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Addendum II to 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

Revised July 2017

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

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Table of Contents

1.0	Introduction	1
2.0	Results	1
3.0	Conclusions.....	3
4.0	References.....	5
Table 1	Wetlands Identified Within the Project Study Area Wetland Photographs (Additional Features Only)	
Table 2	Waterbodies Identified Within the Project Study Area Waterbody Photographs (Additional Features Only)	
Figure 1	Project Location Map	
Figure 2	Wetland and Waterbody Delineation and National Wetland Inventory Map	
Appendix A	Wetland Data Forms (Additional Features Only)	
Appendix B	Upland Data Forms (Additional Features Only)	
Appendix C	Stream Data Forms (Additional Features Only)	

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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 will consist of approximately 65 miles of new 24-inch-diameter steel pipeline in two segments. The first segment (referred to as the "24-inch pipeline" portion of the Project) will originate at a new interconnect with the Rockies Express Pipeline LLC ("REX") pipeline in Scott County, Illinois and extend approximately 59 miles through Greene and Jersey Counties in Illinois before crossing the Mississippi River and extending east through St. Charles County, Missouri. The 24-inch pipeline then crosses the Missouri River into St. Louis County, Missouri, and terminates at a new interconnect with Laclede Gas Company ("LGC"). The second segment of pipeline (referred to as the "North County Extension"), will consist of a new 24-inch-diameter steel pipeline which will extend approximately six miles from the LGC interconnect through the northern portion of St. Louis County and terminate at a new interconnect with Enable Mississippi River Transmission, LLC ("Enable MRT") and LGC. The total length of the Project pipeline will be approximately 65 miles. The Project also includes the construction of three new metering and regulating ("M&R") stations that provide interconnects with (1) REX in Illinois, (2) LGC in Missouri, and (3) Enable MRT and LGC in Missouri.

GAI Consultants, Inc. (GAI), on behalf of Spire, conducted field and desktop wetland delineations and stream investigations of the Project study area from September 2016 through June 2017. 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 results of the environmental field surveys and desktop delineation within the revised Project study area.

2.0 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.

On March 18, 2017 the United States Army Corps of Engineers reissued their Nationwide Permits, including revisions to regional conditions, as well as state water quality certification conditions. These updated conditions have been incorporated below as there have been several additions since the onset of the Project.

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;
- ▶ In-stream work will be limited to the shortest duration practicable and only within the immediate vicinity of the crossing as to limit disturbance. The work area shall be sealed off from flow to avoid sedimentation.
- ▶ Only suitable material will be used for backfill within all Waters of the U.S.
- ▶ 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.
- ▶ Excavated material shall not be side cast into Waters of the U.S.
- ▶ Horizontal directional drills will be utilized where applicable. BMP's will be followed to avoid discharge of drilling mud into Waters of the U.S.
- ▶ Stream crossings will be constructed as close to perpendicular as practicable.
- ▶ New utilities lines that cross more than one jurisdictional water resulting in greater than 500 LF and/or 0.50 acre of impact to jurisdictional waters as a project total, and travel through more than two county jurisdictions or more than one state jurisdiction shall be viewed as a whole project in the WQC process and require individual WQC of all crossings, except crossings utilizing directional boring.

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.
- ▶ Mitigation shall be constructed prior to or concurrent with the discharge of dredged or fill material.
- ▶ In-stream work will be limited to the shortest duration practicable and only within the immediate vicinity of the crossing as to limit disturbance.

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.

118 wetlands, 216 waterbodies, and 12 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 additional features accompany these tables. Wetland and upland data forms corresponding with additional identified features are provided in Appendices A and B, respectively. Stream data forms are provided in Appendix C.

3.0 Conclusions

Wetland delineations and stream investigations within the Spire STL Pipeline Project study area were conducted from September 2016 through June 2017 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. 118 wetlands, 216 waterbodies, and 12 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.

4.0 References

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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-001	Illinois	39.022155	-90.377140	PEM	N/A	0.37
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	39.090823	-90.387546	PEM	N/A	0.12
WIL-CDK-010	Illinois	39.137757	-90.389500	PEM	N/A	0.57
WIL-CDK-012	Illinois	39.070722	-90.389764	PEM	N/A	0.02
WIL-CDK-013	Illinois	39.070657	-90.389265	PEM	N/A	0.01
WIL-CDK-100	Illinois	39.078653	-90.391204	PUB	PUBGh	0.57
		39.079015	-90.391521	PEM		0.23
WIL-DFW-001	Illinois	39.149210	-90.390183	PEM	N/A	0.03
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-003	Illinois	39.540391	-90.430672	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-006A	Illinois	39.518085	-90.429810	PSS	N/A	0.08
WIL-JJP-007	Illinois	39.515762	-90.430480	PEM	N/A	0.03
WIL-JJP-008	Illinois	39.515567	-90.430078	PEM	N/A	0.01
WIL-JJP-009	Illinois	39.507946	-90.430584	PEM	N/A	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

Feature Designation ¹	State	Latitude ²	Longitude ²	Cowardin Classification ³	NWI Wetland ⁴	Approximate Size (acres) ⁵
WIL-JJP-012	Illinois	39.490357	-90.431126	PFO	N/A	0.22
WIL-JJP-012A	Illinois	39.490739	-90.430907	PEM	N/A	0.18
WIL-JJP-013	Illinois	39.489242	-90.430912	PEM	N/A	0.24
WIL-JJP-015	Illinois	39.419449	-90.422040	PSS	N/A	0.25
WIL-JJP-015A	Illinois	39.419089	-90.422324	PEM	N/A	0.36
WIL-JJP-015B	Illinois	39.419343	-90.422187	PEM	N/A	0.05
WIL-JJP-100	Illinois	39.378327	-90.412062	PFO	PFO1A	0.22
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	N/A	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-111	Illinois	39.025020	-90.381551	PEM	N/A	0.05
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	0.20
WIL-JJP-116	Illinois	39.062507	-90.389141	PEM	N/A	0.22

Feature Designation ¹	State	Latitude ²	Longitude ²	Cowardin Classification ³	NWI Wetland ⁴	Approximate Size (acres) ⁵
WIL-JJP-117	Illinois	39.266172	-90.417569	PEM	N/A	0.04
WIL-JJP-118	Illinois	39.228372	-90.403592	PEM	N/A	0.03
WIL-JJP-119	Illinois	39.227853	-90.404303	PEM	N/A	0.03
WIL-JJP-120	Illinois	39.233145	-90.407774	PEM	N/A	0.20
WIL-JJP-121	Illinois	39.232356	-90.407009	PEM	N/A	0.09
WIL-JJP-122	Illinois	39.213994	-90.399707	PEM	N/A	0.04
WIL-JJP-123	Illinois	39.209956	-90.400003	PEM	PEM1Fh	0.55
WIL-JJP-124	Illinois	39.209481	-90.399383	PEM	PEM1Fh	0.15
		39.209227	-90.399028	PSS		0.03
WIL-JJP-125	Illinois	39.207910	-90.397244	PEM	PUBGh	0.08
WIL-JJP-148	Illinois	38.956631	-90.373762	PFO	N/A	0.45
WIL-JJP-148A	Illinois	39.092032	-90.386645	PEM	PFO1A	0.08
WIL-JJP-149	Illinois	39.087203	-90.387098	PEM	N/A	0.01
WIL-JJP-151	Illinois	39.071163	-90.391799	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	N/A	0.10
WIL-TMA-001	Illinois	39.540379	-90.432102	PEM	N/A	0.49
		39.540514	-90.432771	PFO		0.10
WIL-TMA-002	Illinois	39.523149	-90.430870	PFO	N/A	0.03
WIL-TMA-003	Illinois	39.520878	-90.430311	PSS	N/A	0.02
WIL-TMA-004	Illinois	39.490808	-90.430400	PEM	N/A	0.03
WIL-TMA-005	Illinois	39.489397	-90.430493	PEM	N/A	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	N/A	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	39.232873	-90.406438	PEM	N/A	3.16
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	39.218360	-90.399824	PEM	N/A	0.07
WIL-TMA-019	Illinois	39.218518	-90.398331	PEM	N/A	0.53
WIL-TMA-020	Illinois	39.221532	-90.397924	PEM	N/A	0.32
WIL-TMA-021	Illinois	39.222506	-90.399869	PEM	N/A	0.42
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	N/A	0.04
WIL-TMA-026	Illinois	39.084517	-90.388324	PEM	N/A	0.10
WIL-TMA-027	Illinois	39.038279	-90.387644	PEM	N/A	0.02
WIL-TMA-028	Illinois	39.007043	-90.377830	PEM	N/A	0.14
WIL-TMA-029	Illinois	39.566813	-90.420864	PFO	N/A	0.12
WIL-WJW-001	Illinois	39.248473	-90.414091	PEM	N/A	0.11
WIL-WJW-002	Illinois	39.013921	-90.378141	PEM	N/A	0.23
WIL-WJW-003	Illinois	38.961004	-90.371619	PUB	N/A	0.03

Feature Designation ¹	State	Latitude ²	Longitude ²	Cowardin Classification ³	NWI Wetland ⁴	Approximate Size (acres) ⁵
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
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	38.779631	-90.185107	PEM	N/A	0.10
WMO-DFW-008	Missouri	38.779606	-90.184568	PEM	N/A	0.04
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-004	Missouri	38.881785	-90.260742	PEM	N/A	0.03
WMO-JJP-005	Missouri	38.863393	-90.233723	PEM	N/A	1.17

Feature Designation ¹	State	Latitude ²	Longitude ²	Cowardin Classification ³	NWI Wetland ⁴	Approximate Size (acres) ⁵
WMO-JJP-006	Missouri	38.859737	-90.235000	PEM	N/A	0.43
WMO-JJP-007	Missouri	38.886789	-90.271736	PEM	N/A	0.81
WMO-JJP-008	Missouri	38.926382	-90.368039	PEM	PFO1Ax	0.03
WMO-JJP-009	Missouri	38.940723	-90.380833	PFO	N/A	0.02
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	38.916858	-90.333608	PEM	PFO1Ah	9.31
WMO-JJP-117	Missouri	39.266172	-90.417569	PEM	N/A	0.04
WMO-JJP-119	Missouri	38.813428	-90.218066	PEM	N/A	0.31
WMO-JJP-120	Missouri	38.829937	-90.246007	PEM	N/A	0.98
		38.829764	-90.245768	PFO		0.95
WMO-JJP-121	Missouri	38.832020	-90.245615	PEM	N/A	0.04
WMO-JJP-122	Missouri	38.822320	-90.241562	PEM	PUBGh	0.08
WMO-JJP-123	Missouri	38.821510	-90.240424	PEM	N/A	0.08
		38.821554	-90.240422	PSS		0.02
WMO-JJP-124	Missouri	38.812509	-90.215816	PFO	N/A	0.39
WMO-JJP-125	Missouri	38.818400	-90.230588	PEM	N/A	0.02
WMO-JJP-126	Missouri	38.814432	-90.220974	PEM	N/A	0.08
WMO-JJP-127	Missouri	38.814418	-90.219644	PEM	N/A	0.06
WMO-JJP-129	Missouri	38.799318	-90.193019	PUB	PUBGh	0.61
		38.798870	-90.193148	PSS		0.07
WMO-JJP-130	Missouri	38.800269	-90.194267	PUB	PUBGh	0.09
WMO-JJP-131	Missouri	38.881714	-90.262515	PEM	N/A	0.20
WMO-JJP-132	Missouri	38.800325	-90.196196	PSS	L1UBHh	0.09

Feature Designation ¹	State	Latitude ²	Longitude ²	Cowardin Classification ³	NWI Wetland ⁴	Approximate Size (acres) ⁵
WMO-JJP-133	Missouri	38.801419	-90.199086	PSS	L1UBHh	0.01
WMO-TMA-001	Missouri	38.848253	-90.238473	PEM	N/A	0.39
		38.849036	-90.238268	PFO		0.14
WMO-TMA-001A	Missouri	38.848497	-90.238326	PFO	PFO1A	1.53
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-008	Missouri	38.865864	-90.234011	PEM	N/A	0.91
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-205*	Illinois	39.078759	-90.391475	PUBGH	PUBGH	0.46
NWI-24*	Illinois	38.968776	-90.369426	PUBGH	PUBGH	0.17
NWI-505*	Illinois	38.951019	-90.377480	L1UBHh	L1UBHh	26.91

Feature Designation ¹	State	Latitude ²	Longitude ²	Cowardin Classification ³	NWI Wetland ⁴	Approximate Size (acres) ⁵
NWI-105*	Missouri	38.947785	-90.379679	PFO1Ah	PFO1Ah	4.24
NWI-102*	Missouri	38.945710	-90.380536	PFO1Ah	PFO1Ah	0.38
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
NWI-179*	Missouri	38.815128	-90.220270	PFO1A	PFO1A	0.01
NWI-181*	Missouri	38.809078	-90.213735	PFO1A	PFO1A	0.91
NWI-203*	Missouri	38.805357	-90.206722	PEM1C	PEM1C	2.12
NWI-204*	Missouri	38.803456	-90.201907	PFO1C	PFO1C	5.00
NWI-185*	Missouri	38.801039	-90.197429	L1UBHh	L1UBHh	4.98
NWI-186*	Missouri	38.799377	-90.193219	PUBGh	PUBGh	1.71
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
PIL-WJW-001	Illinois	38.968772	-90.369457	PUB	PUBGh	0.11
PIL-WJW-002	Illinois	38.997298	-90.375970	PUB	N/A	0.22
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-JJP-001	Missouri	38.801743	-90.197777	PUB	L1UBHh	7.29
PMO-JJP-002	Missouri	38.800067	-90.193495	PUB	PUBGh	4.51

Feature Designation ¹	State	Latitude ²	Longitude ²	Cowardin Classification ³	NWI Wetland ⁴	Approximate Size (acres) ⁵
<i>PMO-JJP-003</i>	<i>Missouri</i>	<i>38.798509</i>	<i>-90.192872</i>	<i>PUB</i>	<i>PEM1Fh</i>	<i>0.52</i>
PMO-TMA-001	Missouri	38.881783	-90.261671	PUB	PEM1Ad	0.60

Features denoted in ***bold italics*** contain new or revised data. Features denoted in **red text** have been removed from the current Project study area.

