	3	0	0	302
SIL-TMA-016	Illinois	39.511048	-90.430056	UNT to Little Sandy Creek	Intermittent		Moderately	8	6	1	0.08	602
SIL-TMA-018	Illinois	39.510393	-90.430216	UNT to Little Sandy Creek	Perennial		Impaired	9	4	2	0.1	747
SIL-TMA-019	Illinois	39.510477	-90.430489	UNT to Little Sandy Creek	Ephemeral		Moderately	6	3	0	0	21
SIL-TMA-021	Illinois	39.426159	-90.422245	UNT to Seminary Creek	Perennial		Moderately	30	4	22	0.75	668
SIL-TMA-022	Illinois	39.419120	-90.422292	UNT to Seminary Creek	Ephemeral		Moderately	4	2	0	0	470
SIL-TMA-023	Illinois	39.411730	-90.421937	UNT to Seminary Creek	Ephemeral		Moderately	4	3	0	0	103
SIL-TMA-024	Illinois	39.411621	-90.422283	UNT to Seminary Creek	Ephemeral		Moderately	4	3	0	0	356
SIL-TMA-026	Illinois	39.444625	-90.431573	UNT to Seminary Creek	Intermittent		Moderately	7	3	2	0.1	433
SIL-TMA-027	Illinois	39.445088	-90.431144	UNT to Seminary Creek	Ephemeral		Moderately	4	2.5	0	0	182
SIL-TMA-028	Illinois	39.388830	-90.410960	UNT to Apple Creek	Ephemeral		Moderately	4	3	0	0	117
SIL-TMA-029	Illinois	39.388375	-90.410931	UNT to Apple Creek	Ephemeral		Moderately	5	1.5	0	0	315

Feature Designation ¹	State	Latitude ²	Longitude ²	Waterbody	Stream Type	Listed as Impaired on the 303(d) or 305(b) List ³	Function ⁴	Average Bank-to-Bank Width (feet)	Average Channel Depth (feet)	Average Water Width (feet)	Average Water Depth (feet)	Approximate Length Within Study Area (feet) ⁵
SIL-TMA-030	Illinois	39.388550	-90.410854	UNT to Apple Creek	Ephemeral		Moderately	2	1.5	0	0	90
SIL-TMA-031	Illinois	39.387395	-90.410602	UNT to Apple Creek	Perennial		Moderately	15	4	12	1.5	688
SIL-TMA-032	Illinois	39.386667	-90.410012	UNT to Apple Creek	Ephemeral		Moderately	3	2	0	0	144
SIL-TMA-033	Illinois	39.377013	-90.411377	Apple Creek	Perennial	Dissolved Oxygen/Fecal Coliform	Moderately	67	10	35	2	512
SIL-TMA-034	Illinois	39.374960	-90.412624	Apple Creek	Perennial	Dissolved Oxygen/Fecal Coliform	Moderately	50	10	35	2	593
SIL-TMA-035	Illinois	39.334372	-90.421658	UNT to Coates Creek	Perennial		Moderately	3	1	2	0.5	178
SIL-TMA-036	Illinois	39.326851	-90.422003	UNT to Coates Creek	Perennial		Moderately	5	5	3	0.25	407
SIL-TMA-037	Illinois	39.325258	-90.422459	UNT to Coates Creek	Ephemeral		Moderately	2	1	0	0	65
SIL-TMA-038	Illinois	39.232807	-90.404619	UNT to Macoupin Creek	Intermittent		Moderately	4	2	2	0.5	371
SIL-TMA-039	Illinois	39.230199	-90.401780	Macoupin Creek	Perennial	Fecal Coliform	Moderately	100	15	75	>5	329
SIL-TMA-040	Illinois	39.238148	-90.410641	UNT to Macoupin Creek	Ephemeral		Moderately	3	1.5	0	0	359
SIL-TMA-041	Illinois	39.378521	-90.412042	UNT to Apple Creek	Perennial		Fully	3	0.5	1.5	0.2	281
SIL-TMA-042	Illinois	39.308567	-90.431829	UNT to Coates Creek	Perennial		Moderately	6	4	3.5	0.5	337
SIL-TMA-043	Illinois	39.313029	-90.429650	UNT to Coates Creek	Ephemeral		Moderately	6	3.5	0	0	287
SIL-TMA-044	Illinois	39.218350	-90.396095	UNT to Macoupin Creek	Intermittent		Impaired	7	4	4	0.5	70
SIL-TMA-045	Illinois	39.282938	-90.429094	UNT to Link Branch	Ephemeral		Impaired	3	3.5	0	0	68
SIL-TMA-051	Illinois	39.282411	-90.429377	UNT to Link Branch	Intermittent		Moderately	6	3	2	0.2	369
SIL-TMA-054	Illinois	39.510084	-90.430842	UNT to Little Sandy Creek	Ephemeral		Impaired	8	4	0	0	317
SIL-TMA-055	Illinois	39.511238	-90.431087	UNT to Little Sandy Creek	Ephemeral		Moderately	4	3	0	0	81
SIL-TMA-056	Illinois	39.475940	-90.431397	UNT to Hurricane Creek	Ephemeral		Moderately	8	6	2	0.1	303
SIL-TMA-058	Illinois	39.087103	-90.387609	UNT to Otter Creek	Perennial		Moderately	8	4	4	1	315
SIL-TMA-059	Illinois	39.084930	-90.388101	UNT to Otter Creek	Ephemeral		Moderately	5	3	0	0	255
SIL-TMA-060	Illinois	39.083513	-90.388302	UNT to Otter Creek	Intermittent		Moderately	8	8	4	<0.08	395
SIL-TMA-061	Illinois	39.083354	-90.388163	UNT to Otter Creek	Ephemeral		Moderately	6	8	0	0	137
SIL-TMA-062	Illinois	39.077915	-90.389532	UNT to Otter Creek	Ephemeral		Moderately	8	6	0	0	372
SIL-TMA-063	Illinois	39.077660	-90.389472	UNT to Otter Creek	Ephemeral		Moderately	8	6	0	0	94
SIL-TMA-066/NHD-830*	Illinois	39.027304	-90.385042	UNT to South Fork Otter Creek	Perennial		Moderately	12	5	6	1	539
SIL-TMA-067	Illinois	39.026718	-90.384737	UNT to South Fork Otter Creek	Ephemeral		Moderately	4	5	0	0	417
SIL-TMA-068	Illinois	39.027638	-90.385157	UNT to South Fork Otter Creek	Intermittent		Moderately	5	5	1	<0.08	150
SIL-TMA-070	Illinois	39.028699	-90.387224	UNT to South Fork Otter Creek	Ephemeral		Moderately	5	2	0	0	290
SIL-TMA-071	Illinois	39.028781	-90.387241	UNT to South Fork Otter Creek	Ephemeral		Moderately	2	1.5	0	0	128
SIL-TMA-072	Illinois	39.030142	-90.388127	UNT to South Fork Otter Creek	Ephemeral		Moderately	3	1.5	0	0	292
SIL-TMA-073	Illinois	39.036643	-90.388178	UNT to South Fork Otter Creek	Ephemeral		Moderately	4	3	0	0	231
SIL-TMA-074	Illinois	39.037178	-90.387940	UNT to South Fork Otter Creek	Perennial		Moderately	5	1	2.5	0.2	495
SIL-TMA-075	Illinois	39.037880	-90.388502	UNT to South Fork Otter Creek	Ephemeral		Moderately	2	1	0	0	42
SIL-TMA-076	Illinois	39.056290	-90.389316	UNT to Otter Creek	Perennial		Moderately	8	3	3.5	0.25	1076
SIL-TMA-077	Illinois	39.566165	-90.420796	UNT to N. Little Sandy Creek	Ephemeral		Moderately	3	1.5	0	0	324
SIL-TMA-078	Illinois	39.266200	-90.417756	UNT to Link Branch	Intermittent		Moderately	2	1	1.5	0.25	199
SIL-WJW-002	Illinois	39.248463	-90.413938	UNT to Macoupin Creek	Ephemeral		Moderately	4	2	0	0	168
SIL-WJW-003	Illinois	39.247771	-90.414045	UNT to Macoupin Creek	Ephemeral		Moderately	5	3	0	0	119
SIL-WJW-004	Illinois	39.247384	-90.413994	UNT to Macoupin Creek	Ephemeral		Moderately	5	2	0	0	139
SMO-CDK-001	Missouri	38.843945	-90.243532	Missouri River	Perennial	Escherichia coli	Impaired	1335	30	1300	>10	1429
SMO-CDK-002	Missouri	38.838173	-90.248214	UNT to Missouri River	Ephemeral		Moderately	4	1.5	0	0	183
SMO-CDK-004	Missouri	38.812939	-90.228836	UNT to Coldwater Creek	Intermittent		Impaired	5	1	2	<0.08	261

Feature Designation ¹	State	Latitude ²	Longitude ²	Waterbody	Stream Type	Listed as Impaired on the 303(d) or 305(b) List ³	Function ⁴	Average Bank-to-Bank Width (feet)	Average Channel Depth (feet)	Average Water Width (feet)	Average Water Depth (feet)	Approximate Length Within Study Area (feet) ⁵
SMO-DFW-001	Missouri	38.834494	-90.244639	UNT to Missouri River	Ephemeral		Moderately	1.5	0.5	0	0	212
SMO-DFW-002	Missouri	38.836889	-90.246547	UNT to Missouri River	Ephemeral		Moderately	6	2.5	0	0	113
SMO-DFW-003	Missouri	38.819987	-90.232597	UNT to Missouri River	Ephemeral		Moderately	3	0.4	0	0	46
SMO-DFW-004	Missouri	38.819808	-90.232595	UNT to Missouri River	Ephemeral		Moderately	5	1.5	0	0	106
SMO-DFW-005	Missouri	38.819776	-90.232648	UNT to Missouri River	Ephemeral		Moderately	3	0.6	0	0	67
SMO-DFW-006	Missouri	38.819730	-90.232627	UNT to Missouri River	Ephemeral		Moderately	4	0.8	0	0	35
SMO-DFW-007	Missouri	38.819736	-90.232541	UNT to Missouri River	Ephemeral		Impaired	5	8	0	0	48
SMO-DFW-008	Missouri	38.814359	-90.230186	Coldwater Creek	Perennial		Moderately	48	5	45	1	1889
SMO-DFW-010	Missouri	38.808483	-90.214810	UNT to Missouri River	Perennial		Impaired	20	5	13	1.5	316
SMO-DFW-011	Missouri	38.808359	-90.214236	UNT to Missouri River	Intermittent		Impaired	7	1.5	0	0	191
SMO-DFW-012	Missouri	38.808231	-90.214915	UNT to Missouri River	Perennial		Impaired	12	2	7	0.7	76
SMO-DFW-013	Missouri	38.792400	-90.205204	UNT to Missouri River	Perennial		Moderately	5	1.5	2.5	0.2	100
SMO-DFW-014	Missouri	38.779924	-90.189295	UNT to Waitkins Creek	Perennial		Impaired	5	1.5	3	0.2	84
SMO-DFW-015	Missouri	38.779426	-90.185748	UNT to Waitkins Creek	Perennial		Impaired	4	2	2.3	0.3	248
SMO-DFW-016	Missouri	38.779533	-90.185563	UNT to Waitkins Creek	Intermittent		Impaired	2	0.5	1	0.2	78
SMO-JP-001	Missouri	38.920571	-90.354152	UNT to Mississippi River	Ephemeral		Impaired	4	0.5	0	0	1019
SMO-JP-002	Missouri	38.936457	-90.379163	UNT to Mississippi River	Ephemeral		Moderately	6	3.5	0	0	2007
SMO-JP-003	Missouri	38.926903	-90.368500	UNT to Mississippi River	Ephemeral		Impaired	4	1	0	0	307
SMO-JP-004	Missouri	38.931230	-90.381978	UNT to Mississippi River	Ephemeral		Impaired	2	0.7	0	0	352
SMO-JP-005	Missouri	38.940691	-90.380919	UNT to Mississippi River	Ephemeral	Escherichia coli	Impaired	2.5	1	0	0	36
SMO-TMA-001	Missouri	38.847983	-90.238412	Missouri River	Perennial		Moderately	200	8	165	>10	632
SMO-TMA-002	Missouri	38.897465	-90.298574	UNT to Missouri River	Ephemeral		Impaired	2	0.5	0	0	343
SMO-TMA-003	Missouri	38.897872	-90.300348	UNT to Missouri River	Ephemeral		Impaired	3	0.5	0	0	220
SMO-TMA-004	Missouri	38.897899	-90.300400	UNT to Missouri River	Ephemeral		Impaired	3	0.5	0	0	243
SMO-TMA-005	Missouri	38.898920	-90.302959	UNT to Missouri River	Ephemeral		Impaired	4	1.5	0	0	336
SMO-TMA-006	Missouri	38.926926	-90.368199	UNT to Mississippi River	Perennial		Moderately	60	8	20	2	276
SMO-TMA-007	Missouri	38.938019	-90.378581	UNT to Mississippi River	Ephemeral		Impaired	3	0.75	0	0	44
SMO-TMA-008	Missouri	38.939439	-90.382114	UNT to Mississippi River	Ephemeral		Moderately	2	1	0	0	1581
SMO-TMA-009	Missouri	38.917734	-90.336715	UNT to Mississippi River	Ephemeral		Impaired	6	4	0	0	322
SMO-TMA-010	Missouri	38.926364	-90.363016	UNT to Mississippi River	Intermittent		Impaired	2	0.5	0	0	113
SMO-TMA-011	Missouri	38.929795	-90.392510	UNT to Mississippi River	Ephemeral		Moderately	2	1	0	0	223
SMO-WJW-001	Missouri	38.944847	-90.381487	UNT to Mississippi River	Perennial		Fully	350	8	350	>10	325
NHD-181*	Illinois	39.543397	-90.429073	UNT to Little Sandy Creek	Intermittent		N/A	N/A	N/A	N/A	N/A	639
NHD-199*	Illinois	39.540378	-90.432385	UNT to Little Sandy Creek	Intermittent		N/A	N/A	N/A	N/A	N/A	302
NHD-214*	Illinois	39.538098	-90.433359	UNT to Little Sandy Creek	Intermittent		N/A	N/A	N/A	N/A	N/A	108
NHD-256*	Illinois	39.533426	-90.432688	UNT to Little Sandy Creek	Intermittent		N/A	N/A	N/A	N/A	N/A	313
NHD-267*	Illinois	39.532665	-90.432775	UNT to Little Sandy Creek	Intermittent		N/A	N/A	N/A	N/A	N/A	66
NHD-599*	Illinois	39.479504	-90.430571	Hurricane Creek	Perennial		N/A	N/A	N/A	N/A	N/A	305
NHD-687*	Illinois	39.313384	-90.430202	Coates Creek	Perennial		N/A	N/A	N/A	N/A	N/A	307
NHD-741*	Illinois	39.209942	-90.400017	UNT to Macoupin Creek	Intermittent		N/A	N/A	N/A	N/A	N/A	316
NHD-761*	Illinois	39.111419	-90.388676	UNT to Otter Creek	Intermittent		N/A	N/A	N/A	N/A	N/A	844
NHD-784*	Illinois	39.072246	-90.391618	Otter Creek	Perennial	Dissolved Oxygen	N/A	N/A	N/A	N/A	N/A	90
NHD-828*	Illinois	39.026853	-90.385974	UNT to South Fork Otter Creek	Intermittent		N/A	N/A	N/A	N/A	N/A	247
NHD-831*	Illinois	39.026382	-90.385313	UNT to South Fork Otter Creek	Intermittent		N/A	N/A	N/A	N/A	N/A	353
NHD-849*	Illinois	39.012799	-90.377855	UNT to South Fork Otter Creek	Intermittent		N/A	N/A	N/A	N/A	N/A	321
NHD-850*	Illinois	39.010974	-90.377883	UNT to South Fork Otter Creek	Intermittent		N/A	N/A	N/A	N/A	N/A	339
NHD-869*	Illinois	38.997623	-90.377792	UNT to South Fork Otter Creek	Intermittent		N/A	N/A	N/A	N/A	N/A	353

Feature Designation ¹	State	Latitude ²	Longitude ²	Waterbody	Stream Type	Listed as Impaired on the 303(d) or 305(b) List ³	Function ⁴	Average Bank-to-Bank (Channel) Width (feet)	Average Channel Depth (feet)	Average Water Width (feet)	Average Water Depth (feet)	Approximate Length Within Study Area (feet) ⁵
NHD-874*	Illinois	38.990205	-90.376687	UNT to Mill Creek	Intermittent		N/A	N/A	N/A	N/A	N/A	353
NHD-901*	Illinois	38.968773	-90.369409	UNT to Mississippi River	Intermittent		N/A	N/A	N/A	N/A	N/A	56
NHD-902*	Illinois	38.967875	-90.367375	UNT to Mississippi River	Intermittent		N/A	N/A	N/A	N/A	N/A	248
NHD-908*	Illinois	38.963779	-90.370445	UNT to Mississippi River	Intermittent		N/A	N/A	N/A	N/A	N/A	321
NHD-913*	Illinois	38.959885	-90.374491	UNT to Mississippi River	Intermittent		N/A	N/A	N/A	N/A	N/A	913
NHD-915*	Illinois	38.958117	-90.375599	UNT to Mississippi River	Intermittent		N/A	N/A	N/A	N/A	N/A	361
NHD-917*	Illinois	38.955669	-90.374171	UNT to Mississippi River	Intermittent		N/A	N/A	N/A	N/A	N/A	284
NHD-916*	Illinois	38.955651	-90.374103	UNT to Mississippi River	Intermittent		N/A	N/A	N/A	N/A	N/A	271
NHD-921*	Illinois/Missouri	38.952804	-90.376331	Mississippi River	Perennial	Fecal Coliform	N/A	N/A	N/A	N/A	N/A	302

Notes:

- GAI map designation. Features designated with an asterisk (*) were located using desktop methods and have not been field verified due to property access constraints.
- Coordinates provided in NAD 83.
- Impairments as listed on the Illinois Integrated Water Quality Report and Section 303(d) List (2016). Available at: <http://www.epa.illinois.gov/Assess/epa/water-quality/watershed-management/indisr/2016/303-d-list/wq-report-surface-water.pdf> or the Missouri Water Quality 305(b) Report (2014) and 303(d) list (2016). Available at: <http://dmr.mo.gov/env/wq/wq/waterquality/303d/303d.htm>.
- As quantified in the field using Missouri Stream Mitigation Method assessment guidance (USACE, et al., 2013).
- Extent of waterbody within study area. Waterbody may extend beyond the limits of the delineation survey.

UNT – Unnamed tributary; N/A – Not applicable.

WATERBODY PHOTOGRAPHS

Waterbody Photographs

Photos Taken Within The Study Area Unless Otherwise Noted.



**Stream SIL-CDK-001,
Upstream, Facing Northeast (11/1/16)**



**Stream SIL-CDK-001, Downstream,
Facing Southwest (11/1/16)**



**Stream SIL-CDK-002,
Upstream, Facing East (11/1/16)**



**Stream SIL-CDK-002, Downstream,
Facing West (11/1/16)**



**Stream SIL-CDK-003,
Upstream, Facing East (11/1/16)**



**Stream SIL-CDK-003, Downstream,
Facing West (11/1/16)**



**Stream SIL-CDK-012,
Upstream, Facing North (11/3/16)**



**Stream SIL-CDK-012, Downstream,
Facing South (11/3/16)**



**Stream SIL-CDK-013,
Upstream, Facing West-Northwest (11/3/16)**



**Stream SIL-CDK-013, Downstream,
Facing East-Southeast (11/3/16)**



**Stream SIL-CDK-016,
Upstream, Facing North-Northwest (11/4/16)**



**Stream SIL-CDK-016, Downstream,
Facing South-Southeast (11/4/16)**



**Stream SIL-CDK-017,
Upstream, Facing West (11/4/16)**



**Stream SIL-CDK-017, Downstream,
Facing East (11/4/16)**



**Stream SIL-CDK-018,
Upstream, Facing East (11/5/16)**



**Stream SIL-CDK-018, Downstream,
Facing West (11/5/16)**



**Stream SIL-CDK-022,
Upstream, Facing West (11/5/16)**



**Stream SIL-CDK-022 Downstream,
Facing East (11/5/16)**



**Stream SIL-CDK-029,
Upstream, Facing North (11/6/16)**



**Stream SIL-CDK-029, Downstream,
Facing South (11/6/16)**



**Stream SIL-DFW-001,
Upstream, Facing East (9/22/16)**



**Stream SIL-DFW-001, Downstream,
Facing West (9/22/16)**



**Stream SIL-DFW-002,
Upstream, Facing North (9/22/16)**



**Stream SIL-DFW-002, Downstream,
Facing South (9/22/16)**



**Stream SIL-DFW-003,
Upstream, Facing Northeast (9/22/16)**



**Stream SIL-DFW-003, Downstream,
Facing Southwest (9/22/16)**



**Stream SIL-DFW-004,
Upstream, Facing East (9/23/16)**



**Stream SIL-JJP-001,
Upstream, Facing South (9/8/16)**



**Stream SIL-JJP-001, Downstream,
Facing North (9/8/16)**



**Stream SIL-JJP-002,
Upstream, Facing Northwest (9/8/16)**



**Stream SIL-JJP-002, Downstream,
Facing Southeast (9/8/16)**



**Stream SIL-JJP-003,
Upstream, Facing East (9/8/16)**



**Stream SIL-JJP-003, Downstream,
Facing West (9/8/16)**



**Stream SIL-JJP-004,
Upstream, Facing Southeast (9/8/16)**



**Stream SIL-JJP-004, Downstream,
Facing Northwest (9/8/16)**



**Stream SIL-JJP-009,
Upstream, Facing West (9/9/16)**



**Stream SIL-JJP-009, Downstream,
Facing East (9/9/16)**



**Stream SIL-JJP-010,
Upstream, Facing West-Northwest (9/9/16)**



**Stream SIL-JJP-010, Downstream,
Facing East-southeast (9/9/16)**



**Stream SIL-JJP-011,
Upstream, Facing South (9/10/16)**



**Stream SIL-JJP-011, Downstream,
Facing North (9/10/16)**



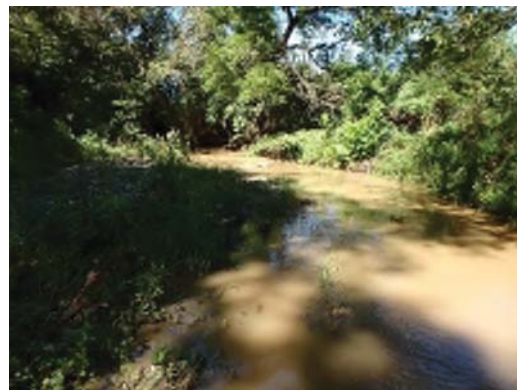
**Stream SIL-JJP-012,
Upstream, Facing Northeast (9/10/16)**



**Stream SIL-JJP-012, Downstream,
Facing Southeast (9/10/16)**



**Stream SIL-JJP-013,
Upstream, Facing East (9/10/16)**



**Stream SIL-JJP-013, Downstream,
Facing West (9/10/16)**



**Stream SIL-JJP-014,
Upstream, Facing North (9/10/16)**



**Stream SIL-JJP-014, Downstream,
Facing West (9/10/16)**



**Stream SIL-JJP-015,
Upstream, Facing South (9/10/16)**



**Stream SIL-JJP-015, Downstream,
Facing North (9/10/16)**



**Stream SIL-JJP-016,
Upstream, Facing North (9/12/16)**



**Stream SIL-JJP-016, Downstream,
Facing South (9/12/16)**



**Stream SIL-JJP-017,
Upstream, Facing Northwest (9/12/16)**



**Stream SIL-JJP-017, Downstream,
Facing Southeast (9/12/16)**



**Stream SIL-JJP-018,
Upstream, Facing East (9/12/16)**



**Stream SIL-JJP-018, Downstream,
Facing West (9/12/16)**



**Stream SIL-JJP-024,
Upstream, Facing South-Southwest (9/13/16)**



**Stream SIL-JJP-024, Downstream,
Facing Northeast (9/13/16)**



**Stream SIL-JJP-025,
Upstream, Facing West (9/13/16)**



**Stream SIL-JJP-025, Downstream,
Facing East (9/13/16)**



**Stream SIL-JJP-026,
Upstream, Facing Northeast (9/14/16)**



**Stream SIL-JJP-026, Downstream,
Facing Southwest (9/14/16)**



**Stream SIL-JJP-027,
Upstream, Facing East (9/14/16)**



**Stream SIL-JJP-027, Downstream,
Facing West (9/14/16)**



**Stream SIL-JJP-028,
Upstream, Facing Northeast (9/14/16)**



**Stream SIL-JJP-028, Downstream,
Facing Southwest (9/14/16)**



**Stream SIL-JJP-029,
Upstream, Facing West (9/15/16)**



**Stream SIL-JJP-029, Downstream,
Facing East (9/15/16)**



**Stream SIL-JJP-030,
Upstream, Facing North-Northwest (9/15/16)**



**Stream SIL-JJP-030, Downstream,
Facing South-Southeast (9/15/16)**



**Stream SIL-JJP-031,
Upstream, Facing East (9/16/16)**



**Stream SIL-JJP-031, Downstream,
Facing West (9/16/16)**



**Stream SIL-JJP-100,
Upstream, Facing South (10/19/16)**



**Stream SIL-JJP-100, Downstream,
Facing North (10/19/16)**



**Stream SIL-JJP-101,
Upstream, Facing South (10/20/16)**



**Stream SIL-JJP-101, Downstream,
Facing North (10/20/16)**



**Stream SIL-JJP-102,
Upstream, Facing Northwest (10/20/16)**



**Stream SIL-JJP-102, Downstream,
Facing Southeast (10/20/16)**



**Stream SIL-JJP-103,
Upstream, Facing South (10/20/16)**



**Stream SIL-JJP-103, Downstream,
Facing North (10/20/16)**



**Stream SIL-JJP-104,
Upstream, Facing Southeast (10/20/16)**



**Stream SIL-JJP-104, Downstream,
Facing Northwest (10/20/16)**



**Stream SIL-JJP-109,
Upstream, Facing Northeast (10/22/16)**



**Stream SIL-JJP-109, Downstream,
Facing Southwest (10/22/16)**



**Stream SIL-JJP-110,
Upstream, Facing Northwest (10/22/16)**



**Stream SIL-JJP-110, Downstream,
Facing Southeast (10/22/16)**



**Stream SIL-JJP-111,
Upstream, Facing Southwest (10/22/16)**



**Stream SIL-JJP-111, Downstream,
Facing Northeast (10/22/16)**



**Stream SIL-JJP-113,
Upstream, Facing Northwest (10/24/16)**



**Stream SIL-JJP-113, Downstream,
Facing Southeast (10/24/16)**



**Stream SIL-JJP-114,
Upstream, Facing Southeast (10/24/16)**



**Stream SIL-JJP-114, Downstream,
Facing Northwest (10/24/16)**



**Stream SIL-JJP-115,
Upstream, Facing East (10/24/16)**



**Stream SIL-JJP-115, Downstream,
Facing West (10/24/16)**



**Stream SIL-JJP-117,
Upstream, Facing Southeast (11/15/16)**



**Stream SIL-JJP-117, Downstream,
Facing North-Northwest (11/15/16)**



**Stream SIL-JJP-118,
Upstream, Facing East (11/15/16)**



**Stream SIL-JJP-118, Downstream,
Facing West (11/15/16)**



**Stream SIL-JJP-119,
Upstream, Facing South (11/15/16)**



**Stream SIL-JJP-119, Downstream,
Facing North (11/15/16)**



**Stream SIL-JJP-120,
Upstream, Facing North (11/15/16)**



**Stream SIL-JJP-120, Downstream,
Facing Southwest (11/15/16)**



**Stream SIL-JJP-121,
Upstream, Facing North (11/15/16)**



**Stream SIL-JJP-121, Downstream,
Facing South (11/15/16)**



**Stream SIL-JJP-122,
Upstream, Facing North-Northeast (11/16/16)**



**Stream SIL-JJP-122, Downstream,
Facing South-Southwest (11/16/16)**



**Stream SIL-JJP-123,
Upstream, Facing South (11/16/16)**



**Stream SIL-JJP-123, Downstream,
Facing North (11/16/16)**



**Stream SIL-JJP-124,
Upstream, Facing Southeast (11/16/16)**



**Stream SIL-JJP-124, Downstream,
Facing Northwest (11/16/16)**



**Stream SIL-JJP-127,
Upstream, Facing North (11/17/16)**



**Stream SIL-JJP-127, Downstream,
Facing South (11/17/16)**



**Stream SIL-JJP-128,
Upstream, Facing South (11/17/16)**



**Stream SIL-JJP-128 Downstream,
Facing North (11/17/16)**



**Stream SIL-JJP-129,
Upstream, Facing Southeast (11/17/16)**



**Stream SIL-JJP-129, Downstream,
Facing Northwest (11/17/16)**



**Stream SIL-JJP-130,
Upstream, Facing Northeast (11/17/16)**



**Stream SIL-JJP-130, Downstream,
Facing Southwest (11/17/16)**



**Stream SIL-JJP-131,
Upstream, Facing North-Northwest (11/17/16)**



**Stream SIL-JJP-131, Downstream,
Facing South-Southeast (11/17/16)**



**Stream SIL-JJP-132,
Upstream, Facing Northeast (11/17/16)**



**Stream SIL-JJP-132, Downstream,
Facing Southwest (11/17/16)**



**Stream SIL-JJP-133,
Upstream, Facing North (11/17/16)**



**Stream SIL-JJP-133, Downstream,
Facing South (11/17/16)**



**Stream SIL-JJP-134,
Upstream, Facing Southeast (11/17/16)**



**Stream SIL-JJP-134, Downstream,
Facing Northwest (11/17/16)**



**Stream SIL-JJP-135,
Upstream, Facing South (11/17/16)**



**Stream SIL-JJP-135, Downstream,
Facing North (11/17/16)**



**Stream SIL-JJP-136,
Upstream, Facing North (11/18/16)**



**Stream SIL-JJP-136, Downstream,
Facing South (11/18/16)**



**Stream SIL-JJP-137,
Upstream, Facing North (11/18/16)**



**Stream SIL-JJP-137, Downstream,
Facing South (11/18/16)**



**Stream SIL-JJP-138,
Upstream, Facing East (11/18/16)**



**Stream SIL-JJP-138, Downstream,
Facing West (11/18/16)**



**Stream SIL-JJP-139,
Upstream, Facing East (11/18/16)**



**Stream SIL-JJP-139, Downstream,
Facing West (11/18/16)**



**Stream SIL-JTR-001,
Upstream, Facing North-Northwest (11/7/16)**



**Stream SIL-JTR-001, Downstream,
Facing South-Southeast (11/7/16)**



**Stream SIL-JTR-002,
Upstream, Facing Northwest (11/7/16)**



**Stream SIL-JTR-002, Downstream,
Facing East (11/7/16)**



**Stream SIL-JTR-003,
Upstream, Facing East (11/7/16)**



**Stream SIL-JTR-003, Downstream,
Facing West (11/7/16)**



**Stream SIL-JTR-004,
Upstream, Facing Southeast (11/7/16)**



**Stream SIL-JTR-004, Downstream,
Facing Northwest (11/7/16)**



**Stream SIL-TMA-001,
Upstream, Facing North (9/8/16)**



**Stream SIL-TMA-001, Downstream,
Facing South (9/8/16)**



**Stream SIL-TMA-002,
Upstream, Facing South (9/8/16)**



**Stream SIL-TMA-002, Downstream,
Facing North (9/8/16)**



**Stream SIL-TMA-005,
Upstream, Facing Southeast (9/9/16)**



**Stream SIL-TMA-005, Downstream,
Facing Northwest (9/9/16)**



**Stream SIL-TMA-006,
Upstream, Facing Southwest (9/9/16)**



**Stream SIL-TMA-006, Downstream,
Facing Southeast (9/9/16)**



**Stream SIL-TMA-007,
Upstream, Facing South (9/9/16)**



**Stream SIL-TMA-007, Downstream,
Facing Northeast (9/9/16)**



**Stream SIL-TMA-008,
Upstream, Facing South (9/10/16)**



**Stream SIL-TMA-008, Downstream,
Facing North (9/10/16)**



**Stream SIL-TMA-009,
Upstream, Facing North (9/10/16)**



**Stream SIL-TMA-009, Downstream,
Facing South (9/10/16)**



**Stream SIL-TMA-010,
Upstream, Facing South (9/10/16)**



**Stream SIL-TMA-010, Downstream,
Facing North (9/10/16)**



**Stream SIL-TMA-011,
Upstream, Facing Northeast (9/12/16)**



**Stream SIL-TMA-011, Downstream,
Facing Southwest (9/12/16)**



**Stream SIL-TMA-012,
Upstream, Facing Southeast (9/12/16)**



**Stream SIL-TMA-012, Downstream,
Facing Northwest (9/12/16)**



**Stream SIL-TMA-015,
Upstream, Facing West (9/12/16)**



**Stream SIL-TMA-015, Downstream,
Facing East (9/12/16)**



**Stream SIL-TMA-016,
Upstream, Facing North (9/12/16)**



**Stream SIL-TMA-016, Downstream,
Facing South (9/12/16)**



**Stream SIL-TMA-018,
Upstream, Facing East (9/13/16)**



**Stream SIL-TMA-018, Downstream,
Facing West (9/13/16)**



**Stream SIL-TMA-019,
Upstream, Facing North (9/13/16)**



**Stream SIL-TMA-019, Downstream,
Facing South (9/13/16)**



**Stream SIL-TMA-021,
Upstream, Facing East (9/15/16)**



**Stream SIL-TMA-021, Downstream,
Facing West (9/15/16)**



**Stream SIL-TMA-022,
Upstream, Facing Northeast (9/15/16)**



**Stream SIL-TMA-022, Downstream,
Facing South (9/15/16)**



**Stream SIL-TMA-023,
Upstream, Facing West (9/15/16)**



**Stream SIL-TMA-023, Downstream,
Facing East (9/15/16)**



**Stream SIL-TMA-024,
Upstream, Facing West (9/15/16)**



**Stream SIL-TMA-024, Downstream,
Facing East (9/15/16)**



**Stream SIL-TMA-026,
Upstream, Facing East (9/19/16)**



**Stream SIL-TMA-026, Downstream,
Facing West (9/19/16)**



**Stream SIL-TMA-027,
Upstream, Facing North (9/19/16)**



**Stream SIL-TMA-027, Downstream,
Facing South (9/19/16)**



**Stream SIL-TMA-028,
Upstream, Facing North (9/19/16)**



**Stream SIL-TMA-028, Downstream,
Facing South (9/19/16)**



**Stream SIL-TMA-029,
Upstream, Facing North (9/19/16)**



**Stream SIL-TMA-029, Downstream,
Facing South (9/19/16)**



**Stream SIL-TMA-030,
Upstream, Facing Northeast (9/19/16)**



**Stream SIL-TMA-030, Downstream,
Facing Southwest (9/19/16)**



**Stream SIL-TMA-031,
Upstream, Facing West (9/19/16)**



**Stream SIL-TMA-031, Downstream,
Facing East (9/19/16)**



**Stream SIL-TMA-032,
Upstream, Facing Northwest (9/19/16)**



**Stream SIL-TMA-032, Downstream,
Facing Southeast (9/19/16)**



**Stream SIL-TMA-033,
Upstream, Facing East (9/20/16)**



**Stream SIL-TMA-033, Downstream,
Facing West (9/20/16)**



**Stream SIL-TMA-034,
Upstream, Facing North (9/20/16)**



**Stream SIL-TMA-034, Downstream,
Facing South (9/20/16)**



**Stream SIL-TMA-035,
Upstream, Facing East (9/21/16)**



**Stream SIL-TMA-035, Downstream,
Facing West (9/21/16)**



**Stream SIL-TMA-036,
Upstream, Facing East (9/21/16)**



**Stream SIL-TMA-036, Downstream,
Facing West (9/21/16)**



**Stream SIL-TMA-037,
Upstream, Facing East (9/21/16)**



**Stream SIL-TMA-037, Downstream,
Facing West (9/21/16)**



**Stream SIL-TMA-038,
Upstream, Facing Northeast (9/22/16)**



**Stream SIL-TMA-038, Downstream,
Facing Southwest (9/22/16)**



**Stream SIL-TMA-039,
Upstream, Facing Northeast (9/22/16)**



**Stream SIL-TMA-039, Downstream,
Facing Southwest (9/22/16)**



**Stream SIL-TMA-040,
Upstream, Facing North (9/23/16)**



**Stream SIL-TMA-040, Downstream,
Facing South (9/23/16)**



**Stream SIL-TMA-041,
Upstream, Facing North (10/19/16)**



**Stream SIL-TMA-041, Downstream,
Facing South (10/19/16)**



**Stream SIL-TMA-042,
Upstream, Facing East (10/19/16)**



**Stream SIL-TMA-042, Downstream,
Facing West (10/19/16)**



**Stream SIL-TMA-043,
Upstream, Facing South (10/19/16)**



**Stream SIL-TMA-043, Downstream,
Facing North (10/19/16)**



**Stream SIL-TMA-044,
Upstream, Facing South (10/20/16)**



**Stream SIL-TMA-044, Downstream,
Facing North (10/20/16)**



**Stream SIL-TMA-050,
Upstream, Facing South (10/22/16)**



**Stream SIL-TMA-050, Downstream,
Facing North (10/22/16)**



**Stream SIL-TMA-051,
Upstream, Facing West (10/22/16)**



**Stream SIL-TMA-051, Downstream,
Facing East (10/22/16)**



**Stream SIL-TMA-054,
Upstream, Facing South (10/24/16)**



**Stream SIL-TMA-054, Downstream,
Facing North (10/24/16)**



**Stream SIL-TMA-055,
Upstream, Facing Northeast (10/24/16)**



**Stream SIL-TMA-055, Downstream,
Facing Southwest (10/24/16)**



**Stream SIL-TMA-056,
Upstream, Facing East (10/24/16)**



**Stream SIL-TMA-056, Downstream,
Facing West (10/24/16)**



**Stream SIL-TMA-058,
Upstream, Facing East (11/15/16)**



**Stream SIL-TMA-058, Downstream,
Facing West (11/15/16)**



**Stream SIL-TMA-059,
Upstream, Facing Northeast (11/15/16)**



**Stream SIL-TMA-059, Downstream,
Facing Southwest (11/15/16)**



**Stream SIL-TMA-060,
Upstream, Facing East (11/15/16)**



**Stream SIL-TMA-060, Downstream,
Facing West (11/15/16)**



**Stream SIL-TMA-061,
Upstream, Facing South (11/15/16)**



**Stream SIL-TMA-061, Downstream,
Facing North (11/15/16)**



**Stream SIL-TMA-062,
Upstream, Facing Northeast (11/16/16)**



**Stream SIL-TMA-062, Downstream,
Facing Southwest (11/16/16)**



**Stream SIL-TMA-063,
Upstream, Facing Southeast (11/16/16)**



**Stream SIL-TMA-063, Downstream,
Facing Northwest (11/16/16)**



**Stream SIL-TMA-066,
Upstream, Facing East (11/17/16)**



**Stream SIL-TMA-066, Downstream,
Facing West (11/17/16)**



**Stream SIL-TMA-067,
Upstream, Facing East (11/17/16)**



**Stream SIL-TMA-067, Downstream,
Facing West (11/17/16)**



**Stream SIL-TMA-068,
Upstream, Facing North (11/17/16)**



**Stream SIL-TMA-068, Downstream,
Facing South (11/17/16)**



**Stream SIL-TMA-070,
Upstream, Facing Northeast (11/17/16)**



**Stream SIL-TMA-070, Downstream,
Facing Southwest (11/17/16)**



**Stream SIL-TMA-071,
Upstream, Facing North (11/17/16)**



**Stream SIL-TMA-071, Downstream,
Facing South (11/17/16)**



**Stream SIL-TMA-072,
Upstream, Facing East (11/17/16)**



**Stream SIL-TMA-072, Downstream,
Facing West (11/17/16)**



**Stream SIL-TMA-073,
Upstream, Facing East (11/18/16)**



**Stream SIL-TMA-073, Downstream,
Facing West (11/18/16)**



**Stream SIL-TMA-074,
Upstream, Facing East (11/18/16)**



**Stream SIL-TMA-074, Downstream,
Facing West (11/18/16)**



**Stream SIL-TMA-075,
Upstream, Facing Northeast (11/18/16)**



**Stream SIL-TMA-075, Downstream,
Facing Southwest (11/18/16)**



**Stream SIL-TMA-076,
Upstream, Facing South (11/19/16)**



**Stream SIL-TMA-076, Downstream,
Facing North (11/19/16)**



**Stream SIL-TMA-077,
Upstream, Facing South (11/20/16)**



**Stream SIL-TMA-077 Downstream,
Facing North (11/20/16)**



**Stream SIL-TMA-078,
Upstream, Facing East (11/20/16)**



**Stream SIL-TMA-078 Downstream,
Facing West (11/20/16)**



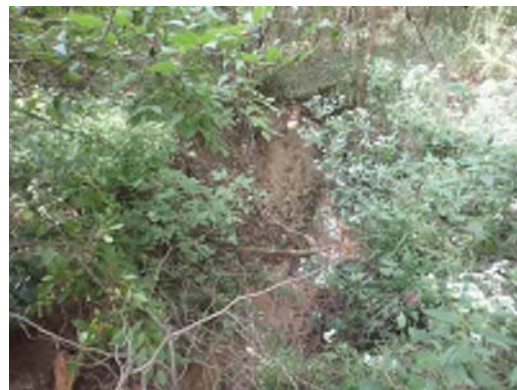
**Stream SIL-WJW-002,
Upstream, Facing Southeast (9/23/16)**