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 (Additional Features Only)

Wetland Photographs

Photos Taken Within The Study Area Unless Otherwise Noted.



**Wetland WIL-CDK-100, PEM,
Facing North (3/14/17)**



**Wetland WIL-CDK-100, PEM,
Facing East (3/14/17)**



**Wetland WIL-CDK-100, PUB,
Facing South (3/14/17)**



**Wetland WIL-CDK-100, PUB,
Facing West (3/14/17)**



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



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



**Wetland WIL-JJP-148, PFO,
Facing South (6/5/17)**



**Wetland WIL-JJP-148, PFO,
Facing North (6/5/17)**



**Wetland WIL-JJP-148A, PEM,
Facing North (3/14/17)**



**Wetland WIL-JJP-148A, PEM,
Facing South (3/14/17)**



**Wetland WIL-JJP-149, PEM,
Facing North (3/14/17)**



**Wetland WIL-JJP-149, PEM,
Facing South (3/14/17)**



**Wetland WIL-JJP-151, PEM,
Facing North (3/14/17)**



**Wetland WIL-JJP-151, PEM,
Facing South (3/14/17)**



**Wetland WMO-JJP-126, PEM,
Facing Northeast (3/15/17)**



**Wetland WMO-JJP-126, PEM,
Facing North (3/15/17)**



**Wetland WMO-JJP-127, PEM,
Facing East (3/15/17)**



**Wetland WMO-JJP-127, PEM,
Facing North (3/15/17)**



**Wetland WMO-JJP-129, PUB,
Facing North (3/16/17)**



**Wetland WMO-JJP-129, PUB,
Facing South (3/16/17)**



**Wetland WMO-JJP-130, PUB,
Facing North (3/16/17)**



**Wetland WMO-JJP-130, PUB,
Facing South (3/16/17)**



**Wetland WMO-JJP-131, PEM,
Facing North (3/17/17)**



**Wetland WMO-JJP-131, PEM,
Facing South (3/17/17)**



**Wetland WMO-JJP-132, PUB,
Facing North (3/17/17)**



**Wetland WMO-JJP-132, PUB,
Facing South (3/17/17)**



**Wetland WMO-JJP-133, PSS,
Facing South-southwest (3/17/17)**



**Wetland WMO-JJP-133, PSS,
Facing North (3/17/17)**



**Pond PIL-WJW-001,
Facing North-northeast (6/7/17)**



**Pond PIL-WJW-001,
Facing Southwest (6/7/17)**



**Pond PIL-WJW-002,
Facing Southeast (6/10/17)**



**Pond PIL-WJW-002,
Facing East-northeast (6/10/17)**



**Pond PMO-JJP-001,
Facing West-southwest (3/17/17)**



**Pond PMO-JJP-001,
Facing South-southeast (3/17/17)**



**Pond PMO-JJP-002,
Facing West (3/16/17)**



**Pond PMO-JJP-002,
Facing North (3/16/17)**



**Pond PMO-JJP-003,
Facing North (3/16/17)**



**Pond PMO-JJP-003,
Facing North (3/16/17)**

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 (Channel) Width (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	39.090599	-90.387094	UNT to Otter Creek	Perennial		Impaired	20	8	12	1.25	981
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	39.069146	-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	987
SIL-CDK-029	Illinois	39.073355	-90.394004	UNT to Otter Creek	Intermittent		Impaired	5	3	3	1	265
SIL-CDK-033	Illinois	39.533284	-90.432619	UNT to Little Sandy Creek	Perennial		Moderately	20	5	17	0.25	338
SIL-CDK-034	Illinois	39.532582	-90.432783	UNT to Little Sandy Creek	Intermittent		Moderately	4	2	1	0.08	424
SIL-CDK-035	Illinois	39.481115	-90.430827	UNT to Hurricane Creek	Intermittent		Impaired	4	5	2	0.08	298
SIL-CDK-036	Illinois	39.479311	-90.430059	UNT to Hurricane Creek	Intermittent		Impaired	6	10	1.5	0.13	57
SIL-CDK-037	Illinois	39.026076	-90.384942	UNT to South Fork Otter Creek	Ephemeral		Impaired	6	3.5	0	0	52
SIL-CDK-038	Illinois	39.026189	-90.385126	UNT to South Fork Otter Creek	Intermittent		Moderately	8	2.5	3	0.08	151
SIL-CDK-039	Illinois	39.026541	-90.385399	UNT to South Fork Otter Creek	Intermittent		Moderately	6	3	0	0	244
SIL-CDK-040	Illinois	39.089971	-90.386787	UNT to Otter Creek	Ephemeral		Impaired	2	1	2	0	149
SIL-CDK-041	Illinois	39.090090	-90.386689	UNT to Otter Creek	Ephemeral		Impaired	3	1	2.5	0	71
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	39.550223	-90.423468	UNT to Little Sandy Creek	Intermittent		Fully	10	5	2	0.4	511
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-019	Illinois	39.515036	-90.429417	UNT to Little Sandy Creek	Ephemeral		Impaired	4	2	0	0	26
SIL-JJP-020	Illinois	39.514197	-90.429571	UNT to Little Sandy Creek	Ephemeral		Impaired	3	3	0	0	83
SIL-JJP-021	Illinois	39.511690	-90.429792	UNT to Little Sandy Creek	Ephemeral		Impaired	8	8	0	0	43
SIL-JJP-022	Illinois	39.509415	-90.429710	UNT to Little Sandy Creek	Ephemeral		Moderately	6	5	0	0	69
SIL-JJP-023	Illinois	39.510330	-90.429689	UNT to Little Sandy Creek	Perennial		Moderately	8	4	3	0.17	81
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	39.490529	-90.430896	UNT to Hurricane Creek	Intermittent		Impaired	2.5	1	0	0	476

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
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-049	Illinois	39.083257	-90.386954	UNT to Otter Creek	Ephemeral		Impaired	3	3	0	0	43
SIL-JJP-050	Illinois	39.083321	-90.386939	UNT to Otter Creek	Ephemeral		Impaired	3	3	0	0	63
SIL-JJP-051	Illinois	39.080542	-90.391027	UNT to Otter Creek	Ephemeral		Impaired	4	2	0	0	51
SIL-JJP-052	Illinois	39.076500	-90.392260	UNT to Otter Creek	Ephemeral		Impaired	3	2.5	0	0	224
SIL-JJP-053	Illinois	39.063009	-90.389457	UNT to Otter Creek	Intermittent		Impaired	5	3	2	0.17	103
SIL-JJP-054	Illinois	39.059235	-90.388923	UNT to Otter Creek	Perennial		Impaired	7	5	0.5	0.25	1355
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	39.222663	-90.399940	UNT to Macoupin Creek	Perennial		Moderately	8	4.5	3	0.8	510
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 Link 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
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-116	Illinois	39.475230	-90.431637	UNT to Hurricane Creek	Intermittent		Moderately	6	4.5	0	0	127
SIL-JJP-117	Illinois	39.090336	-90.387080	UNT to Otter Creek	Ephemeral		Impaired	6	4.5	0	0	262
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	±	0.2	323
SIL-JJP-122	Illinois	39.075663	-90.389363	UNT to Otter Creek	Perennial		Moderately	4	4	±	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-125	Illinois	39.025779	-90.382351	UNT to South Fork Otter Creek	Ephemeral		Impaired	4	3	0	0	93
SIL-JJP-126	Illinois	39.027818	-90.385227	UNT to South Fork Otter Creek	Ephemeral		Impaired	3	2	0	0	59
SIL-JJP-127	Illinois	39.027585	-90.386489	UNT to South Fork Otter Creek	Ephemeral		Impaired	4	4	0	0	313
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	±	0.5	86
SIL-JJP-141	Illinois	39.228256	-90.404036	UNT to Macoupin Creek	Ephemeral		Impaired	4	2	0	0	168
SIL-JJP-142	Illinois	39.228192	-90.404323	UNT to Macoupin Creek	Intermittent		Moderately	5	3	0	0	146
SIL-JJP-143	Illinois	39.313474	-90.430311	Coates Creek	Perennial		Fully	15	7	4	1	475

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SIL-JJP-144	Illinois	39.313085	-90.430920	UNT to Coates Creek	Ephemeral		Moderately	2	1	0	0	151
SIL-JJP-145	Illinois	39.210063	-90.399966	UNT to Macoupin Creek	Perennial		Fully	4	2	1	0.5	388
SIL-JJP-146	Illinois	39.209046	-90.398907	UNT to Macoupin Creek	Ephemeral		Moderately	3	1	0	0	102
SIL-JJP-147	Illinois	39.541573	-90.426516	UNT to Little Sandy Creek	Ephemeral		Moderately	4	1	0	0	337
SIL-JJP-148	Illinois	39.228476	-90.404182	Macoupin Creek	Perennial		Fully	100	20	50	4	342
SIL-JJP-148A	Illinois	39.083787	-90.387143	UNT to Otter Creek	Ephemeral		Impaired	6	6	2	0	272
SIL-JJP-200	Illinois	38.956583	-90.374314	UNT to Mississippi River	Perennial		Impaired	4	0.8	1	0.2	460
SIL-JJP-201	Illinois	38.957591	-90.373000	UNT to Mississippi River	Intermittent		Moderately	5	1	1	0.2	306
SIL-JJP-202	Illinois	38.956637	-90.374401	UNT to Mississippi River	Ephemeral		Impaired	2	0.4	0.4	<0.2	140
SIL-JJP-203	Illinois	38.958912	-90.371938	UNT to Mississippi River	Intermittent		Moderately	5	1.5	1.5	0.5	1167
SIL-JJP-204	Illinois	38.958846	-90.371873	UNT to Mississippi River	Ephemeral		Moderately	4	1	1	0.2	73
SIL-JJP-205	Illinois	38.959145	-90.371744	UNT to Mississippi River	Ephemeral		Impaired	4	1	0	0	28
SIL-JJP-206	Illinois	38.961586	-90.370722	UNT to Mississippi River	Ephemeral		Impaired	5	2	0	0	214
SIL-JJP-207	Illinois	38.961710	-90.370814	UNT to Mississippi River	Ephemeral		Impaired	4	1	0	0	101
SIL-JJP-208	Illinois	38.961767	-90.370587	UNT to Mississippi River	Ephemeral		Impaired	4.5	2	0	0	131
SIL-JJP-209	Illinois	38.963817	-90.370557	UNT to Mississippi River	Perennial		Moderately	16	6	4	1	529
SIL-JJP-210	Illinois	38.96337	-90.371024	UNT to Mississippi River	Ephemeral		Moderately	4	2	0	0	162
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-003	Illinois	39.540354	-90.430910	UNT to Little Sandy Creek	Ephemeral		Moderately	3	2	0	0	106
SIL-TMA-005	Illinois	39.532038	-90.431227	UNT to Little Sandy Creek	Intermittent		Moderately	20	15	3	0.25	950
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-013	Illinois	39.513797	-90.429737	UNT to Little Sandy Creek	Intermittent		Moderately	8	12	1	0.05	617
SIL-TMA-014	Illinois	39.512934	-90.429824	UNT to Little Sandy Creek	Ephemeral		Moderately	5	6	0	0	136
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-017	Illinois	39.509379	-90.429608	UNT to Little Sandy Creek	Ephemeral		Moderately	6	10	0	0	85
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-020	Illinois	39.479428	-90.431107	Hurricane Creek	Perennial		Impaired	12	7	4	0.5	674
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-025	Illinois	39.426365	-90.422382	UNT to Seminary Creek	Ephemeral		Moderately	4	3	0	0	28
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

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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	39.313018	-90.429648	UNT to Coates Creek	Ephemeral		Moderately	6	3.5	0	0	279
SIL-TMA-044	Illinois	39.218350	-90.396095	UNT to Macoupin Creek	Intermittent		Impaired	7	4	4	0.5	70
SIL-TMA-048	Illinois	39.238800	-90.412838	UNT to Macoupin Creek	Intermittent		Moderately	9	3.5	0	0	582
SIL-TMA-049	Illinois	39.235274	-90.405926	UNT to Macoupin Creek	Intermittent		Impaired	5	2.5	1.5	0.25	124
SIL-TMA-050	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	468
SIL-TMA-059	Illinois	39.084930	-90.388101	UNT to Otter Creek	Ephemeral		Moderately	5	3	0	0	255
SIL-TMA-060	Illinois	39.083390	-90.387283	UNT to Otter Creek	Intermittent		Moderately	8	8	4	<0.08	698
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-064	Illinois	39.024698	-90.381210	UNT to South Fork Otter Creek	Intermittent		Moderately	3	2	1	0.2	146
SIL-TMA-065	Illinois	39.025322	-90.381721	UNT to South Fork Otter Creek	Intermittent		Moderately	7	4	0	0	124
SIL-TMA-066	Illinois	39.027304	-90.385042	UNT to South Fork Otter Creek	Perennial		Moderately	12	5	6	1	886
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-069	Illinois	39.027337	-90.384495	UNT to South Fork Otter Creek	Ephemeral		Moderately	6	4	0	0	40
SIL-TMA-070	Illinois	39.028526	-90.387367	UNT to South Fork Otter Creek	Ephemeral		Moderately	5	2	0	0	440
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-001	Illinois	39.248270	-90.414222	UNT to Macoupin Creek	Intermittent		Moderately	6	4	0	0	349
SIL-WJW-002	Illinois	39.248463	-90.413938	UNT to Macoupin Creek	Ephemeral		Moderately	4	2	0	0	168

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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
SIL-WJW-006	Illinois	39.012751	-90.377811	UNT to South Fork Otter Creek	Intermittent		Moderately	5	4	0.75	<0.1	447
SIL-WJW-007	Illinois	39.010964	-90.377753	UNT to South Fork Otter Creek	Intermittent		Moderately	5	3	2	0.1	345
SIL-WJW-008	Illinois	38.997120	-90.376546	UNT to South Fork Otter Creek	Intermittent		Moderately	8	4	4	0.25	111
SIL-WJW-009	Illinois	38.996270	-90.377066	UNT to South Fork Otter Creek	Intermittent		Moderately	5	1.5	0.5	0.1	818
SIL-WJW-010	Illinois	38.956165	-90.374065	Mississippi River	Perennial	Mercury, Fecal Coliform, Polychlorinated biphenyls	Moderately	3,020	4	4,500	N/A	386
SIL-WJW-011	Illinois	38.957076	-90.373683	UNT to Mississippi River	Perennial		Fully	8	3	3	0.5	902
SIL-WJW-012	Illinois	38.959927	-90.371365	UNT to Mississippi River	Ephemeral		Fully	5	2	0	0	64
SIL-WJW-013	Illinois	38.963561	-90.370360	UNT to Mississippi River	Ephemeral		Fully	5	2	0	0	246
SIL-WJW-014	Illinois	38.964234	-90.370208	UNT to Mississippi River	Ephemeral		Fully	5	1	0	0	339
SIL-WJW-015	Illinois	38.969820	-90.368272	UNT to Mississippi River	Ephemeral		Fully	3	1	0	0	51
SIL-WJW-016	Illinois	38.968753	-90.368685	UNT to Mississippi River	Intermittent		Fully	8	1.5	0.5	0.1	179
SIL-WJW-017	Illinois	38.967113	-90.369355	UNT to Mississippi River	Ephemeral		Fully	8	2	0	0	112
SIL-WJW-018	Illinois	38.966765	-90.369418	UNT to Mississippi River	Ephemeral		Fully	5	1.5	0	0	122
SIL-WJW-019	Illinois	38.963726	-90.370858	UNT to Mississippi River	Perennial		Fully	10	3	1	0.2	124
SIL-WJW-020	Illinois	38.997043	-90.376636	UNT to South Fork Otter Creek	Intermittent		Moderately	8	2	1.0	<0.1	413
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
SMO-CDK-006	Missouri	38.814446	-90.222101	UNT to Coldwater Creek	Ephemeral		Impaired	3	0.75	1.0	<0.08	138
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	38.836885	-90.246316	UNT to Missouri River	Ephemeral		Moderately	6	2.5	0	0	249
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 Watkins Creek	Perennial		Impaired	5	1.5	3	0.2	84
SMO-DFW-015	Missouri	38.779892	-90.185957	UNT to Watkins Creek	Perennial		Impaired	4	2	2.3	0.3	624
SMO-DFW-016	Missouri	38.779533	-90.185563	UNT to Watkins Creek	Intermittent		Impaired	2	0.5	1	0.2	78
SMO-JJP-001	Missouri	38.921934	-90.354259	UNT to Mississippi River	Ephemeral		Impaired	4	0.5	0	0	1414
SMO-JJP-002	Missouri	38.936457	-90.379163	UNT to Mississippi River	Ephemeral		Moderately	6	3.5	0	0	2007
SMO-JJP-003	Missouri	38.927347	-90.368485	UNT to Mississippi River	Ephemeral		Impaired	4	1	0	0	628
SMO-JJP-004	Missouri	38.931561	-90.381805	UNT to Mississippi River	Ephemeral		Impaired	2	0.7	0	0	612
SMO-JJP-005	Missouri	38.940691	-90.380919	UNT to Mississippi River	Ephemeral		Impaired	2.5	1	0	0	36
SMO-JJP-007	Missouri	38.779962	-90.185939	UNT to Watkins Creek	Intermittent		Moderately	6	2	0	0	53
SMO-JJP-008	Missouri	38.782593	-90.185679	UNT to Mississippi River	Ephemeral		Moderately	6	4.5	0	0	196
SMO-JJP-009	Missouri	38.783600	-90.185641	UNT to Mississippi River	Intermittent		Moderately	8	4.5	0	0	172
SMO-JJP-010	Missouri	38.783516	-90.185754	UNT to Mississippi River	Ephemeral		Moderately	4	4	0	0	31

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
SMO-JJP-011	Missouri	38.783507	-90.185847	UNT to Mississippi River	Ephemeral		Moderately	5	4	0	0	26
SMO-JJP-012	Missouri	38.786330	-90.186001	UNT to Mississippi River	Perennial		Fully	30	18	5	0.5	1072
SMO-JJP-013	Missouri	38.785568	-90.187608	UNT to Mississippi River	Ephemeral		Moderately	9	6	0	0	31
SMO-JJP-014	Missouri	38.785411	-90.186948	UNT to Mississippi River	Intermittent		Fully	10	7	0	0	146
SMO-JJP-015	Missouri	38.788613	-90.186708	UNT to Mississippi River	Perennial		Fully	12	5	5	0.33	387
SMO-JJP-016	Missouri	38.788708	-90.187031	UNT to Mississippi River	Perennial		Fully	12	4.5	4	0.38	321
SMO-JJP-017	Missouri	38.790552	-90.187623	UNT to Mississippi River	Ephemeral		Impaired	6	4	0	0	52
SMO-JJP-019	Missouri	38.817799	-90.227655	UNT to Coldwater Creek	Ephemeral		Impaired	16	4	0	0	210
SMO-JJP-020	Missouri	38.818100	-90.228305	Coldwater Creek	Perennial		Fully	125	8	80	2	639
SMO-JJP-021	Missouri	38.818546	-90.228757	UNT to Coldwater Creek	Ephemeral		Impaired	4	2.5	0	0	213
SMO-JJP-022	Missouri	38.821324	-90.239463	UNT to Missouri River	Perennial		Fully	6	2	2	0.2	3407
SMO-JJP-023	Missouri	38.827874	-90.245955	UNT to Missouri River	Ephemeral		Impaired	4	2	0	0	583
SMO-JJP-024	Missouri	38.822504	-90.242183	UNT to Missouri River	Ephemeral		Impaired	4	2	0	0	170
SMO-JJP-025	Missouri	38.822523	-90.241421	UNT to Missouri River	Ephemeral		Impaired	5	4.5	0	0	46
SMO-JJP-026	Missouri	38.821819	-90.241293	UNT to Missouri River	Ephemeral		Impaired	6	4	0	0	116
SMO-JJP-027	Missouri	38.821763	-90.241280	UNT to Missouri River	Ephemeral		Impaired	6	2	1	0.2	269
SMO-JJP-028	Missouri	38.820885	-90.237374	UNT to Missouri River	Ephemeral		Moderately	6	4	0	0	32
SMO-JJP-029	Missouri	38.820780	-90.237165	UNT to Missouri River	Ephemeral		Impaired	8	2.5	0	0	48
SMO-JJP-030	Missouri	38.937597	-90.386250	UNT to Mississippi River	Ephemeral		Impaired	3	2	0	0	253
SMO-JJP-032	Missouri	38.816962	-90.227825	UNT to Coldwater Creek	Perennial		Moderately	15	10	4	0.7	551
SMO-JJP-033	Missouri	38.785819	-90.186539	UNT to Mississippi River	Ephemeral		Moderately	8	5	0	0	24
SMO-JJP-033A	Missouri	38.798816	-90.192992	UNT to Mississippi River	Intermittent		Impaired	6	3.0	0.0	0.00	32
SMO-JJP-034	Missouri	38.785858	-90.186500	UNT to Mississippi River	Ephemeral		Moderately	4	4	0	0	24
SMO-JJP-035	Missouri	38.786548	-90.186039	UNT to Mississippi River	Intermittent		Moderately	20	16	1	0.4	126
SMO-JJP-036	Missouri	38.785905	-90.186369	UNT to Mississippi River	Ephemeral		Moderately	3	3	0	0	24
SMO-JJP-037	Missouri	38.786475	-90.185837	UNT to Mississippi River	Ephemeral		Moderately	20	6	0	0	53
SMO-JJP-038	Missouri	38.786625	-90.185541	UNT to Mississippi River	Ephemeral		Moderately	5	6	0	0	47
SMO-TMA-001	Missouri	38.847983	-90.238412	Missouri River	Perennial	Escherichia coli	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	38.927305	-90.368048	UNT to Mississippi River	Perennial		Moderately	60	8	20	2	569
SMO-TMA-007	Missouri	38.938019	-90.378581	UNT to Mississippi River	Ephemeral		Impaired	3	0.75	0	0	44
SMO-TMA-008	Missouri	38.940042	-90.384496	UNT to Mississippi River	Ephemeral		Moderately	2	1	0	0	154
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
SMO-WJW-010	Missouri	38.783501	-90.185412	UNT to Mississippi River	Intermittent	-	Fully	10	-4	0	0	766
SMO-WJW-011	Missouri	38.785369	-90.187336	UNT to Mississippi River	Perennial	-	Impaired	25	-15	1	<0.1	295
SMO-WJW-012	Missouri	38.785325	-90.187067	UNT to Mississippi River	Ephemeral	-	Impaired	10	3	0	0	13
SMO-WJW-013	Missouri	38.785348	-90.187013	UNT to Mississippi River	Ephemeral	-	Impaired	10	4	0	0	90
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

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-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
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	38.956532	-90.374038	UNT to Mississippi-River	Intermittent		N/A	N/A	N/A	N/A	N/A	367
NHD-916*	Illinois	38.955651	-90.374103	UNT to Mississippi-River	Intermittent		N/A	N/A	N/A	N/A	N/A	271
NHD-917*	Illinois	38.955669	-90.374171	UNT to Mississippi-River	Intermittent		N/A	N/A	N/A	N/A	N/A	284
NHD-918	Illinois	38.955266	-90.374148	UNT to Mississippi-River	Intermittent		N/A	N/A	N/A	N/A	N/A	4
NHD-921*	Illinois/ Missouri	38.952804	-90.376331	Mississippi-River	Perennial	Fecal Coliform	N/A	N/A	N/A	N/A	N/A	302
NHD-924	Missouri	38.945409	-90.381136	UNT to Mississippi-River	Perennial		N/A	N/A	N/A	N/A	N/A	302
NHD-955	Missouri	38.808990	-90.214076	UNT to Missouri River	Intermittent		N/A	N/A	N/A	N/A	N/A	305
NHD-959	Missouri	38.811551	-90.215461	UNT to Missouri River	Intermittent		N/A	N/A	N/A	N/A	N/A	321
NHD-962	Missouri	38.806127	-90.207249	UNT to Missouri River	Intermittent		N/A	N/A	N/A	N/A	N/A	383
NHD-969	Illinois	39.072399	-90.392182	Otter-Creek	Perennial	Dissolved Oxygen	N/A	N/A	N/A	N/A	N/A	251

Features denoted in **bold italics** contain new or revised data. Features denoted in red text have been removed from the current Project study area.

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 Impairments as listed on the Illinois Integrated Water Quality Report and Section 303(d) List (2016) Available at: <http://www.epa.illinois.gov/Assets/iepa/water-quality/watershed-management/tmdls/2016/303-d-list/iwq-report-surface-water.pdf> or the Missouri Water Quality 305(b) Report (2014) and 303(d) list (2016). Available at: <http://dnr.mo.gov/env/wpp/waterquality/303d/303d.htm>.
 - ⁴ As quantified in the field using Missouri Stream Mitigation Method assessment guidance (USACE, et al., 2013).
 - ⁵ 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 (Additional Features Only)

Waterbody Photographs

Photos Taken Within The Study Area Unless Otherwise Noted.



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



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



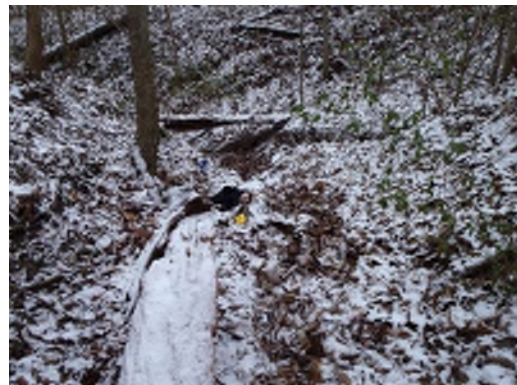
**Stream SIL-CDK-040,
Upstream, Facing South (3/14/17)**