**Stream SIL-WJW-002, Downstream,
Facing West-Southwest (9/23/16)**



**Stream SIL-WJW-003,
Upstream, Facing East (9/23/16)**



**Stream SIL-WJW-003, Downstream,
Facing Southwest (9/23/16)**



**Stream SIL-WJW-004,
Upstream, Facing South-Southeast (9/23/16)**



**Stream SIL-WJW-004, Downstream,
Facing West-Northwest (9/23/16)**



**Stream SMO-CDK-001,
Upstream, Facing Northwest (11/9/16)**



**Stream SMO-CDK-001, Downstream,
Facing Southeast (11/9/16)**



**Stream SMO-CDK-002,
Upstream, Facing Southeast (11/9/16)**



**Stream SMO-CDK-002, Downstream,
Facing Northwest (11/9/16)**



**Stream SMO-CDK-004,
Upstream, Facing South (11/10/16)**



**Stream SMO-CDK-004, Downstream,
Facing North (11/10/16)**



**Stream SMO-DFW-001,
Upstream, Facing South (9/20/16)**



**Stream SMO-DFW-001, Downstream,
Facing North (9/20/16)**



**Stream SMO-DFW-002,
Upstream, Facing West (9/20/16)**



**Stream SMO-DFW-002, Downstream,
Facing East (9/20/16)**



**Stream SMO-DFW-003,
Upstream, Facing West (9/20/16)**



**Stream SMO-DFW-003, Downstream,
Facing East (9/20/16)**



**Stream SMO-DFW-004,
Upstream, Facing Southeast (9/20/16)**



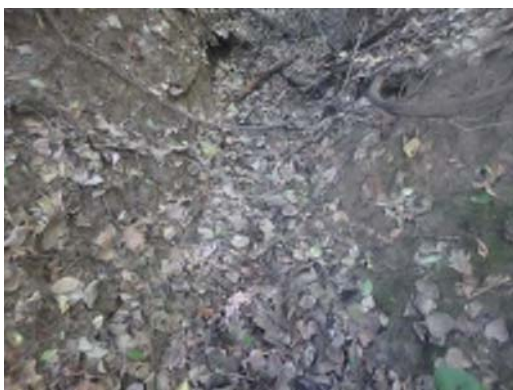
**Stream SMO-DFW-004, Downstream,
Facing Northwest (9/20/16)**



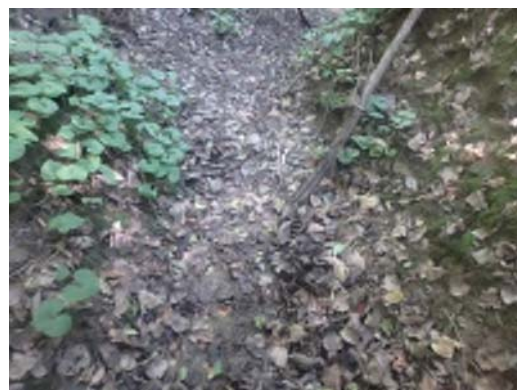
**Stream SMO-DFW-005,
Upstream, Facing West (9/20/16)**



**Stream SMO-DFW-005, Downstream,
Facing East (9/20/16)**



**Stream SMO-DFW-006,
Upstream, Facing South (9/20/16)**



**Stream SMO-DFW-006, Downstream,
Facing North (9/20/16)**



**Stream SMO-DFW-007,
Upstream, Facing South (9/20/16)**



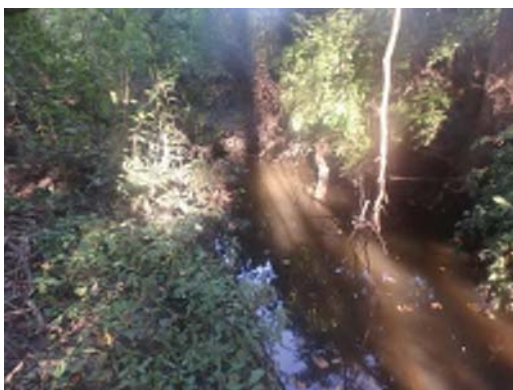
**Stream SMO-DFW-007, Downstream,
Facing North (9/20/16)**



**Stream SMO-DFW-008,
Upstream, Facing West (9/20/16)**



**Stream SMO-DFW-008, Downstream,
Facing East (9/20/16)**



**Stream SMO-DFW-010,
Upstream, Facing Southwest (9/21/16)**



**Stream SMO-DFW-010, Downstream,
Facing Northeast (9/21/16)**



**Stream SMO-DFW-011,
Upstream, Facing South (9/21/16)**



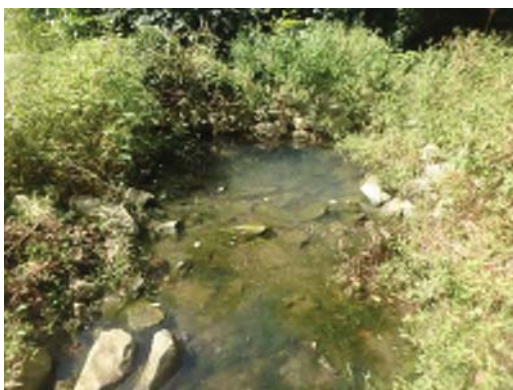
**Stream SMO-DFW-011, Downstream,
Facing North (9/21/16)**



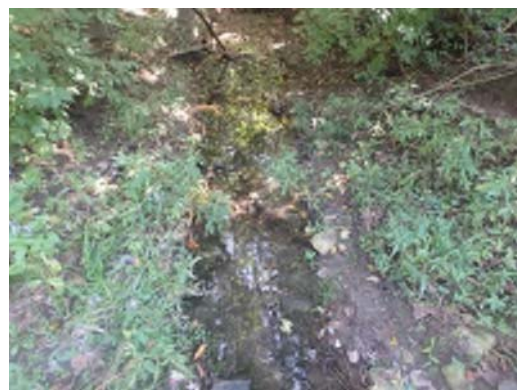
**Stream SMO-DFW-012,
Upstream, Facing South (9/21/16)**



**Stream SMO-DFW-012, Downstream,
Facing North (9/21/16)**



**Stream SMO-DFW-013,
Upstream, Facing West (9/21/16)**



**Stream SMO-DFW-013, Downstream,
Facing East (9/21/16)**



**Stream SMO-DFW-014,
Upstream, Facing Northwest (9/22/16)**



**Stream SMO-DFW-014, Downstream,
Facing Southeast (9/22/16)**



**Stream SMO-DFW-015,
Upstream, Facing Northeast (9/22/16)**



**Stream SMO-DFW-015, Downstream,
Facing Southwest (9/22/16)**



**Stream SMO-DFW-016,
Upstream, Facing Northwest (9/22/16)**



**Stream SMO-DFW-016, Downstream,
Facing Southeast (9/22/16)**



**Stream SMO-JJP-001,
Upstream, Facing South (10/17/16)**



**Stream SMO-JJP-001, Downstream,
Facing North (10/17/16)**



**Stream SMO-JJP-002,
Upstream, Facing Southeast (10/17/16)**



**Stream SMO-JJP-002, Downstream,
Facing Northwest (10/17/16)**



**Stream SMO-JJP-003,
Upstream, Facing West (10/17/16)**



**Stream SMO-JJP-003, Downstream,
Facing East (10/17/16)**



**Stream SMO-JJP-004,
Upstream, Facing Southwest (10/17/16)**



**Stream SMO-JJP-004, Downstream,
Facing Northeast (10/17/16)**



**Stream SMO-JJP-005,
Upstream, Facing West (10/18/16)**



**Stream SMO-JJP-005, Downstream,
Facing East (10/18/16)**



**Stream SMO-TMA-001,
Upstream, Facing West (10/14/16)**



**Stream SMO-TMA-001, Downstream,
Facing East (10/14/16)**



**Stream SMO-TMA-002,
Upstream, Facing North (10/16/16)**



**Stream SMO-TMA-002, Downstream,
Facing South (10/16/16)**



**Stream SMO-TMA-003,
Upstream, Facing North (10/16/16)**



**Stream SMO-TMA-003, Downstream,
Facing South (10/16/16)**



**Stream SMO-TMA-004,
Upstream, Facing North (10/16/16)**



**Stream SMO-TMA-004, Downstream,
Facing South (10/16/16)**



**Stream SMO-TMA-005,
Upstream, Facing North (10/16/16)**



**Stream SMO-TMA-005, Downstream,
Facing South (10/16/16)**



**Stream SMO-TMA-006,
Upstream, Facing South (10/17/16)**



**Stream SMO-TMA-006, Downstream,
Facing North (10/17/16)**



**Stream SMO-TMA-007,
Upstream, Facing Southwest (10/18/16)**



**Stream SMO-TMA-007, Downstream,
Facing Northeast (10/18/16)**



**Stream SMO-TMA-008,
Upstream, Facing East (10/18/16)**



**Stream SMO-TMA-008, Downstream,
Facing West (10/18/16)**



**Stream SMO-TMA-009,
Upstream, Facing East (11/21/16)**



**Stream SMO-TMA-009, Downstream,
Facing West (11/21/16)**



**Stream SMO-TMA-010,
Upstream, Facing East (11/21/16)**



**Stream SMO-TMA-010, Downstream,
Facing West (11/21/16)**



**Stream SMO-TMA-011,
Upstream, Facing South (11/22/16)**



**Stream SMO-TMA-011, Downstream,
Facing North (11/22/16)**

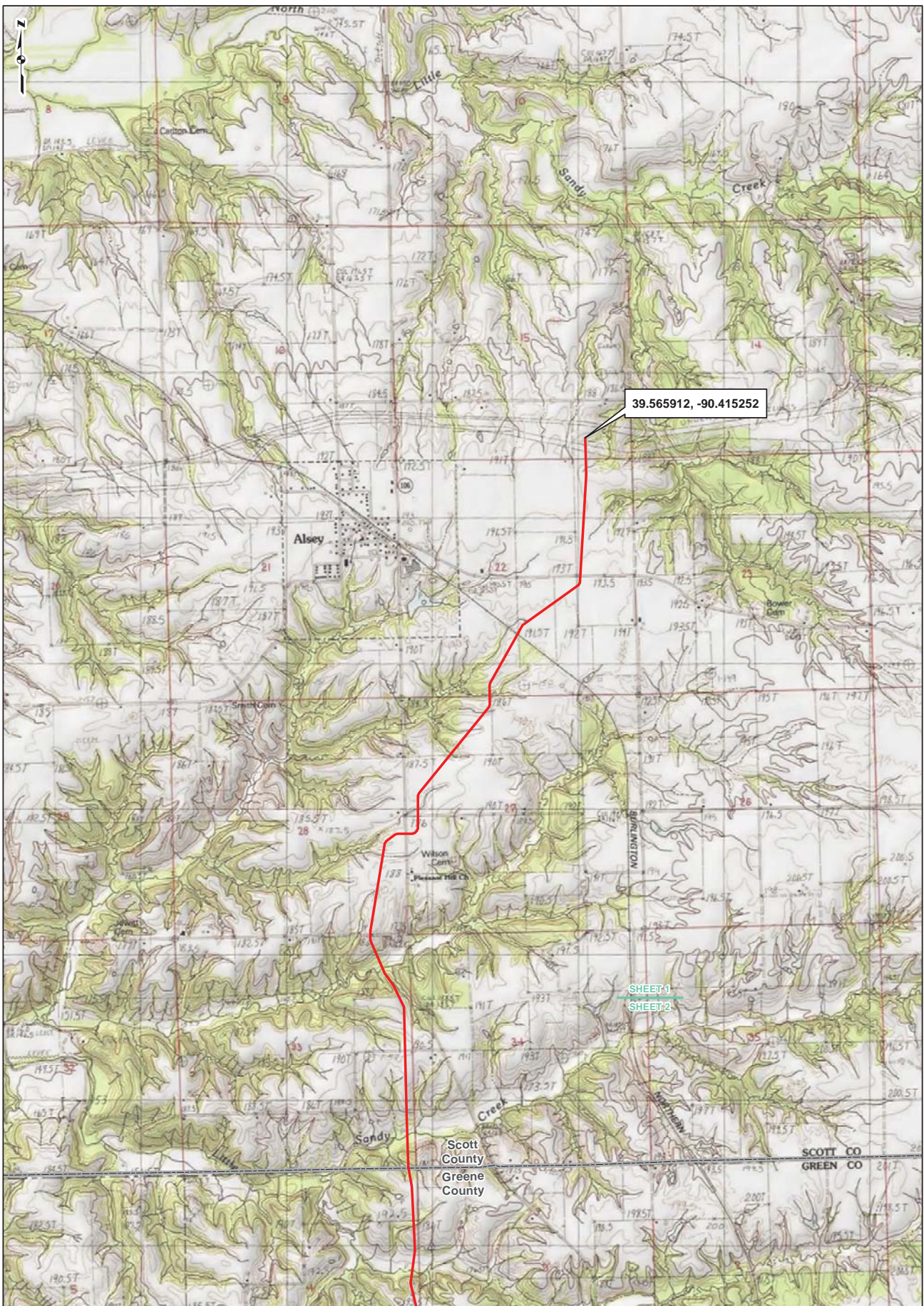


**Stream SMO-WJW-001,
Upstream, Facing North-Northwest (9/22/16)**



**Stream SMO-WJW-001, Downstream,
Facing East (9/22/16)**

FIGURES



39.565912, -90.415252

SHEET 1
SHEET 2



REFERENCE: USGS 7.5 TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1984), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1989), ELSA (1985), FLORISSANT (1989), GRAFTON (1985), JERSEYVILLE NORTH (1983), JERSEYVILLE SOUTH (1983), OTTERTON (1983) AND ROUGHHOUSE WEST (1983), ILLINOIS AND MISSOURI, OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND I-CUBED, ACCESSED 01/2017.

LEGEND

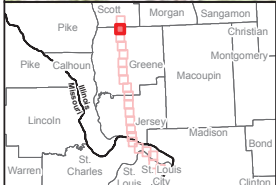
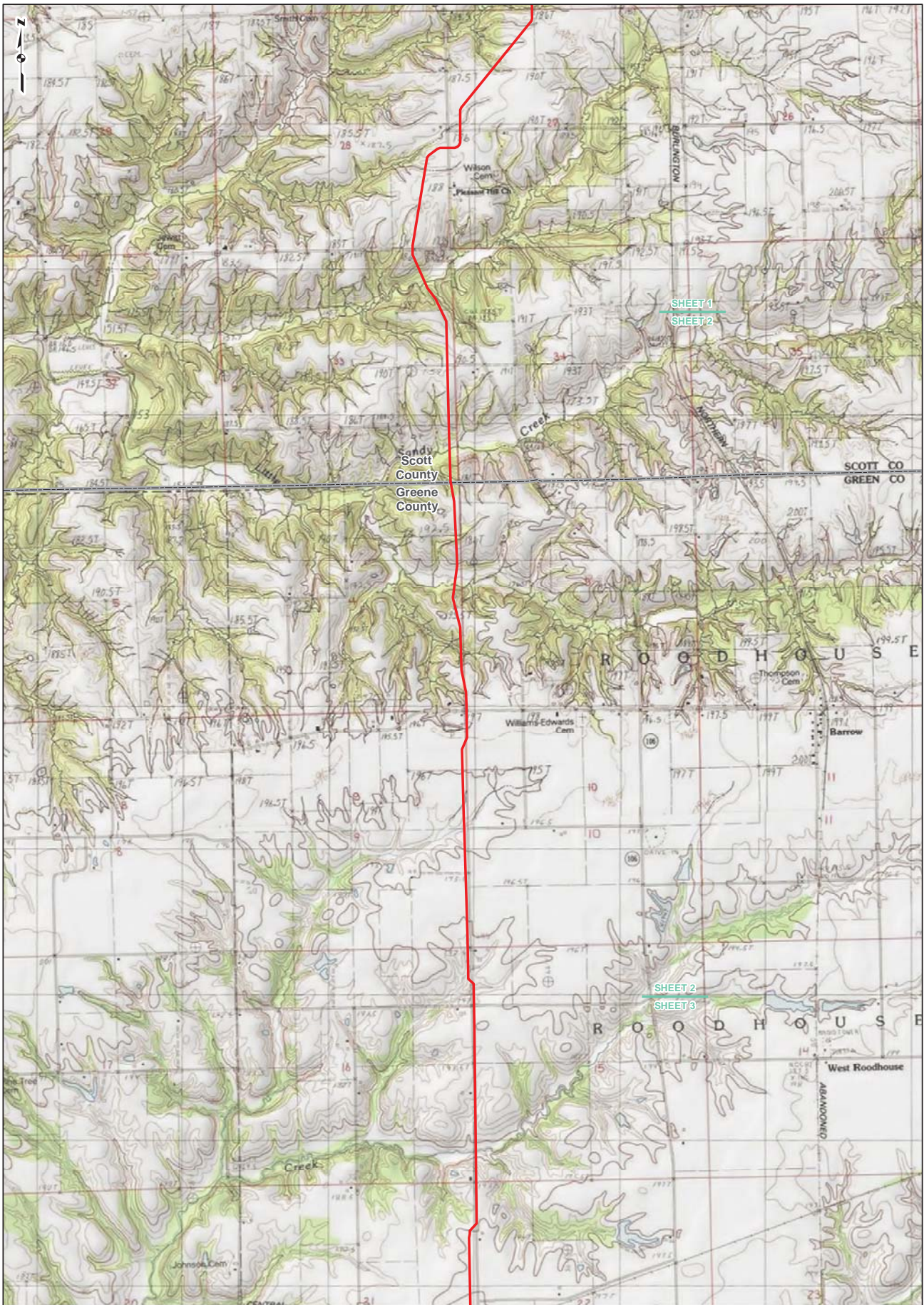
- 24-INCH PIPELINE
- LINE 880 MODIFICATIONS
- COUNTY BOUNDARY
- STATE BOUNDARY

PROJECT LOCATION MAP
SHEET 1 OF 21

SPIRE STL PIPELINE PROJECT



DRAWN BY: PMH DATE: 1/4/2017
CHECKED: APPROVED: TCW



REFERENCE: USGS 7.5 TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1984), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1999), ELSA (1995), FLORISSANT (1999), GRAFTON (1983), JERSEYVILLE NORTH (1983), JERSEYVILLE SOUTH (1983), OTTERVILLE (1983) AND ROODHOUSE WEST (1983). ILLINOIS AND MISSOURI, OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND I-CUBED, ACCESSED 01/2017.

LEGEND

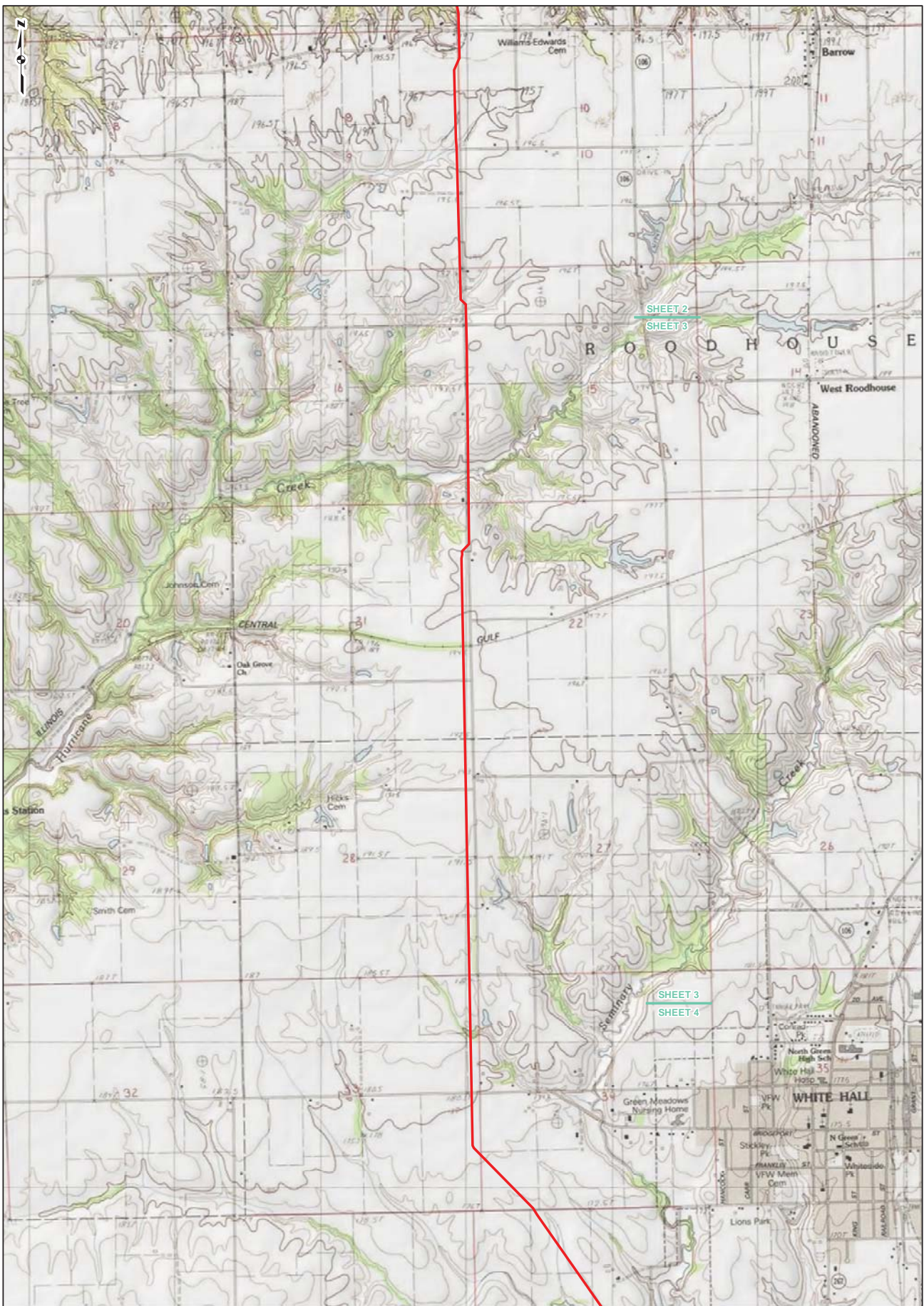
- 24-INCH PIPELINE
- LINE 880 MODIFICATIONS
- COUNTY BOUNDARY
- STATE BOUNDARY

PROJECT LOCATION MAP
SHEET 2 OF 21

SPIRE STL PIPELINE PROJECT



DRAWN BY: PMH DATE: 1/4/2017
 CHECKED: APPROVED: TCW



REFERENCE: USGS 7.5 TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1984), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1989), ELSA (1995), FLORISSANT (1999), GRAFTON (1983), JERSEYVILLE NORTH (1983), JERSEYVILLE SOUTH (1983), OTTERVILLE (1983) AND ROODHOUSE WEST (1983). ILLINOIS AND MISSOURI TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND I-CUBED, ACCESSED 01/2017.

LEGEND

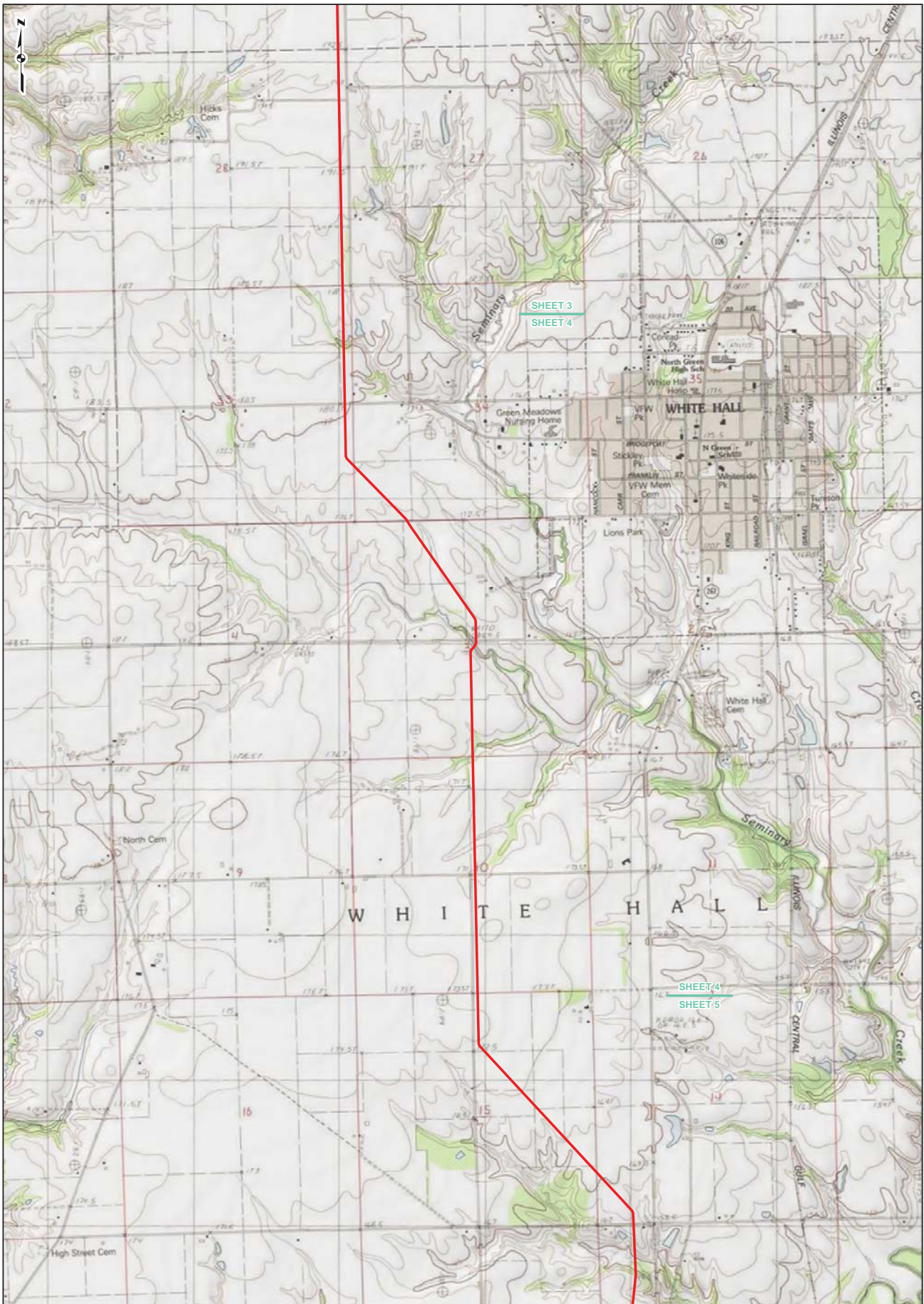
- 24-INCH PIPELINE
- LINE 880 MODIFICATIONS
- COUNTY BOUNDARY
- STATE BOUNDARY

PROJECT LOCATION MAP
SHEET 3 OF 21

SPIRE STL PIPELINE PROJECT



DRAWN BY: PMH DATE: 1/4/2017
 CHECKED: APPROVED: TCW



REFERENCE: USGS 7.5 TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1984), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1989), ELSA (1995), FLOISSANT (1989), GRAFTON (1985), JERSEYVILLE NORTH (1983), JERSEYVILLE SOUTH (1983), OTTERVILLE (1983) AND ROODHOUSE WEST (1983). ILLINOIS AND MISSOURI OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND I-CUBED, ACCESSED 01/2017.

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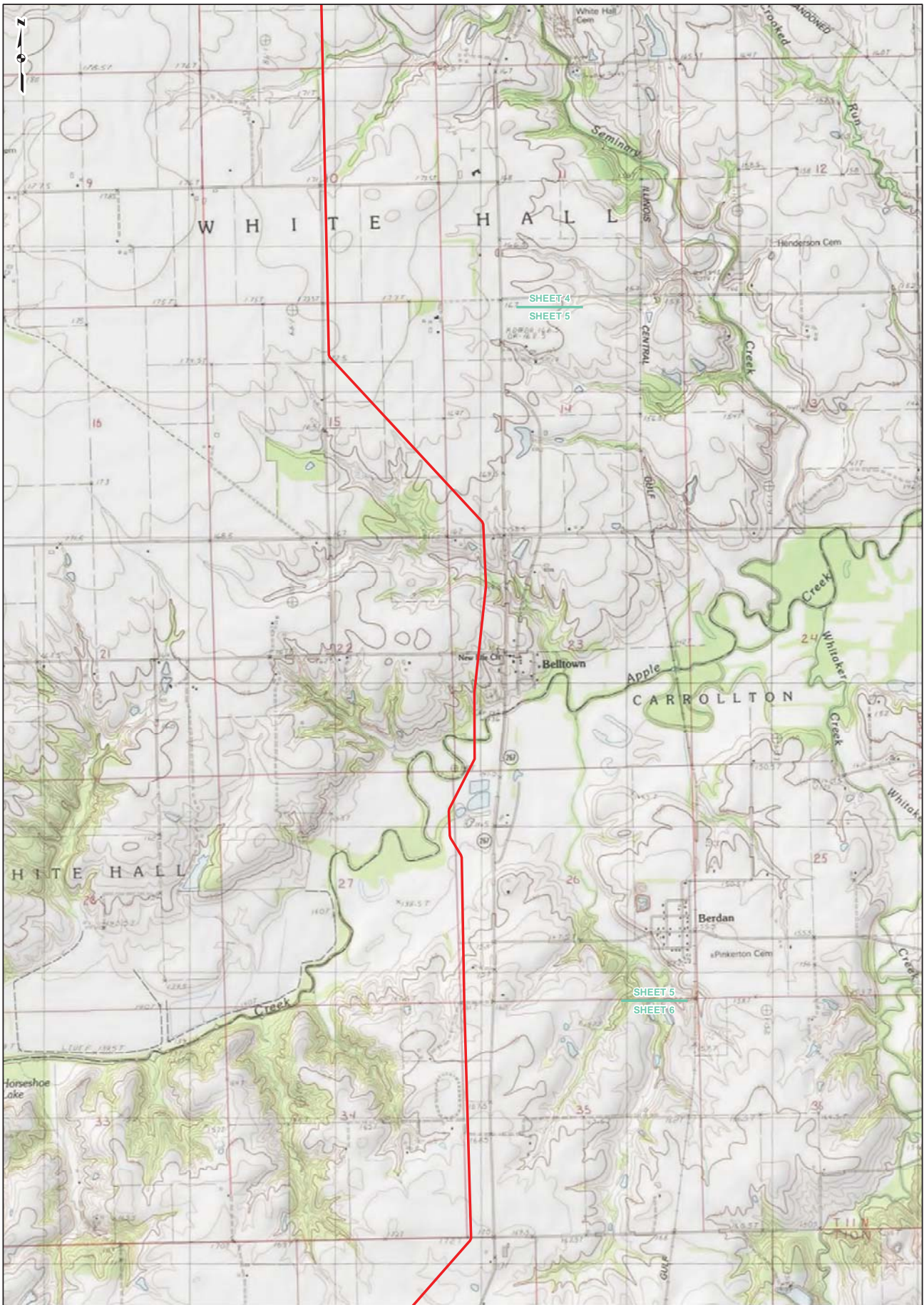
- 24-INCH PIPELINE
- LINE 880 MODIFICATIONS
- COUNTY BOUNDARY
- STATE BOUNDARY

**PROJECT LOCATION MAP
SHEET 4 OF 21**

**SPIRE STL
PIPELINE
PROJECT**



DRAWN BY: PMH DATE: 1/4/2017
 CHECKED: APPROVED: TCW



REFERENCE: USGS 7.5 TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1984), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1989), ELSA (1995), FLORISSANT (1999), GRAFTON (1985), JERSEYVILLE NORTH (1983), JERSEYVILLE SOUTH (1983), OTTERVILLE (1983) AND ROUGHHOUSE WEST (1983), ILLINOIS AND MISSOURI MAPS, NATIONAL GEOGRAPHIC TOPO AND I-CUBED, ACCESSED 01/2017.

LEGEND

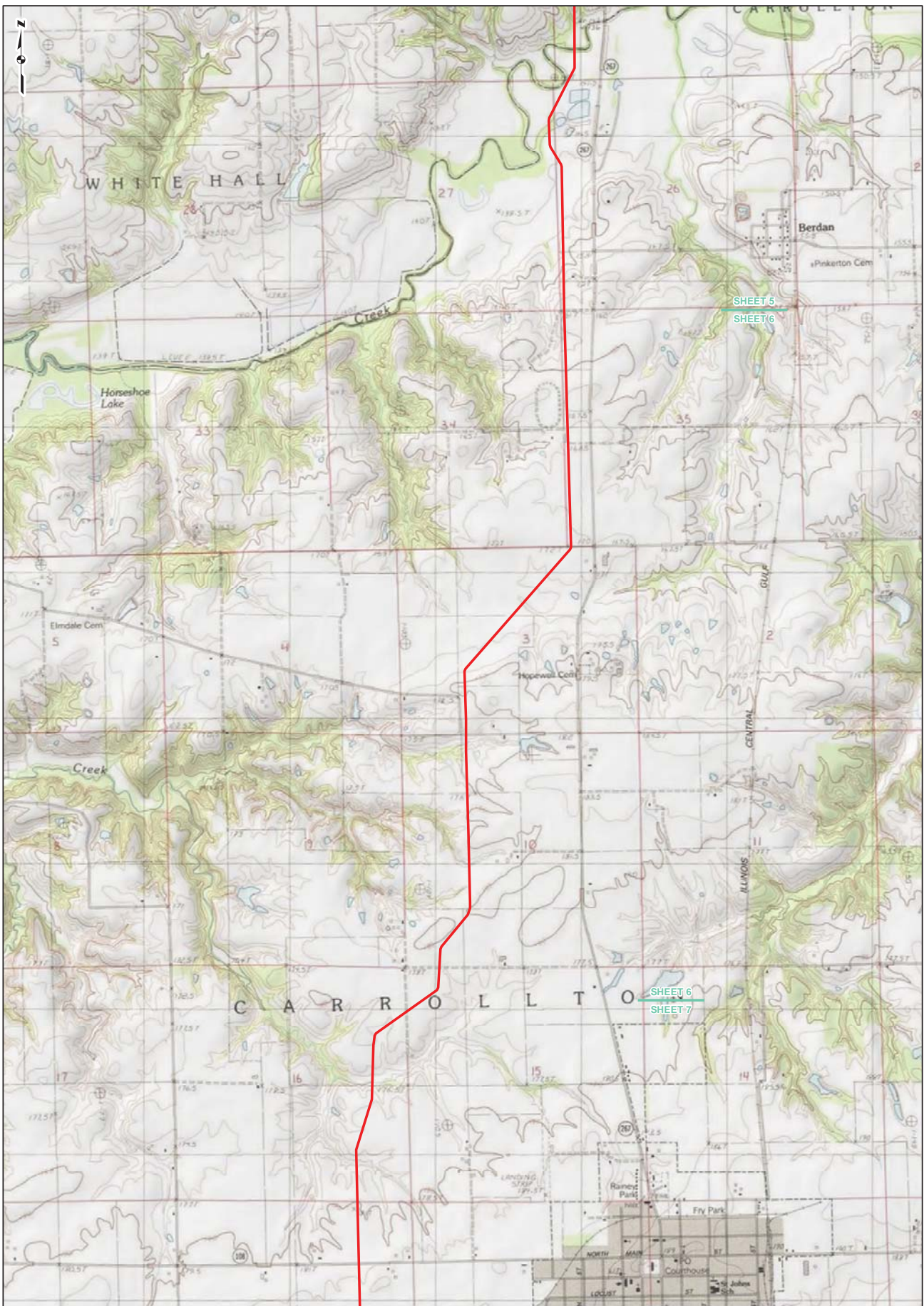
- 24-INCH PIPELINE
- LINE 880 MODIFICATIONS
- COUNTY BOUNDARY
- STATE BOUNDARY

PROJECT LOCATION MAP
SHEET 5 OF 21

SPIRE STL PIPELINE PROJECT



DRAWN BY: PMH DATE: 1/4/2017
 CHECKED: APPROVED: TCW



REFERENCE: USGS 7.5 TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1984), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1989), ELSA (1995), FLOISSANT (1999), GRAFTON (1985), JERSEYVILLE NORTH (1983), JERSEYVILLE SOUTH (1983), OTTERVILLE (1983) AND ROUGHHOUSE WEST (1983), ILLINOIS AND MISSOURI, OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND I-CUBED, ACCESSED 01/2017.

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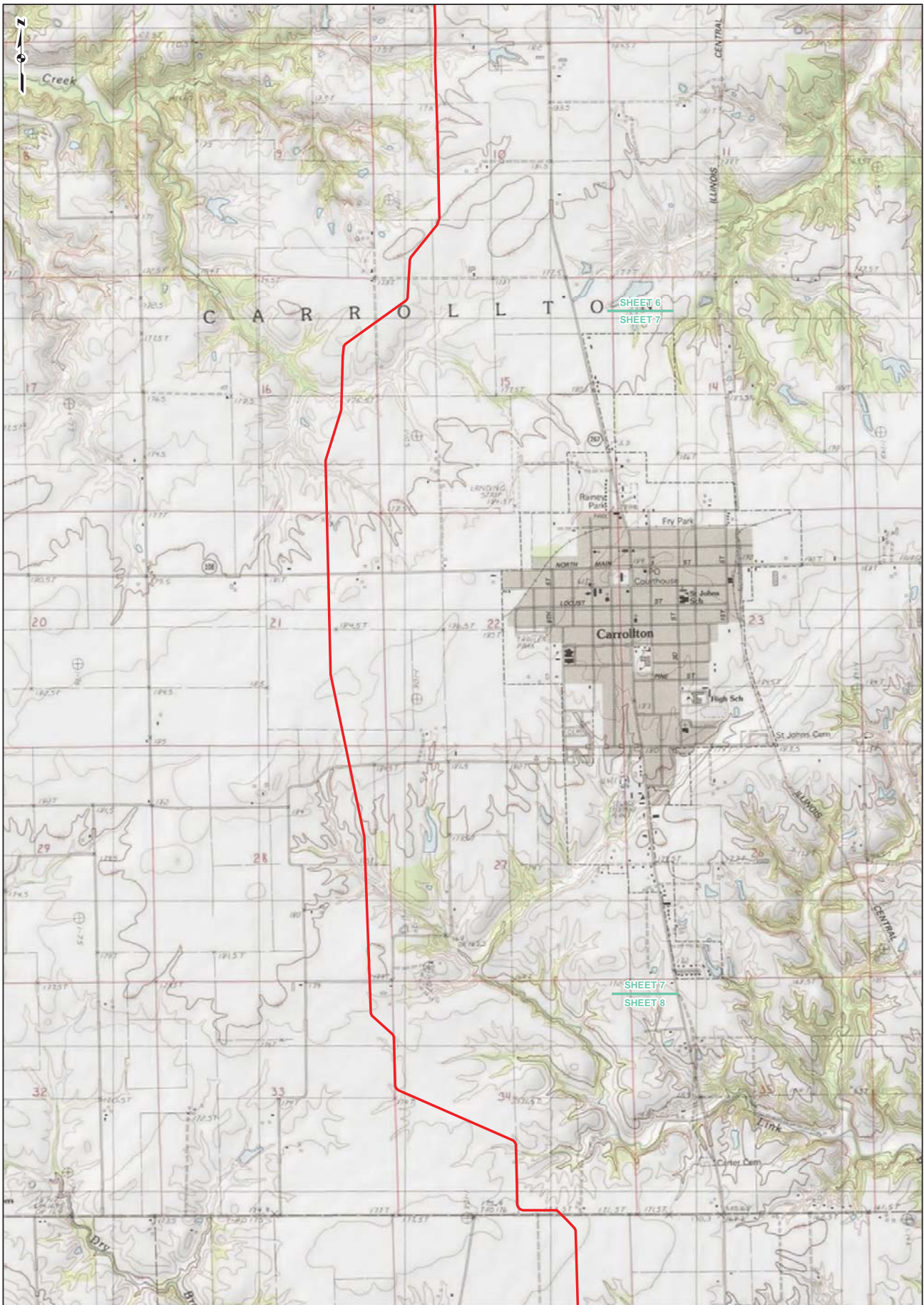
- 24-INCH PIPELINE
- LINE 880 MODIFICATIONS
- COUNTY BOUNDARY
- STATE BOUNDARY

PROJECT LOCATION MAP
SHEET 6 OF 21

SPIRE STL PIPELINE PROJECT



DRAWN BY: PMH DATE: 1/4/2017
 CHECKED: APPROVED: TCW



REFERENCE: USGS 7.5 TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1984), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1989), ELSA (1995), FLORISSANT (1999), GRAFTON (1985), JERSEYVILLE NORTH (1983), JERSEYVILLE SOUTH (1983), OTTERTVILLE (1983) AND ROOCHOUSE WEST (1983). ILLINOIS AND MISSOURI MAPS, NATIONAL GEOGRAPHIC TOPO AND I-CUBED, ACCESSED 01/2017.

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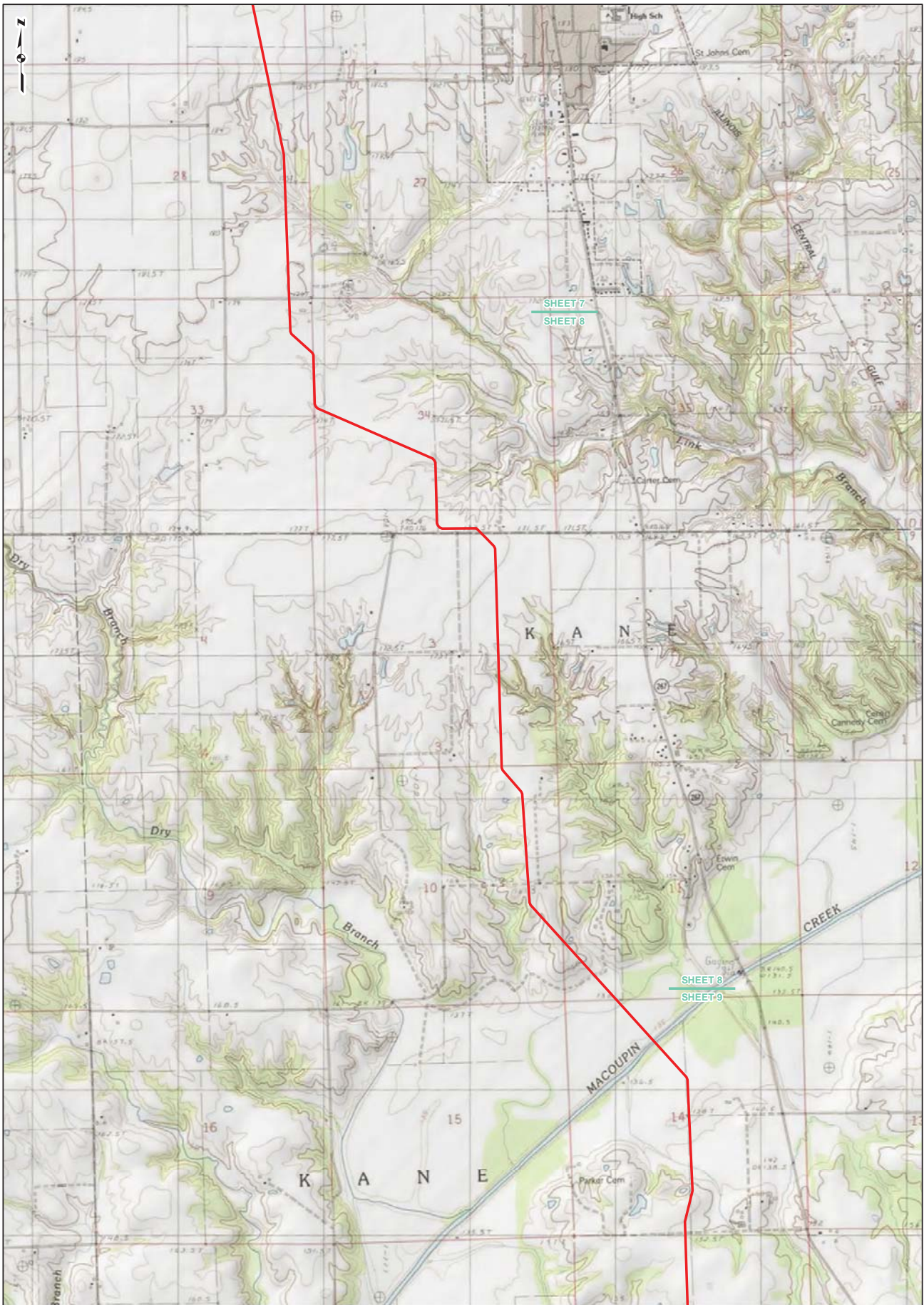
- 24-INCH PIPELINE
- LINE 880 MODIFICATIONS
- COUNTY BOUNDARY
- STATE BOUNDARY

PROJECT LOCATION MAP
SHEET 7 OF 21

spire STL PIPELINE PROJECT



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 CHECKED: APPROVED: TCW



REFERENCE: USGS 7.5 TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1984), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1989), ELSA (1995), FLORISSANT (1999), GRAFTON (1985), JERSEYVILLE NORTH (1983), JERSEYVILLE SOUTH (1983), OTTERTVILLE (1983) AND ROUGHHOUSE WEST (1983), ILLINOIS AND MISSOURI MAPS, NATIONAL GEOGRAPHIC TOPO AND I-CUBED, ACCESSED 01/2017.

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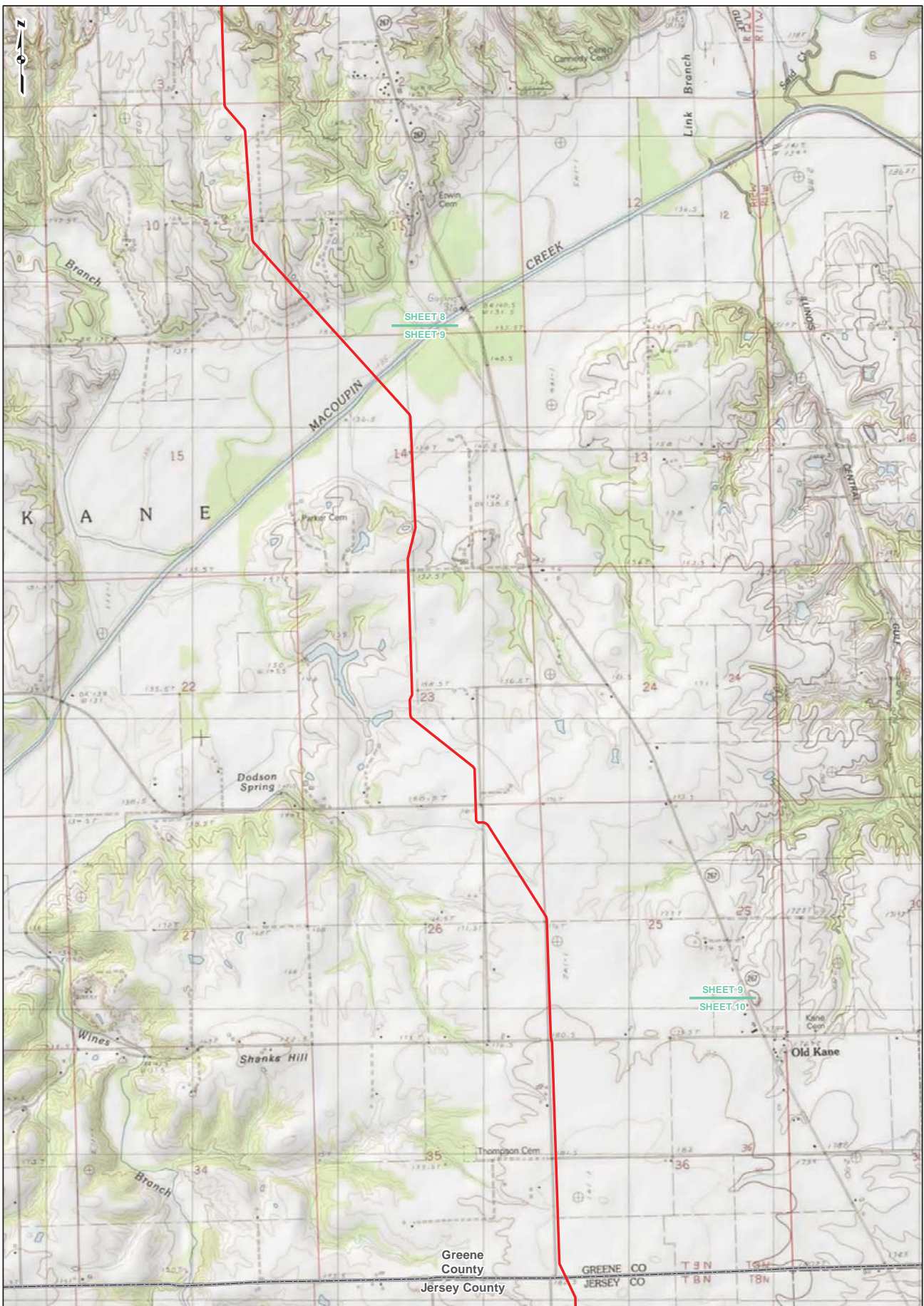
- 24-INCH PIPELINE
- LINE 880 MODIFICATIONS
- COUNTY BOUNDARY
- STATE BOUNDARY

PROJECT LOCATION MAP
SHEET 8 OF 21

spire STL PIPELINE PROJECT

0 1,000 2,000 4,000 Feet

DRAWN BY: PMH DATE: 1/4/2017
CHECKED: APPROVED: TCW



REFERENCE: USGS 7.5 TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1984), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1989), ELSA (1995), FLORISSANT (1989), GRAFTON (1985), JERSEYVILLE NORTH (1983), JERSEYVILLE SOUTH (1983), OTTERVILLE (1983) AND ROUGHHOUSE WEST (1983), ILLINOIS AND MISSOURI MAPS, NATIONAL GEOGRAPHIC TOPO AND I-CUBED, ACCESSED 01/2017.

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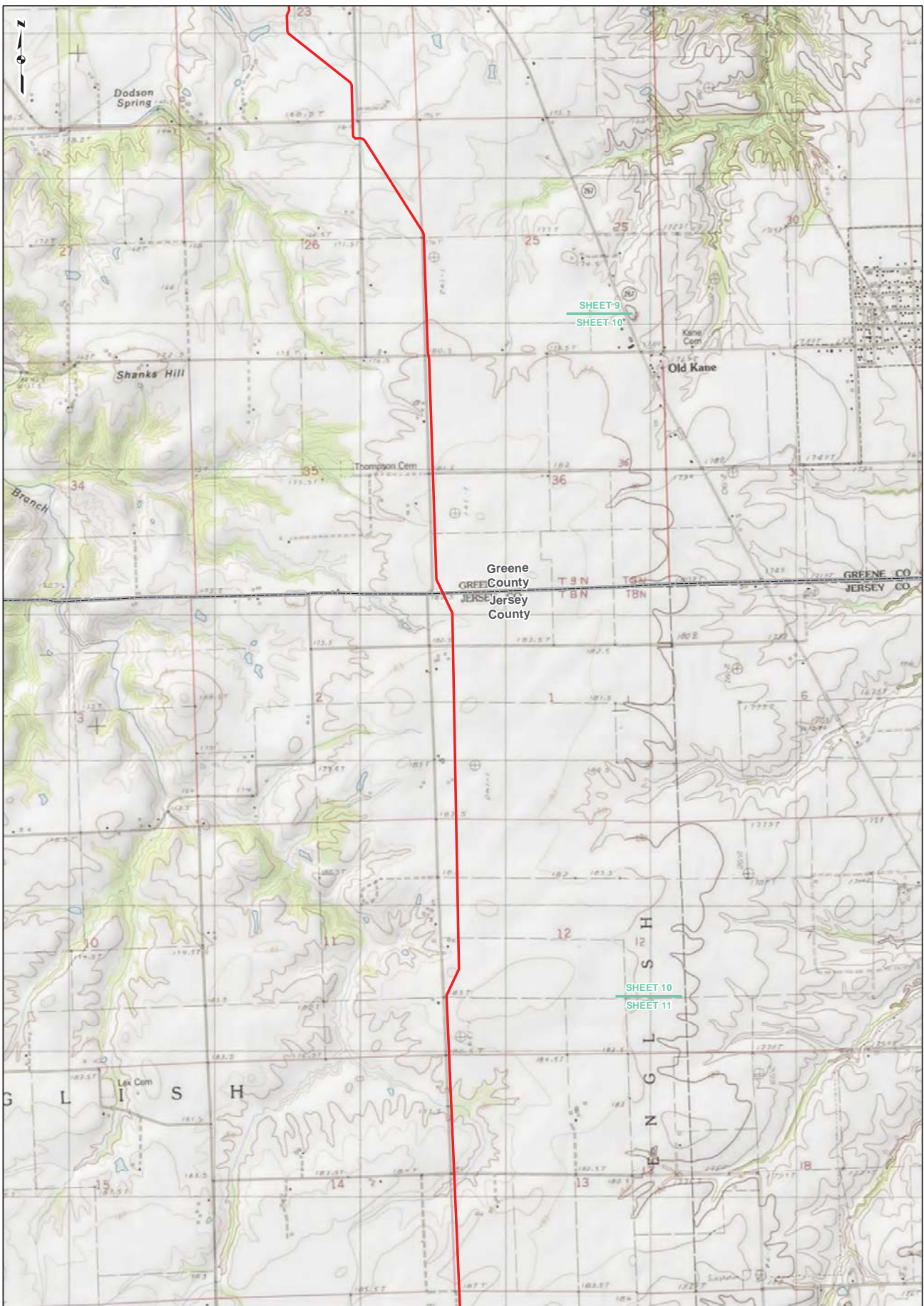
- 24-INCH PIPELINE
- LINE 880 MODIFICATIONS
- COUNTY BOUNDARY
- STATE BOUNDARY

PROJECT LOCATION MAP
SHEET 9 OF 21

SPIRE STL PIPELINE PROJECT

0 1,000 2,000 4,000 Feet

DRAWN BY: PMH DATE: 1/4/2017
CHECKED: APPROVED: TCW



REFERENCE: USGS 7.5 TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1984), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1999), ELSA (1995), FLOISSANT (1999), GRAFTON (1983), JERSEYVILLE NORTH (1983), JERSEYVILLE SOUTH (1983), OTTERVILLE (1983) AND ROOCHOUSE WEST (1983). ILLINOIS AND MISSOURI OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND I-CUBED, ACCESSED 01/2017.

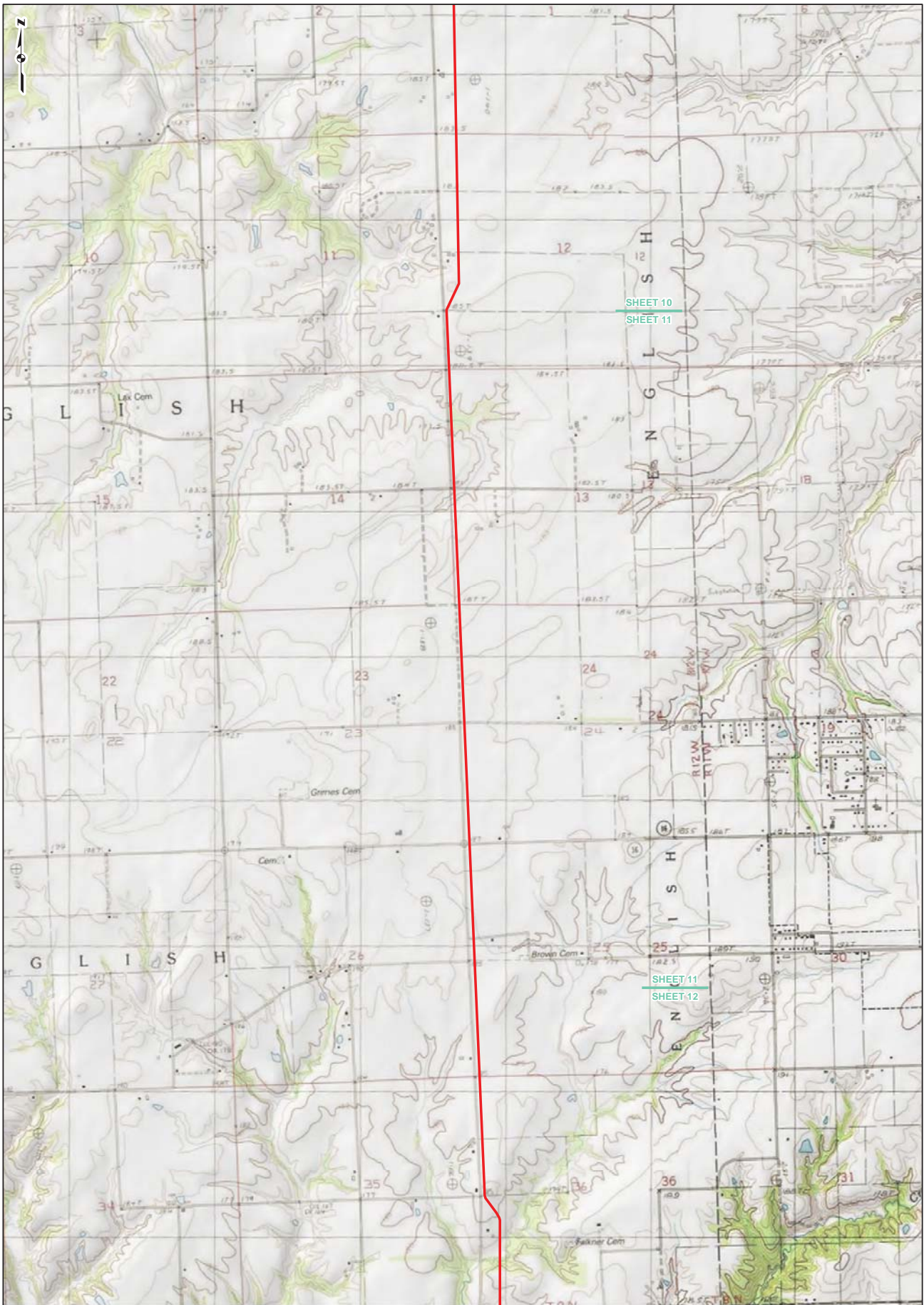
LEGEND

- 24-INCH PIPELINE
- LINE 880 MODIFICATIONS
- COUNTY BOUNDARY
- STATE BOUNDARY

PROJECT LOCATION MAP
SHEET 10 OF 21

SPIRE STL PIPELINE PROJECT

DRAWN BY: PMH DATE: 1/4/2017
 CHECKED: APPROVED: TCW



REFERENCE: USGS 7.5 TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1984), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1999), ELSA (1995), FLORISSANT (1999), GRAFTON (1983), JERSEYVILLE NORTH (1983), JERSEYVILLE SOUTH (1983), OTTERTON (1983) AND ROODHOUSE WEST (1983), ILLINOIS AND MISSOURI MAPS, NATIONAL GEOGRAPHIC TOPO AND I-CUBED, ACCESSED 01/2017.

LEGEND

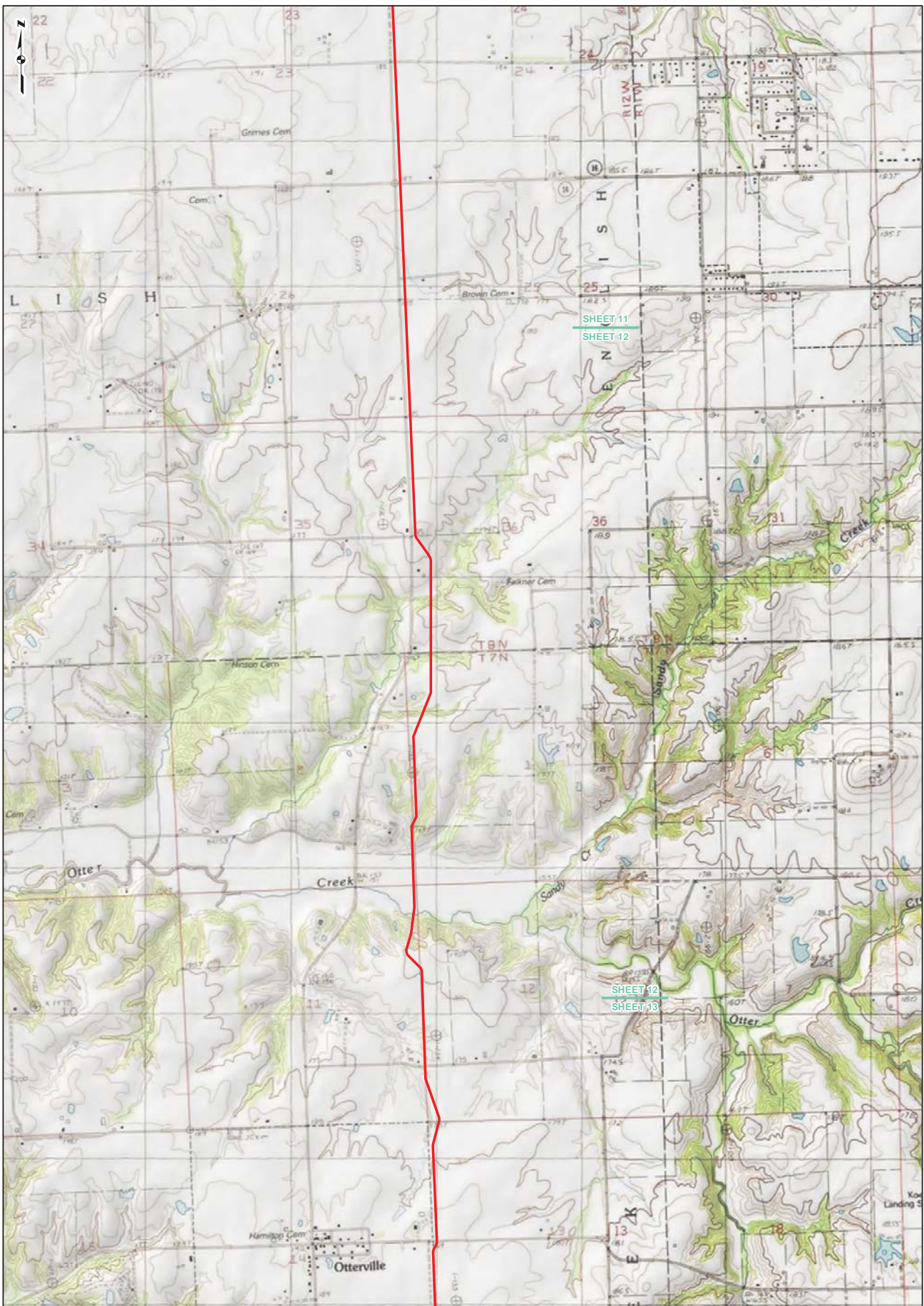
- 24-INCH PIPELINE
- LINE 880 MODIFICATIONS
- COUNTY BOUNDARY
- STATE BOUNDARY

PROJECT LOCATION MAP
SHEET 11 OF 21

spire STL PIPELINE PROJECT



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 CHECKED: APPROVED: TCW



SHEET 11
SHEET 12

SHEET 12
SHEET 13



REFERENCE: USGS 7.5 TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1984), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1999), ELSA (1995), FLORISSANT (1999), GRAFTON (1983), JERSEYVILLE NORTH (1983), JERSEYVILLE SOUTH (1983), OTTERVILLE (1983) AND ROCHHOUSE WEST (1983), ILLINOIS AND MISSOURI MAPS, NATIONAL GEOGRAPHIC TOPO AND I-CUBED, ACCESSED 01/2017.

LEGEND

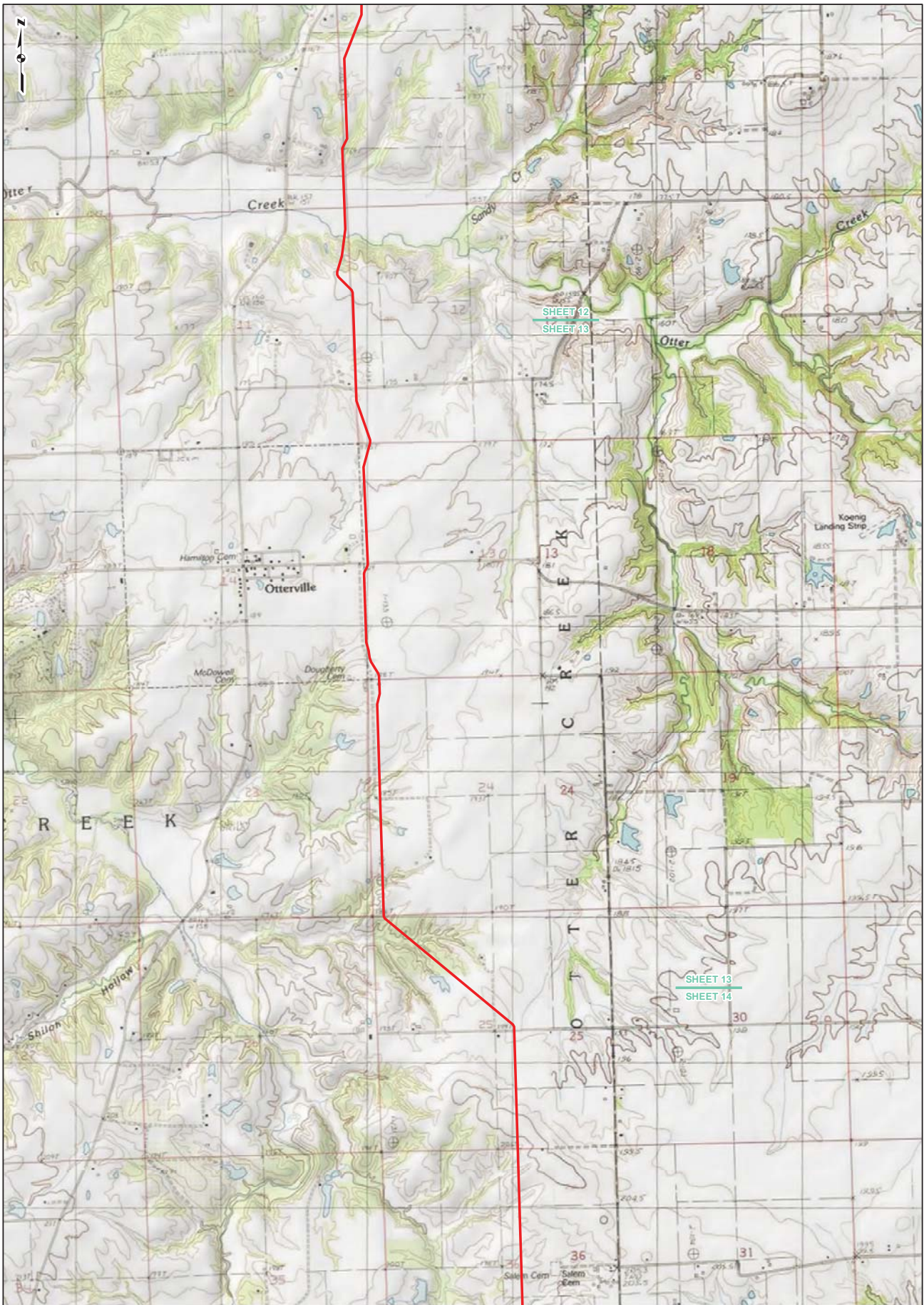
- 24-INCH PIPELINE
- LINE 880 MODIFICATIONS
- COUNTY BOUNDARY
- STATE BOUNDARY

PROJECT LOCATION MAP
SHEET 12 OF 21

spire STL PIPELINE PROJECT



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SHEET 12
SHEET 13

SHEET 13
SHEET 14



REFERENCE: USGS 7.5 TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1984), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1989), ELSAHL (1995), FLORISSANT (1999), GRANTON (1983), JERSEYVILLE NORTH (1983), JERSEYVILLE SOUTH (1983), OTTERVILLE (1983) AND ROCKHOUSE WEST (1983), ILLINOIS AND MISSOURI MAPS, NATIONAL GEOGRAPHIC TOPO AND I-CUBED, ACCESSED 01/2017.

LEGEND

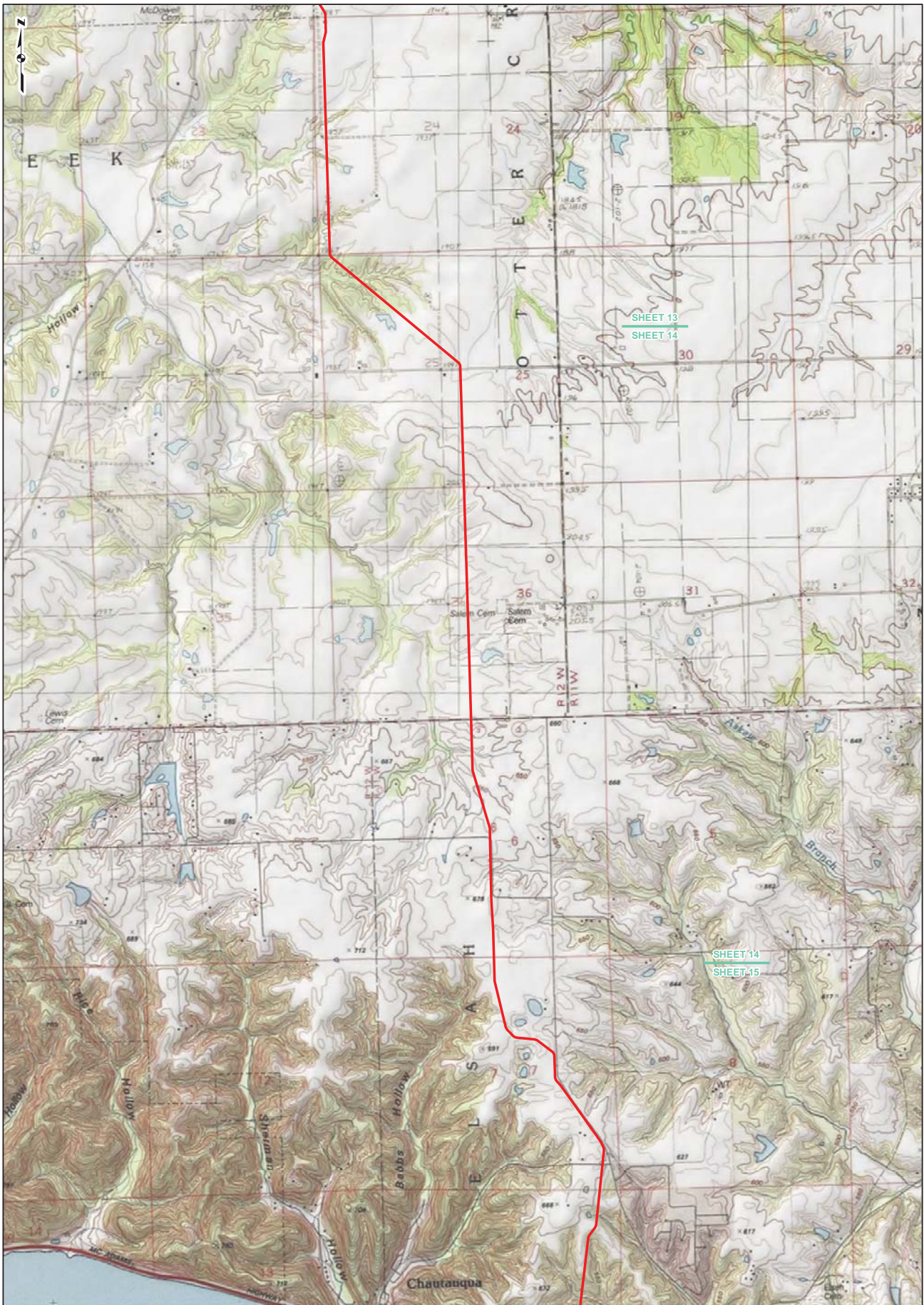
- 24-INCH PIPELINE
- LINE 880 MODIFICATIONS
- COUNTY BOUNDARY
- STATE BOUNDARY

PROJECT LOCATION MAP
SHEET 13 OF 21

spire STL PIPELINE PROJECT



DRAWN BY: PMH DATE: 1/4/2017
CHECKED: APPROVED: TCW



REFERENCE: USGS 7.5 TOPOGRAPHIC QUADRANGLES: ELSEY (1983), ALTON (1984), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1989), ELSA (1995), FLORISSANT (1989), GRAFTON (1985), JERSEYVILLE NORTH (1983), JERSEYVILLE SOUTH (1983), OTTERTON (1983) AND ROODHOUSE WEST (1983), ILLINOIS AND MISSOURI, OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND I-CUBED, ACCESSED 01/2017.

LEGEND

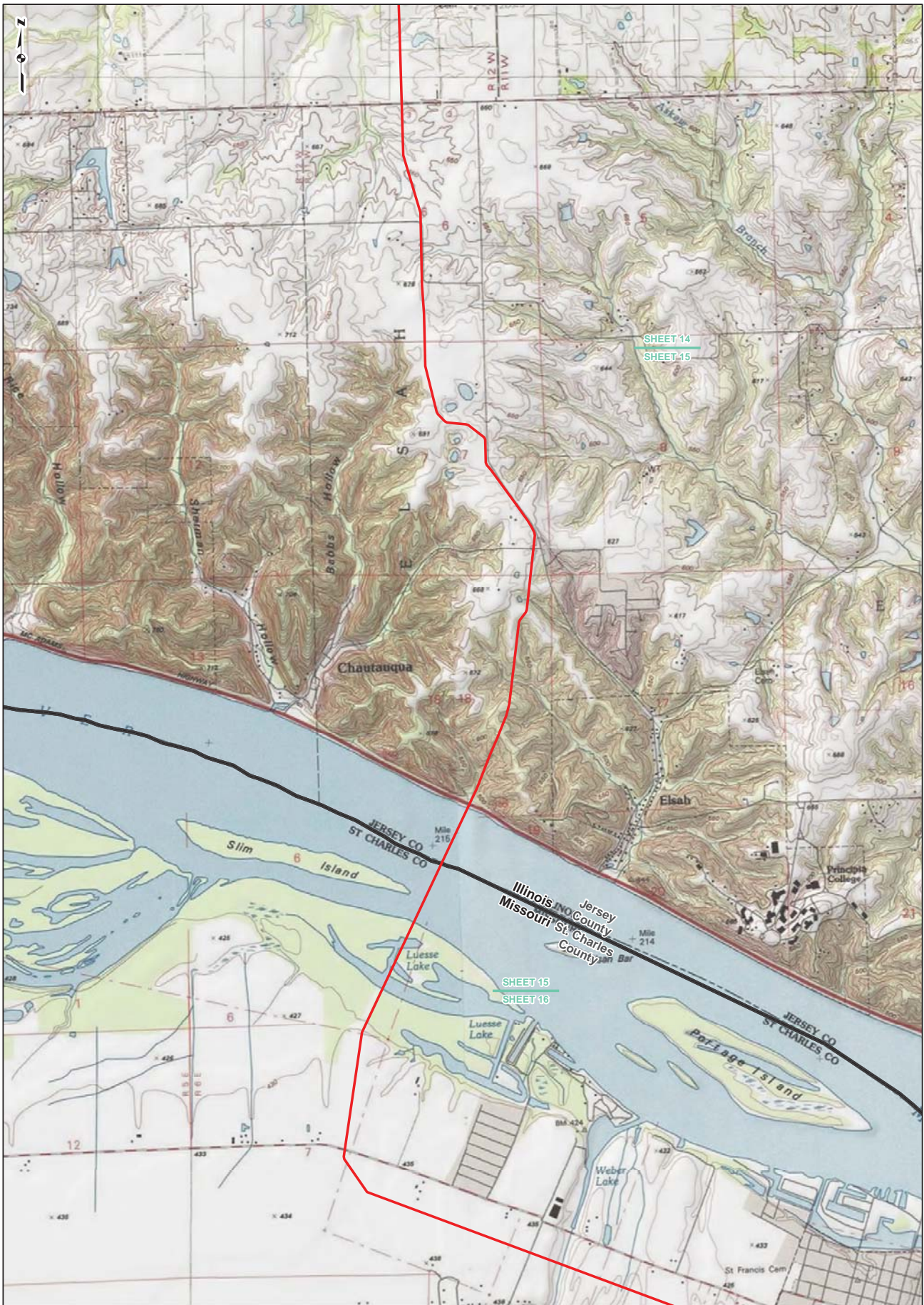
- 24-INCH PIPELINE
- LINE 880 MODIFICATIONS
- COUNTY BOUNDARY
- STATE BOUNDARY

PROJECT LOCATION MAP
SHEET 14 OF 21

SPIRE STL PIPELINE PROJECT



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 CHECKED: APPROVED: TCW



REFERENCE: USGS 7.5 TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1984), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1989), ELSAH (1995), FLORISSANT (1989), GRAFTON (1985), JERSEYVILLE NORTH (1983), JERSEYVILLE SOUTH (1983), OTTERVILLE (1983) AND ROUGHHOUSE WEST (1983), ILLINOIS AND MISSOURI, OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND I-CUBED, ACCESSED 01/2017.

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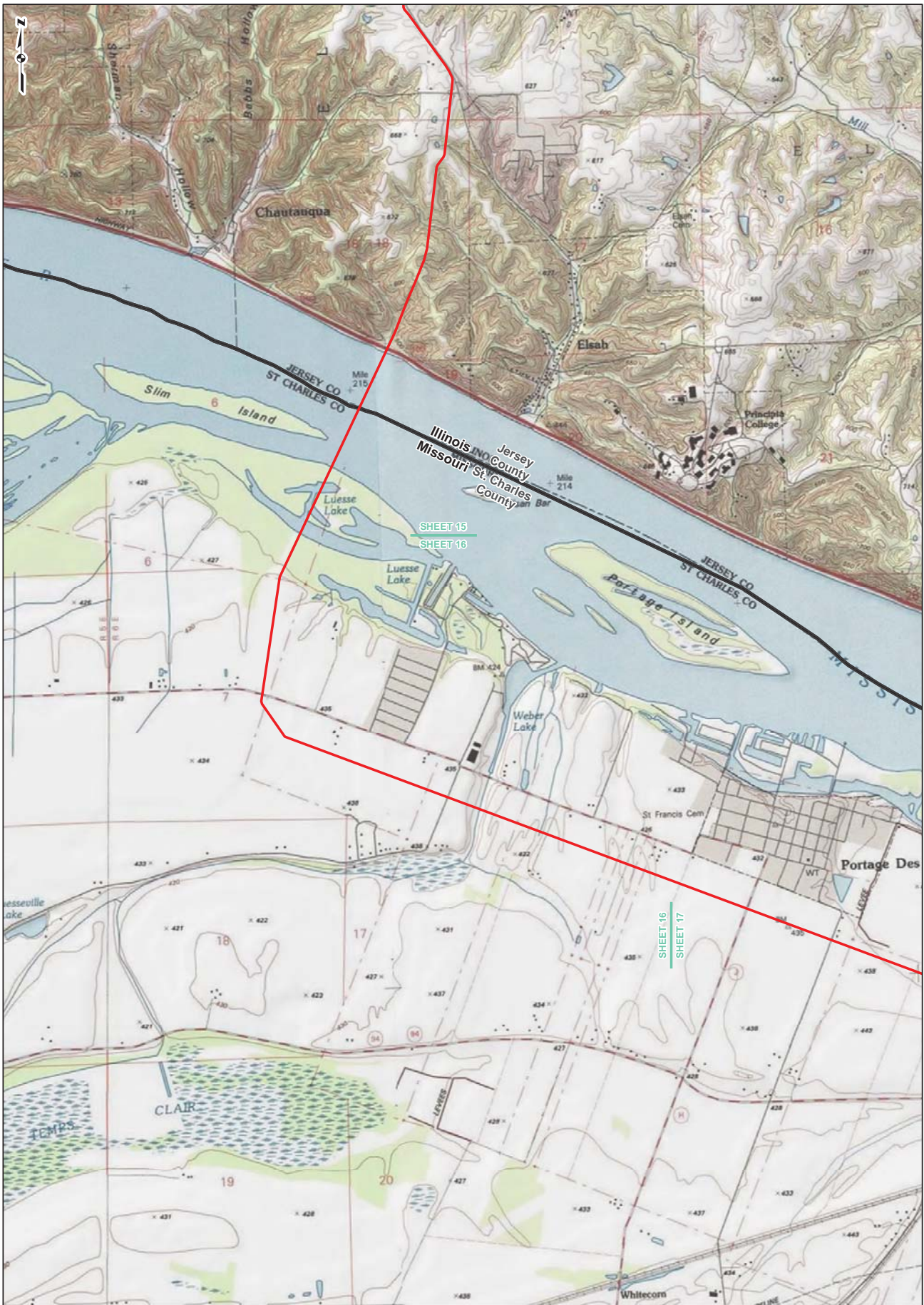
- 24-INCH PIPELINE
- LINE 880 MODIFICATIONS
- COUNTY BOUNDARY
- STATE BOUNDARY



PROJECT LOCATION MAP
SHEET 15 OF 21

SPIRE STL PIPELINE PROJECT

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 CHECKED: APPROVED: TCW



REFERENCE: USGS 7.5 TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1994), BOYER CREEK (1993), CARROLLTON (1983), COLUMBIA BOTTOM (1999), ELSAH (1995), FLOISSANT (1999), GRAFTON (1995), JERSEYVILLE NORTH (1983), JERSEYVILLE SOUTH (1983), OTTERTVILLE (1983) AND ROUGHHOUSE WEST (1983), ILLINOIS AND MISSOURI, OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND I-CUBED, ACCESSED 01/2017.

LEGEND

- 24-INCH PIPELINE
- LINE 880 MODIFICATIONS
- COUNTY BOUNDARY
- STATE BOUNDARY

PROJECT LOCATION MAP
SHEET 16 OF 21

spire STL PIPELINE PROJECT



DRAWN BY: PMH
CHECKED: _____

DATE: 1/4/2017
APPROVED: TCW



REFERENCE: USGS 7.5 TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1984), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1999), ELSAH (1995), FLORISSANT (1999), GRAFTON (1985), JERSEYVILLE NORTH (1983), JERSEYVILLE SOUTH (1983), OTTERTVILLE (1983) AND ROCKHOUSE WEST (1983), ILLINOIS AND MISSOURI, OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND I-CUBED, ACCESSED 01/2017.