**Stream SIL-CDK-040, Downstream,
Facing North (3/14/17)**



**Stream SIL-CDK-041,
Upstream, Facing South-southeast (3/14/17)**



**Stream SIL-CDK-041, Downstream,
Facing North-northwest (3/14/17)**



**Stream SIL-JJP-049,
Upstream, Facing South (3/14/17)**



**Stream SIL-JJP-049, Downstream,
Facing North (3/14/17)**



**Stream SIL-JJP-050,
Upstream, Facing East (3/14/17)**



**Stream SIL-JJP-050, Downstream,
Facing West (3/14/17)**



**Stream SIL-JJP-051,
Upstream, Facing North (3/14/17)**



**Stream SIL-JJP-051, Downstream,
Facing South (3/14/17)**



**Stream SIL-JJP-052,
Upstream, Facing East (3/14/17)**



**Stream SIL-JJP-052, Downstream,
Facing West (3/14/17)**



**Stream SIL-JJP-053,
Upstream, Facing East (3/14/17)**



**Stream SIL-JJP-053, Downstream,
Facing West (3/14/17)**



**Stream SIL-JJP-054,
Upstream, Facing South (3/14/17)**



**Stream SIL-JJP-054, Downstream,
Facing North (3/14/17)**



**Stream SIL-JJP-148A,
Upstream, Facing North (3/14/17)**



**Stream SIL-JJP-148A, Downstream,
Facing South (3/14/17)**



**Stream SIL-JJP-200,
Upstream, Facing Northwest (6/5/17)**



**Stream SIL-JJP-200, Downstream,
Facing Southeast (6/5/17)**



**Stream SIL-JJP-201,
Upstream, Facing Southeast (6/5/17)**



**Stream SIL-JJP-201, Downstream,
Facing Northwest (6/5/17)**



**Stream SIL-JJP-202,
Upstream, Facing North (6/5/17)**



**Stream SIL-JJP-202, Downstream,
Facing South (6/5/17)**



**Stream SIL-JJP-203,
Upstream, Facing Northeast (6/5/17)**



**Stream SIL-JJP-203, Downstream,
Facing Southwest (6/5/17)**



**Stream SIL-JJP-204,
Upstream, Facing Northeast (6/5/17)**



**Stream SIL-JJP-204, Downstream,
Facing Southwest (6/5/17)**



**Stream SIL-JJP-205,
Upstream, Facing East (6/5/17)**



**Stream SIL-JJP-205, Downstream,
Facing West (6/5/17)**



**Stream SIL-JJP-206,
Upstream, Facing West-southwest (6/5/17)**



**Stream SIL-JJP-206, Downstream,
Facing East-northeast (6/5/17)**



**Stream SIL-JJP-207,
Upstream, Facing North (6/5/17)**



**Stream SIL-JJP-207, Downstream,
Facing South (6/5/17)**



**Stream SIL-JJP-208,
Upstream, Facing North (6/5/17)**



**Stream SIL-JJP-208, Downstream,
Facing South (6/5/17)**



**Stream SIL-JJP-209,
Upstream, Facing West (6/5/17)**



**Stream SIL-JJP-209, Downstream,
Facing East (6/5/17)**



**Stream SIL-JJP-210,
Upstream, Facing South (6/11/17)**



**Stream SIL-JJP-210, Downstream,
Facing North (6/11/17)**



**Stream SIL-WJW-006,
Upstream, Facing Northeast (4/4/17)**



**Stream SIL-WJW-006, Downstream,
Facing West-southwest (4/4/17)**



**Stream SIL-WJW-007,
Upstream, Facing North-northeast (4/4/17)**



**Stream SIL-WJW-007, Downstream,
Facing West-southwest (4/4/17)**



**Stream SIL-WJW-008,
Upstream, Facing East-southeast (4/4/17)**



**Stream SIL-WJW-008, Downstream,
Facing West-northwest (4/4/17)**



**Stream SIL-WJW-009,
Upstream, Facing South-southeast (4/4/17)**



**Stream SIL-WJW-009, Downstream,
Facing North (4/4/17)**



**Stream SIL-WJW-010,
Upstream, Facing West (6/5/17)**



**Stream SIL-WJW-010, Downstream,
Facing South-southeast (6/5/17)**



**Stream SIL-WJW-011,
Upstream, Facing North-northeast (6/5/17)**



**Stream SIL-WJW-011, Downstream,
Facing South-southeast (6/5/17)**



**Stream SIL-WJW-012,
Upstream, Facing East-northeast (6/5/17)**



**Stream SIL-WJW-012, Downstream,
Facing Southwest (6/5/17)**



**Stream SIL-WJW-013,
Upstream, Facing West-southwest (6/5/17)**



**Stream SIL-WJW-013, Downstream,
Facing North (6/5/17)**



**Stream SIL-WJW-014,
Upstream, Facing North-northwest (6/6/17)**



**Stream SIL-WJW-014, Downstream,
Facing South-southwest (6/6/17)**



**Stream SIL-WJW-015,
Upstream, Facing West-northwest (6/7/17)**



**Stream SIL-WJW-015, Downstream,
Facing South (6/7/17)**



**Stream SIL-WJW-016,
Upstream, Facing Northwest (6/7/17)**



**Stream SIL-WJW-016, Downstream,
Facing East (6/7/17)**



**Stream SIL-WJW-017,
Upstream, Facing Northwest (6/7/17)**



**Stream SIL-WJW-017, Downstream,
Facing South-southeast (6/7/17)**



**Stream SIL-WJW-018,
Upstream, Facing West (6/7/17)**



**Stream SIL-WJW-018, Downstream,
Facing East-southeast (6/7/17)**



**Stream SIL-WJW-019,
Upstream, Facing West-southwest (6/8/17)**



**Stream SIL-WJW-019, Downstream,
Facing East-northeast (6/8/17)**



**Stream SIL-WJW-020,
Upstream, Facing East-northeast (6/10/17)**



**Stream SIL-WJW-020, Downstream,
Facing West-northwest (6/10/17)**



**Stream SMO-CDK-006,
Upstream, Facing East (3/15/17)**



**Stream SMO-CDK-006, Downstream,
Facing West (3/15/17)**

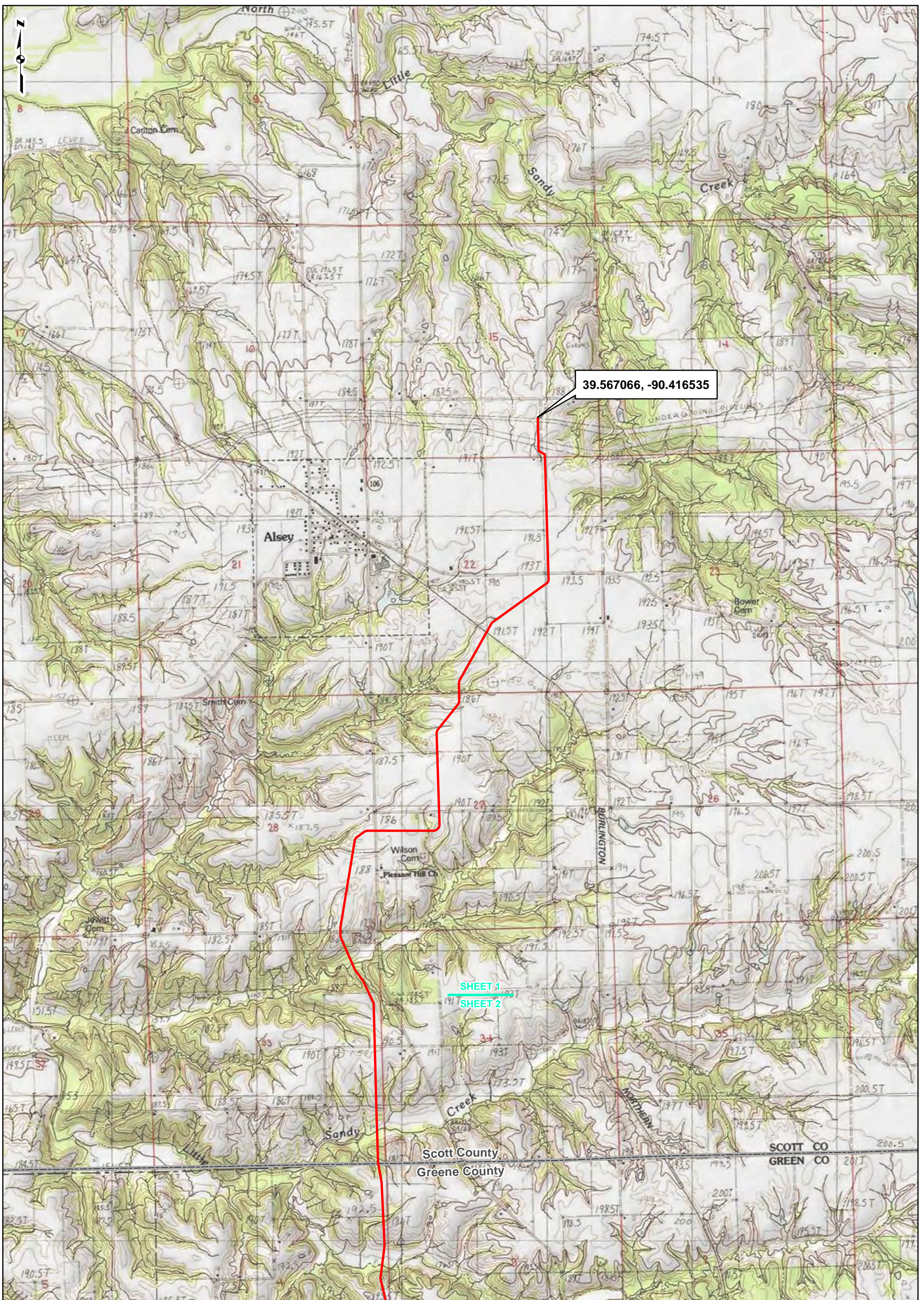


**Stream SMO-JJP-033A,
Upstream, Facing Northwest (2/25/17)**



**Stream SMO-JJP-033A, Downstream,
Facing Southeast (2/25/17)**

FIGURES



39.567066, -90.416535

SHEET 1
SHEET 2

Scott County
Greene County

SCOTT CO
GREEN CO



REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1994), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1989), ELSA (1985), FLOISSANT (1989), GRAFTON (1995), 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 07/2017.

LEGEND

- 24-INCH PIPELINE
- NORTH COUNTY EXTENSION
- COUNTY BOUNDARY
- STATE BOUNDARY

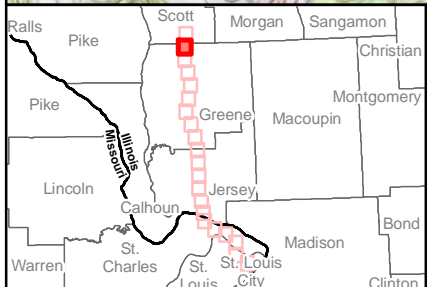
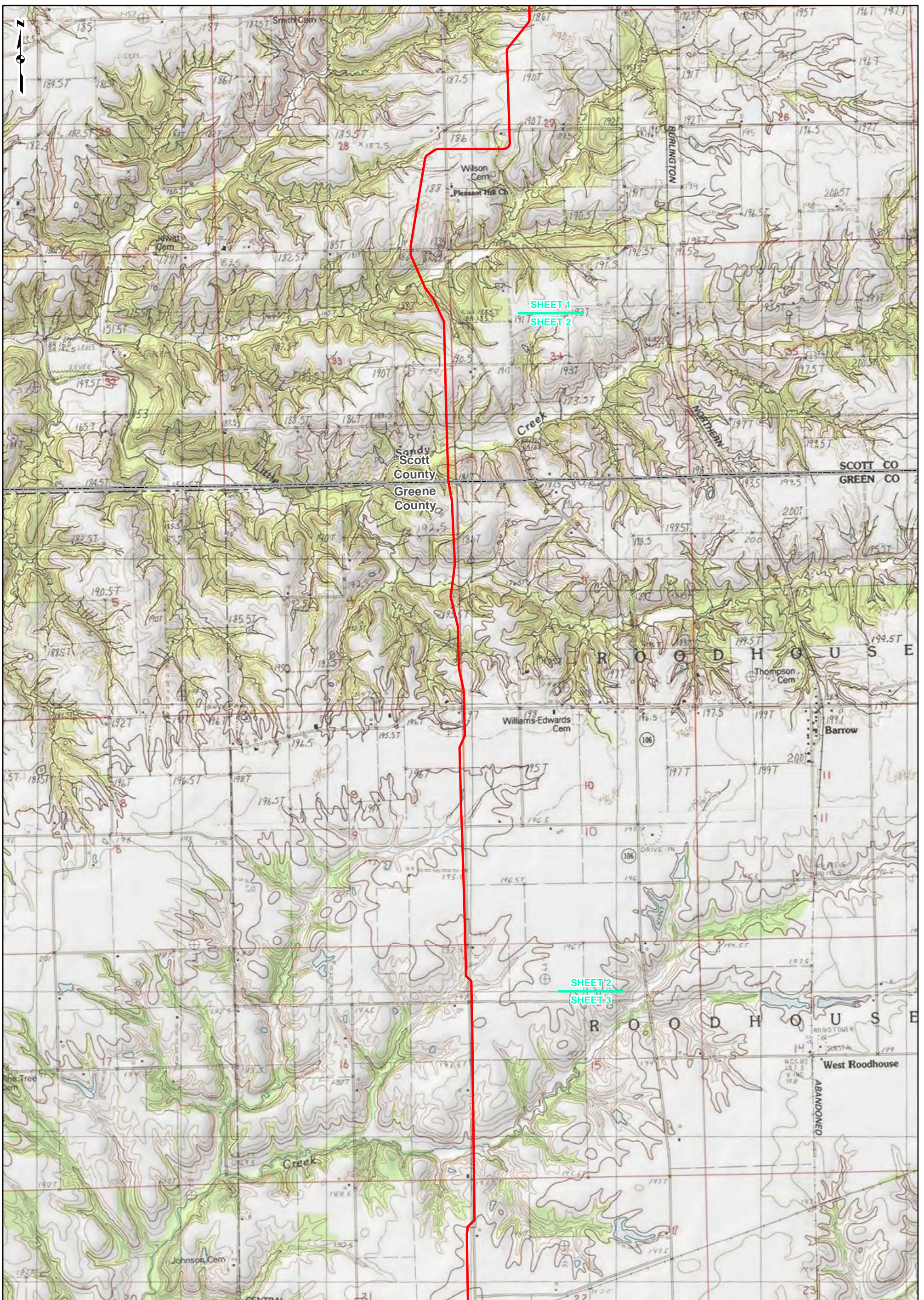
0 1,000 2,000 4,000 Feet

PROJECT LOCATION MAP SHEET 1 OF 21

SPIRE STL PIPELINE PROJECT

gai consultants

DRAWN BY: SWW DATE: 7/14/2017
CHECKED: EFJ APPROVED: TCW



REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1994), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1989), ELSA (1995), FLOISSANT (1989), GRAFTON (1995), 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 07/2017.

LEGEND

- 24-INCH PIPELINE
- NORTH COUNTY EXTENSION
- COUNTY BOUNDARY
- STATE BOUNDARY

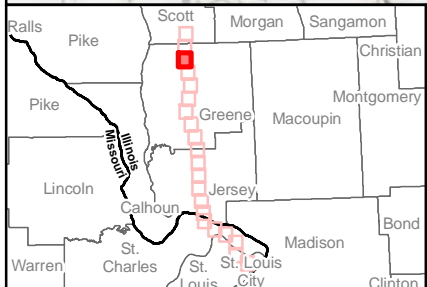
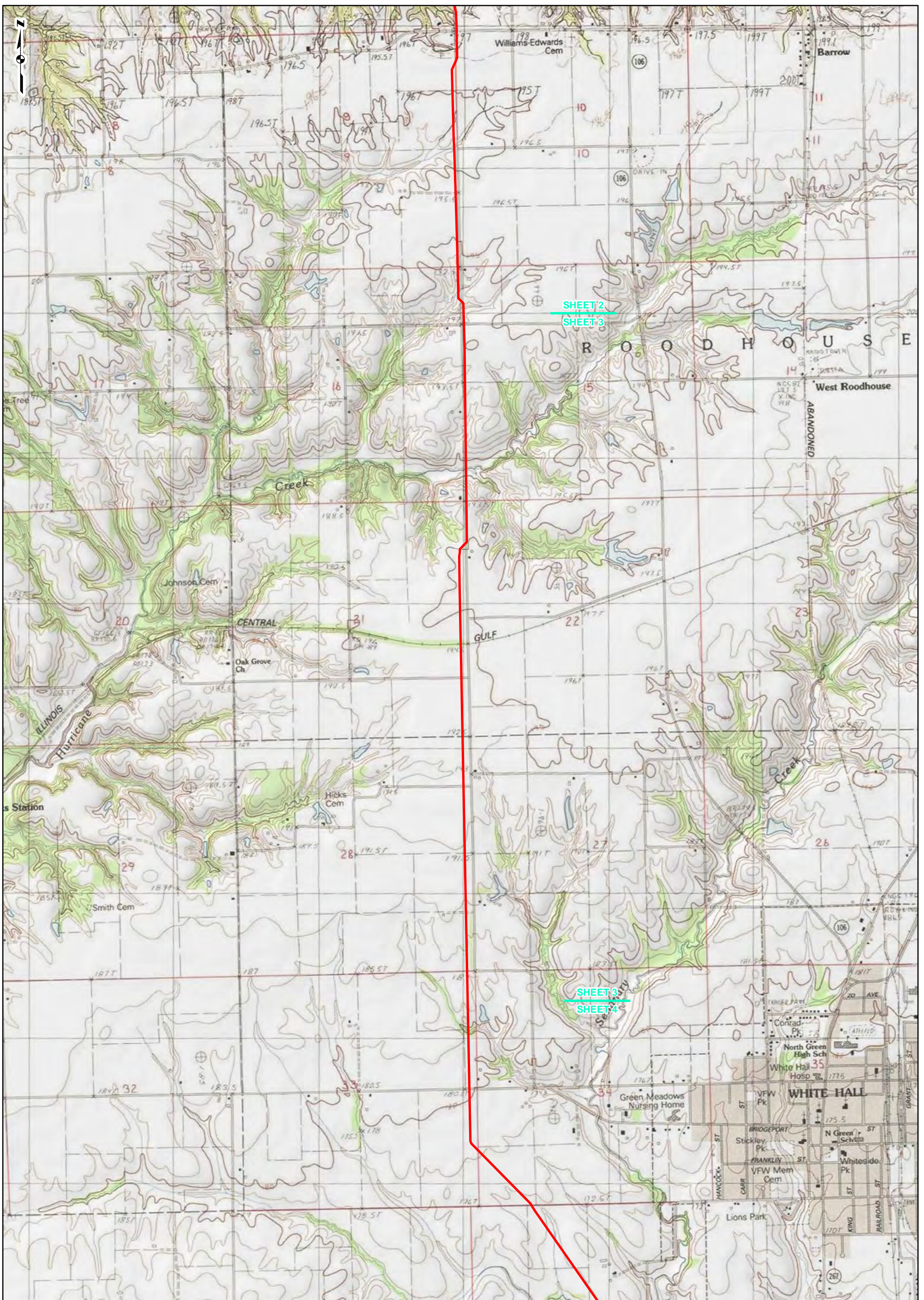
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PROJECT LOCATION MAP SHEET 2 OF 21

SPIRE STL PIPELINE PROJECT

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DRAWN BY: SWW DATE: 7/14/2017
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REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1994), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1999), ELSA (1995), FLORISSANT (1999), GRAFTON (1995), 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 07/2017.

LEGEND

- 24-INCH PIPELINE
- NORTH COUNTY EXTENSION
- COUNTY BOUNDARY
- STATE BOUNDARY

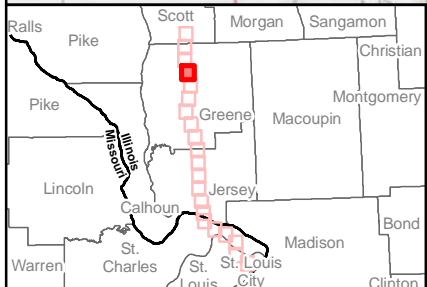
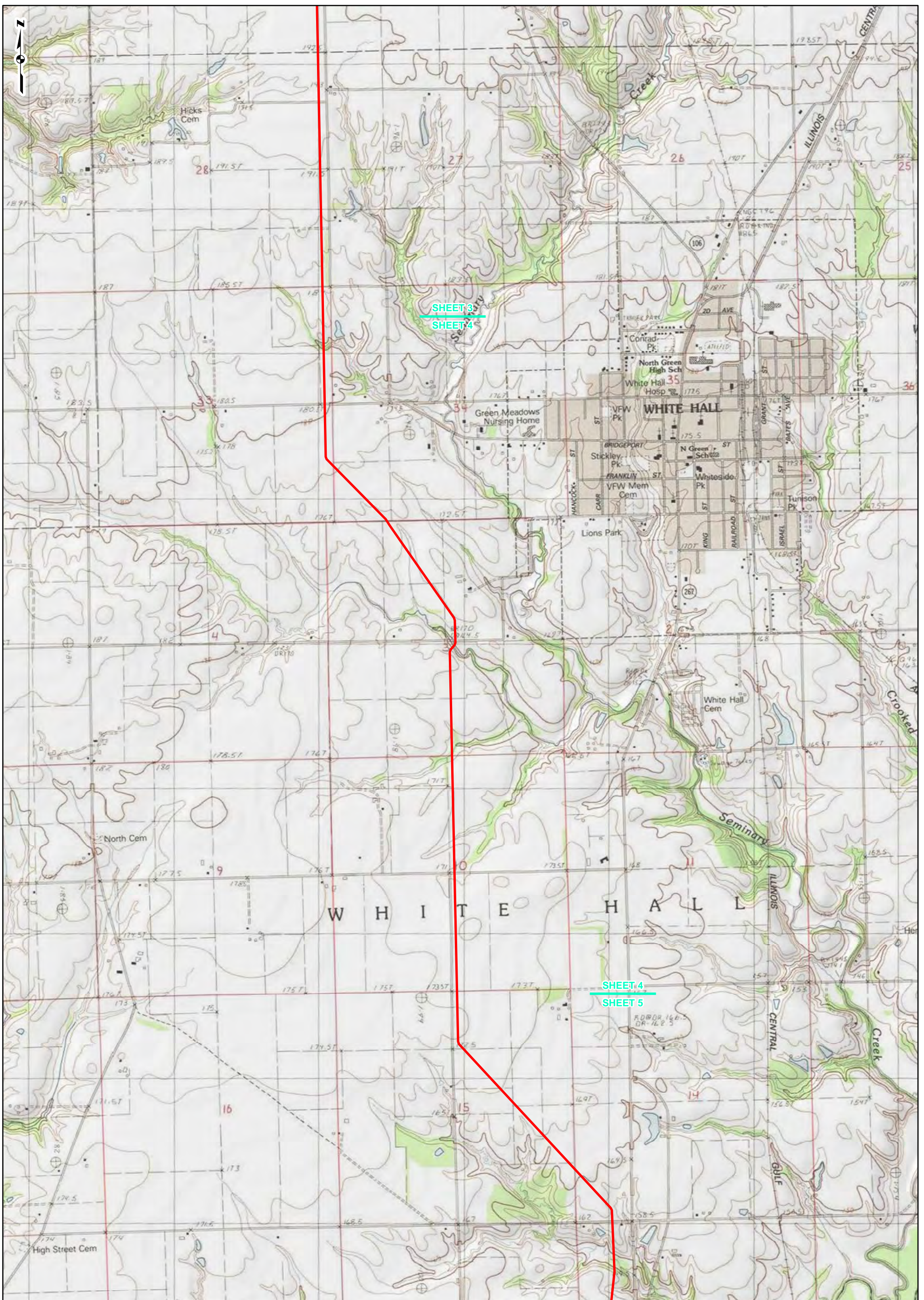
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PROJECT LOCATION MAP SHEET 3 OF 21

SPIRE STL PIPELINE PROJECT





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DRAWN BY: SWW DATE: 7/14/2017
 CHECKED: EFJ APPROVED: TCW




REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1994), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1999), ELSA (1995), FLORISSANT (1999), GRAFTON (1995), 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 07/2017.

LEGEND

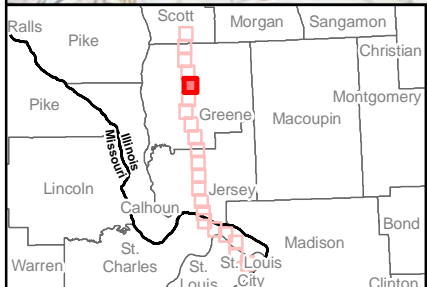
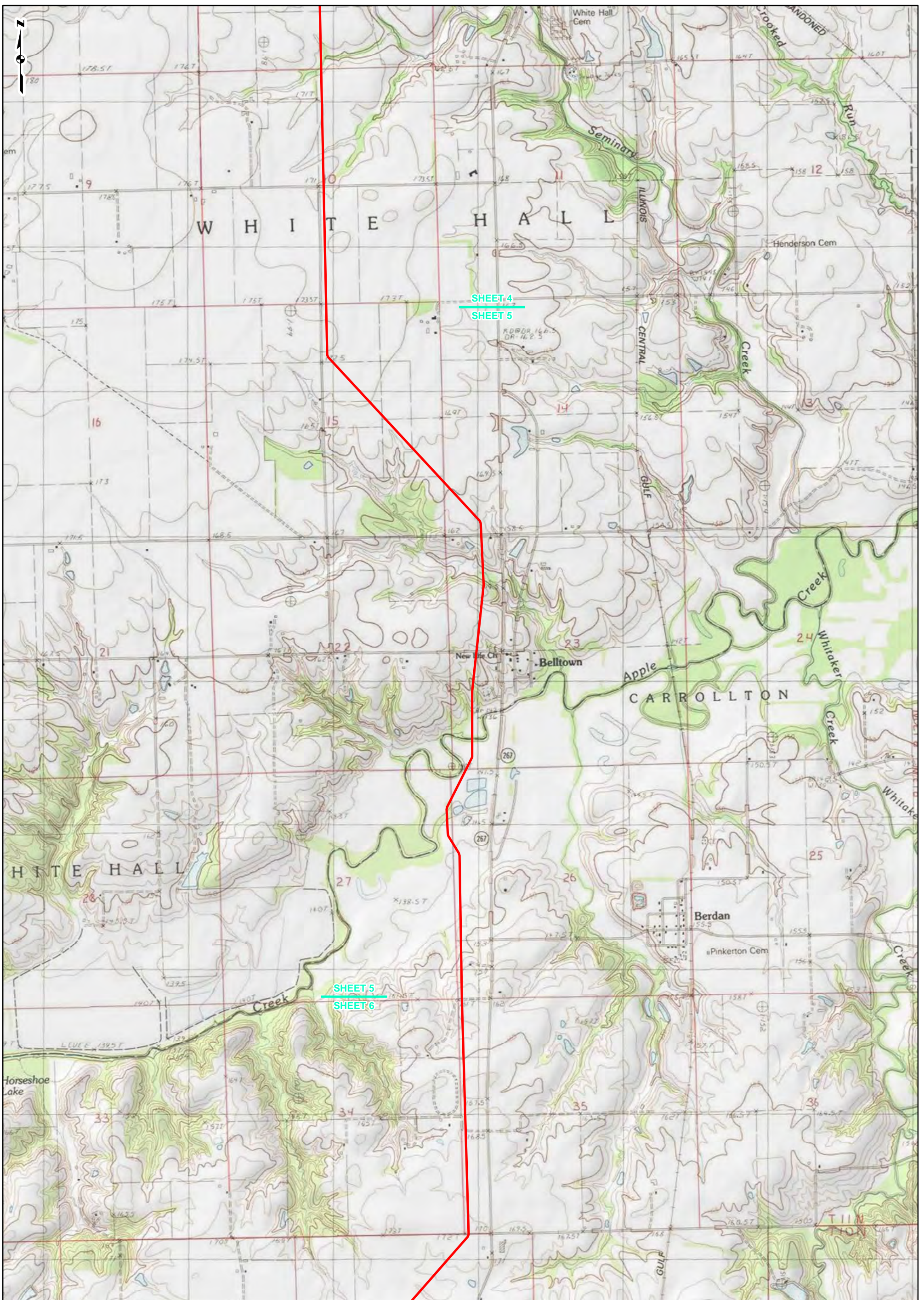
 24-INCH PIPELINE	 COUNTY BOUNDARY
 NORTH COUNTY EXTENSION	 STATE BOUNDARY

0 1,000 2,000 4,000
Feet

PROJECT LOCATION MAP
SHEET 4 OF 21







DRAWN BY: SWW DATE: 7/14/2017
CHECKED: EFJ APPROVED: TCW




REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1994), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1999), ELSA (1995), FLOISSANT (1999), GRAFTON (1995), 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 07/2017.