LEGEND

- 24-INCH PIPELINE
- LINE 880 MODIFICATIONS
- COUNTY BOUNDARY
- STATE BOUNDARY

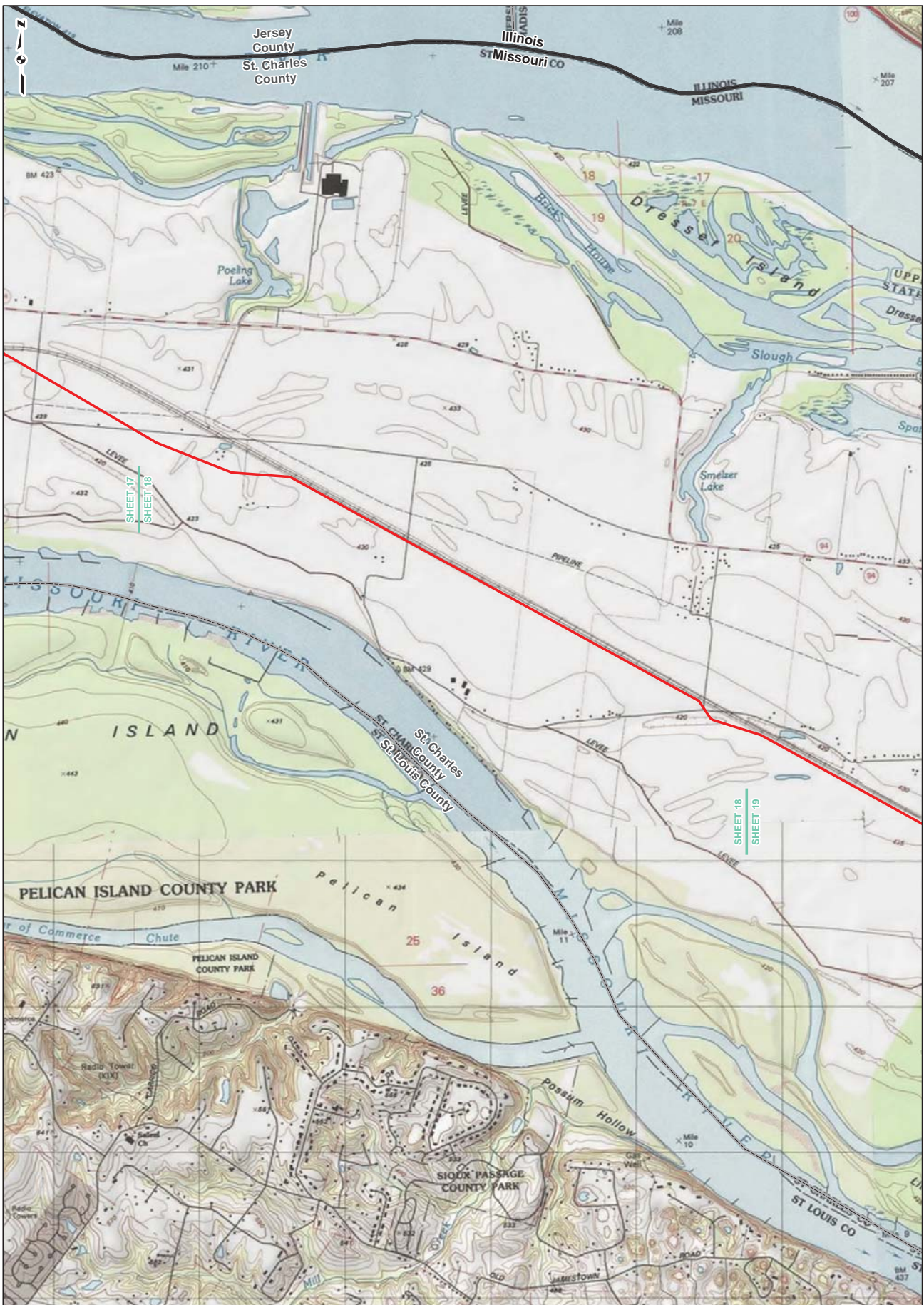
PROJECT LOCATION MAP
SHEET 17 OF 21

SPiRE STL PIPELINE PROJECT

IGN CONSULTANTS



DRAWN BY: PMH DATE: 1/4/2017
 CHECKED: APPROVED: TCW



REFERENCE: USGS 7.5 TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1984), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1999), ELSA (1995), FLORISSANT (1999), GRAFTON (1985), JERSEYVILLE NORTH (1983), JERSEYVILLE SOUTH (1983), OTTERVILLE (1983) AND ROUGHHOUSE WEST (1983), ILLINOIS AND MISSOURI MAPS, NATIONAL GEOGRAPHIC TOPO AND I-CUBED, ACCESSED 01/2017.

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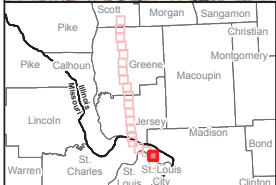
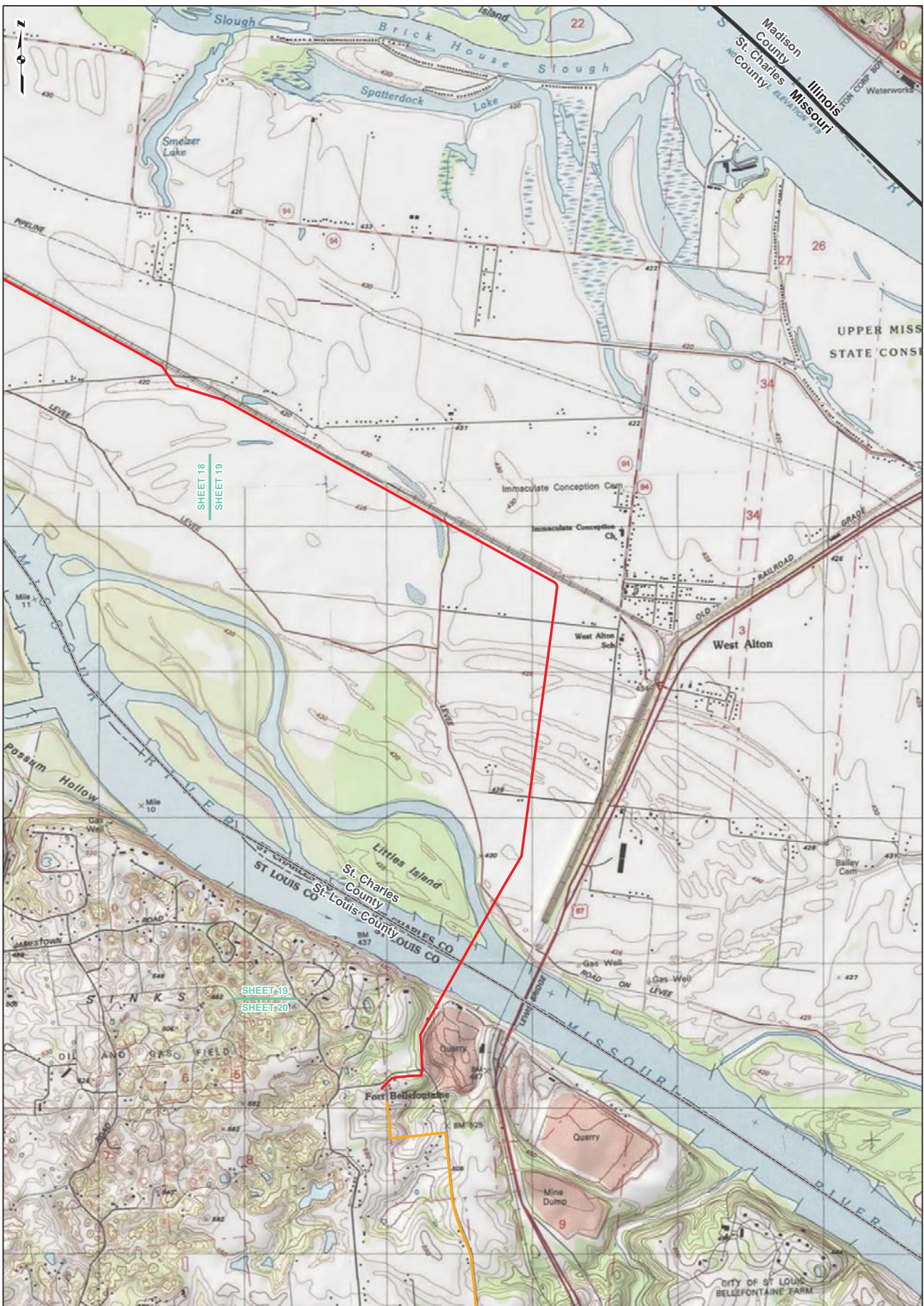
- 24-INCH PIPELINE
- LINE 880 MODIFICATIONS
- COUNTY BOUNDARY
- STATE BOUNDARY

PROJECT LOCATION MAP
SHEET 18 OF 21

spire STL PIPELINE PROJECT



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CHECKED: []
DATE: 1/4/2017
APPROVED: TCW



REFERENCE: USGS 7.5 TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1984), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1989), ELSA (1995), FLORISSANT (1989), SRAFTON (1985), JERSEYVILLE NORTH (1983), JERSEYVILLE SOUTH (1983), OTTERVILLE (1983) AND ROUGHHOUSE WEST (1983), ILLINOIS AND MISSOURI (1983). NATIONAL GEOGRAPHIC TOPO AND I-CUBED, ACCESSED 01/2017.

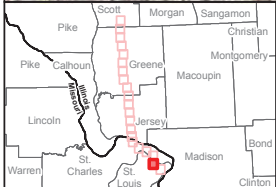
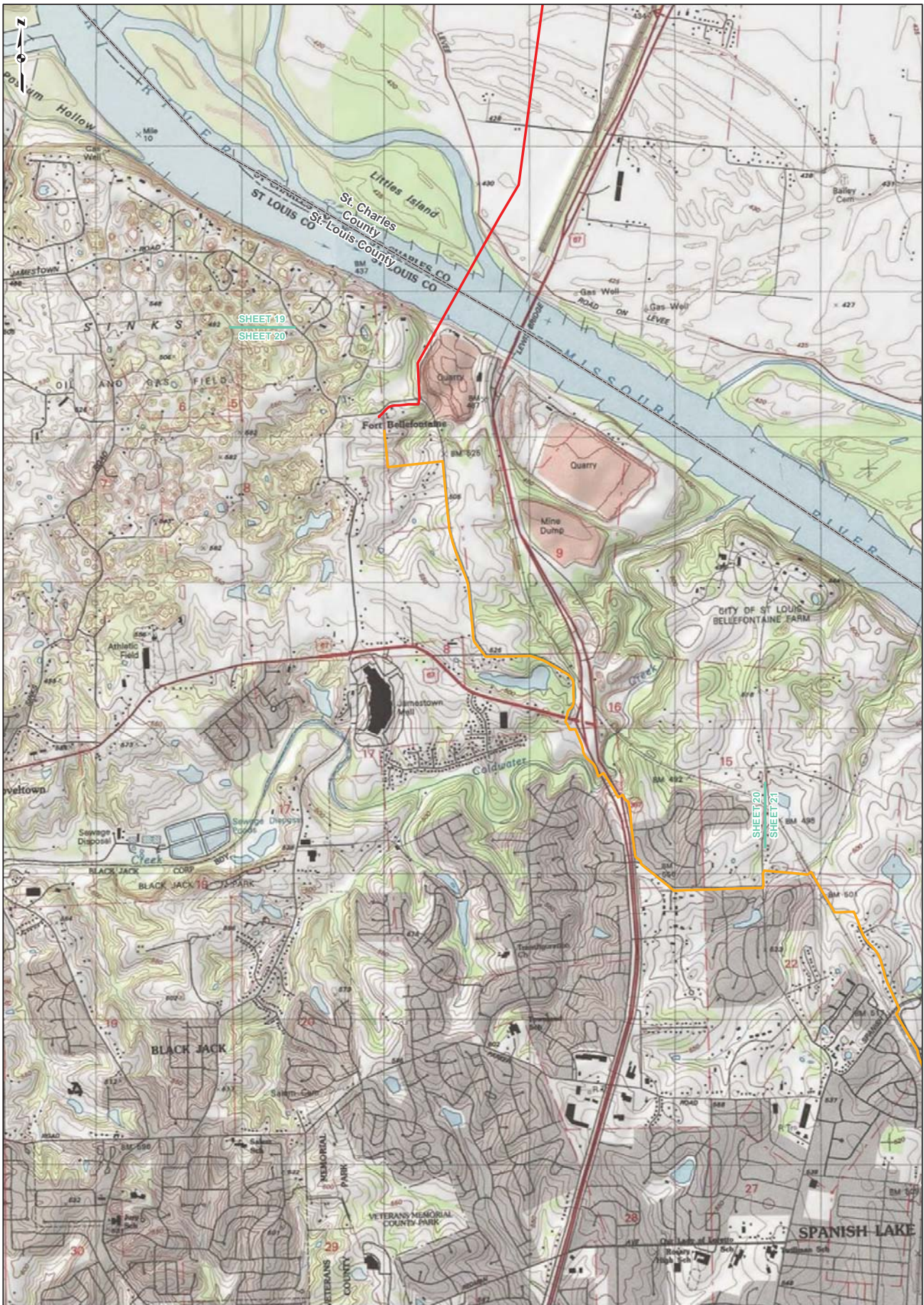
LEGEND

- 24-INCH PIPELINE
- LINE 880 MODIFICATIONS
- COUNTY BOUNDARY
- STATE BOUNDARY

**PROJECT LOCATION MAP
SHEET 19 OF 21**

**SPIRE STL
PIPELINE
PROJECT**

DRAWN BY: PMH DATE: 1/4/2017
 CHECKED: APPROVED: TCW



REFERENCE: USGS 7.5 TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1984), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1989), ELSA (1995), FLORISSANT (1999), GRAFTON (1985), JERSEYVILLE NORTH (1983), JERSEYVILLE SOUTH (1983), OTTERVILLE (1983) AND ROUGHHOUSE WEST (1983), ILLINOIS AND MISSOURI MAPS, NATIONAL GEOGRAPHIC TOPO AND I-CUBED, ACCESSED 01/2017.

LEGEND

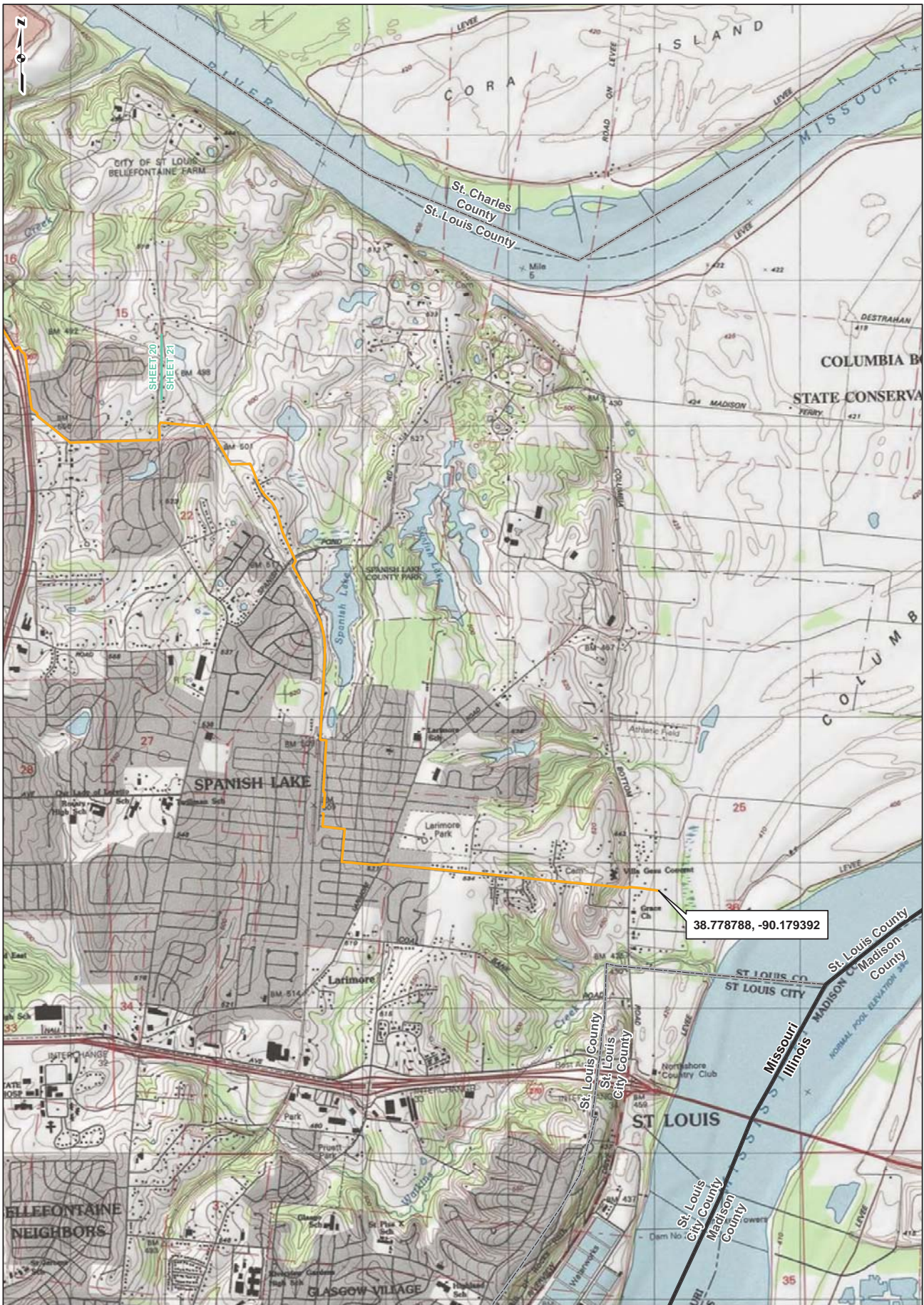
- 24-INCH PIPELINE
- LINE 880 MODIFICATIONS
- COUNTY BOUNDARY
- STATE BOUNDARY



PROJECT LOCATION MAP SHEET 20 OF 21

SPIRE STL PIPELINE PROJECT

DRAWN BY: PMH DATE: 1/4/2017
 CHECKED: APPROVED: TCW



REFERENCE: USGS 7.5 TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1984), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1989), ELSA (1995), FLORISSANT (1999), GRAFTON (1985), JERSEYVILLE NORTH (1983), JERSEYVILLE SOUTH (1983), OTTERVILLE (1983) AND ROUGHHOUSE WEST (1983), ILLINOIS AND MISSOURI, OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND I-CUBED, ACCESSED 01/2017.

LEGEND

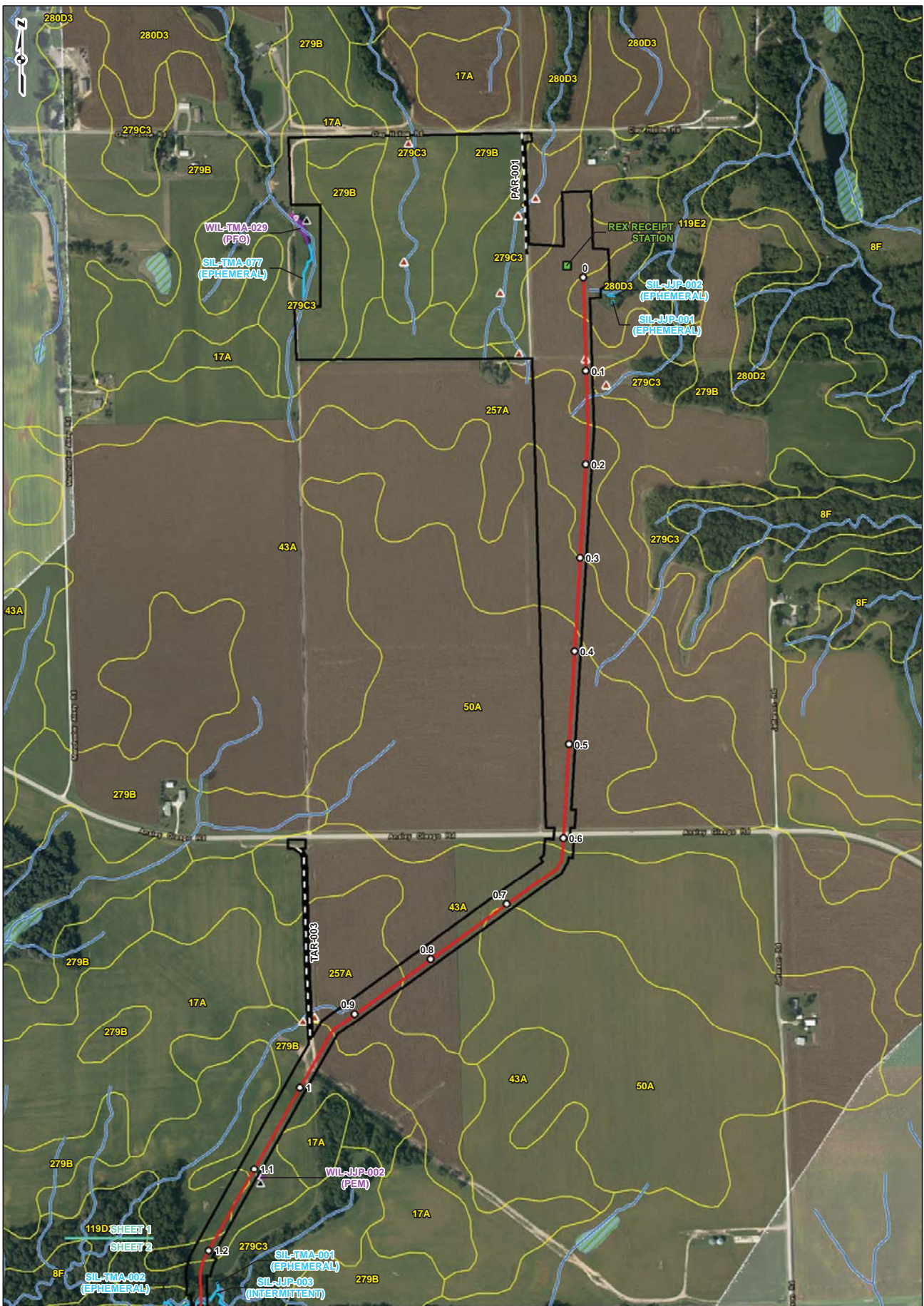
- 24-INCH PIPELINE
- LINE 880 MODIFICATIONS
- COUNTY BOUNDARY
- STATE BOUNDARY

PROJECT LOCATION MAP SHEET 21 OF 21

SPIRE STL PIPELINE PROJECT

0 1,000 2,000 4,000 Feet

DRAWN BY: PMH DATE: 1/4/2017
 CHECKED: APPROVED: TCW



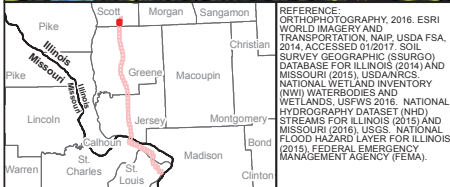
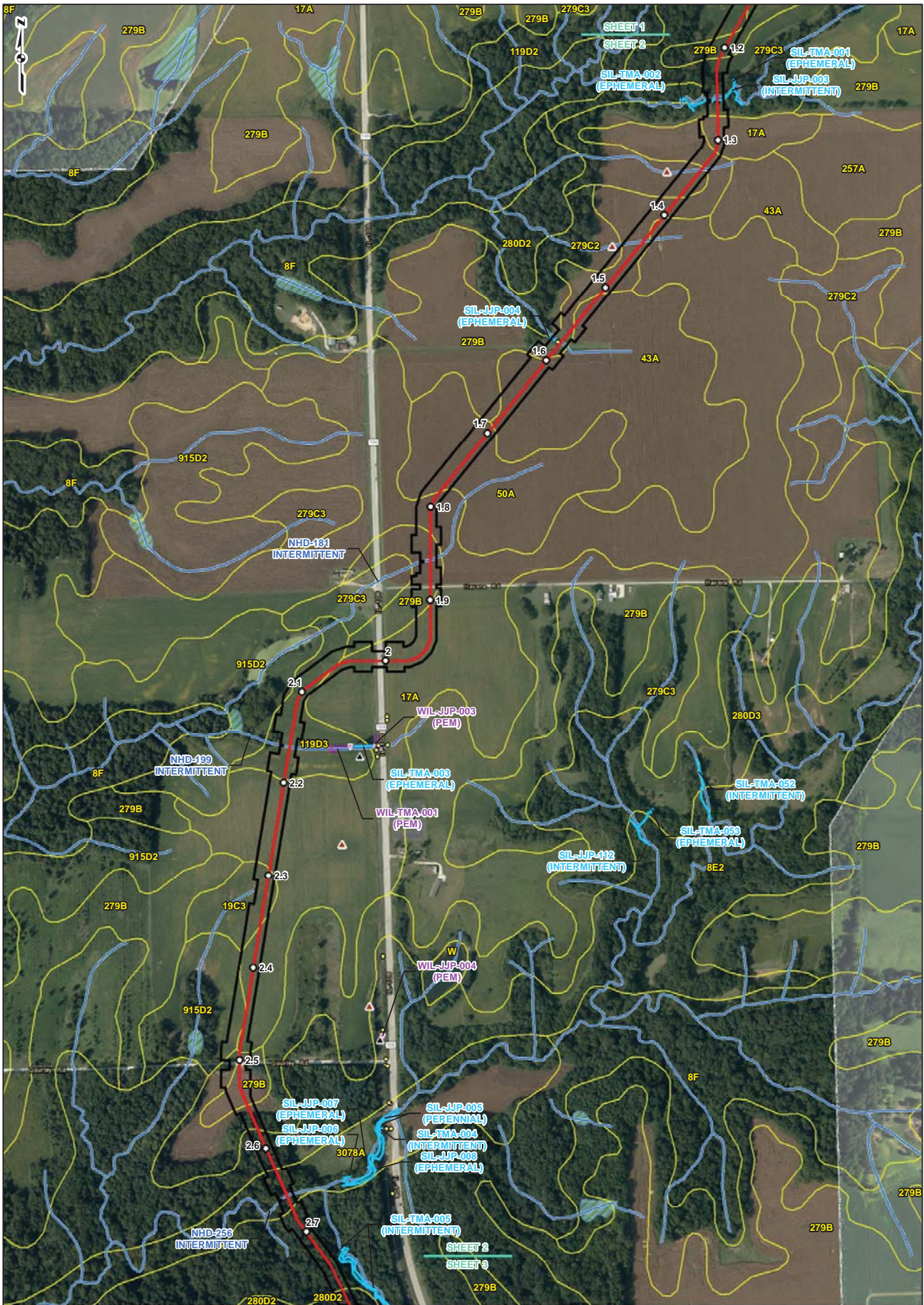
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LEGEND	
	FACILITY
	ACCESS ROAD
	24-INCH PIPELINE
	CULVERT
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	WETLAND DATA POINT
	WETLAND OPEN END
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY
	MILEPOST
	GROUNDWATER SEEP
	UPLAND LOCATION
	POND OPEN END
	POND
	POND OPEN END
	SOIL TEST PIT

RESOURCE LOCATION AND SOILS MAP
SHEET 1 OF 51

SPIRE STL PIPELINE PROJECT

DRAWN BY: PMH DATE: 1/19/2017
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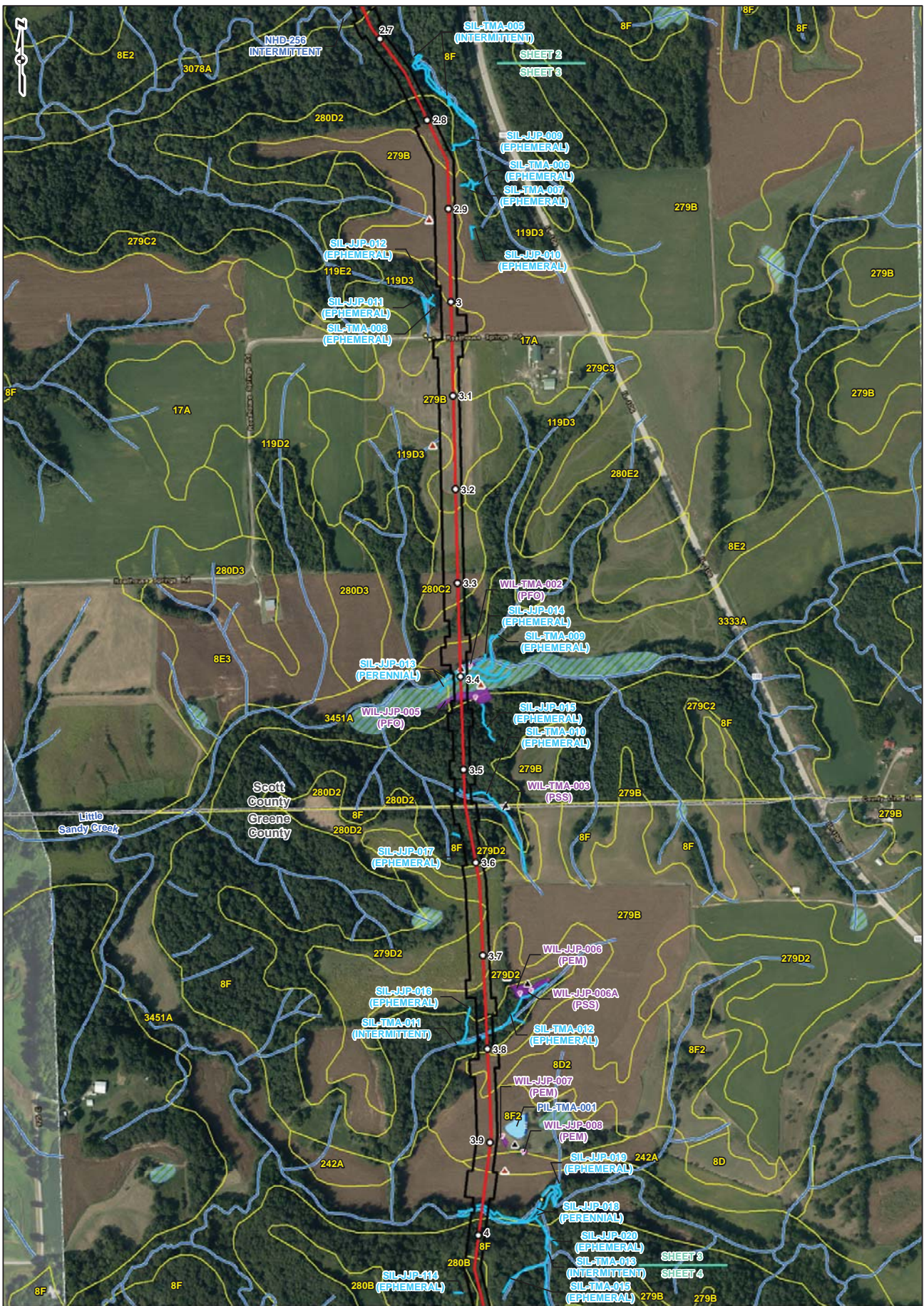
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LEGEND	
	FACILITY
	MILEPOST
	CULVERT
	GROUNDWATER SEEP
	UPLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT
	ACCESS ROAD
	24-INCH PIPELINE
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP
SHEET 2 OF 51

SPIRE STL PIPELINE PROJECT

DRAWN BY: PMH DATE: 1/19/2017
CHECKED: APPROVED:



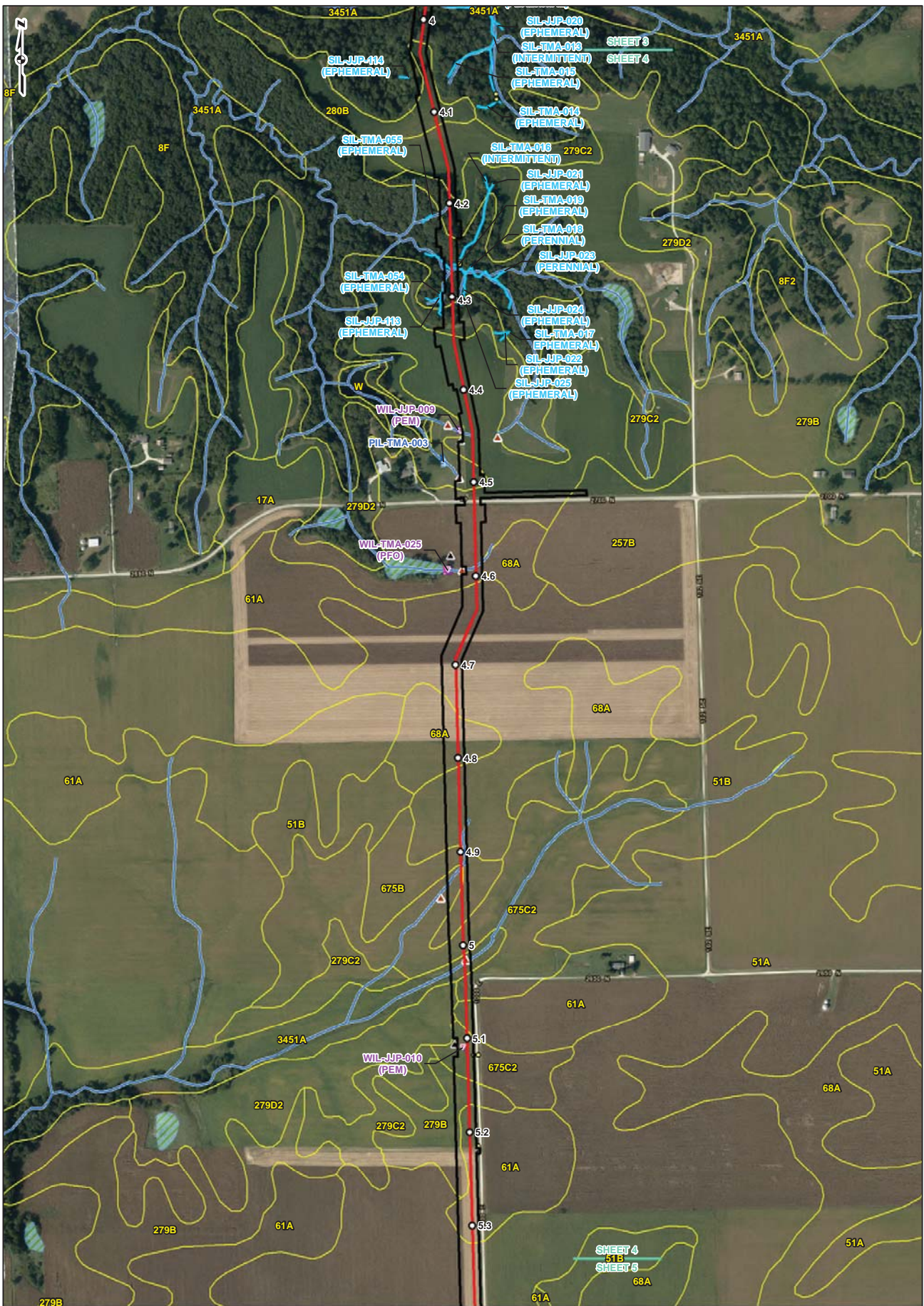
REFERENCE: ORTHOPHOTOGRAPHY, 2016. ESRI WORLD IMAGERY AND TRANSPORTATION, NAIP, USDA FSA, 2014, ACCESSED 01/20/17. SOIL SURVEY GEOGRAPHIC (SSURGO) DATABASE FOR ILLINOIS (2014) AND MISSOURI (2015). USDA/NRCS NATIONAL WETLAND INVENTORY (NWI) WATERBODIES AND WETLANDS, USFWS 2016. NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS FOR ILLINOIS (2015) AND MISSOURI (2016). USGS. NATIONAL FLOOD HAZARD LAYER FOR ILLINOIS (2015). FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA).

LEGEND	
	FACILITY
	MILEPOST
	CULVERT
	GROUNDWATER SEEP
	UPLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT
	ACCESS ROAD
	24-INCH PIPELINE
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP
SHEET 3 OF 51

SPiRE STL PIPELINE PROJECT

DRAWN BY: PMH DATE: 1/19/2017
CHECKED: APPROVED:



REFERENCE:
 ORTHOPHOTOGRAPHY, 2016. ESRI
 WORLD IMAGERY AND
 TRANSPORTATION, NAIP, USDA FSA,
 2014. ACCESSED 01/20/17. SOIL
 SURVEY GEOGRAPHIC (SSURGO)
 DATABASE FOR ILLINOIS (2014) AND
 MISSOURI (2015). USDA/NRCS
 NATIONAL WETLAND INVENTORY
 (NWI) WATERBODIES AND
 WETLANDS. USFWS 2016. NATIONAL
 HYDROGRAPHY DATASET (NHD)
 STREAMS FOR ILLINOIS (2015) AND
 MISSOURI (2016). USGS. NATIONAL
 FLOOD HAZARD LAYER FOR ILLINOIS
 (2015). FEDERAL EMERGENCY
 MANAGEMENT AGENCY (FEMA).

LEGEND

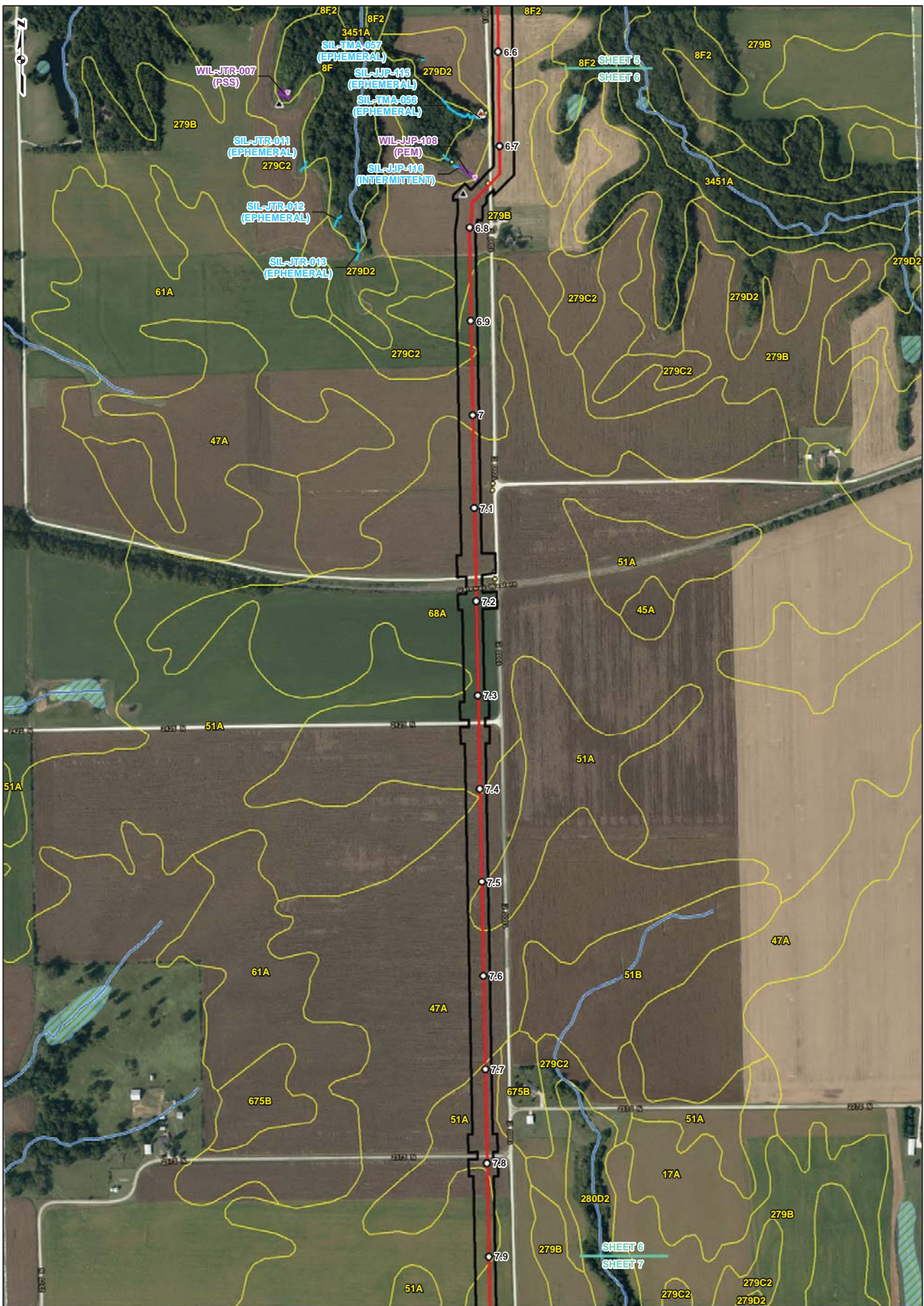
FACILITY	ACCESS ROAD	WETLAND
MILEPOST	24-INCH PIPELINE	NWI WETLAND
CULVERT	LINE 880 MODIFICATIONS	NWI WATERBODY
GROUNDWATER SEEP	STREAM	100-YEAR FLOODPLAIN
UPLAND LOCATION	NHD STREAM	SOIL TYPE BOUNDARY
WETLAND DATA POINT	POND OPEN END	LIMIT OF DISTURBANCE
SOIL TEST PIT	WETLAND OPEN END	COUNTY BOUNDARY
	POND	STATE BOUNDARY

0 250 500 1,000 Feet

RESOURCE LOCATION AND SOILS MAP SHEET 4 OF 51

SPIRE STL PIPELINE PROJECT

DRAWN BY: PMH DATE: 1/19/2017
 CHECKED: APPROVED:



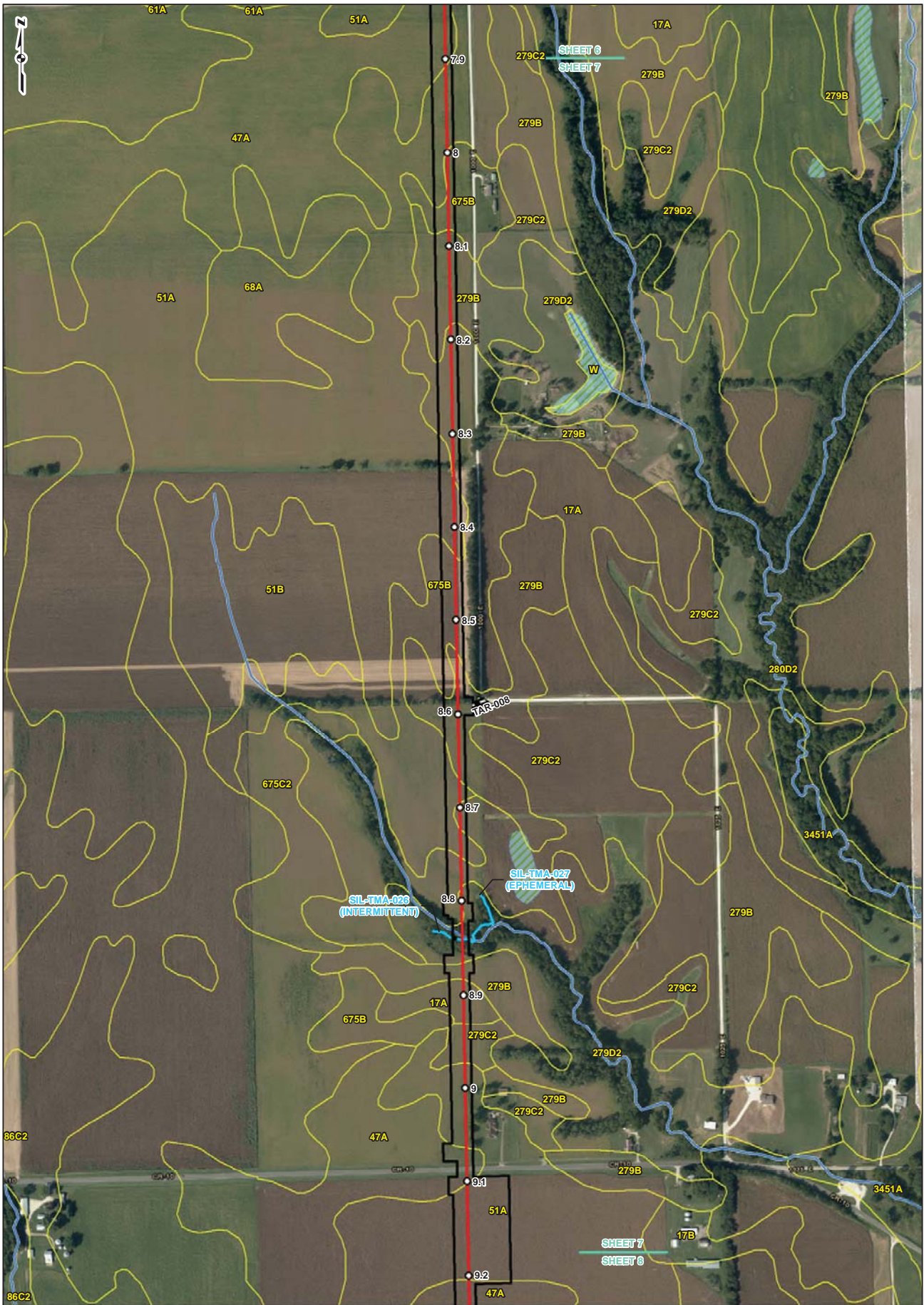
REFERENCE: ORTHOPHOTOGRAPHY, 2016. ESRI WORLD IMAGERY AND TRANSPORTATION, NAIP, USDA FSA, 2014. ACCESSSED 01/20/17. SOIL SURVEY GEOGRAPHIC (SSURGO) DATABASE FOR ILLINOIS (2014) AND MISSOURI (2015). USDA/NRCS NATIONAL WETLAND INVENTORY (NWI) WATERBODIES AND WETLANDS. USFWS 2016. NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS FOR ILLINOIS (2015) AND MISSOURI (2016). USGS. NATIONAL FLOOD HAZARD LAYER FOR ILLINOIS (2015). FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA).