LEGEND

 24-INCH PIPELINE	 COUNTY BOUNDARY
 NORTH COUNTY EXTENSION	 STATE BOUNDARY

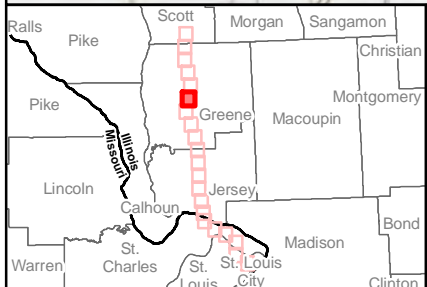
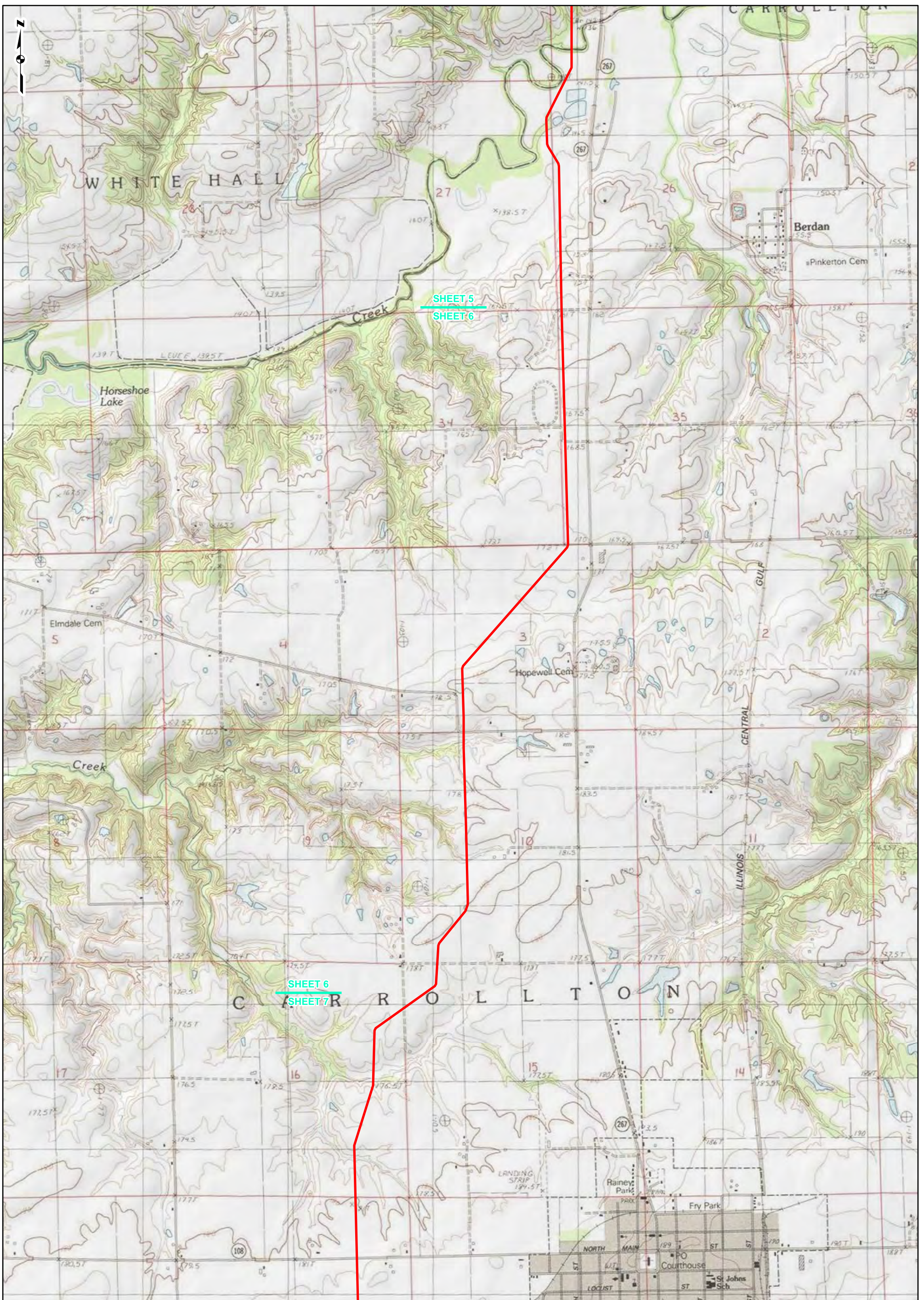
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Feet

**PROJECT LOCATION MAP
SHEET 5 OF 21**



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DRAWN BY: SWW DATE: 7/14/2017
CHECKED: EFJ APPROVED: TCW



REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1994), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1999), ELSA (1995), FLOISSANT (1999), GRAFTON (1995), JERSEYVILLE NORTH (1983), JERSEYVILLE SOUTH (1983), OTTERTVILLE (1983) AND ROODHOUSE WEST (1983), ILLINOIS AND MISSOURI, OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND I-CUBED, ACCESSED 07/2017.

LEGEND

- 24-INCH PIPELINE
- NORTH COUNTY EXTENSION
- COUNTY BOUNDARY
- STATE BOUNDARY

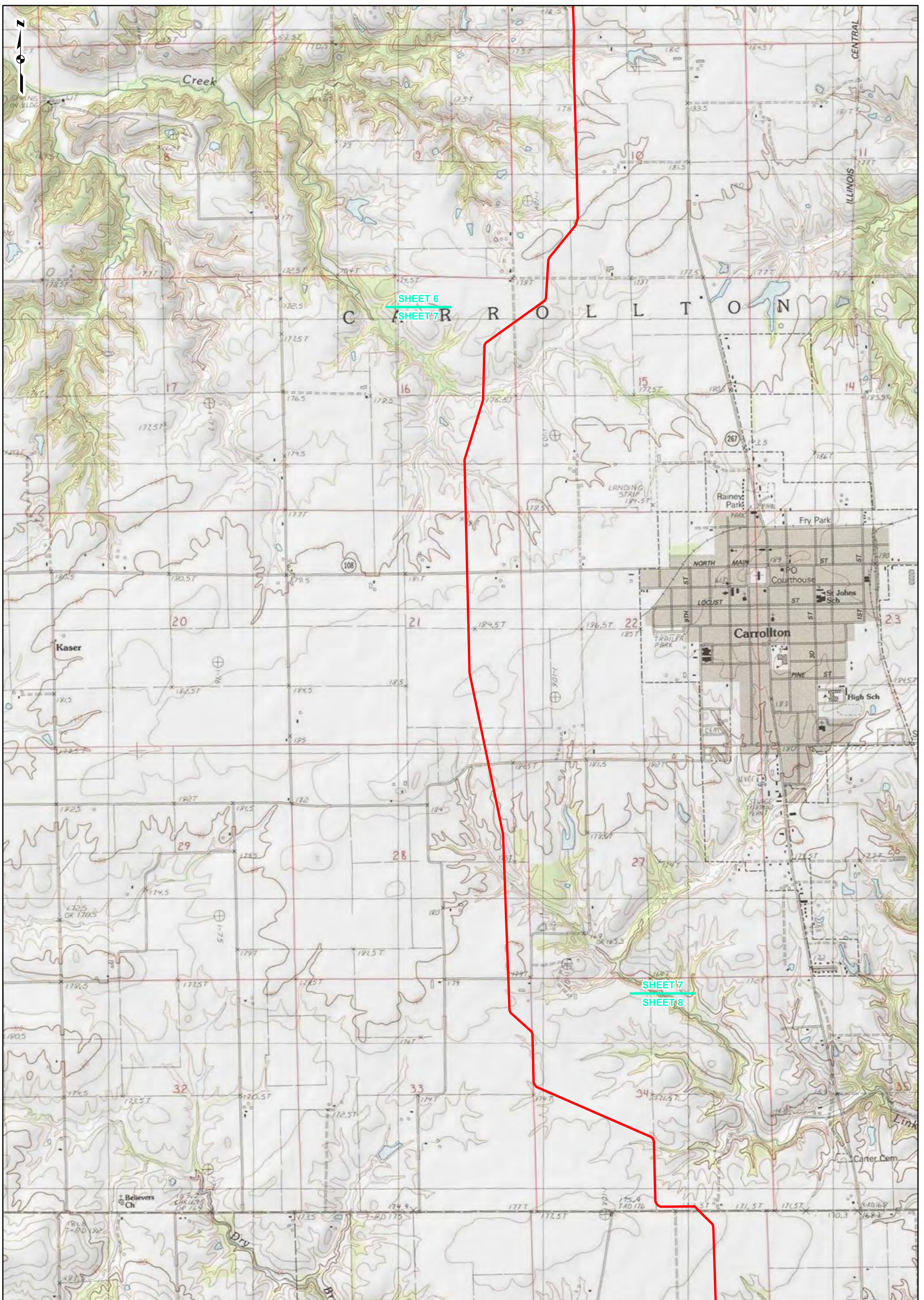
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PROJECT LOCATION MAP
SHEET 6 OF 21

SPiRE STL PIPELINE PROJECT

gai consultants

DRAWN BY: SWW DATE: 7/14/2017
CHECKED: EFJ APPROVED: TCW



REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1994), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1989), ELSA (1995), FLORISSANT (1989), GRAFTON (1995), JERSEYVILLE NORTH (1983), JERSEYVILLE SOUTH (1983), OTTERTVILLE (1983) AND ROODHOUSE WEST (1983), ILLINOIS AND MISSOURI, OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND I-CUBED, ACCESSED 07/2017.

LEGEND

- 24-INCH PIPELINE
- NORTH COUNTY EXTENSION
- COUNTY BOUNDARY
- STATE BOUNDARY

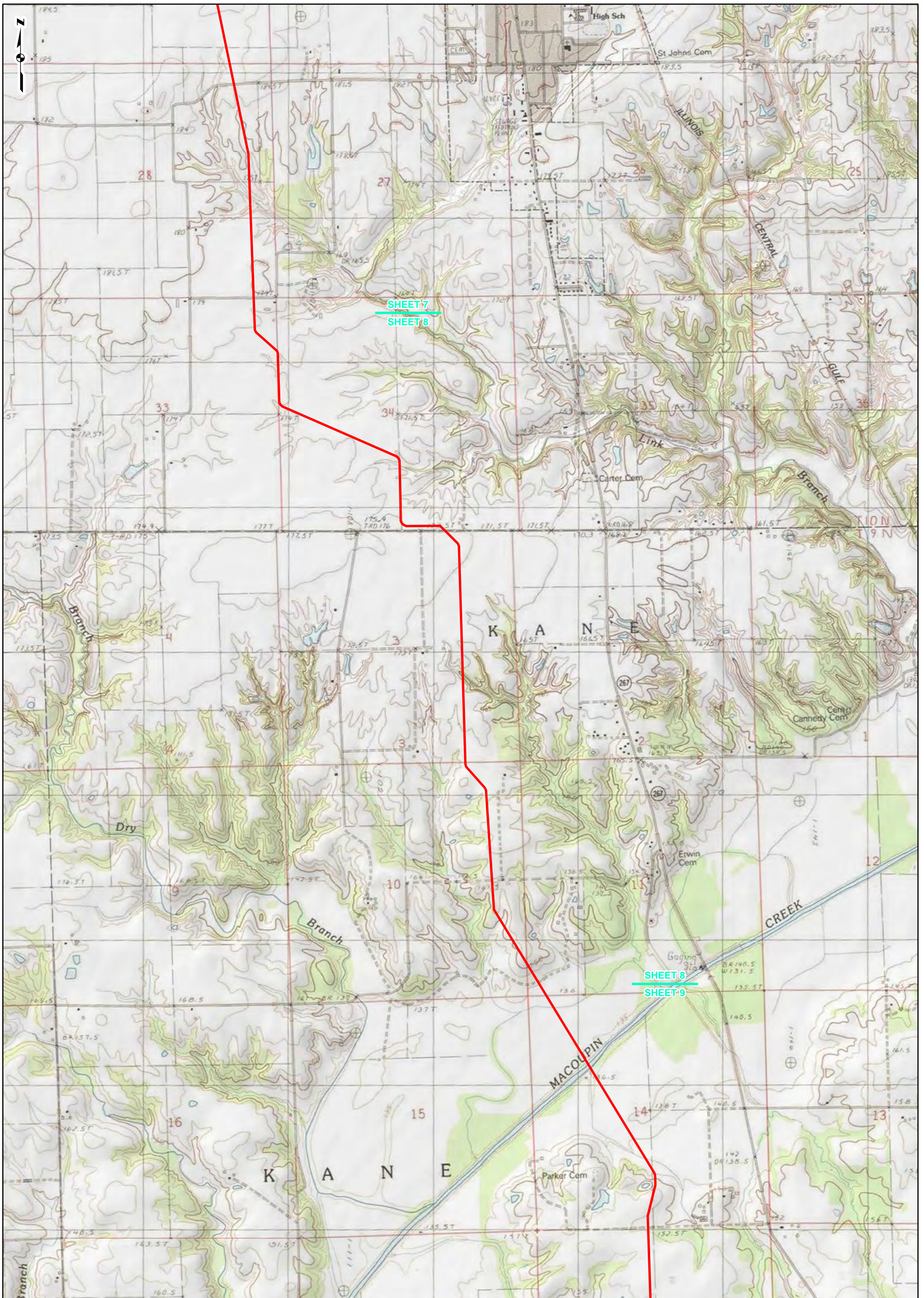
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PROJECT LOCATION MAP SHEET 7 OF 21

SPIRE STL PIPELINE PROJECT

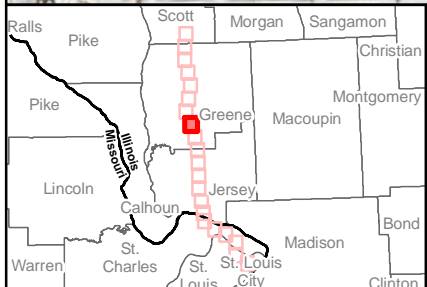
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SHEET 7
SHEET 8

SHEET 8
SHEET 9




REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1994), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1999), ELSA (1995), FLOISSANT (1999), GRAFTON (1995), 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 07/2017.