LEGEND	
	FACILITY
	ACCESS ROAD
	24-INCH PIPELINE
	MILEPOST
	CULVERT
	LINE 880 MODIFICATIONS
	GROUNDWATER SEEP
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND DATA POINT
	WETLAND OPEN END
	SOIL TEST PIT
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP SHEET 6 OF 51

SPIRE STL PIPELINE PROJECT



DRAWN BY: PMH DATE: 1/19/2017
 CHECKED: APPROVED:



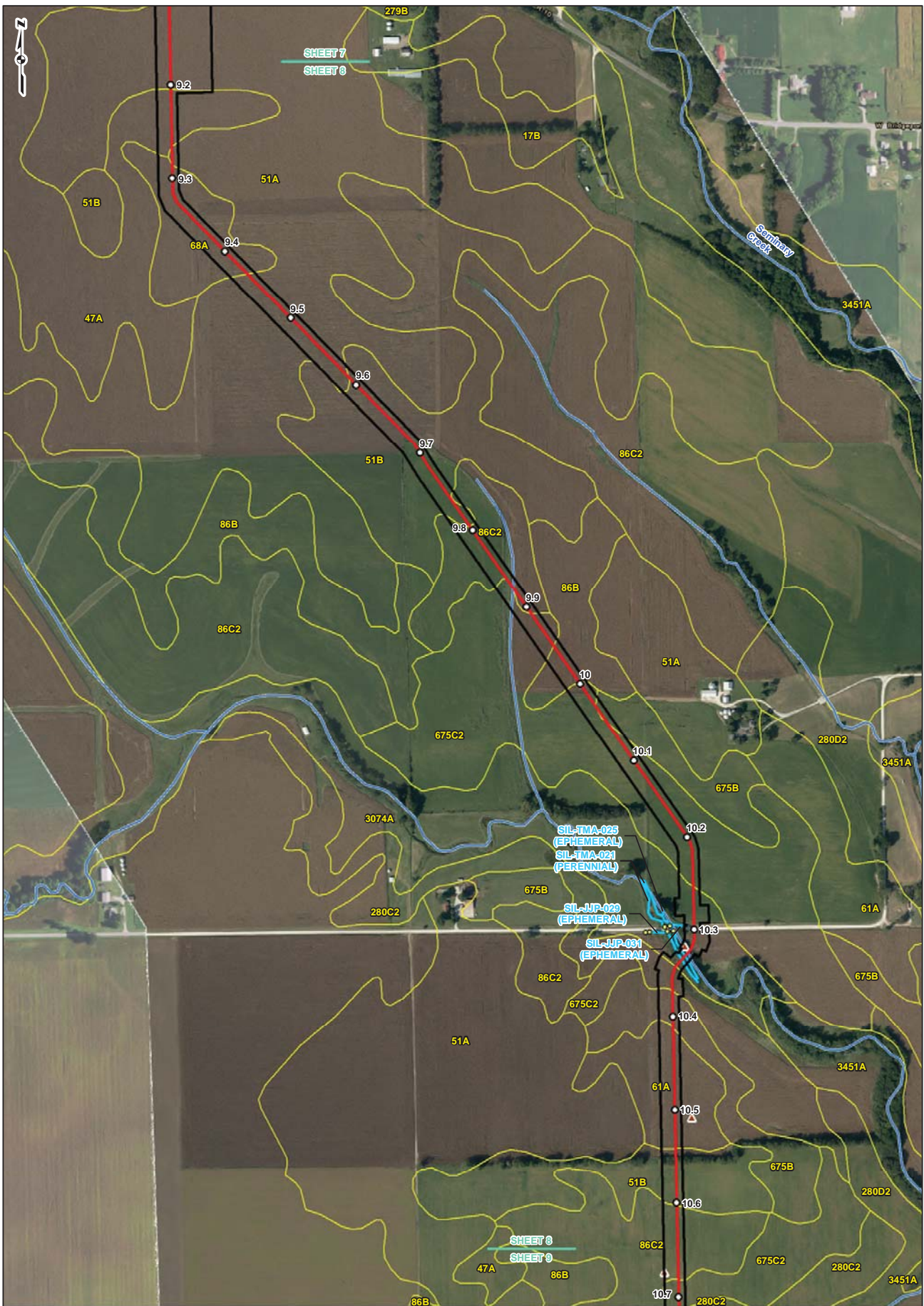
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LEGEND	
	FACILITY
	MILEPOST
	GROUNDWATER SEEP
	WETLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT
	ACCESS ROAD
	24-INCH PIPELINE
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP SHEET 7 OF 51

DRAWN BY: PMH DATE: 1/19/2017
 CHECKED: APPROVED:



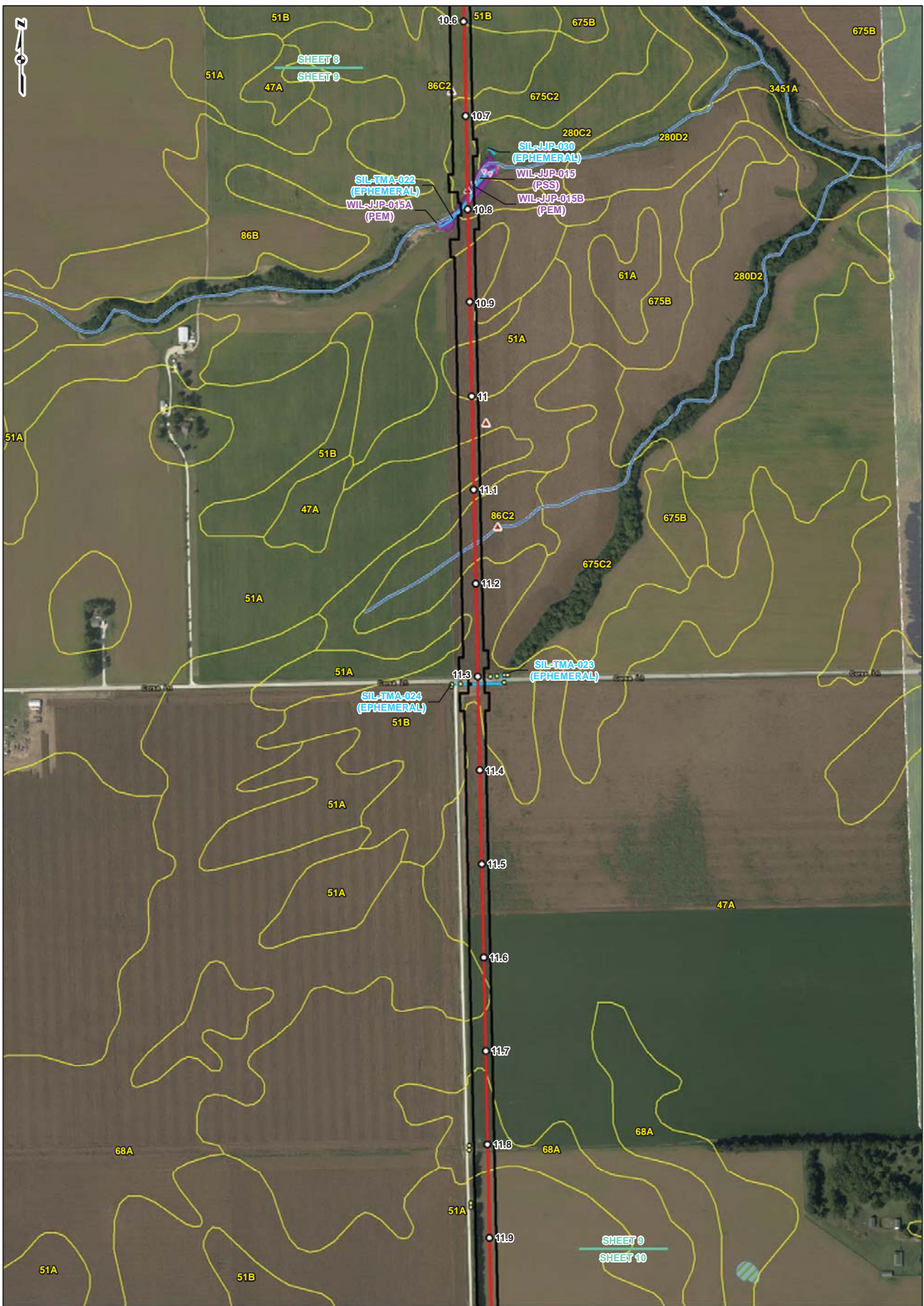
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LEGEND	
	FACILITY
	MILEPOST
	CULVERT
	GROUNDWATER SEEP
	UPLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT
	ACCESS ROAD
	24-INCH PIPELINE
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP SHEET 8 OF 51

SPIRE STL PIPELINE PROJECT

DRAWN BY: PMH DATE: 1/19/2017
 CHECKED: APPROVED:



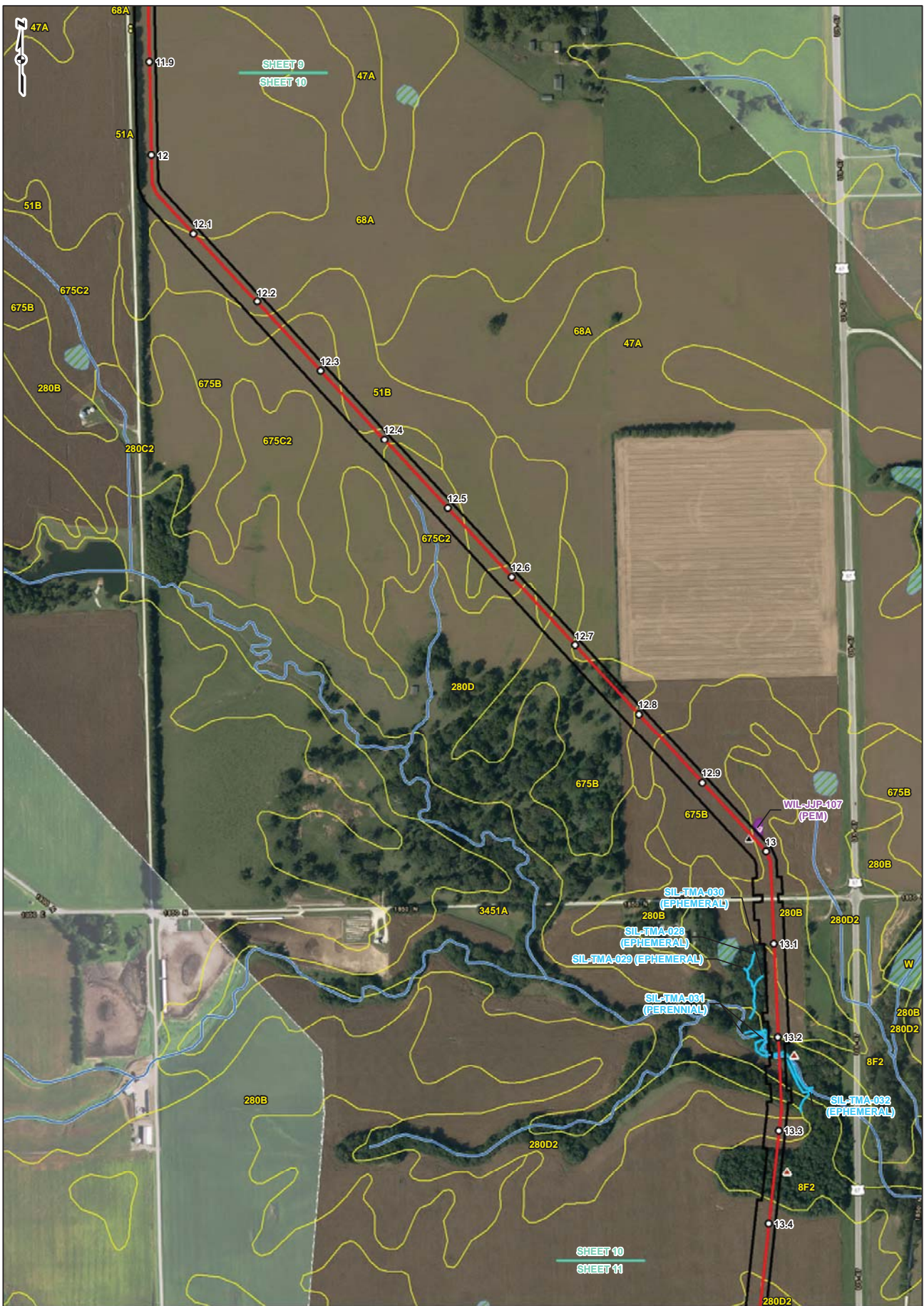
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LEGEND	
	FACILITY
	MILEPOST
	CULVERT
	GROUNDWATER SEEP
	UPLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT
	ACCESS ROAD
	24-INCH PIPELINE
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP
SHEET 9 OF 51

SPiRE STL PIPELINE PROJECT

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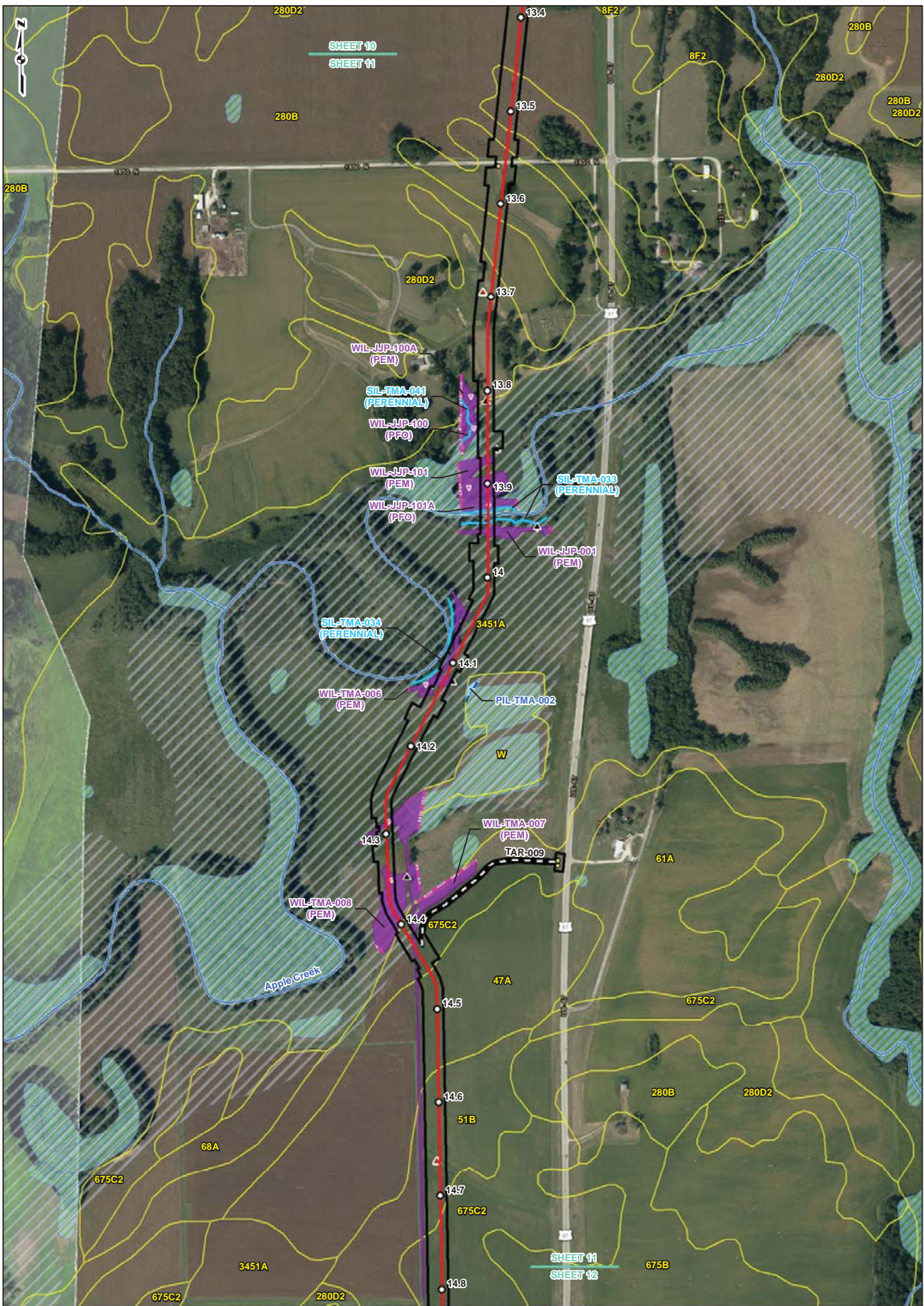
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 DATABASE FOR ILLINOIS (2014) AND
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 (NWI) WATERBODIES AND
 WETLANDS. USFWS 2016. NATIONAL
 HYDROGRAPHY DATASET (NHD)
 STREAMS FOR ILLINOIS (2015) AND
 MISSOURI (2016). USGS. NATIONAL
 FLOOD HAZARD LAYER FOR ILLINOIS
 (2015). FEDERAL EMERGENCY
 MANAGEMENT AGENCY (FEMA).

LEGEND	
	FACILITY
	ACCESS ROAD
	24-INCH PIPELINE
	CULVERT
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND DATA POINT
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

**RESOURCE LOCATION
AND SOILS MAP
SHEET 10 OF 51**

**SPIRE STL
PIPELINE
PROJECT**

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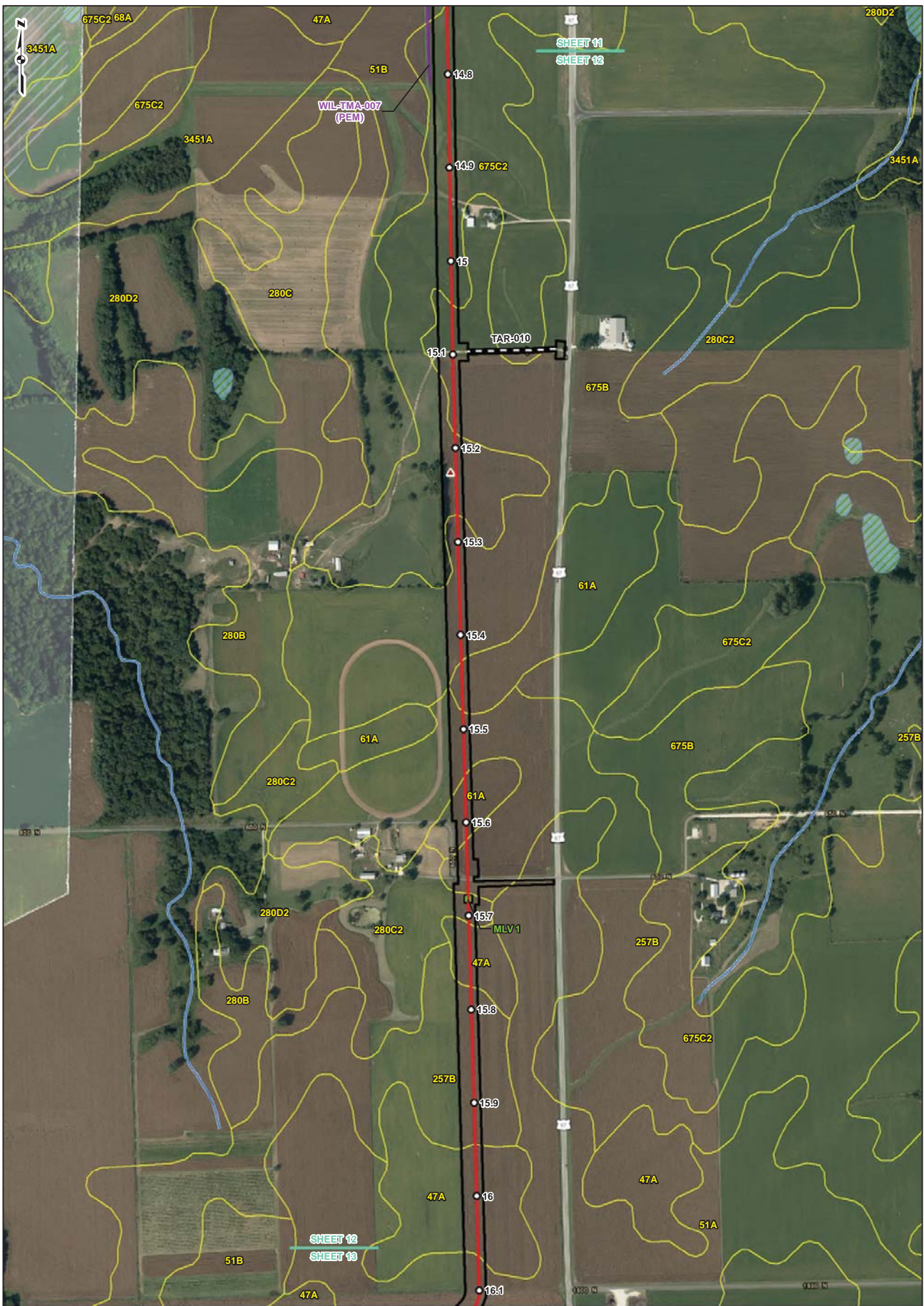
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LEGEND	
	FACILITY
	ACCESS ROAD
	24-INCH PIPELINE
	CULVERT
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND DATA POINT
	WETLAND OPEN END
	SOIL TEST PIT
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP SHEET 11 OF 51

SPIRE STL PIPELINE PROJECT

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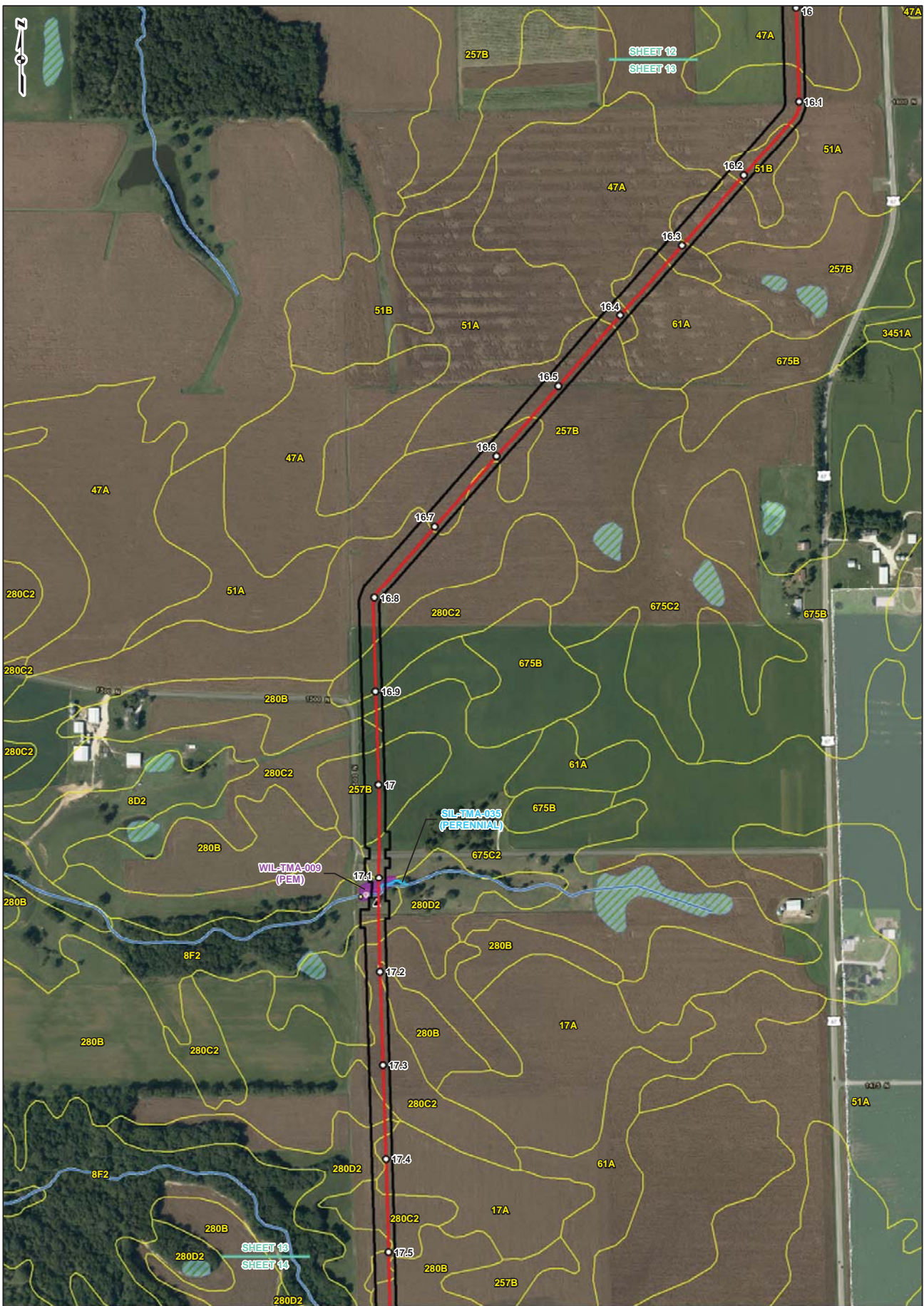
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LEGEND	
	FACILITY
	ACCESS ROAD
	24-INCH PIPELINE
	MILEPOST
	CULVERT
	GROUNDWATER SEEP
	NHD STREAM
	WETLAND DATA POINT
	WETLAND OPEN END
	SOIL TEST PIT
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP SHEET 12 OF 51

SPIRE STL PIPELINE PROJECT

DRAWN BY: PMH DATE: 1/19/2017
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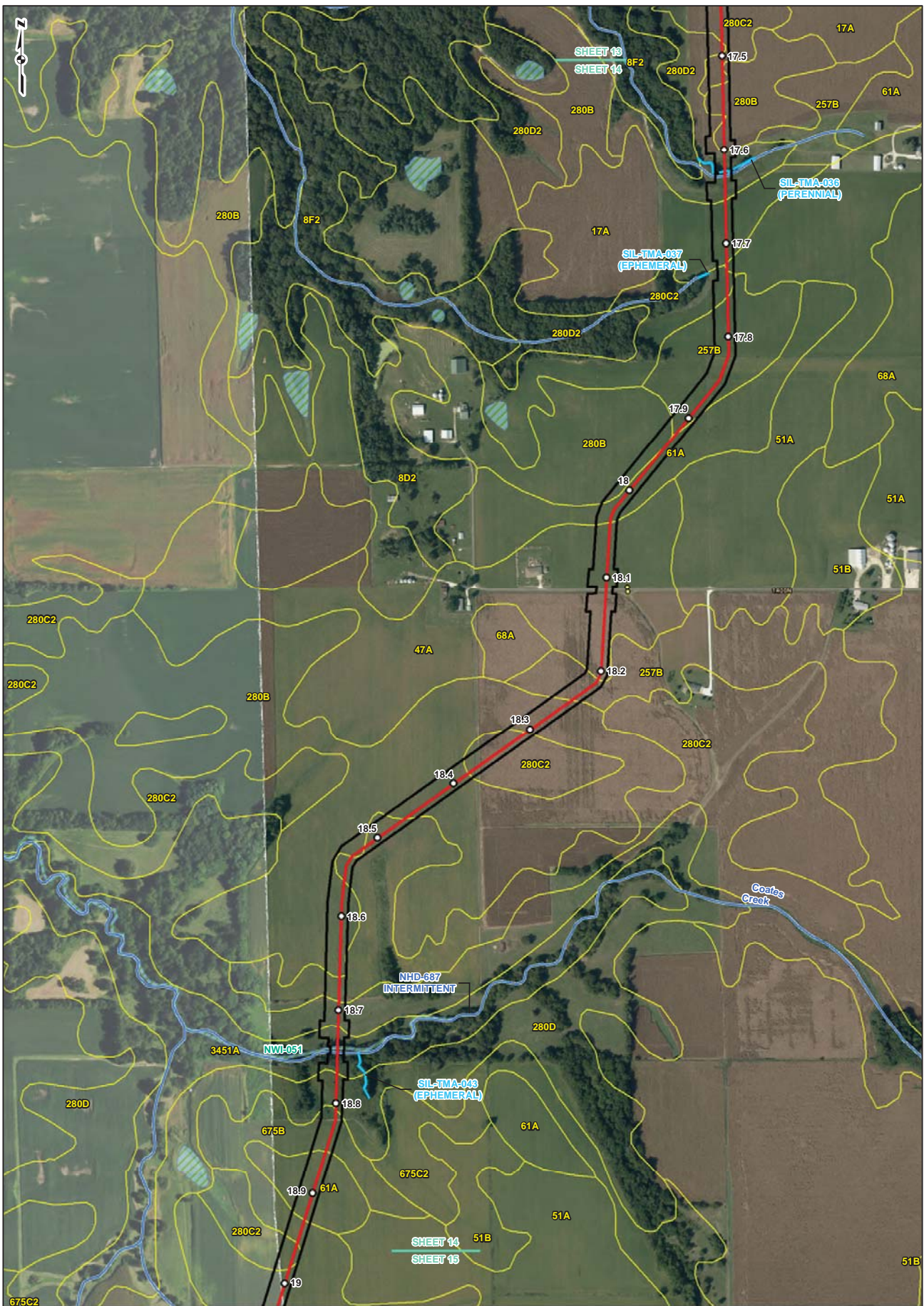
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LEGEND	
	FACILITY
	ACCESS ROAD
	24-INCH PIPELINE
	CULVERT
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY
	MILEPOST
	GROUNDWATER SEEP
	WETLAND DATA POINT
	SOIL TEST PIT

RESOURCE LOCATION AND SOILS MAP SHEET 13 OF 51

SPIRE STL PIPELINE PROJECT

DRAWN BY: PMH DATE: 1/19/2017
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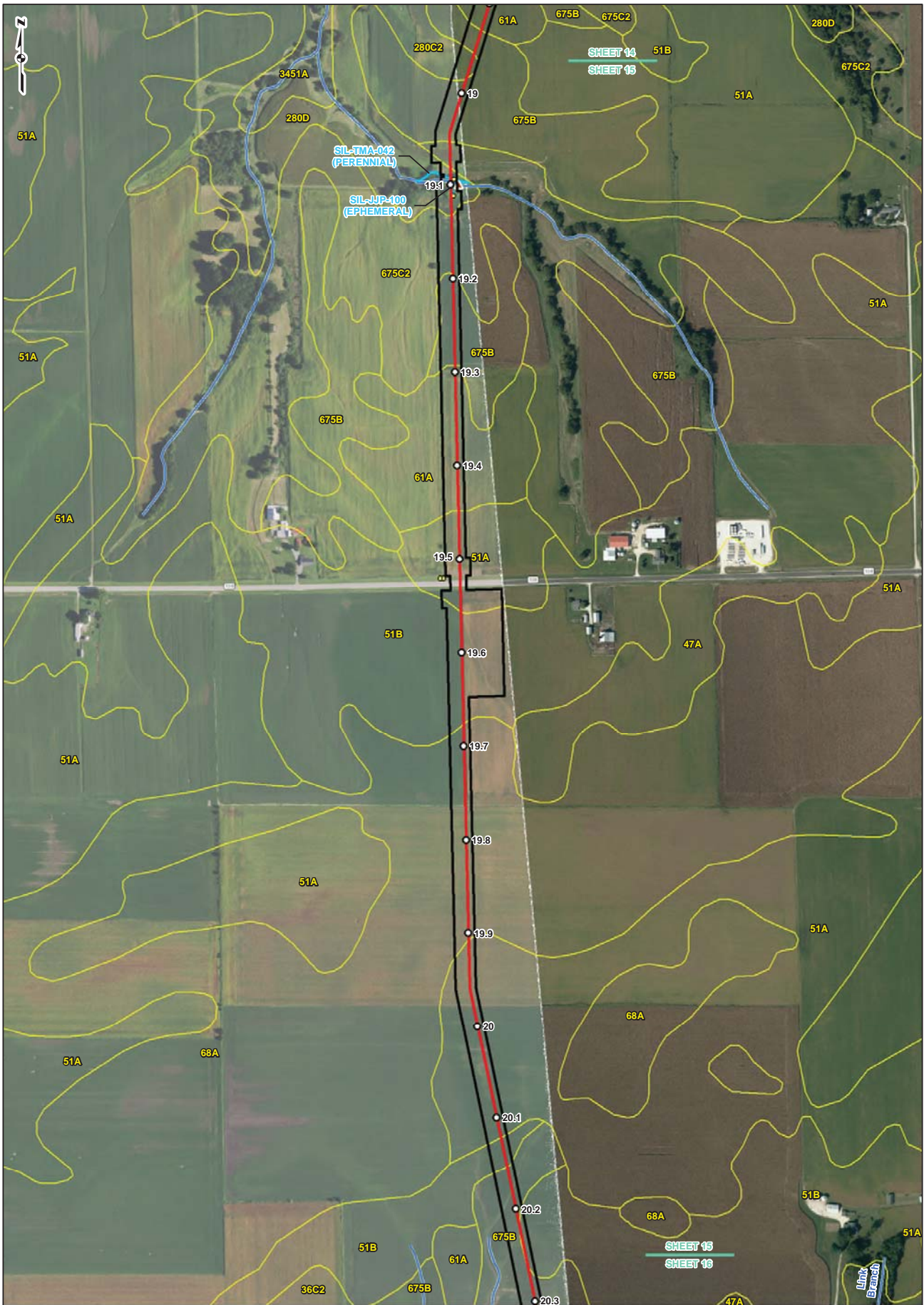
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 DATABASE FOR ILLINOIS (2014) AND
 MISSOURI (2015). USDA/NRCS
 NATIONAL WETLAND INVENTORY
 (NWI) WATERBODIES AND
 WETLANDS. USFWS 2016. NATIONAL
 HYDROGRAPHY DATASET (NHD)
 STREAMS FOR ILLINOIS (2015) AND
 MISSOURI (2016). USGS. NATIONAL
 FLOOD HAZARD LAYER FOR ILLINOIS
 (2015). FEDERAL EMERGENCY
 MANAGEMENT AGENCY (FEMA).

LEGEND	
	FACILITY
	MILEPOST
	CULVERT
	GROUNDWATER SEEP
	UPLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT
	ACCESS ROAD
	24-INCH PIPELINE
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

**RESOURCE LOCATION
AND SOILS MAP
SHEET 14 OF 51**

**SPIRE STL
PIPELINE
PROJECT**

DRAWN BY: PMH DATE: 1/19/2017
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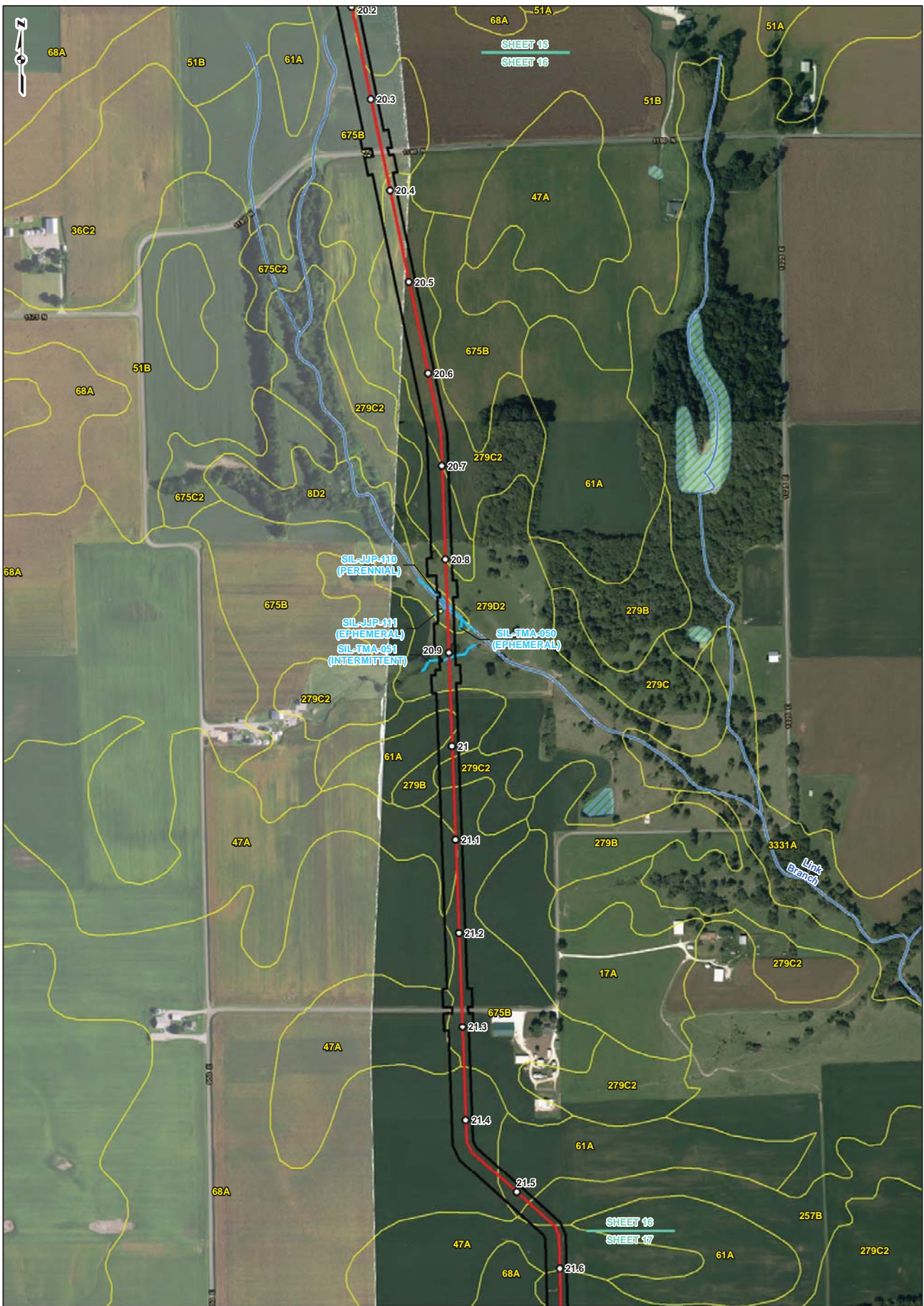
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 NATIONAL WETLAND INVENTORY
 (NWI) WATERBODIES AND
 WETLANDS. USFWS 2016. NATIONAL
 HYDROGRAPHY DATASET (NHD)
 STREAMS FOR ILLINOIS (2015) AND
 MISSOURI (2016). USGS. NATIONAL
 FLOOD HAZARD LAYER FOR ILLINOIS
 (2015). FEDERAL EMERGENCY
 MANAGEMENT AGENCY (FEMA).

LEGEND	
	FACILITY
	ACCESS ROAD
	24-INCH PIPELINE
	CULVERT
	LINE 880 MODIFICATIONS
	GROUNDWATER SEEP
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND DATA POINT
	SOIL TEST PIT
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

**RESOURCE LOCATION
AND SOILS MAP
SHEET 15 OF 51**

**SPIRE STL
PIPELINE
PROJECT**

DRAWN BY: PMH DATE: 1/19/2017
 CHECKED: APPROVED:



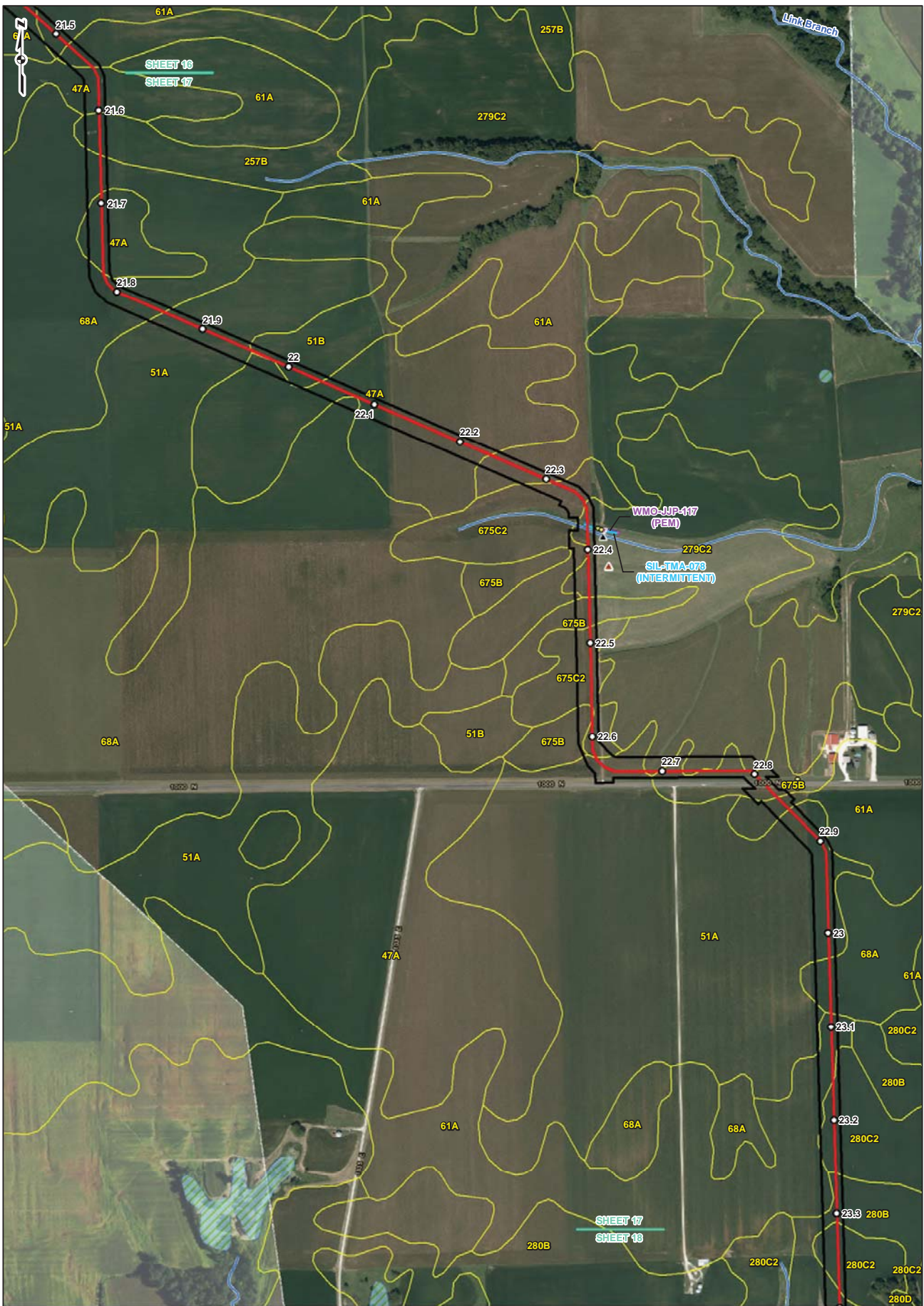
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LEGEND	
	FACILITY
	MILEPOST
	CULVERT
	GROUNDWATER SEEP
	UPLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT
	ACCESS ROAD
	24-INCH PIPELINE
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP
SHEET 16 OF 51

SPiRE STL PIPELINE PROJECT

DRAWN BY: PMH DATE: 1/19/2017
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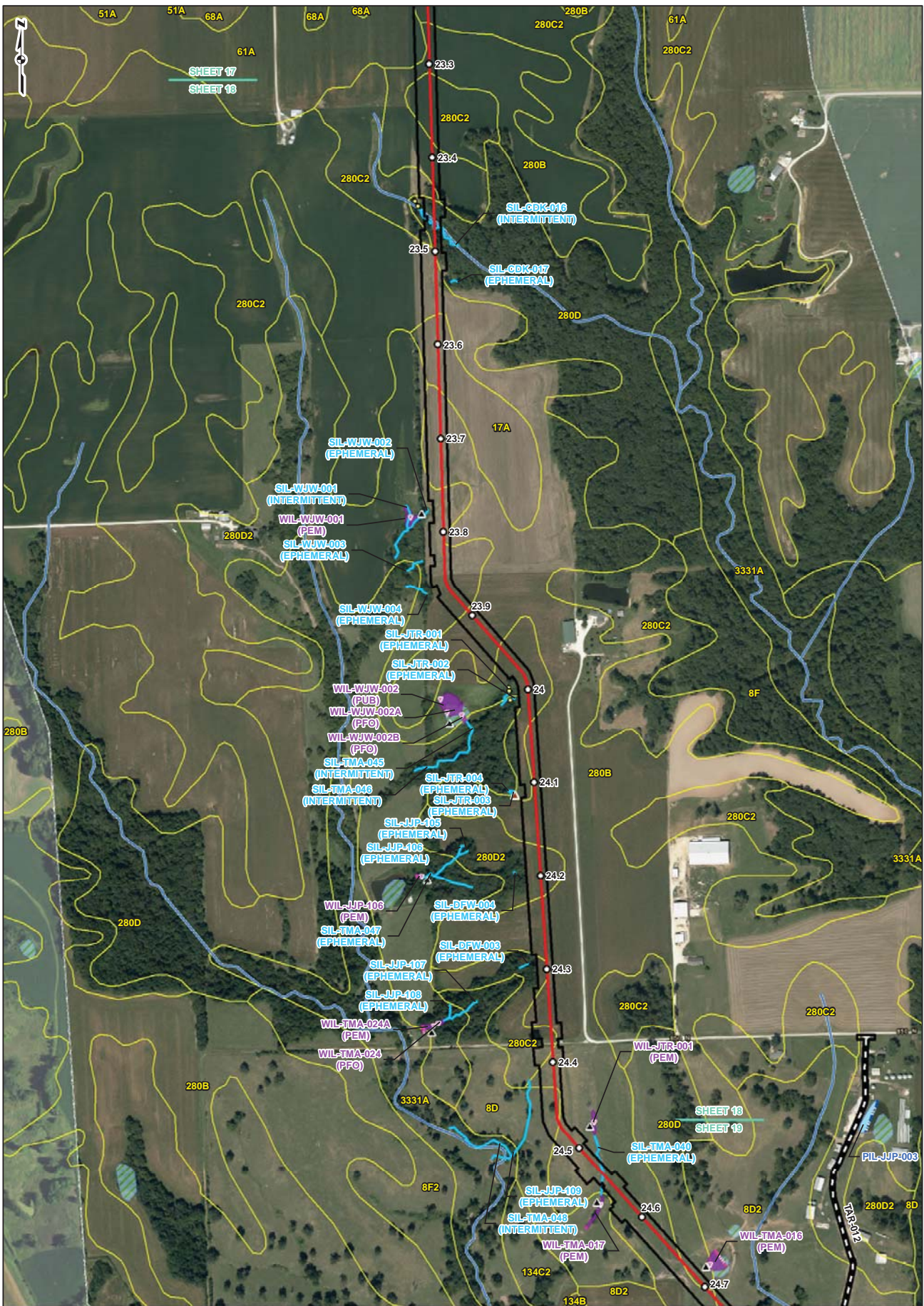
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LEGEND	
	FACILITY
	ACCESS ROAD
	24-INCH PIPELINE
	CULVERT
	LINE 880 MODIFICATIONS
	GROUNDWATER SEEP
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND DATA POINT
	SOIL TEST PIT
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP SHEET 17 OF 51

SPIRE STL PIPELINE PROJECT

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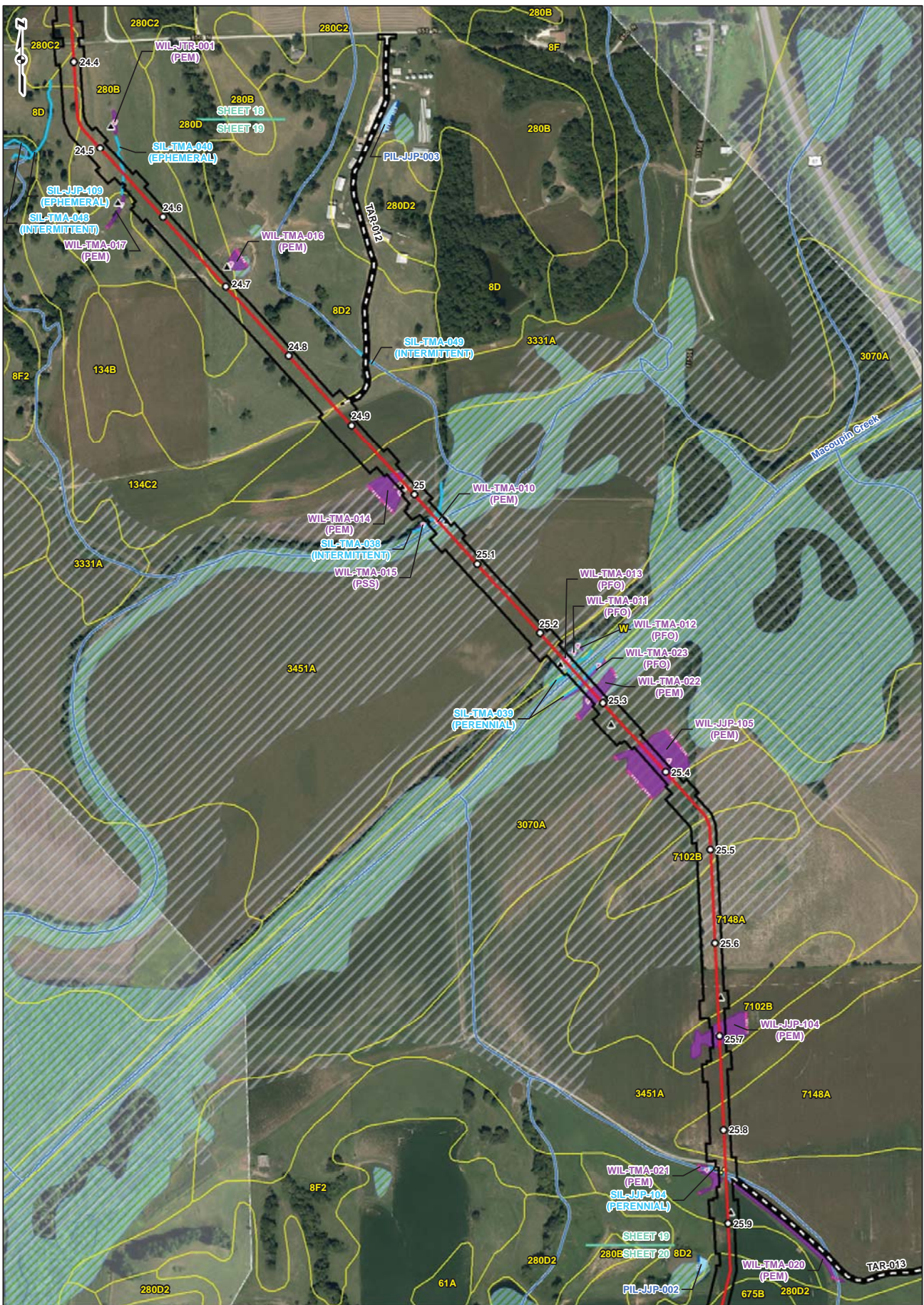
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LEGEND	
	FACILITY
	MILEPOST
	CULVERT
	GROUNDWATER SEEP
	WETLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT
	ACCESS ROAD
	24-INCH PIPELINE
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP
SHEET 18 OF 51

SPIRE STL PIPELINE PROJECT

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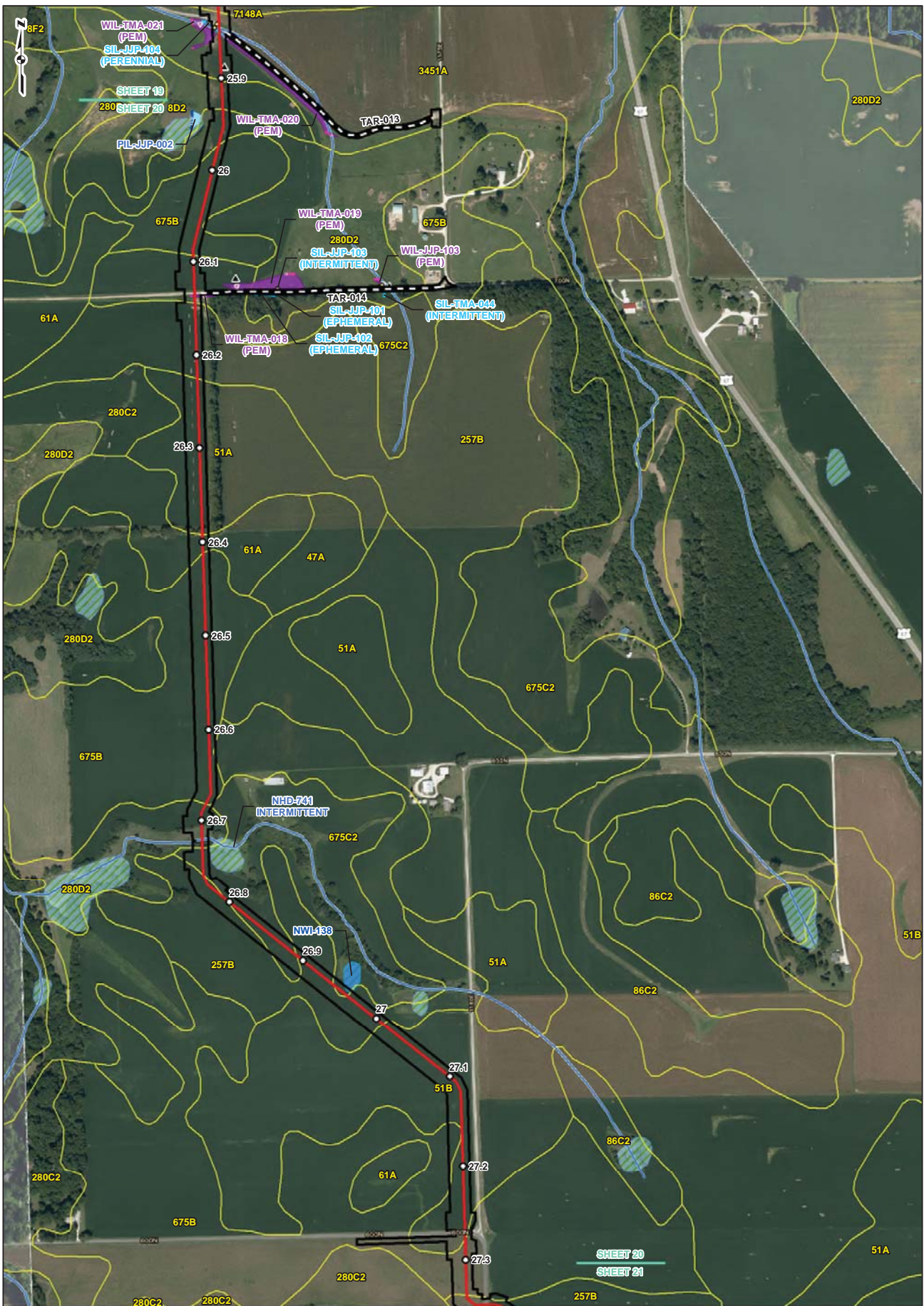
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LEGEND	
	FACILITY
	ACCESS ROAD
	24-INCH PIPELINE
	CULVERT
	LINE 880 MODIFICATIONS
	GROUNDWATER SEEP
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP SHEET 19 OF 51

SPIRE STL PIPELINE PROJECT

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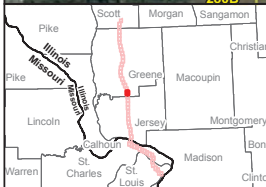
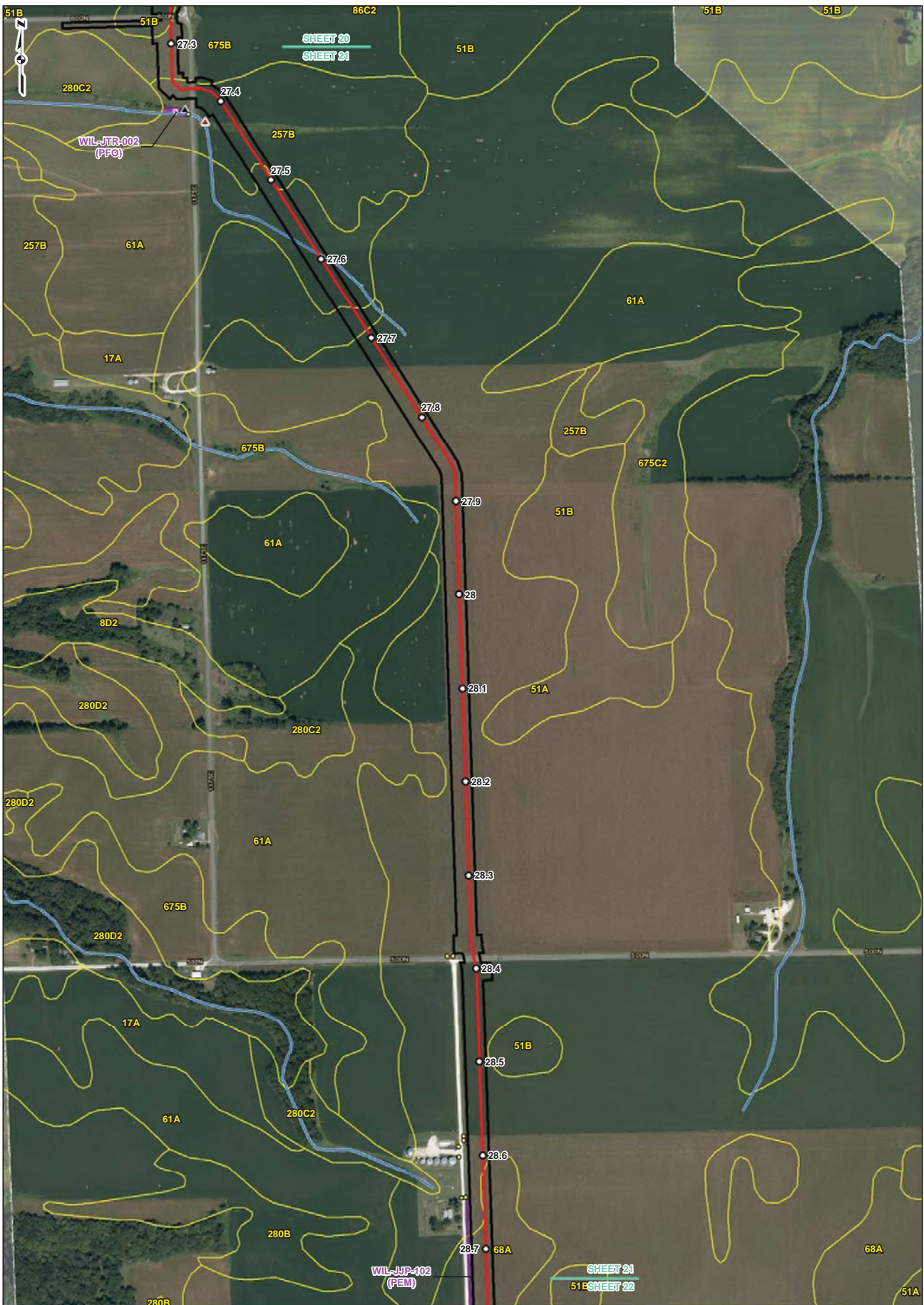
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LEGEND	
	FACILITY
	ACCESS ROAD
	24-INCH PIPELINE
	CULVERT
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

**RESOURCE LOCATION AND SOILS MAP
SHEET 20 OF 51**

SPIRE STL PIPELINE PROJECT



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REFERENCE: ORTHOPHOTOGRAPHY, 2016. ESRI WORLD IMAGERY AND TRANSPORTATION, NAIP, USDA FSA, 2014. ACCESSED 01/20/17. SOIL SURVEY GEOGRAPHIC (SSURGO) DATABASE FOR ILLINOIS (2014) AND MISSOURI (2015). USDA NRCS NATIONAL WETLAND INVENTORY (NWI) WATERBODIES AND WETLANDS. USFWS 2016. NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS FOR ILLINOIS (2015) AND MISSOURI (2016). USGS. NATIONAL FLOOD HAZARD LAYER FOR ILLINOIS (2015). FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA).

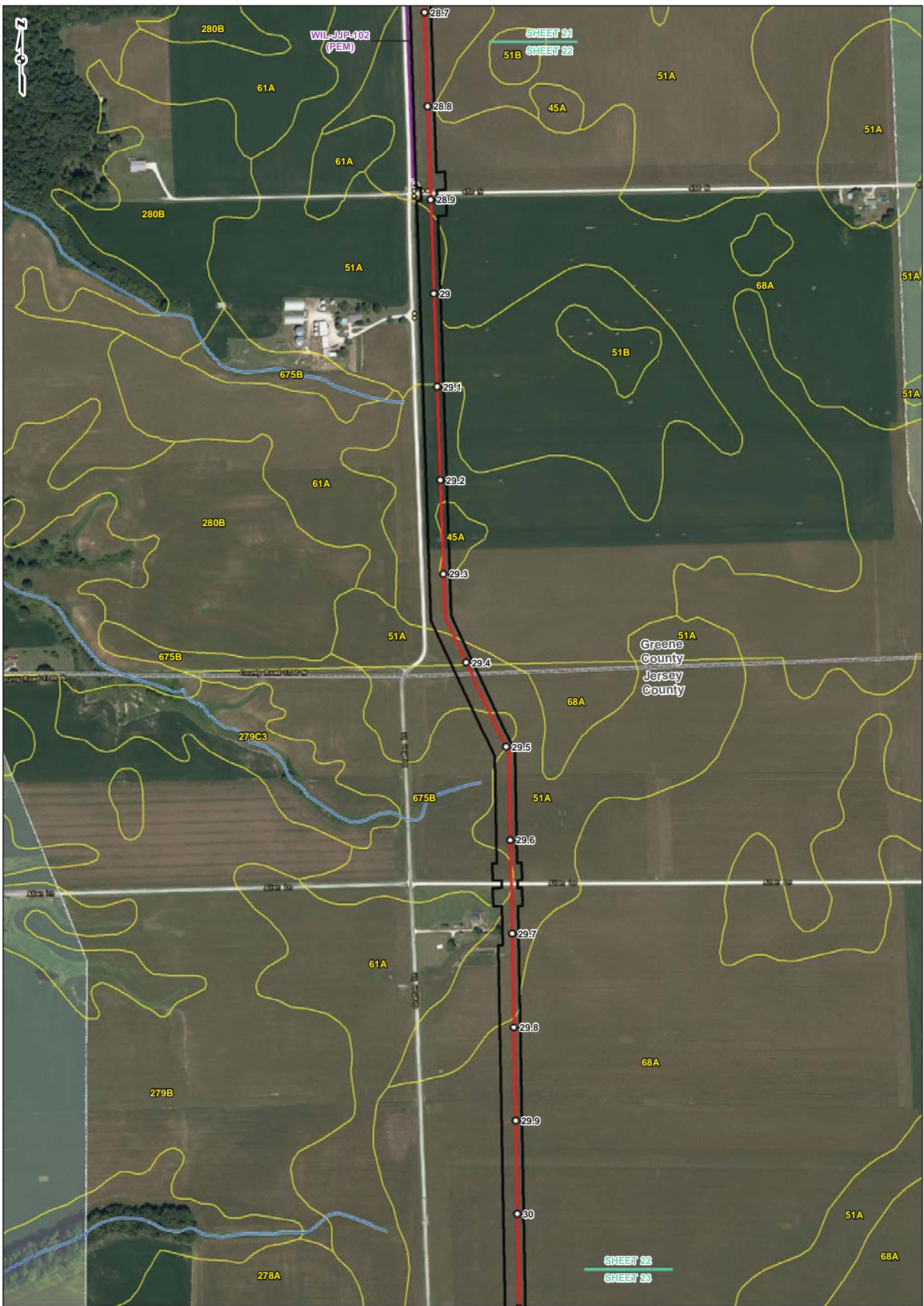
LEGEND	
	FACILITY
	MILEPOST
	GROUNDWATER SEEP
	UPLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT
	ACCESS ROAD
	24-INCH PIPELINE
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP
SHEET 21 OF 51

SPIRE STL PIPELINE PROJECT

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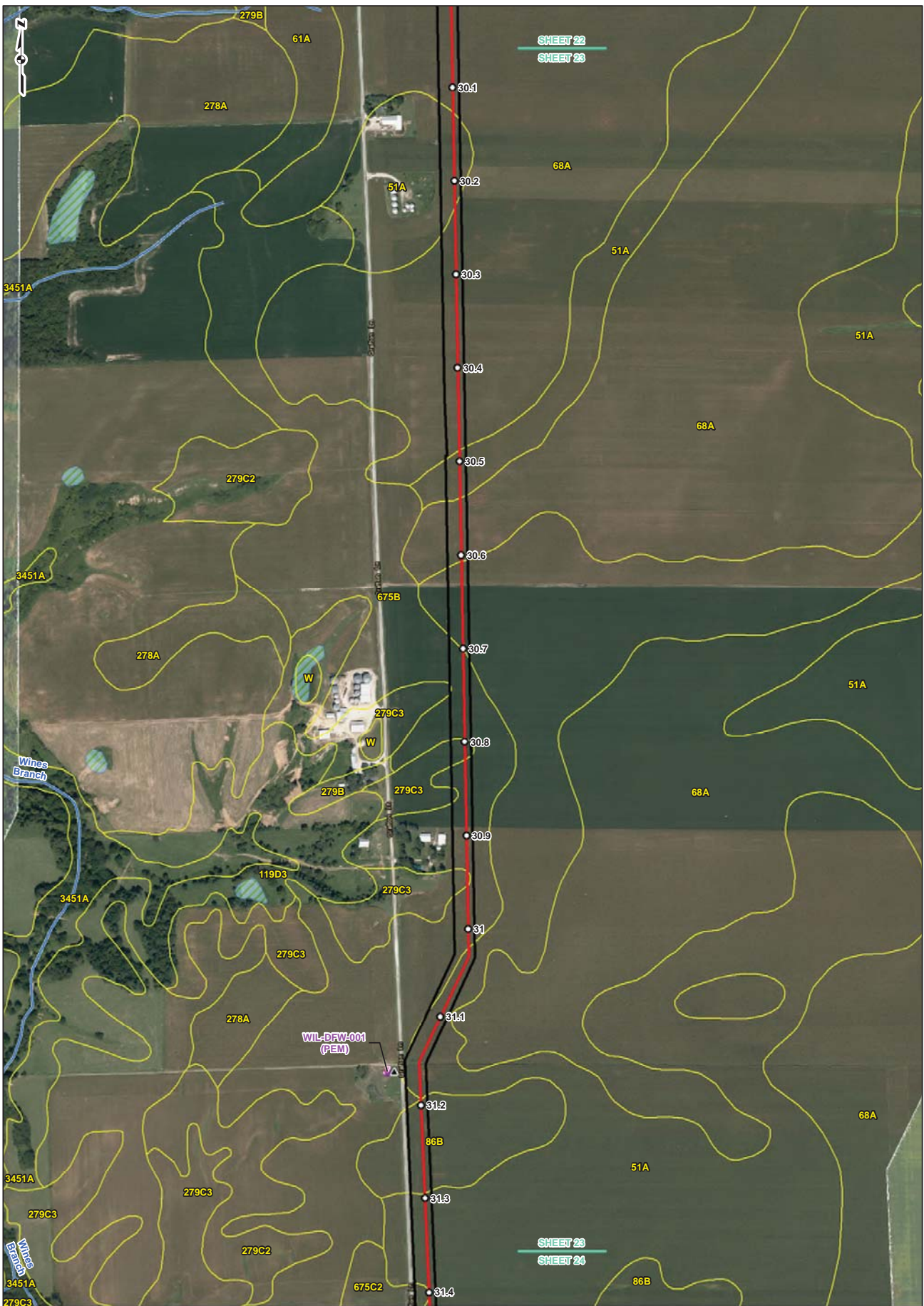
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LEGEND	
	FACILITY
	MILEPOST
	GROUNDWATER SEEP
	UPLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT
	ACCESS ROAD
	24-INCH PIPELINE
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP
SHEET 22 OF 51

SPIRE STL PIPELINE PROJECT

DRAWN BY: PMH DATE: 1/19/2017
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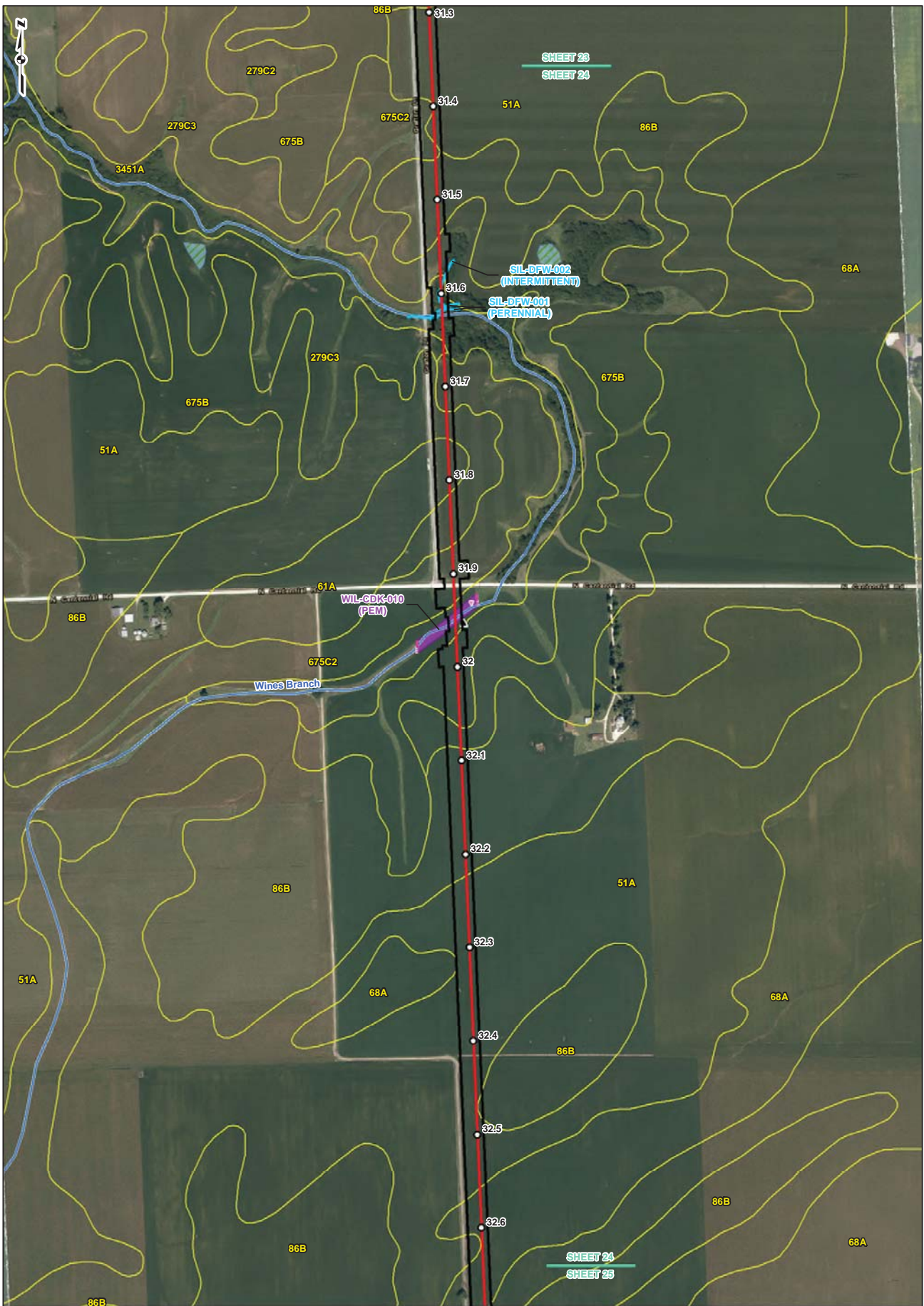
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LEGEND	
	FACILITY
	MILEPOST
	CULVERT
	GROUNDWATER SEEP
	WETLAND DATA POINT
	SOIL TEST PIT
	ACCESS ROAD
	24-INCH PIPELINE
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP
SHEET 23 OF 51

SPIRE STL PIPELINE PROJECT

DRAWN BY: PMH DATE: 1/19/2017
CHECKED: APPROVED:



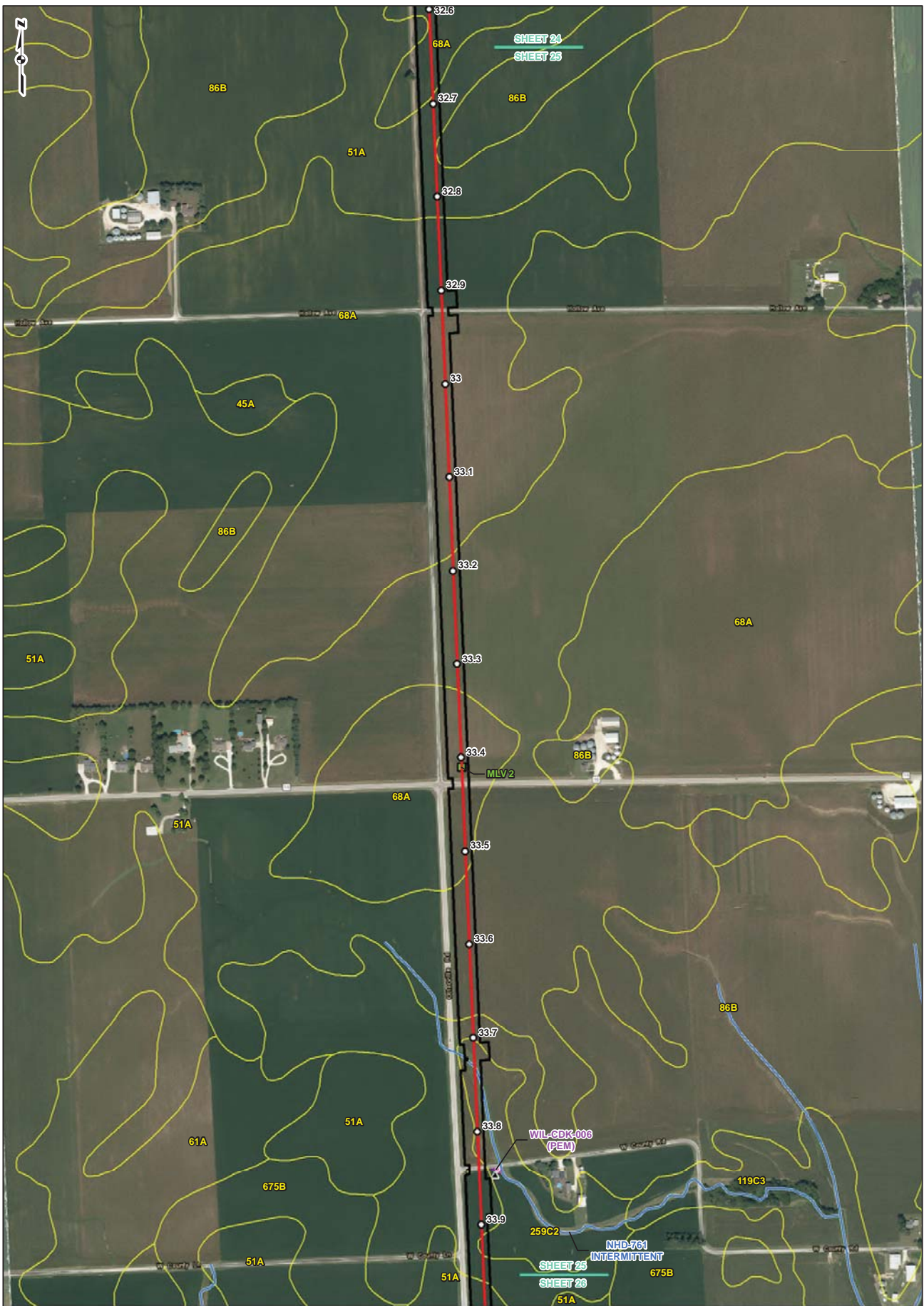
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 DATABASE FOR ILLINOIS (2014) AND
 MISSOURI (2015). USDA NRCS.
 NATIONAL WETLAND INVENTORY
 (NWI) WATERBODIES AND
 WETLANDS. USFWS 2016. NATIONAL
 HYDROGRAPHY DATASET (NHD)
 STREAMS FOR ILLINOIS (2015) AND
 MISSOURI (2016). USGS. NATIONAL
 FLOOD HAZARD LAYER FOR ILLINOIS
 (2015). FEDERAL EMERGENCY
 MANAGEMENT AGENCY (FEMA).

LEGEND	
	FACILITY
	MILEPOST
	CULVERT
	GROUNDWATER SEEP
	UPLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT
	ACCESS ROAD
	24-INCH PIPELINE
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

**RESOURCE LOCATION
AND SOILS MAP
SHEET 24 OF 51**

**SPIRE STL
PIPELINE
PROJECT**

DRAWN BY: PMH DATE: 1/19/2017
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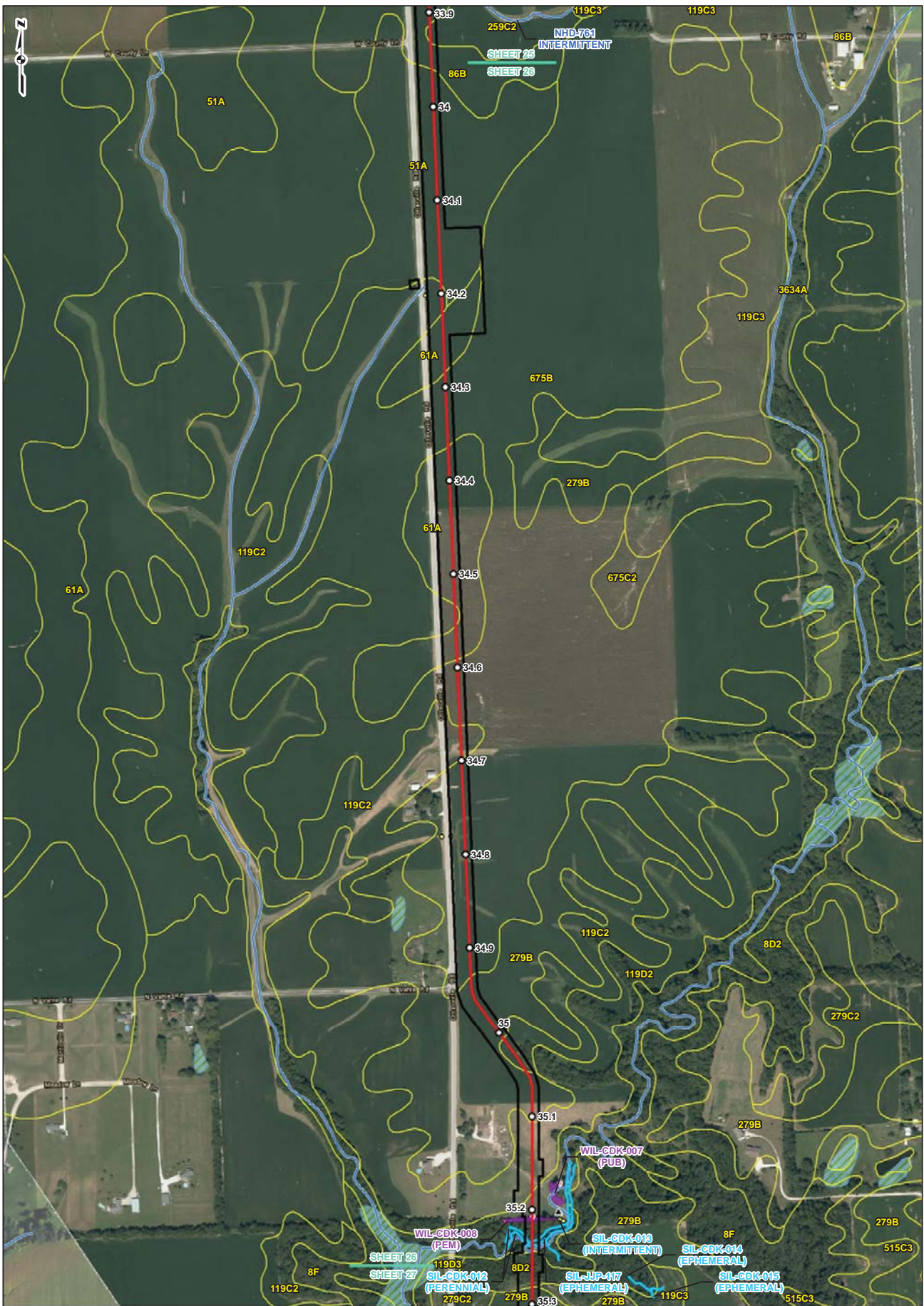
REFERENCE:
 ORTHOPHOTOGRAPHY, 2016. ESRI
 WORLD IMAGERY AND
 TRANSPORTATION, NAIP, USDA FSA,
 2014, ACCESSED 01/20/17. SOIL
 SURVEY GEOGRAPHIC (SSURGO)
 DATABASE FOR ILLINOIS (2014) AND
 MISSOURI (2015). USDA NRCS
 NATIONAL WETLAND INVENTORY
 (NWI) WATERBODIES AND
 WETLANDS, USFWS 2016. NATIONAL
 HYDROGRAPHY DATASET (NHD)
 STREAMS FOR ILLINOIS (2015) AND
 MISSOURI (2016). USGS. NATIONAL
 FLOOD HAZARD LAYER FOR ILLINOIS
 (2015). FEDERAL EMERGENCY
 MANAGEMENT AGENCY (FEMA).