LEGEND

	24-INCH PIPELINE		COUNTY BOUNDARY
	NORTH COUNTY EXTENSION		STATE BOUNDARY

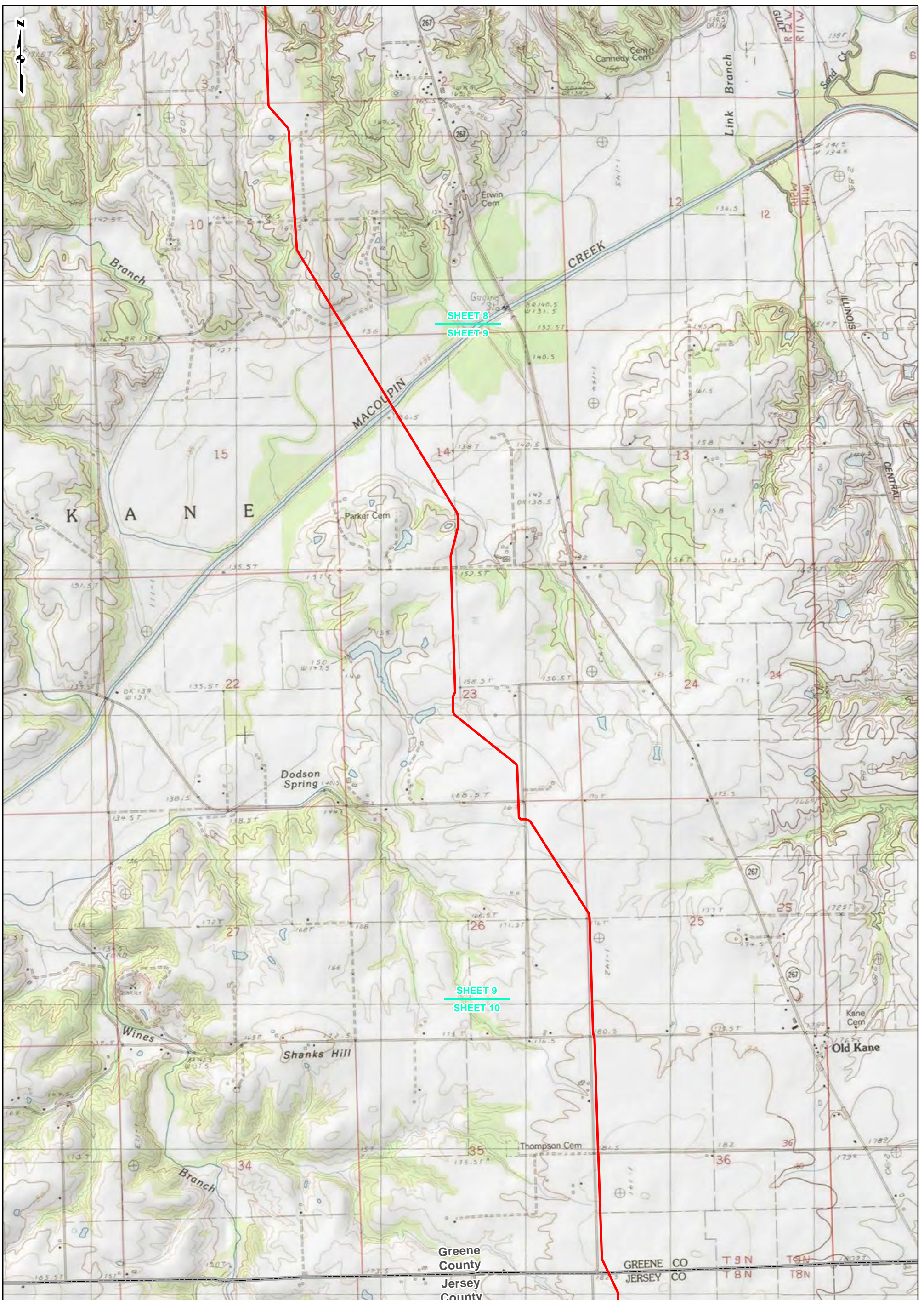
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Feet

**PROJECT LOCATION MAP
SHEET 8 OF 21**



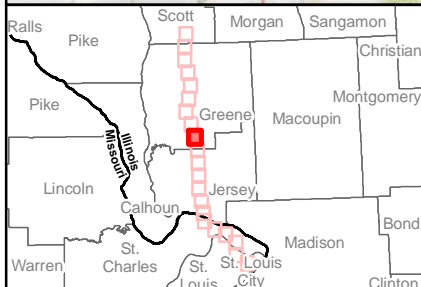
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CHECKED: EFJ APPROVED: TCW



SHEET 8
SHEET 9

SHEET 9
SHEET 10



REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1994), BOYER CREEK (1983), CARROLLTON (1985), COLUMBIA BOTTOM (1999), ELSAHL (1995), FLOISSANT (1999), GRAFTON (1995), 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 07/2017.

LEGEND

- 24-INCH PIPELINE
- NORTH COUNTY EXTENSION
- COUNTY BOUNDARY
- STATE BOUNDARY

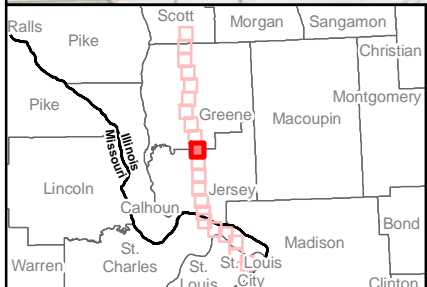
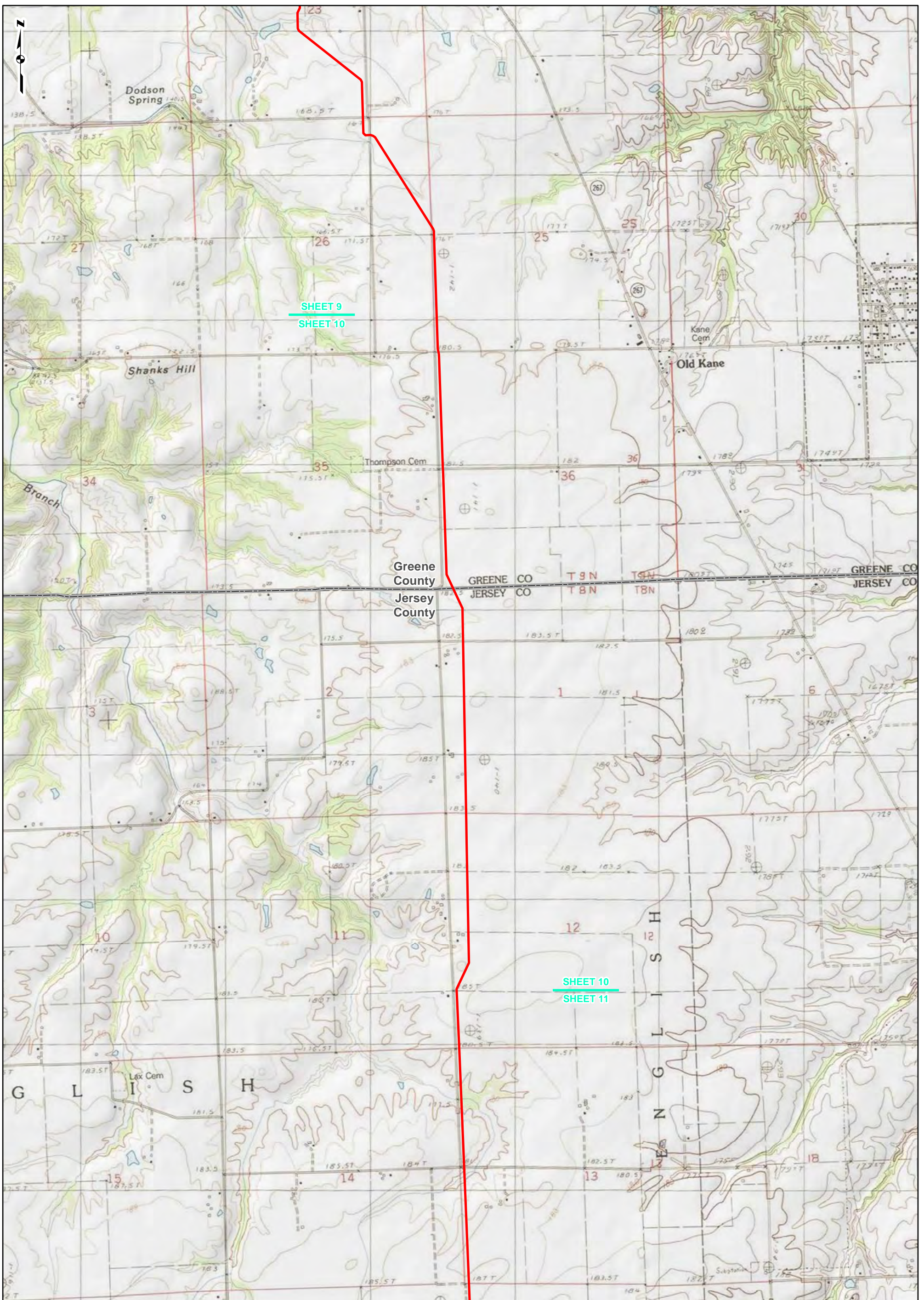
0 1,000 2,000 4,000 Feet

PROJECT LOCATION MAP SHEET 9 OF 21

SPIRE STL PIPELINE PROJECT

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DRAWN BY: SWW DATE: 7/14/2017
 CHECKED: EFJ APPROVED: TCW



REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1994), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1999), ELSA (1995), FLOISSANT (1999), GRAFTON (1995), 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 07/2017.

LEGEND

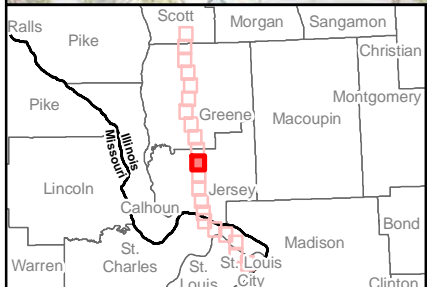
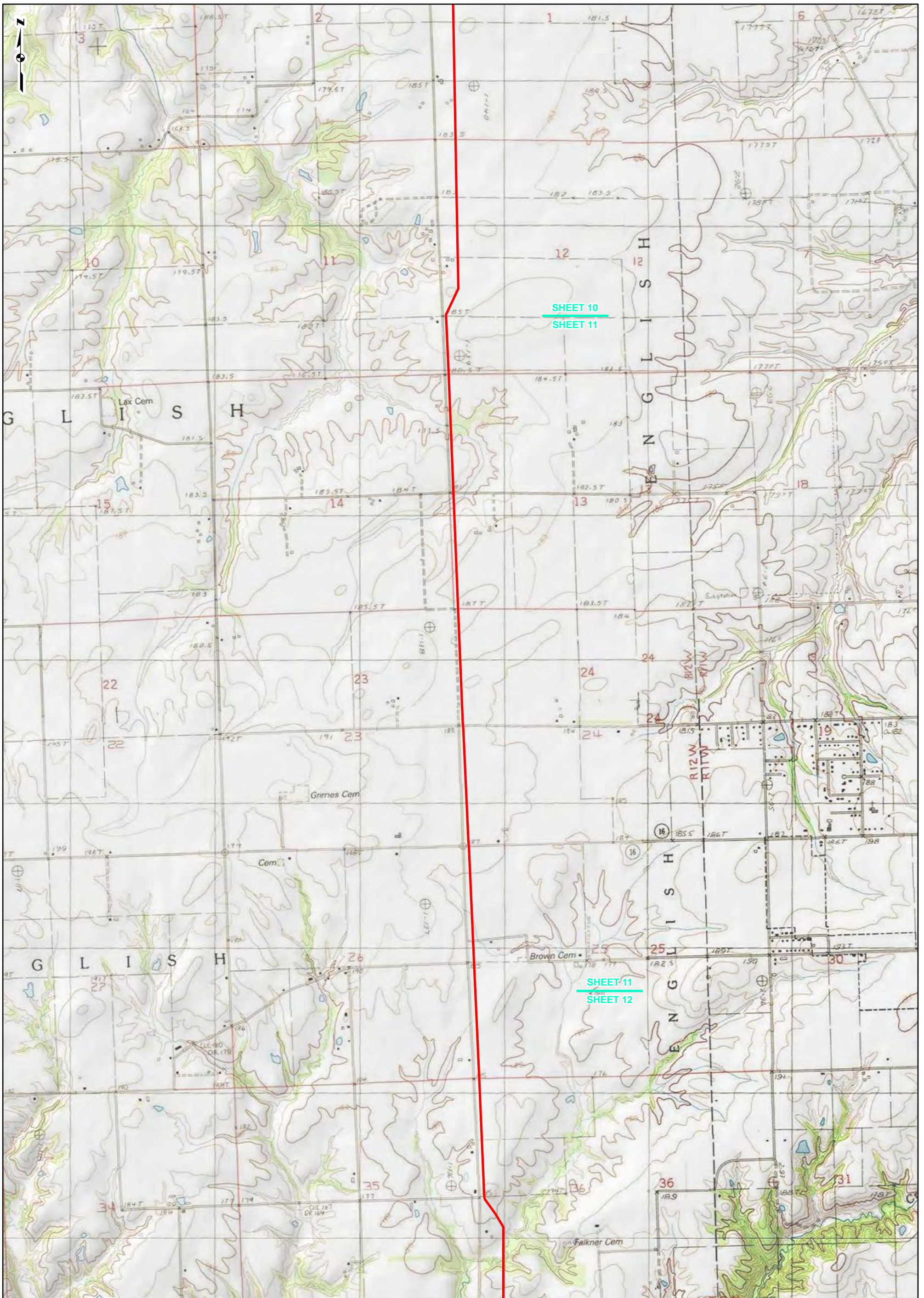
	24-INCH PIPELINE		COUNTY BOUNDARY
	NORTH COUNTY EXTENSION		STATE BOUNDARY

0 1,000 2,000 4,000
Feet

**PROJECT LOCATION MAP
SHEET 10 OF 21**

SPIRE STL PIPELINE PROJECT

DRAWN BY: SWW DATE: 7/14/2017
CHECKED: EFJ APPROVED: TCW



REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1994), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1999), ELSAN (1995), FLOISSANT (1999), GRAFTON (1995), 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 07/2017.