LEGEND	
	FACILITY
	MILEPOST
	CULVERT
	GROUNDWATER SEEP
	UPLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT
	ACCESS ROAD
	24-INCH PIPELINE
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

**RESOURCE LOCATION
AND SOILS MAP
SHEET 25 OF 51**

**SPIRE STL
PIPELINE
PROJECT**

DRAWN BY: PMH DATE: 1/19/2017
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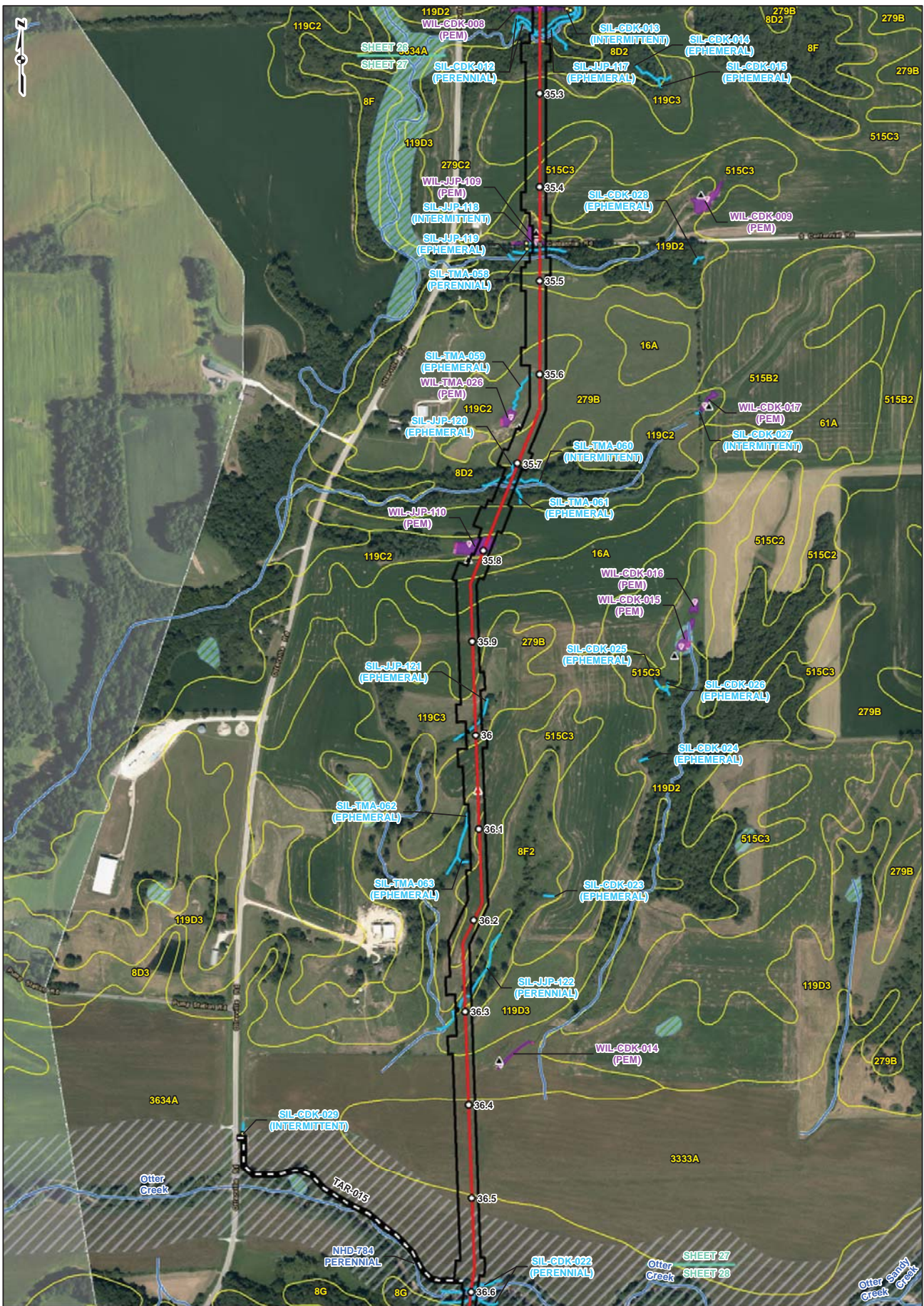
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LEGEND	
	FACILITY
	ACCESS ROAD
	24-INCH PIPELINE
	CULVERT
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND DATA POINT
	WETLAND OPEN END
	SOIL TEST PIT
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP SHEET 26 OF 51

SPIRE STL PIPELINE PROJECT

DRAWN BY: PMH DATE: 1/19/2017
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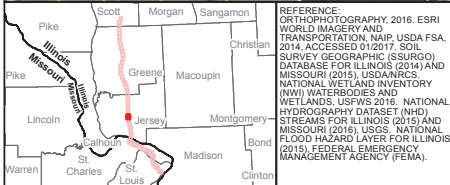
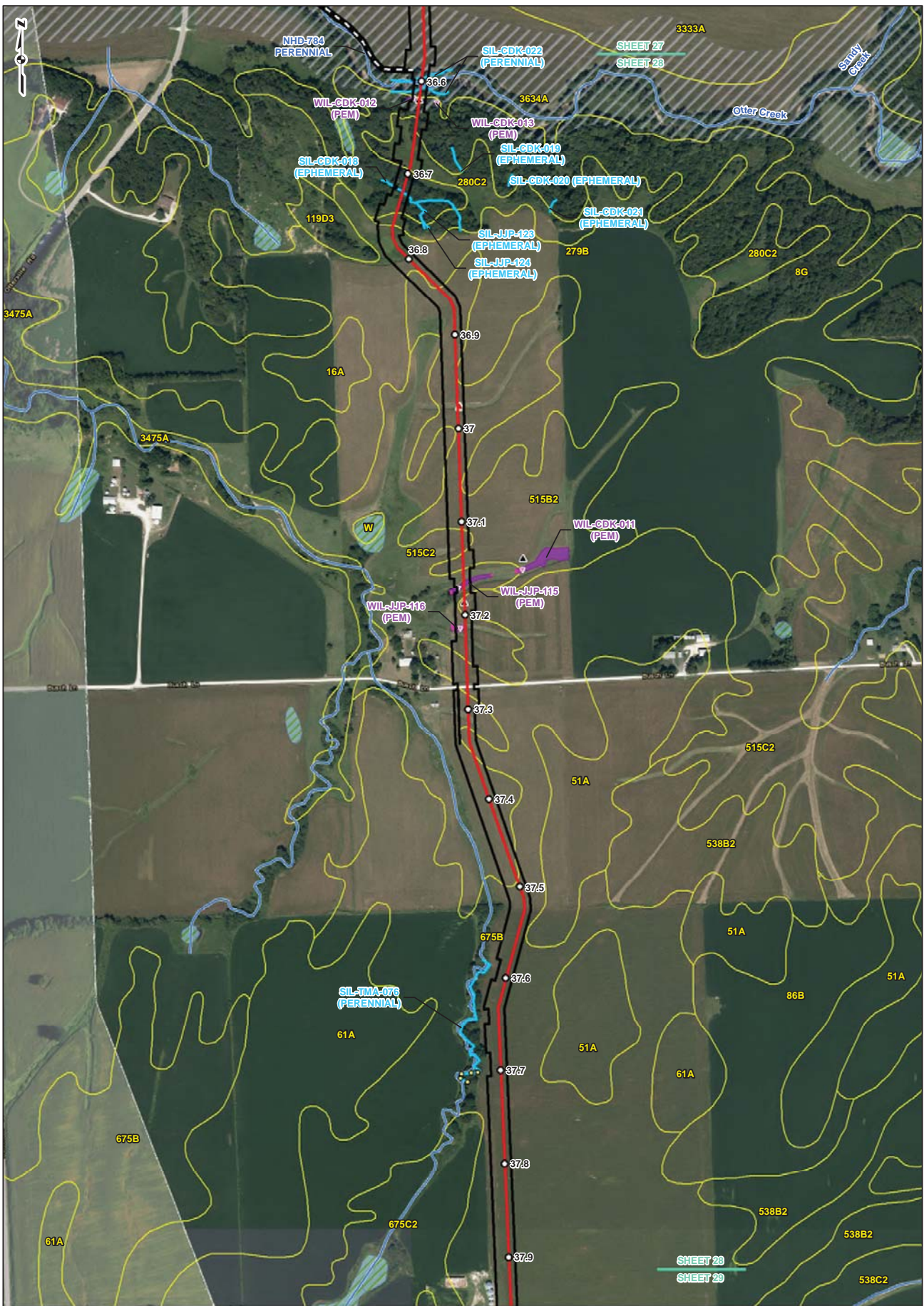
REFERENCE: ORTHOPHOTOGRAPHY, 2016. ESRI WORLD IMAGERY AND TRANSPORTATION, NADIP, USDA FSA, 2014. ACCESSED 01/20/17. SOIL SURVEY GEOGRAPHIC (SSURGO) DATABASE FOR ILLINOIS (2014) AND MISSOURI (2015). USDA/NRCS NATIONAL WETLAND INVENTORY (NWI) WATERBODIES AND WETLANDS. USFWS 2016. NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS FOR ILLINOIS (2015) AND MISSOURI (2016). USGS. NATIONAL FLOOD HAZARD LAYER FOR ILLINOIS (2015). FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA).

LEGEND	
	FACILITY
	MILEPOST
	CULVERT
	GROUNDWATER SEEP
	UPLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT
	ACCESS ROAD
	24-INCH PIPELINE
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP SHEET 27 OF 51

SPIRE STL PIPELINE PROJECT

DRAWN BY: PMH DATE: 1/19/2017
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REFERENCE: ORTHOPHOTOGRAPHY, 2016. ESRI WORLD IMAGERY AND TRANSPORTATION, NAIP, USDA FSA, 2014, ACCESSSED 01/20/17. SOIL SURVEY GEOGRAPHIC (SSURGO) DATABASE FOR ILLINOIS (2014) AND MISSOURI (2015). USDA/NRCS NATIONAL WETLAND INVENTORY (NWI) WATERBODIES AND WETLANDS. USFWS 2016. NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS FOR ILLINOIS (2015) AND MISSOURI (2016). USGS. NATIONAL FLOOD HAZARD LAYER FOR ILLINOIS (2015). FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA).

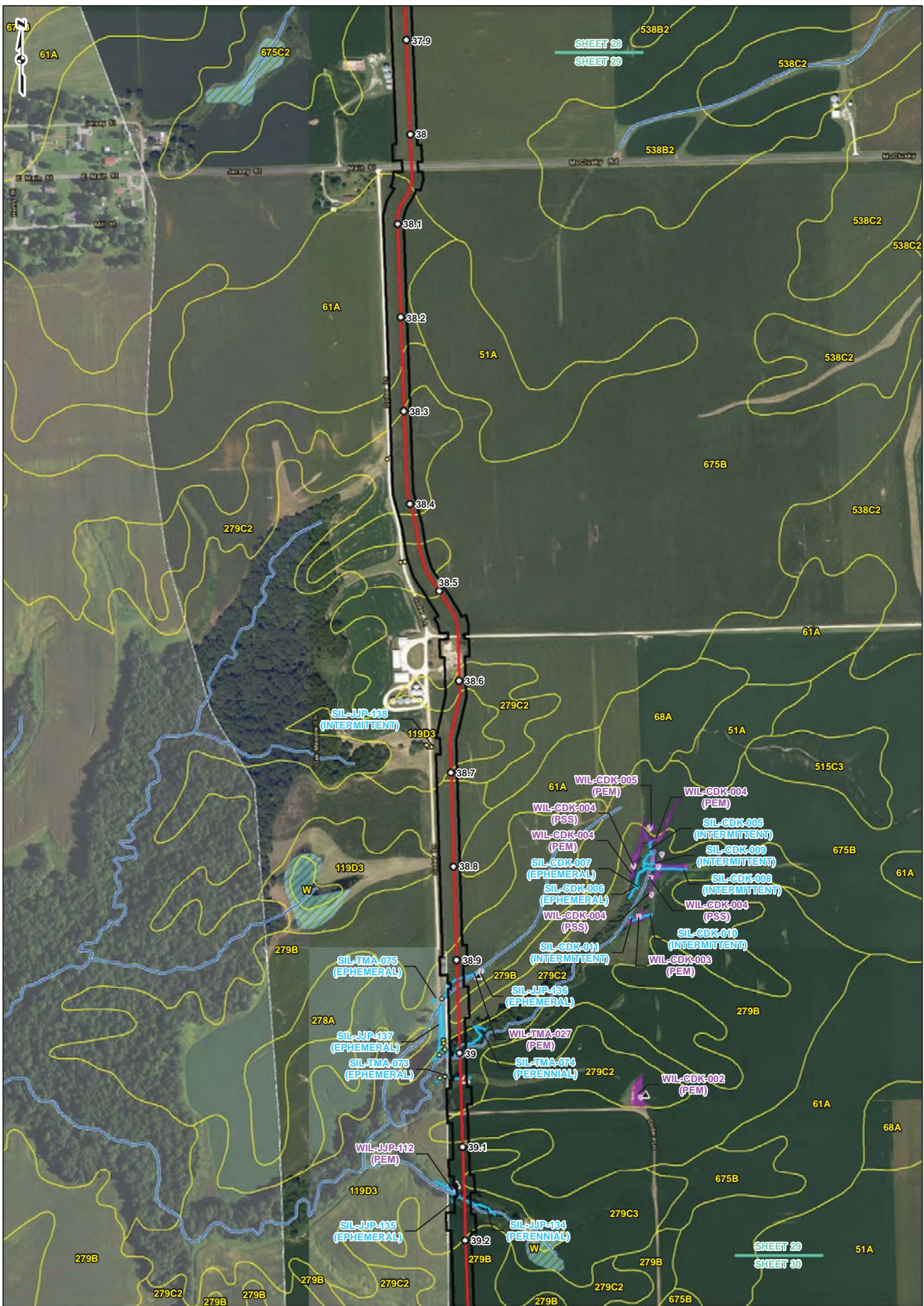
LEGEND	
	FACILITY
	ACCESS ROAD
	24-INCH PIPELINE
	CULVERT
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

0 250 500 1,000 Feet

RESOURCE LOCATION AND SOILS MAP SHEET 28 OF 51

SPIRE STL PIPELINE PROJECT

DRAWN BY: PMH DATE: 1/19/2017
 CHECKED: APPROVED:



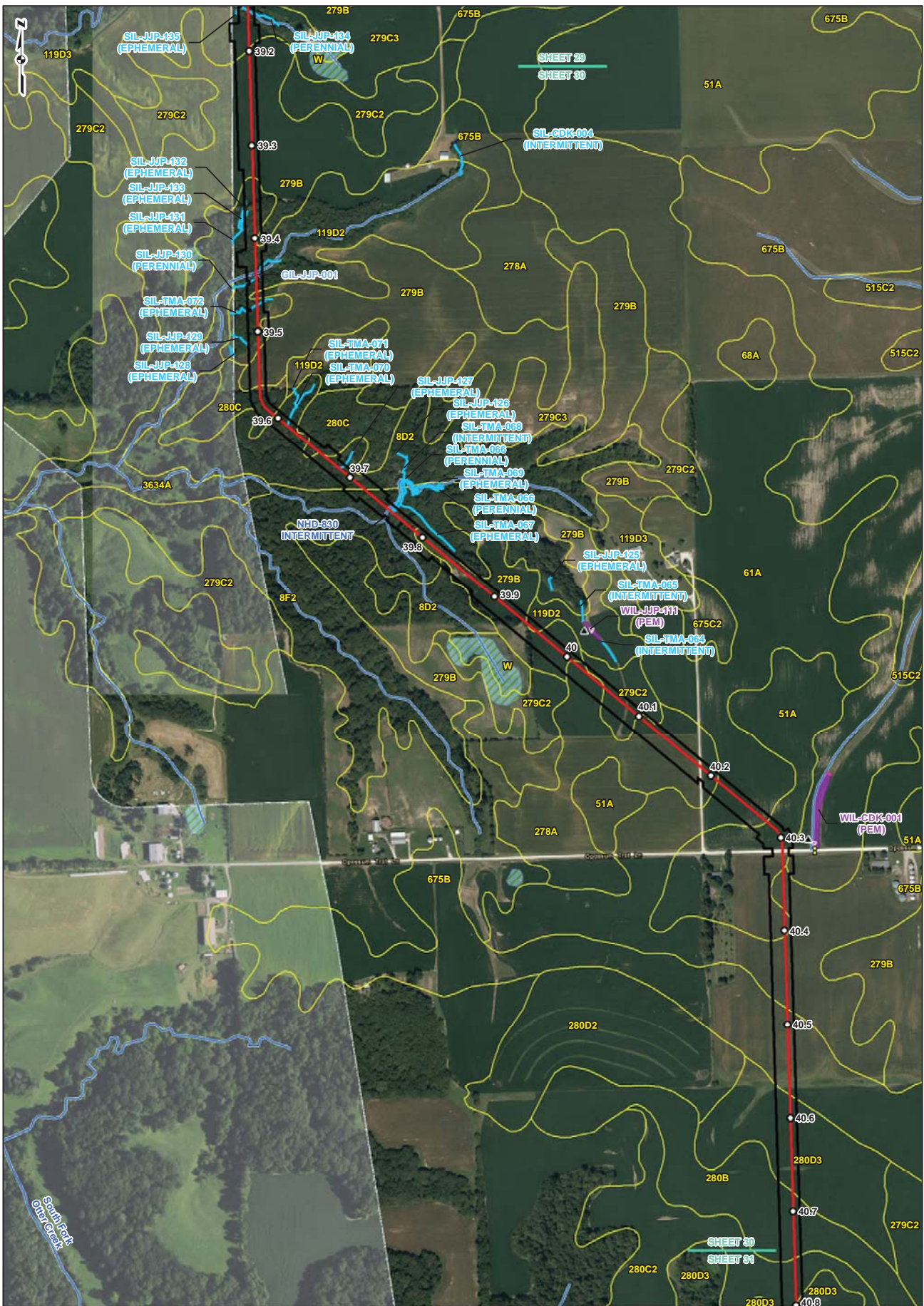
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LEGEND	
	FACILITY
	MILEPOST
	CULVERT
	GROUNDWATER SEEP
	WETLAND DATA POINT
	SOIL TEST PIT
	ACCESS ROAD
	24-INCH PIPELINE
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP
SHEET 29 OF 51

SPIRE STL PIPELINE PROJECT

DRAWN BY: PMH DATE: 1/19/2017
CHECKED: APPROVED:



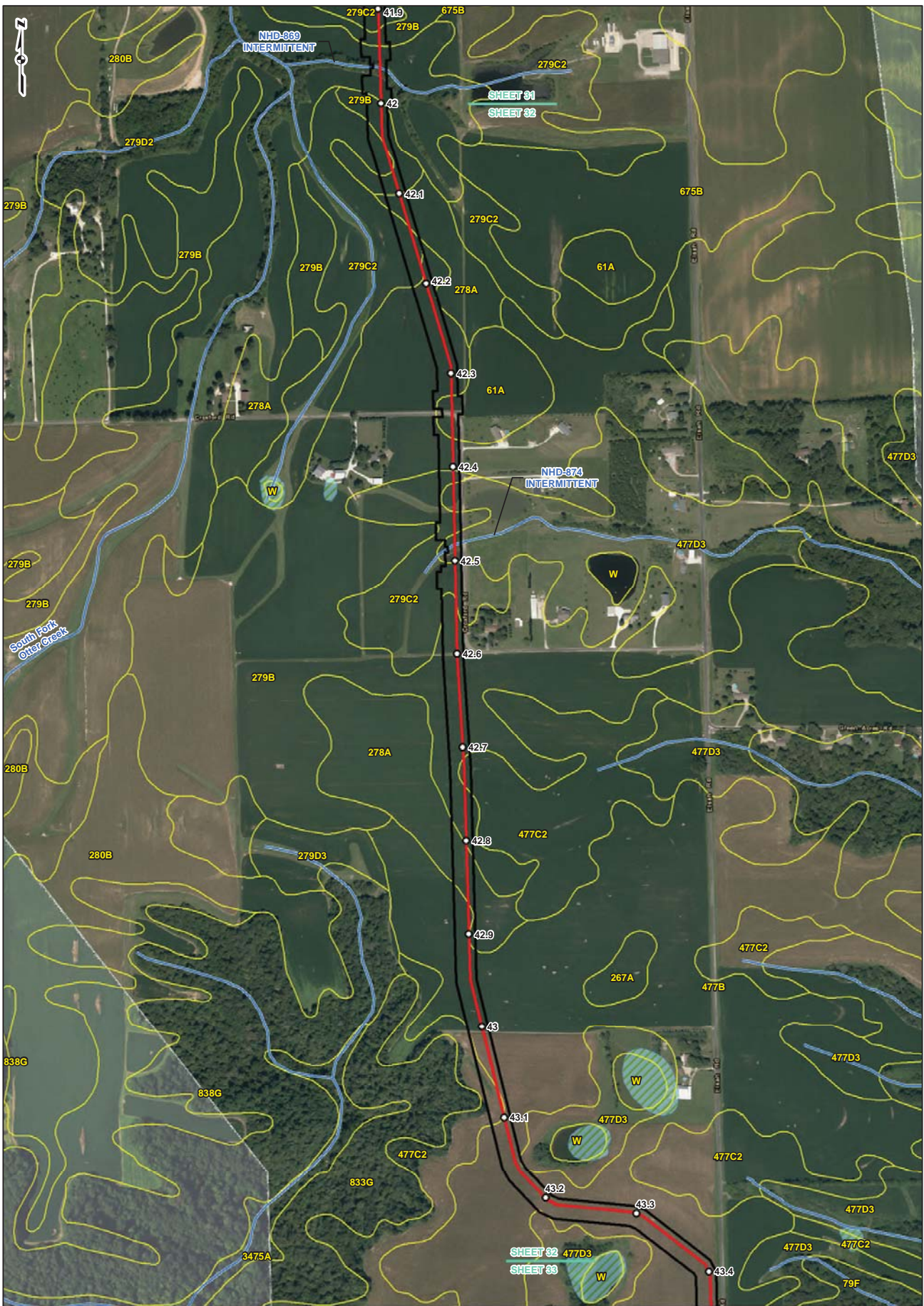
REFERENCE: ORTHOPHOTOGRAPHY, 2016. ESRI WORLD IMAGERY AND TRANSPORTATION, NAIP, USDA FSA, 2014. ACCESSSED 01/2017. SOIL SURVEY GEOGRAPHIC (SSURGO) DATABASE FOR ILLINOIS (2014) AND MISSOURI (2015). US DNR/USFWS NATIONAL WETLAND INVENTORY (NWI) WATERBODIES AND WETLANDS. USFWS 2016. NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS FOR ILLINOIS (2015) AND MISSOURI (2016). USGS. NATIONAL FLOOD HAZARD LAYER FOR ILLINOIS (2015). FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA).

LEGEND	
	FACILITY
	MILEPOST
	CULVERT
	GROUNDWATER SEEP
	WETLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT
	ACCESS ROAD
	24-INCH PIPELINE
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP SHEET 30 OF 51

SPIRE STL PIPELINE PROJECT



DRAWN BY: PMH DATE: 1/19/2017
 CHECKED: APPROVED:



REFERENCE:
 ORTHOPHOTOGRAPHY 2016, ESRI
 WORLD IMAGERY AND
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 2014, ACCESSED 01/2017, SOIL
 SURVEY GEOGRAPHIC (SSURGO)
 DATABASE FOR ILLINOIS (2014) AND
 MISSOURI (2015), USDA NRCS
 NATIONAL WETLAND INVENTORY
 (NWI) WATERBODIES AND
 WETLANDS, USFWS 2016, NATIONAL
 HYDROGRAPHY DATASET (NHD)
 STREAMS FOR ILLINOIS (2015) AND
 MISSOURI (2016), USGS, NATIONAL
 FLOOD HAZARD LAYER FOR ILLINOIS
 (2015), FEDERAL EMERGENCY
 MANAGEMENT AGENCY (FEMA).

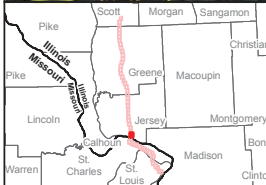
LEGEND	
	FACILITY
	MILEPOST
	CULVERT
	GROUNDWATER SEEP
	UPLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT
	ACCESS ROAD
	24-INCH PIPELINE
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP SHEET 32 OF 51

SPIRE STL PIPELINE PROJECT

DRAWN BY: PMH DATE: 1/19/2017
 CHECKED: APPROVED:



REFERENCE:
 ORTHOPHOTOGRAPHY, 2016. ESRI
 WORLD IMAGERY AND
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 2014, ACCESSED 01/20/17. SOIL
 SURVEY GEOGRAPHIC (SSURGO)
 DATABASE FOR ILLINOIS (2014) AND
 MISSOURI (2015). USDA/NRCS
 NATIONAL WETLAND INVENTORY
 (NWI) WATERBODIES AND
 WETLANDS. USFWS 2016. NATIONAL
 HYDROGRAPHY DATASET (NHD)
 STREAMS FOR ILLINOIS (2015) AND
 MISSOURI (2016). USGS. NATIONAL
 FLOOD HAZARD LAYER FOR ILLINOIS
 (2015). FEDERAL EMERGENCY
 MANAGEMENT AGENCY (FEMA).

LEGEND	
	FACILITY
	ACCESS ROAD
	24-INCH PIPELINE
	CULVERT
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND DATA POINT
	WETLAND OPEN END
	SOIL TEST PIT
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

**RESOURCE LOCATION
AND SOILS MAP
SHEET 33 OF 51**

**SPiRE STL
PIPELINE
PROJECT**

DRAWN BY: PMH DATE: 1/19/2017
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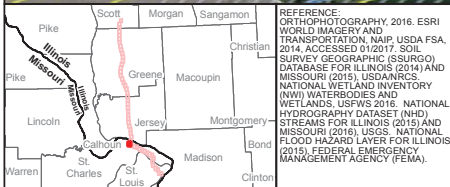
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 SURVEY GEOGRAPHIC (SSURGO)
 DATABASE FOR ILLINOIS (2014) AND
 MISSOURI (2015). USDA/NRCS.
 NATIONAL WETLAND INVENTORY
 (NWI) WATERBODIES AND
 WETLANDS. USFWS 2016. NATIONAL
 HYDROGRAPHY DATASET (NHD)
 STREAMS FOR ILLINOIS (2015) AND
 MISSOURI (2016). USGS. NATIONAL
 FLOOD HAZARD LAYER FOR ILLINOIS
 (2015). FEDERAL EMERGENCY
 MANAGEMENT AGENCY (FEMA).

LEGEND	
	FACILITY
	MILEPOST
	CULVERT
	GROUNDWATER SEEP
	UPLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT
	ACCESS ROAD
	24-INCH PIPELINE
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

**RESOURCE LOCATION
AND SOILS MAP
SHEET 34 OF 51**

**SPIRE STL
PIPELINE
PROJECT**

DRAWN BY: PMH DATE: 1/19/2017
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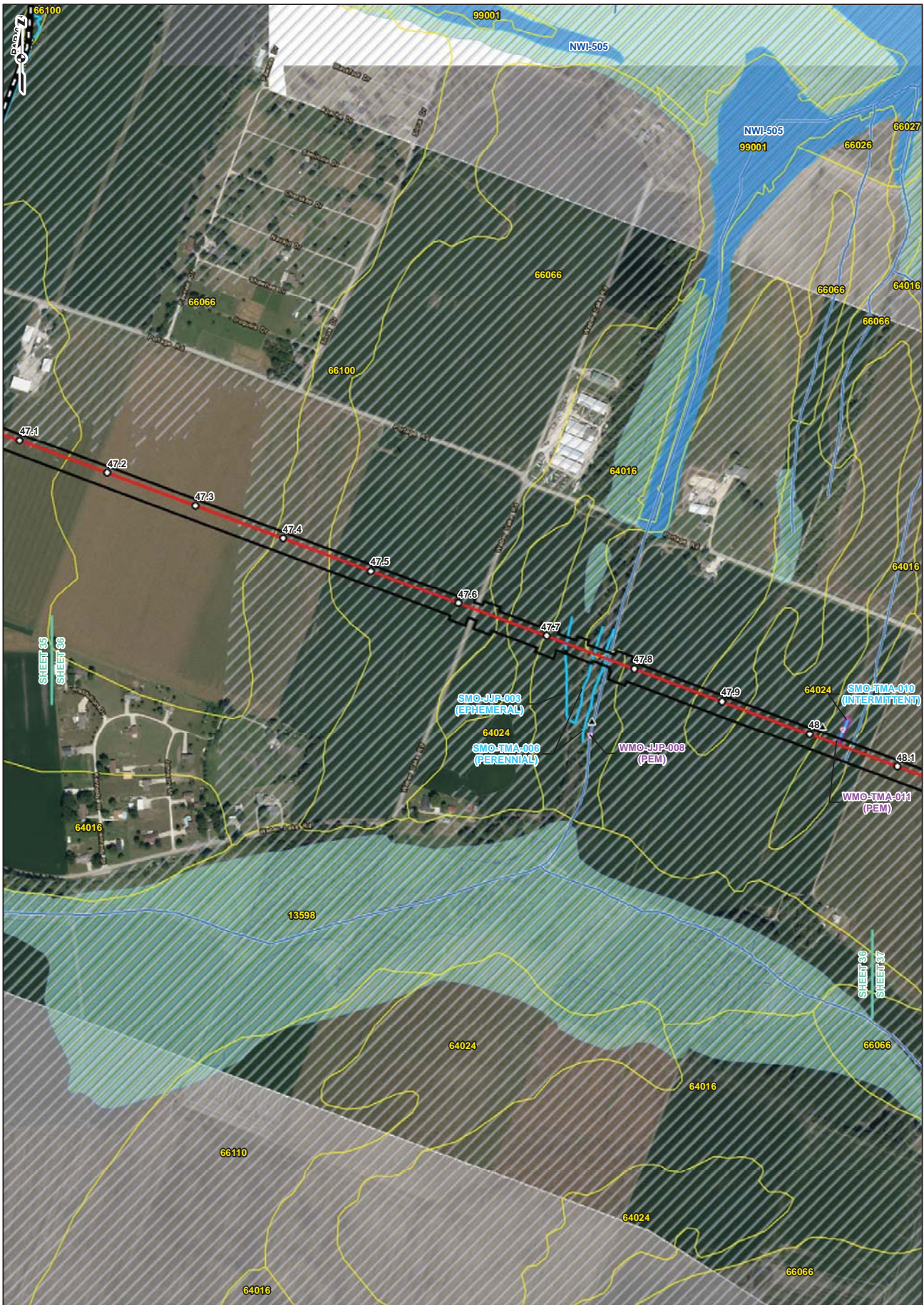
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LEGEND	
	FACILITY
	ACCESS ROAD
	24-INCH PIPELINE
	CULVERT
	LINE 800 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND DATA POINT
	SOIL TEST PIT
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP
SHEET 35 OF 51

SPiRE STL PIPELINE PROJECT



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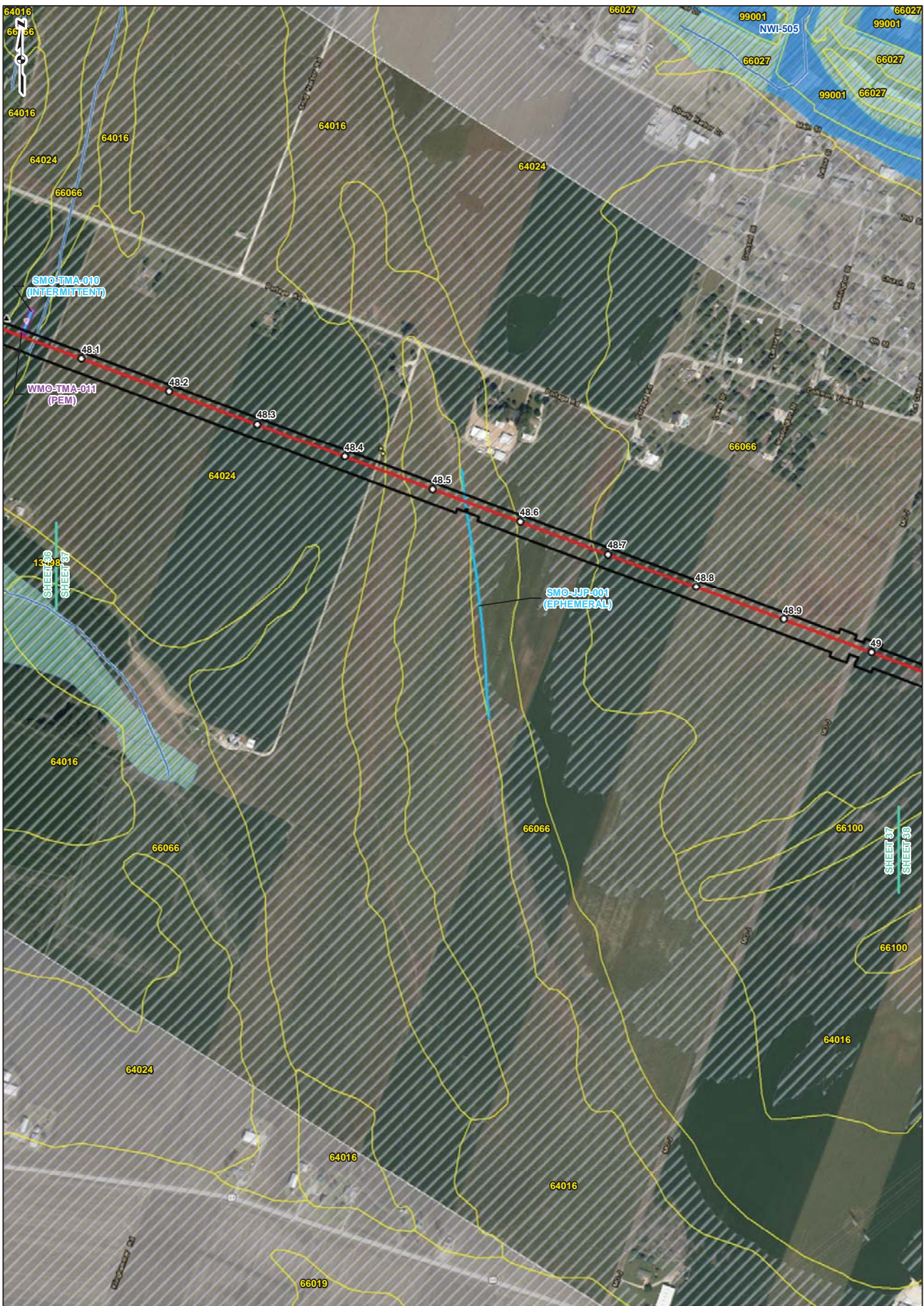
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LEGEND	
	FACILITY
	MILEPOST
	CULVERT
	GROUNDWATER SEEP
	UPLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT
	ACCESS ROAD
	24-INCH PIPELINE
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP
SHEET 36 OF 51

DRAWN BY: PMH DATE: 1/19/2017
 CHECKED: APPROVED:



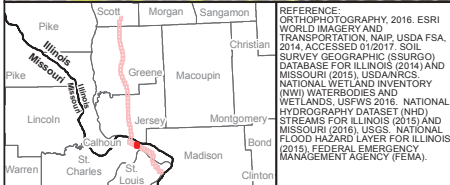
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LEGEND	
	FACILITY
	ACCESS ROAD
	24-INCH PIPELINE
	CULVERT
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	UPLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY
	POND
	POND OPEN END
	WETLAND OPEN END

RESOURCE LOCATION AND SOILS MAP
SHEET 37 OF 51

SPIRE STL PIPELINE PROJECT

DRAWN BY: PMH DATE: 1/19/2017
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REFERENCE:
 ORTHOPHOTOGRAPHY, 2016. ESRI
 WORLD IMAGERY AND
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 2014, ACCESSED 01/2017. SOIL
 SURVEY GEOGRAPHIC (SSURGO)
 DATABASE FOR ILLINOIS (2014) AND
 MISSOURI (2015). USDA/NRCS
 NATIONAL WETLAND INVENTORY
 (NWI) WATERBODIES AND
 WETLANDS. USFWS 2016. NATIONAL
 HYDROGRAPHY DATASET (NHD)
 STREAMS FOR ILLINOIS (2015) AND
 MISSOURI (2016). USGS. NATIONAL
 FLOOD HAZARD LAYER FOR ILLINOIS
 2015. FEDERAL EMERGENCY
 MANAGEMENT AGENCY (FEMA).

LEGEND

FACILITY	ACCESS ROAD	WETLAND
MILEPOST	24-INCH PIPELINE	NWI WETLAND
CULVERT	LINE 880 MODIFICATIONS	NWI WATERBODY
GROUNDWATER SEEP	STREAM	100-YEAR FLOODPLAIN
UPLAND LOCATION	NHD STREAM	SOIL TYPE BOUNDARY
WETLAND DATA POINT	POND OPEN END	LIMIT OF DISTURBANCE
SOIL TEST PIT	WETLAND OPEN END	COUNTY BOUNDARY
	POND	STATE BOUNDARY

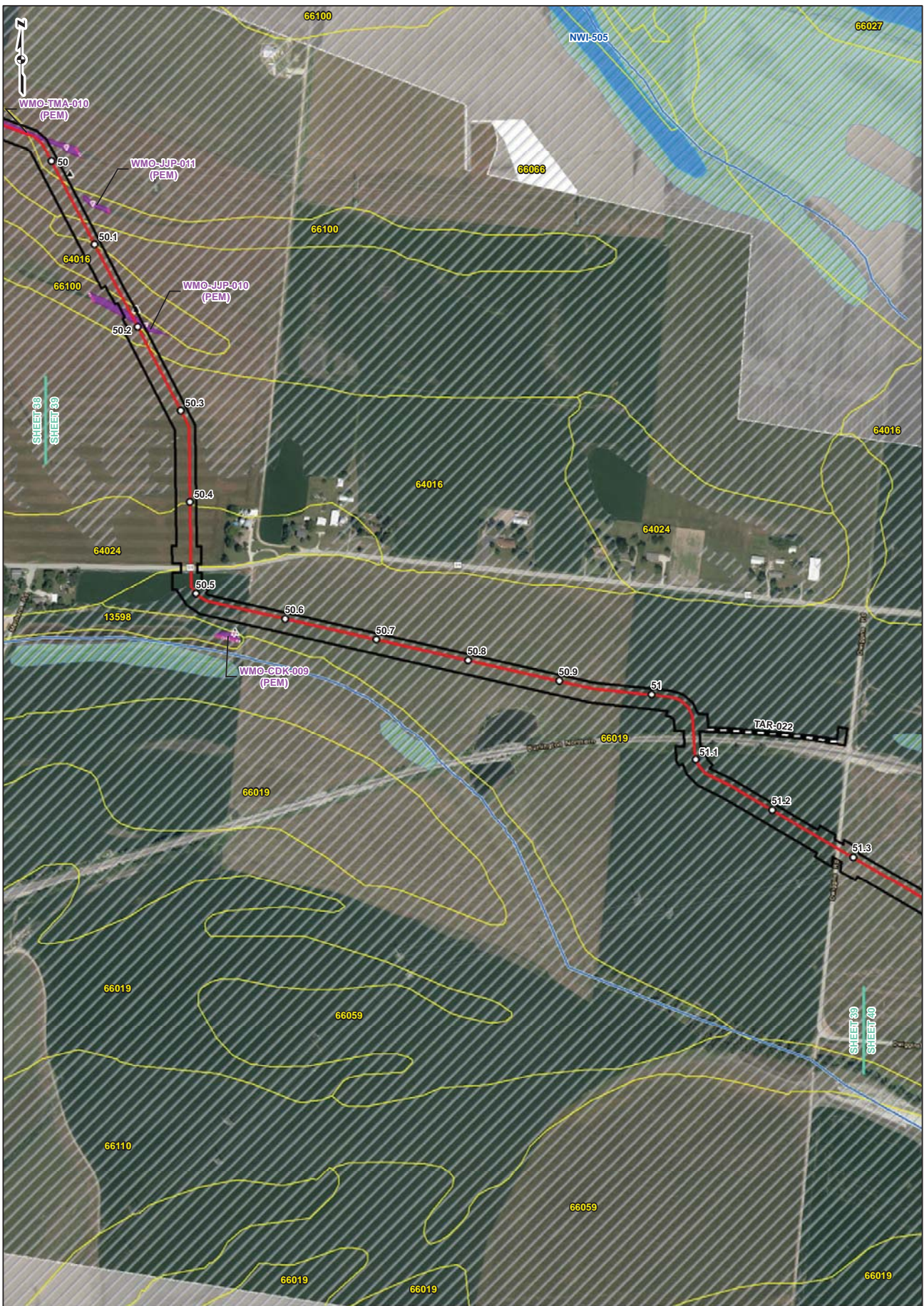
0 250 500 1,000 Feet

RESOURCE LOCATION AND SOILS MAP SHEET 38 OF 51

SPIRE STL PIPELINE PROJECT

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DRAWN BY: PMH DATE: 1/19/2017
 CHECKED: APPROVED:



REFERENCE:
 ORTHOPHOTOGRAPHY, 2016. ESRI
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 SURVEY GEOGRAPHIC (SSURGO)
 DATABASE FOR ILLINOIS (2014) AND
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 NATIONAL WETLAND INVENTORY
 (NWI) WATERBODIES AND
 WETLANDS. USFWS 2016. NATIONAL
 HYDROGRAPHY DATASET (NHD)
 STREAMS FOR ILLINOIS (2015) AND
 MISSOURI (2016). USGS. NATIONAL
 FLOOD HAZARD LAYER FOR ILLINOIS
 (2015). FEDERAL EMERGENCY
 MANAGEMENT AGENCY (FEMA).

LEGEND	
	FACILITY
	MILEPOST
	GROUNDWATER SEEP
	UPLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT
	ACCESS ROAD
	24-INCH PIPELINE
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

**RESOURCE LOCATION
AND SOILS MAP
SHEET 39 OF 51**

**SPIRE STL
PIPELINE
PROJECT**

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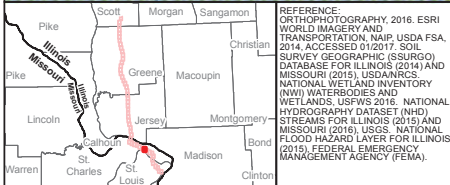
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 WORLD IMAGERY AND
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 2014, ACCESSED 01/20/17, SOIL
 SURVEY GEOGRAPHIC (SSURGO)
 DATABASE FOR ILLINOIS (2014) AND
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 NATIONAL WETLAND INVENTORY
 (NWI) WATERBODIES AND
 WETLANDS, USFWS 2016, NATIONAL
 HYDROGRAPHY DATASET (NHD)
 STREAMS FOR ILLINOIS (2015) AND
 MISSOURI (2016), USGS, NATIONAL
 FLOOD HAZARD LAYER FOR ILLINOIS
 (2015), FEDERAL EMERGENCY
 MANAGEMENT AGENCY (FEMA).

LEGEND	
	FACILITY
	ACCESS ROAD
	24-INCH PIPELINE
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY
	MILEPOST
	CULVERT
	GROUNDWATER SEEP
	UPLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT

**RESOURCE LOCATION
 AND SOILS MAP
 SHEET 40 OF 51**

**SPIRE STL
 PIPELINE
 PROJECT**

DRAWN BY: PMH DATE: 1/19/2017
 CHECKED: APPROVED:



REFERENCE:
 ORTHOPHOTOGRAPHY, 2016. ESRI
 WORLD IMAGERY AND
 TRANSPORTATION, NAIP, USDA FSA,
 2014, ACCESSED 01/2017. SOIL
 SURVEY GEOGRAPHIC (SSURGO)
 DATABASE FOR ILLINOIS (2014) AND
 MISSOURI (2015). USDA NRCS.
 NATIONAL WETLAND INVENTORY
 (NWI) WATERBODIES AND
 WETLANDS. USFWS 2016. NATIONAL
 HYDROGRAPHY DATASET (NHD)
 STREAMS FOR ILLINOIS (2015) AND
 MISSOURI (2016). USGS. NATIONAL
 FLOOD HAZARD LAYER FOR ILLINOIS
 (2015). FEDERAL EMERGENCY
 MANAGEMENT AGENCY (FEMA).

LEGEND

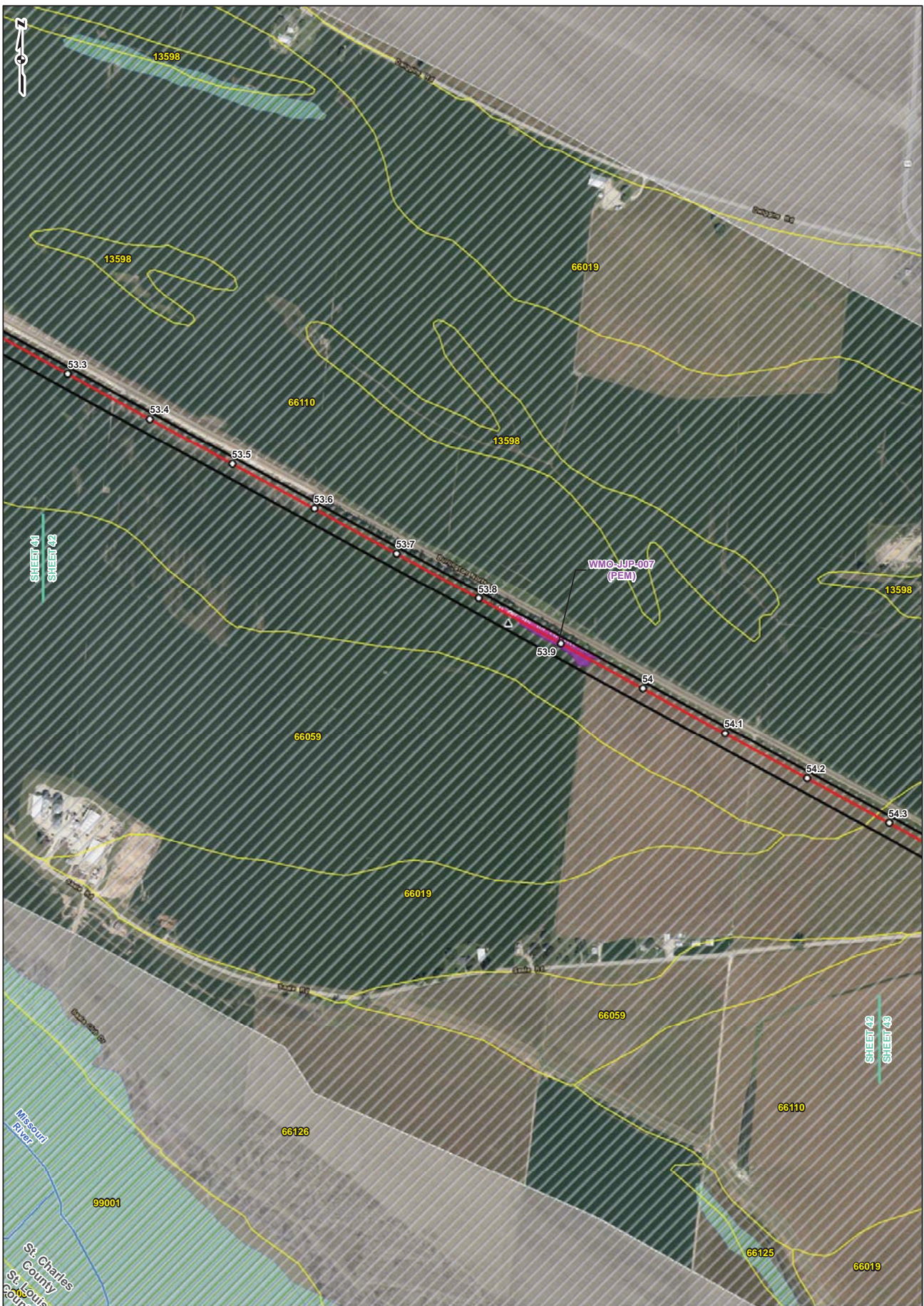
FACILITY	ACCESS ROAD	WETLAND
MILEPOST	24-INCH PIPELINE	NWI WETLAND
CULVERT	LINE 880 MODIFICATIONS	NWI WATERBODY
GROUNDWATER SEEP	STREAM	100-YEAR FLOODPLAIN
UPLAND LOCATION	NHD STREAM	SOIL TYPE BOUNDARY
WETLAND DATA POINT	POND OPEN END	LIMIT OF DISTURBANCE
SOIL TEST PIT	WETLAND OPEN END	COUNTY BOUNDARY
	POND	STATE BOUNDARY

**RESOURCE LOCATION
 AND SOILS MAP
 SHEET 41 OF 51**

**SPIRE STL
 PIPELINE
 PROJECT**

SPiRE



DRAWN BY: PMH DATE: 1/19/2017
 CHECKED: APPROVED:



REFERENCE: ORTHOPHOTOGRAPHY, 2016. ESRI WORLD IMAGERY AND TRANSPORTATION, NAIP, USDA FSA, 2014, ACCESSED 01/20/17. SOIL SURVEY GEOGRAPHIC (SSURGO) DATABASE FOR ILLINOIS (2014) AND MISSOURI (2015). USDA NRCS NATIONAL WETLAND INVENTORY (NWI) WATERBODIES AND WETLANDS. USFWS 2016. NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS FOR ILLINOIS (2015) AND MISSOURI (2016). USGS. NATIONAL FLOOD HAZARD LAYER FOR ILLINOIS (2015). FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA).

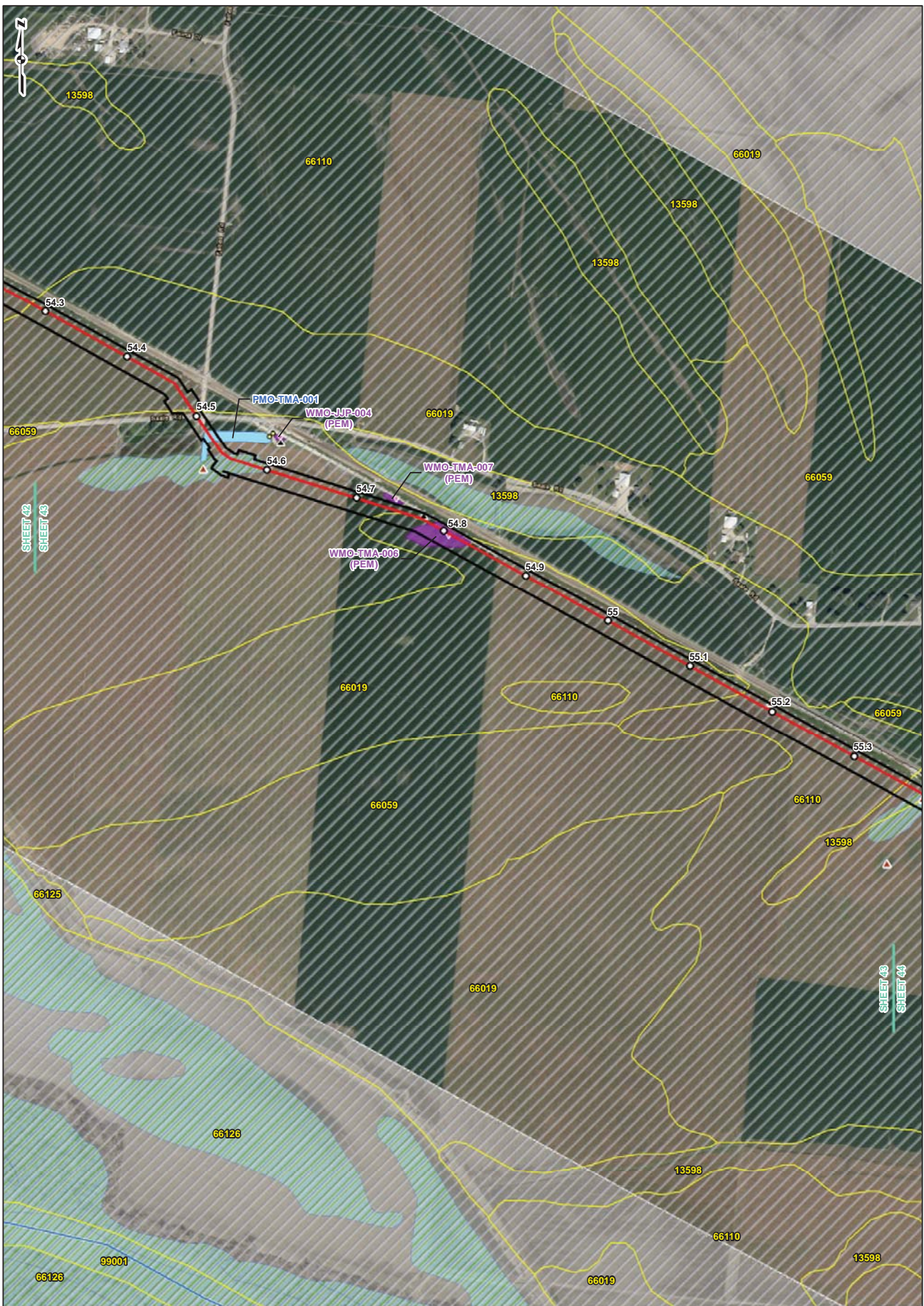
LEGEND	
	FACILITY
	ACCESS ROAD
	24-INCH PIPELINE
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY
	MILEPOST
	CULVERT
	GROUNDWATER SEEP
	UPLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT

RESOURCE LOCATION AND SOILS MAP SHEET 42 OF 51

SPiRE STL PIPELINE PROJECT

DRAWN BY: PMH DATE: 1/19/2017
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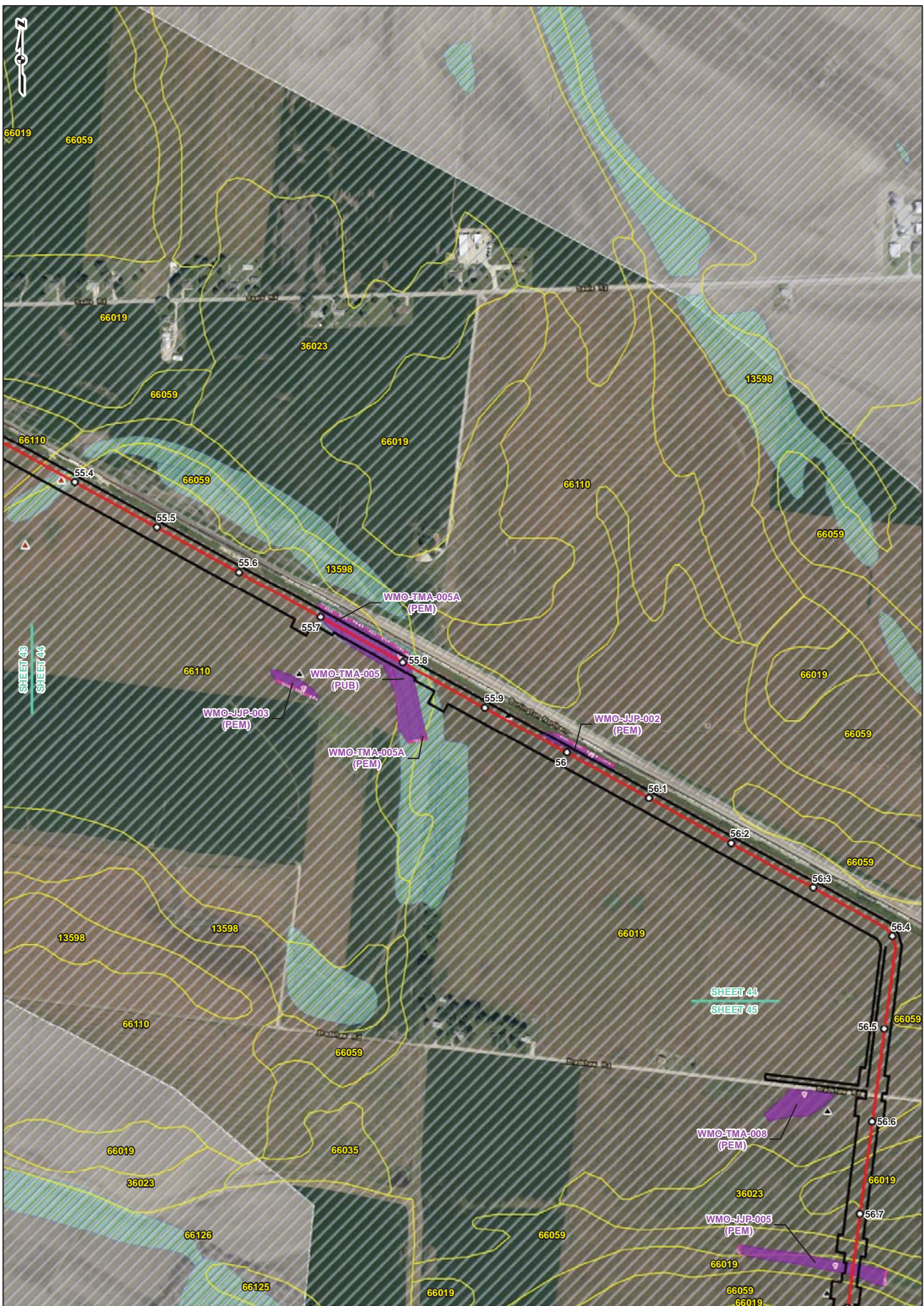
REFERENCE:
 ORTHOPHOTOGRAPHY, 2016, ESRI
 WORLD IMAGERY AND
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 2014, ACCESSED 01/20/17, SOIL
 SURVEY GEOGRAPHIC (SSURGO)
 DATABASE FOR ILLINOIS (2014) AND
 MISSOURI (2015), US DNR/USFWS
 NATIONAL WETLAND INVENTORY
 (NWI) WATERBODIES AND
 WETLANDS, USFWS 2016, NATIONAL
 HYDROGRAPHY DATASET (NHD)
 STREAMS FOR ILLINOIS (2015) AND
 MISSOURI (2016), USGS, NATIONAL
 FLOOD HAZARD LAYER FOR ILLINOIS
 (2015), FEDERAL EMERGENCY
 MANAGEMENT AGENCY (FEMA).

LEGEND	
	FACILITY
	ACCESS ROAD
	24-INCH PIPELINE
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY
	MILEPOST
	GROUNDWATER SEEP
	UPLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT

**RESOURCE LOCATION
AND SOILS MAP
SHEET 43 OF 51**

**SPiRE STL
PIPELINE
PROJECT**

DRAWN BY: PMH DATE: 1/19/2017
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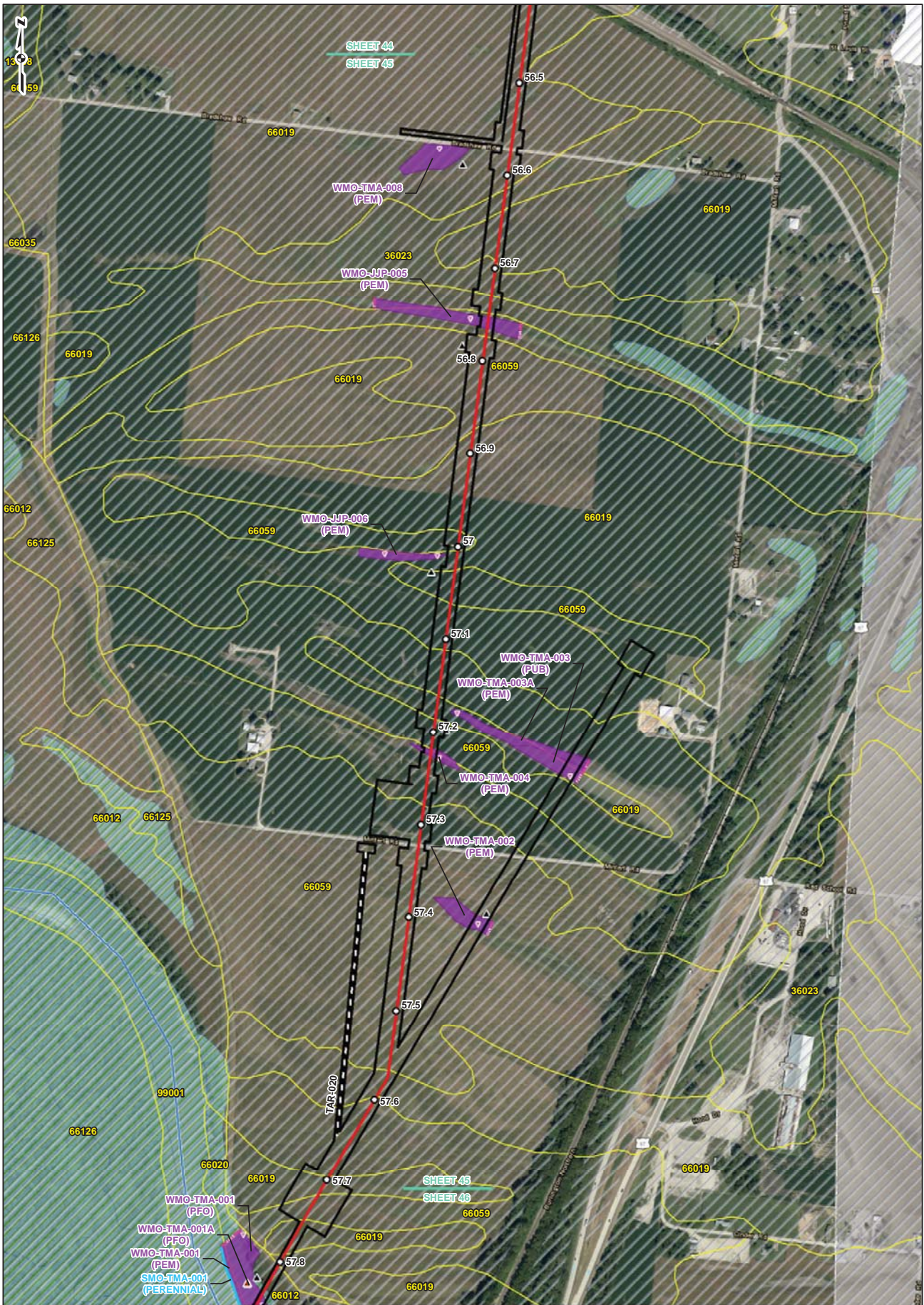
REFERENCE: ORTHOPHOTOGRAPHY, 2016. ESRI WORLD IMAGERY AND TRANSPORTATION, NAIP, USDA FSA, 2014, ACCESSED 01/20/17. SOIL SURVEY GEOGRAPHIC (SSURGO) DATABASE FOR ILLINOIS (2014) AND MISSOURI (2015). USDA/NRCS NATIONAL WETLAND INVENTORY (NWI) WATERBODIES AND WETLANDS. USFWS 2016. NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS FOR ILLINOIS (2015) AND MISSOURI (2016). USGS. NATIONAL FLOOD HAZARD LAYER FOR ILLINOIS (2015). FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA).

LEGEND	
	FACILITY
	ACCESS ROAD
	24-INCH PIPELINE
	MILEPOST
	CULVERT
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY
	GROUNDWATER SEEP
	UPLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT

RESOURCE LOCATION AND SOILS MAP SHEET 44 OF 51

SPiRE STL PIPELINE PROJECT

DRAWN BY: PMH DATE: 1/19/2017
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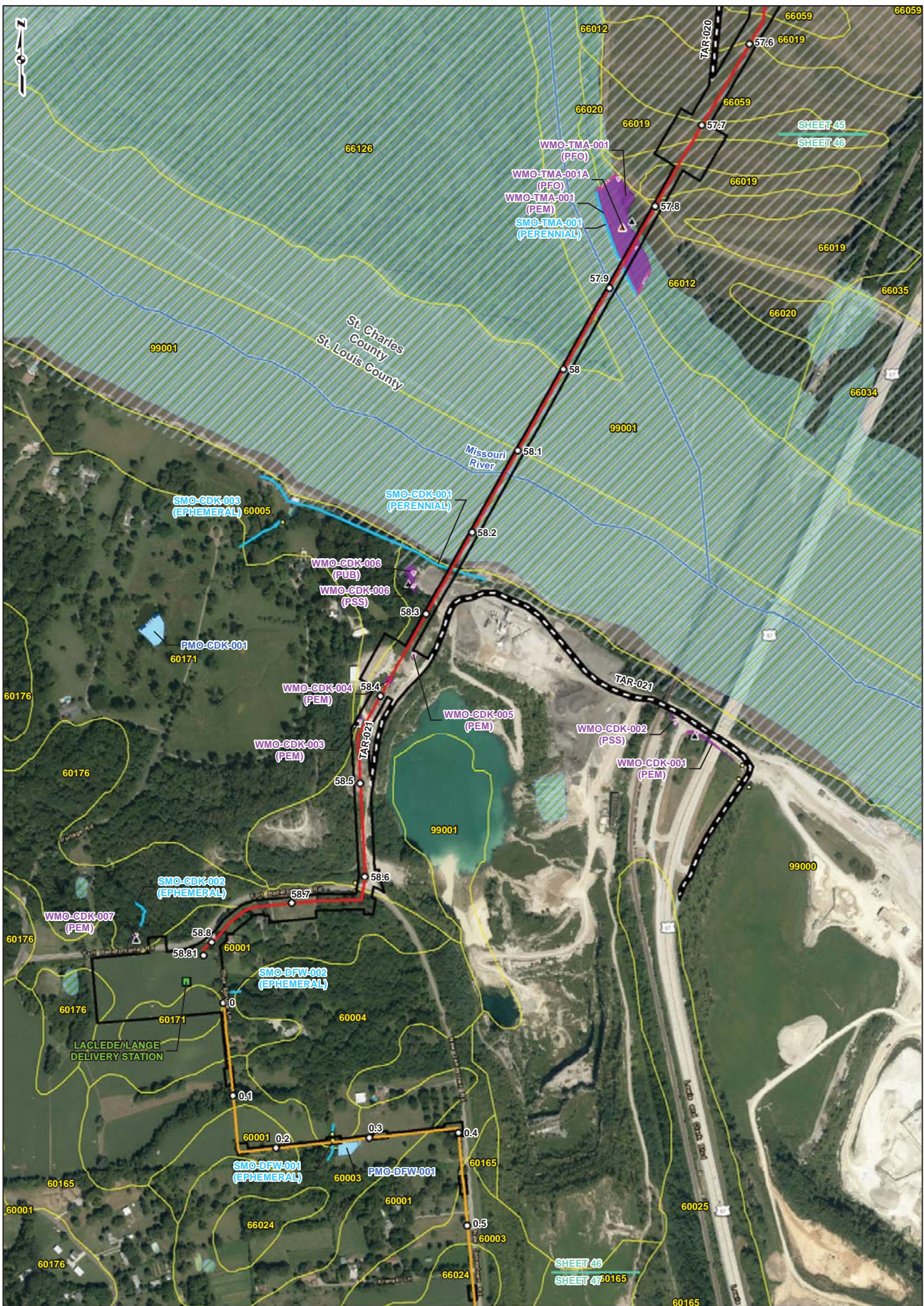
REFERENCE:
 ORTHOPHOTOGRAPHY, 2016, ESRI
 WORLD IMAGERY AND
 TRANSPORTATION, NAIP, USDA FSA,
 2014, ACCESSED 01/20/17, SOIL
 SURVEY GEOGRAPHIC (SSURGO)
 DATABASE FOR ILLINOIS (2014) AND
 MISSOURI (2015), USDA NRCS
 NATIONAL WETLAND INVENTORY
 (NWI) WATERBODIES AND
 WETLANDS, USFWS 2016, NATIONAL
 HYDROGRAPHY DATASET (NHD)
 STREAMS FOR ILLINOIS (2015) AND
 MISSOURI (2016), USGS, NATIONAL
 FLOOD HAZARD LAYER FOR ILLINOIS
 (2015), FEDERAL EMERGENCY
 MANAGEMENT AGENCY (FEMA).

LEGEND	
	FACILITY
	ACCESS ROAD
	24-INCH PIPELINE
	CULVERT
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY
	UPLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT

**RESOURCE LOCATION
AND SOILS MAP
SHEET 45 OF 51**

**SPIRE STL
PIPELINE
PROJECT**

DRAWN BY: PMH DATE: 1/19/2017
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REFERENCE: ORTHOPHOTOGRAPHY, 2016. ESRI WORLD IMAGERY AND TRANSPORTATION, NAIP, USDA FSA, 2014, ACCESSED 01/20/17. SOIL SURVEY GEOGRAPHIC (SSURGO) DATABASE FOR ILLINOIS (2014) AND MISSOURI (2015). USDA NRCS NATIONAL WETLAND INVENTORY (NWI) WATERBODIES AND WETLANDS. USFWS 2016. NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS FOR ILLINOIS (2015) AND MISSOURI (2016). USGS. NATIONAL FLOOD HAZARD LAYER FOR ILLINOIS (2015). FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA).

LEGEND	
	FACILITY
	ACCESS ROAD
	24-INCH PIPELINE
	CULVERT
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP SHEET 46 OF 51

SPIRE STL PIPELINE PROJECT

DRAWN BY: PMH DATE: 1/19/2017
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REFERENCE: ORTHOPHOTOGRAPHY 2016, ESRI WORLD IMAGERY AND TRANSPORTATION, NAIP, USDA FSA, 2014, ACCESSED 01/20/17, SOIL SURVEY GEOGRAPHIC (SSURGO) DATABASE FOR ILLINOIS (2014) AND MISSOURI (2015), USDA NRCS NATIONAL WETLAND INVENTORY (NWI) WATERBODIES AND WETLANDS, USFWS 2016, NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS FOR ILLINOIS (2015) AND MISSOURI (2016), USGS, NATIONAL FLOOD HAZARD LAYER FOR ILLINOIS (2015), FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA).

LEGEND	
	FACILITY
	MILEPOST
	CULVERT
	GROUNDWATER SEEP
	UPLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT
	ACCESS ROAD
	24-INCH PIPELINE
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP SHEET 47 OF 51

SPIRE STL PIPELINE PROJECT

DRAWN BY: PMH DATE: 1/19/2017
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REFERENCE: ORTHOPHOTOGRAPHY, 2016. ESRI WORLD IMAGERY AND TRANSPORTATION, NAIP, USDA FSA, 2014, ACCESSED 01/2017. SOIL SURVEY GEOGRAPHIC (SSURGO) DATABASE FOR ILLINOIS (2014) AND MISSOURI (2015). USDA/NRCS NATIONAL WETLAND INVENTORY (NWI) WATERBODIES AND WETLANDS. USFWS 2016. NATIONAL HYDROGRAPHY DATABASE (NHD) STREAMS FOR ILLINOIS (2015) AND MISSOURI (2016). USGS. NATIONAL FLOOD HAZARD LAYER FOR ILLINOIS (2015). FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA).

LEGEND	
	FACILITY
	ACCESS ROAD
	24-INCH PIPELINE
	CULVERT
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND DATA POINT
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP SHEET 48 OF 51

SPiRE STL PIPELINE PROJECT

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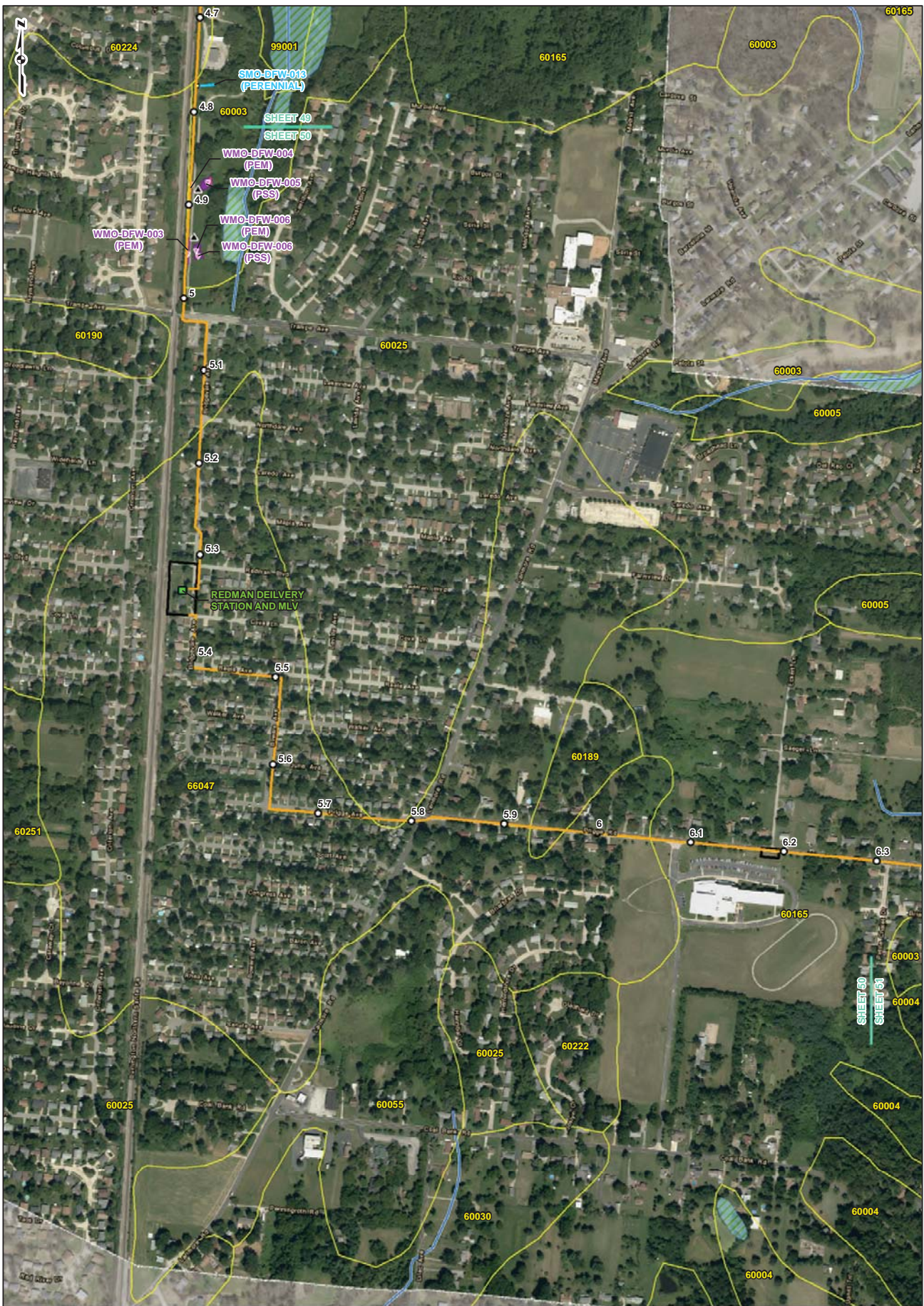
REFERENCE: ORTHOPHOTOGRAPHY, 2016. ESRI WORLD IMAGERY AND TRANSPORTATION, NAIP, USDA FSA, 2014, ACCESSED 01/20/17. SOIL SURVEY GEOGRAPHIC (SSURGO) DATABASE FOR ILLINOIS (2014) AND MISSOURI (2015). USDA/NRCS NATIONAL WETLAND INVENTORY (NWI) WATERBODIES AND WETLANDS. USFWS 2016. NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS FOR ILLINOIS (2015) AND MISSOURI (2016). USGS. NATIONAL FLOOD HAZARD LAYER FOR ILLINOIS (2015). FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA).

LEGEND	
	FACILITY
	ACCESS ROAD
	24-INCH PIPELINE
	CULVERT
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND DATA POINT
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP SHEET 49 OF 51

SPIRE STL PIPELINE PROJECT

DRAWN BY: PMH DATE: 1/19/2017
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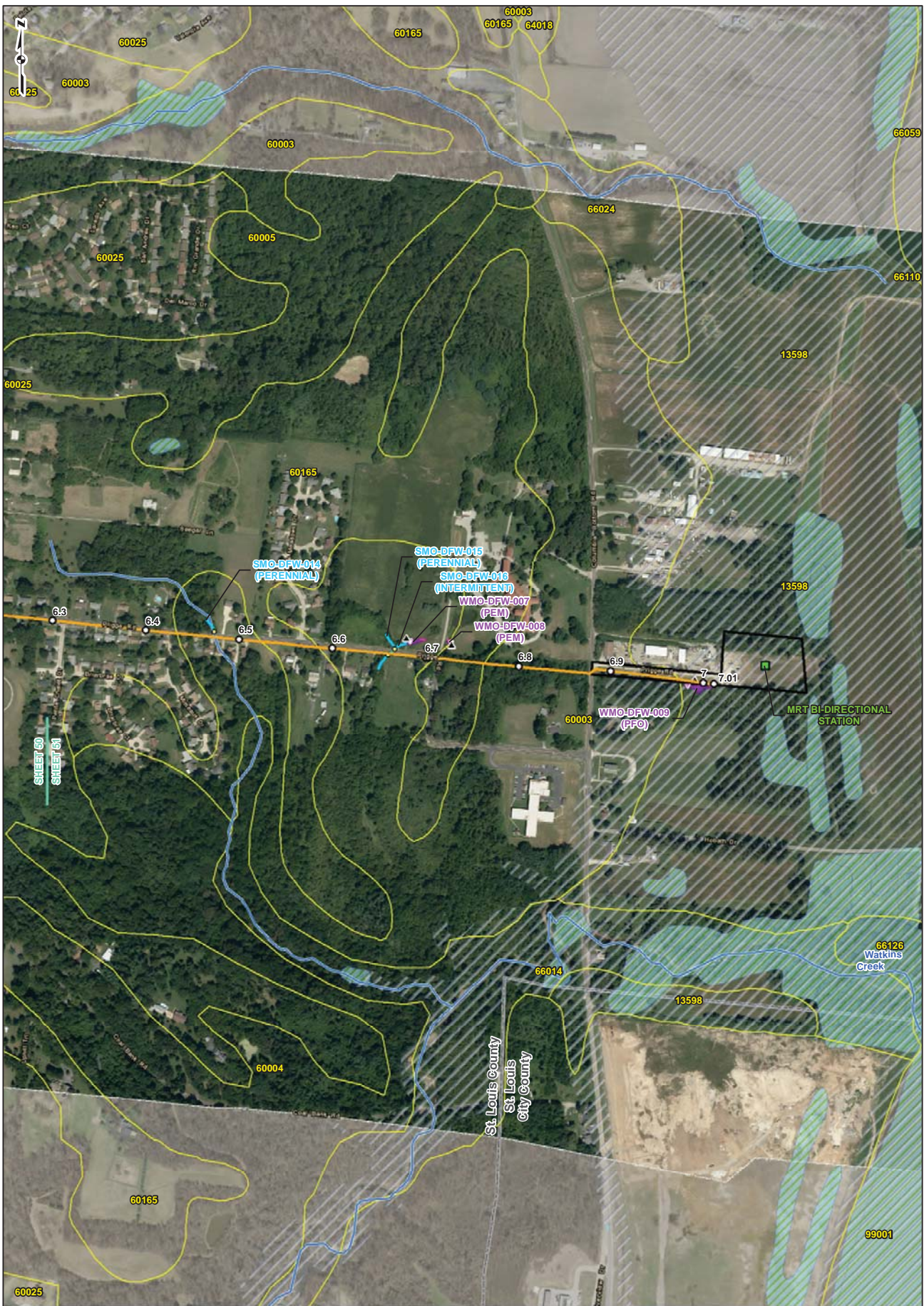
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LEGEND	
	FACILITY
	MILEPOST
	CULVERT
	GROUNDWATER SEEP
	UPLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT
	ACCESS ROAD
	24-INCH PIPELINE
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP SHEET 50 OF 51

SPIRE STL PIPELINE PROJECT

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REFERENCE: ORTHOPHOTOGRAPHY, 2016. ESRI WORLD IMAGERY AND TRANSPORTATION, NAIP, USDA FSA, 2014. ACCESSSED 01/20/17. SOIL SURVEY GEOGRAPHIC (SSURGO) DATABASE FOR ILLINOIS (2014) AND MISSOURI (2015). USDA NRCS NATIONAL WETLAND INVENTORY (NWI) WATERBODIES AND WETLANDS. USFWS 2016. NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS FOR ILLINOIS (2015) AND MISSOURI (2016). USGS. NATIONAL FLOOD HAZARD LAYER FOR ILLINOIS (2015). FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA).

LEGEND	
	FACILITY
	MILEPOST
	CULVERT
	GROUNDWATER SEEP
	UPLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT
	ACCESS ROAD
	24-INCH PIPELINE
	LINE 880 MODIFICATIONS
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	COUNTY BOUNDARY
	STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP
SHEET 51 OF 51

SPiRE STL PIPELINE PROJECT

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