LEGEND

- 24-INCH PIPELINE
- NORTH COUNTY EXTENSION
- COUNTY BOUNDARY
- STATE BOUNDARY

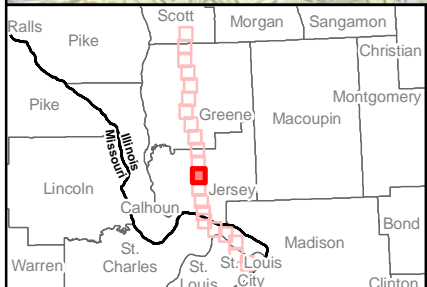
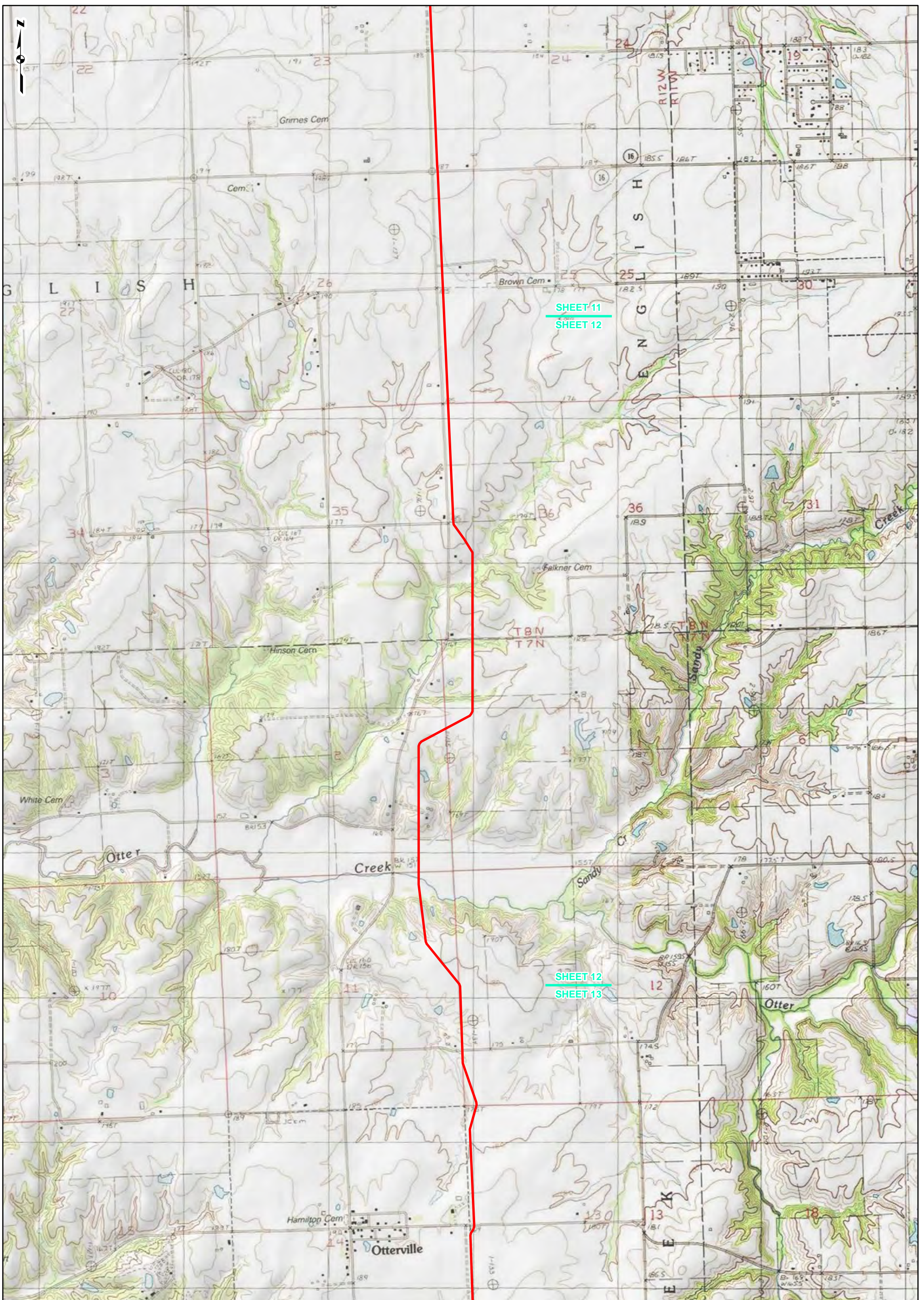
0 1,000 2,000 4,000 Feet

PROJECT LOCATION MAP SHEET 11 OF 21

SPIRE STL PIPELINE PROJECT





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REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1994), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1999), ELSA (1995), FLORISSANT (1999), GRAFTON (1995), 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 07/2017.

LEGEND

 24-INCH PIPELINE	 COUNTY BOUNDARY
 NORTH COUNTY EXTENSION	 STATE BOUNDARY

0 1,000 2,000 4,000
Feet

**PROJECT LOCATION MAP
SHEET 12 OF 21**



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SHEET 12
SHEET 13

SHEET 13
SHEET 14





REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1994), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1999), ELSA (1995), FLOISSANT (1999), GRAFTON (1995), 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 07/2017.

LEGEND

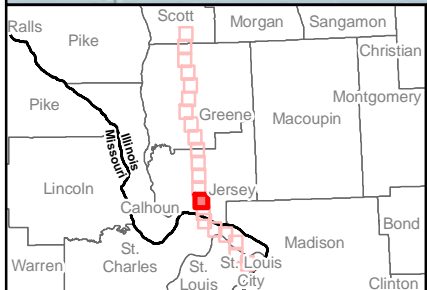
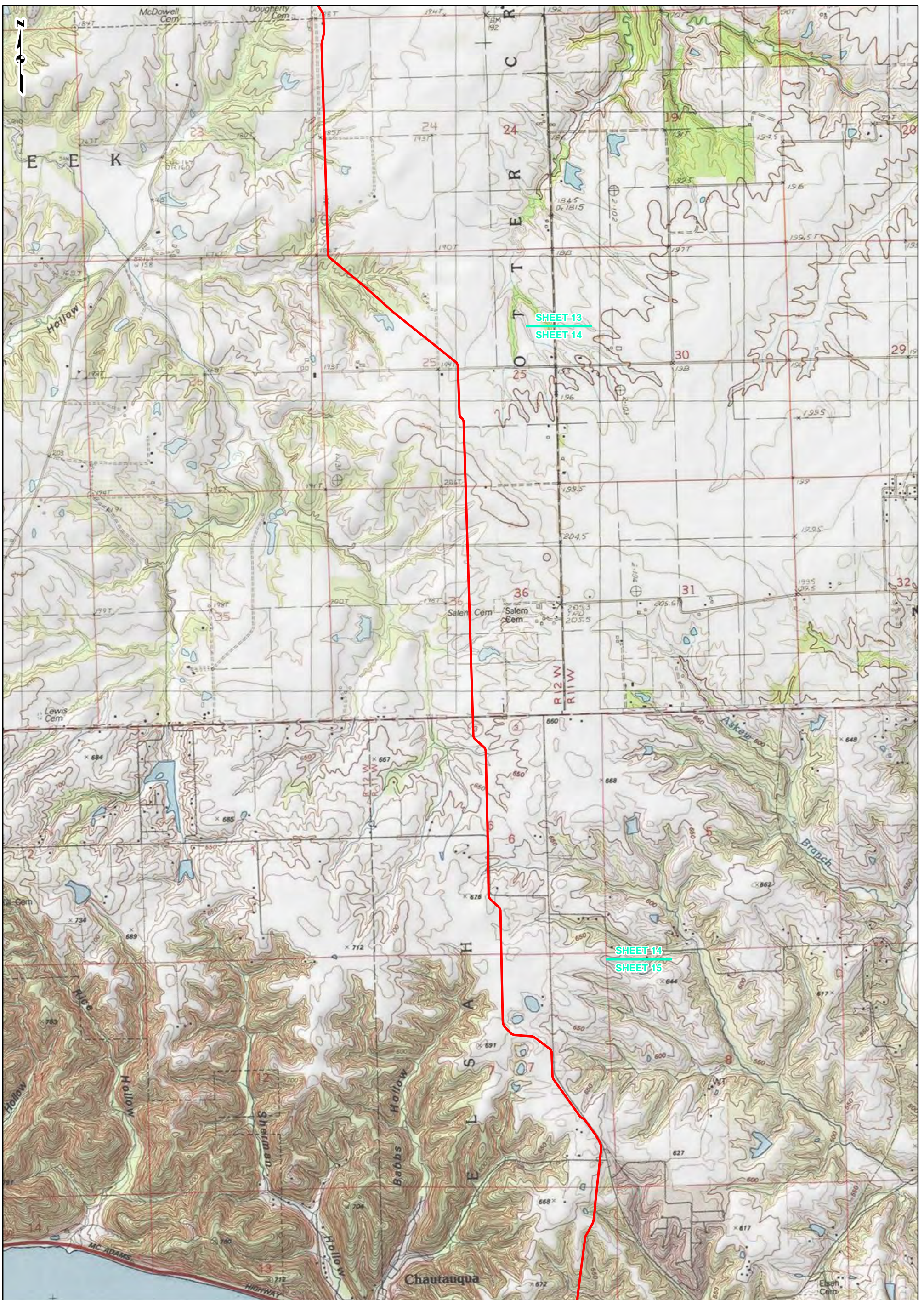
 24-INCH PIPELINE	 COUNTY BOUNDARY
 NORTH COUNTY EXTENSION	 STATE BOUNDARY

0 1,000 2,000 4,000
Feet

**PROJECT LOCATION MAP
SHEET 13 OF 21**

 **SPIRE STL PIPELINE PROJECT** 

DRAWN BY: SWW DATE: 7/14/2017
CHECKED: EFJ APPROVED: TCW



REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1994), BOYER CREEK (1983), COLUMBIA BOTTOM (1983), ELSA (1983), FLOISSANT (1983), 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 07/2017.

LEGEND

- 24-INCH PIPELINE
- NORTH COUNTY EXTENSION
- COUNTY BOUNDARY
- STATE BOUNDARY

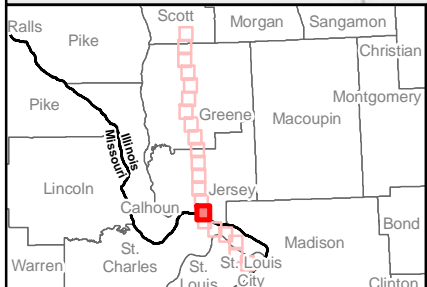
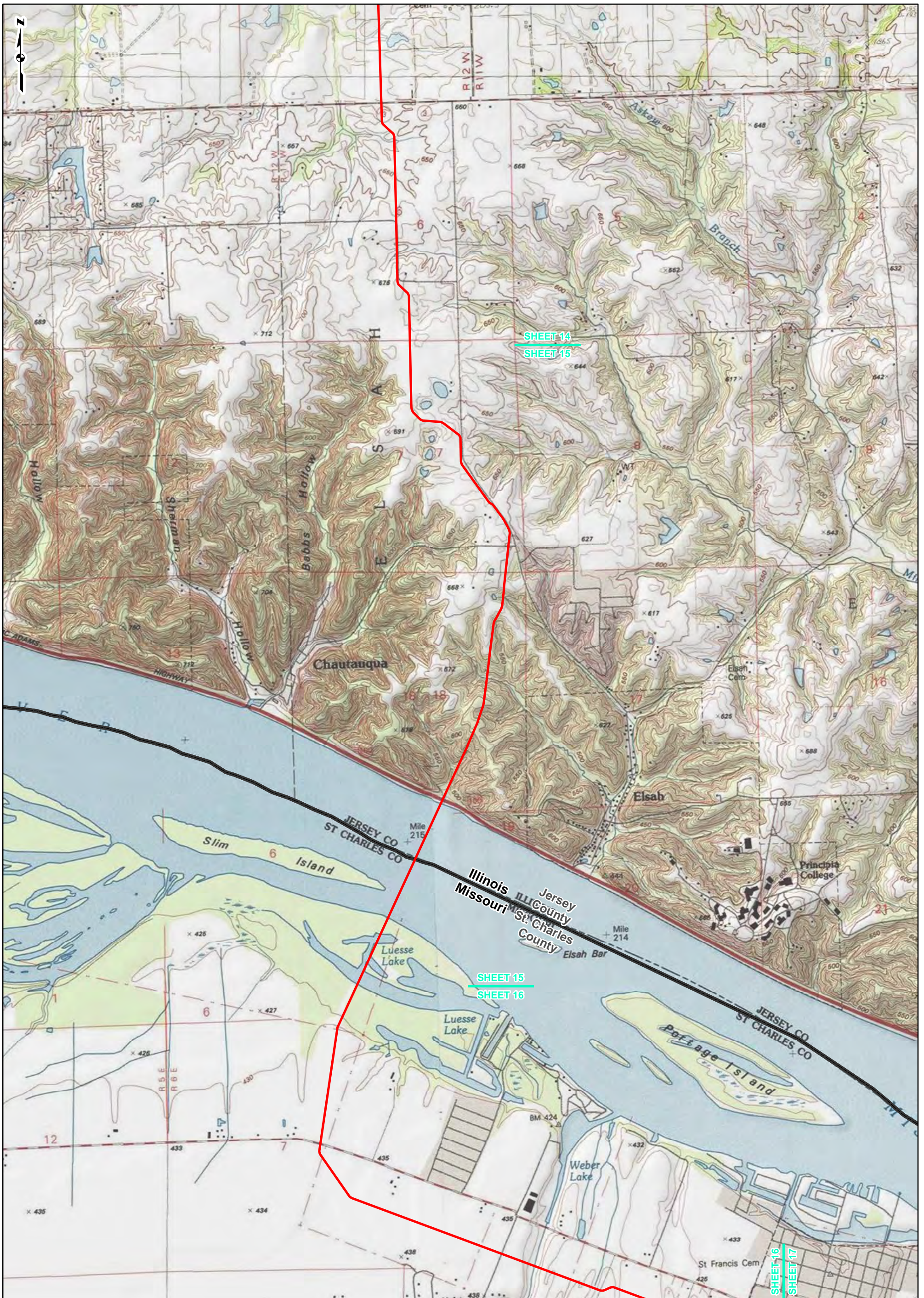
0 1,000 2,000 4,000 Feet

PROJECT LOCATION MAP
SHEET 14 OF 21

SPiRE STL PIPELINE PROJECT

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CHECKED: EFJ APPROVED: TCW



REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1994), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1999), ELSAH (1995), FLORISSANT (1999), GRAFTON (1995), 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 07/2017.

LEGEND

- 24-INCH PIPELINE
- NORTH COUNTY EXTENSION
- COUNTY BOUNDARY
- STATE BOUNDARY

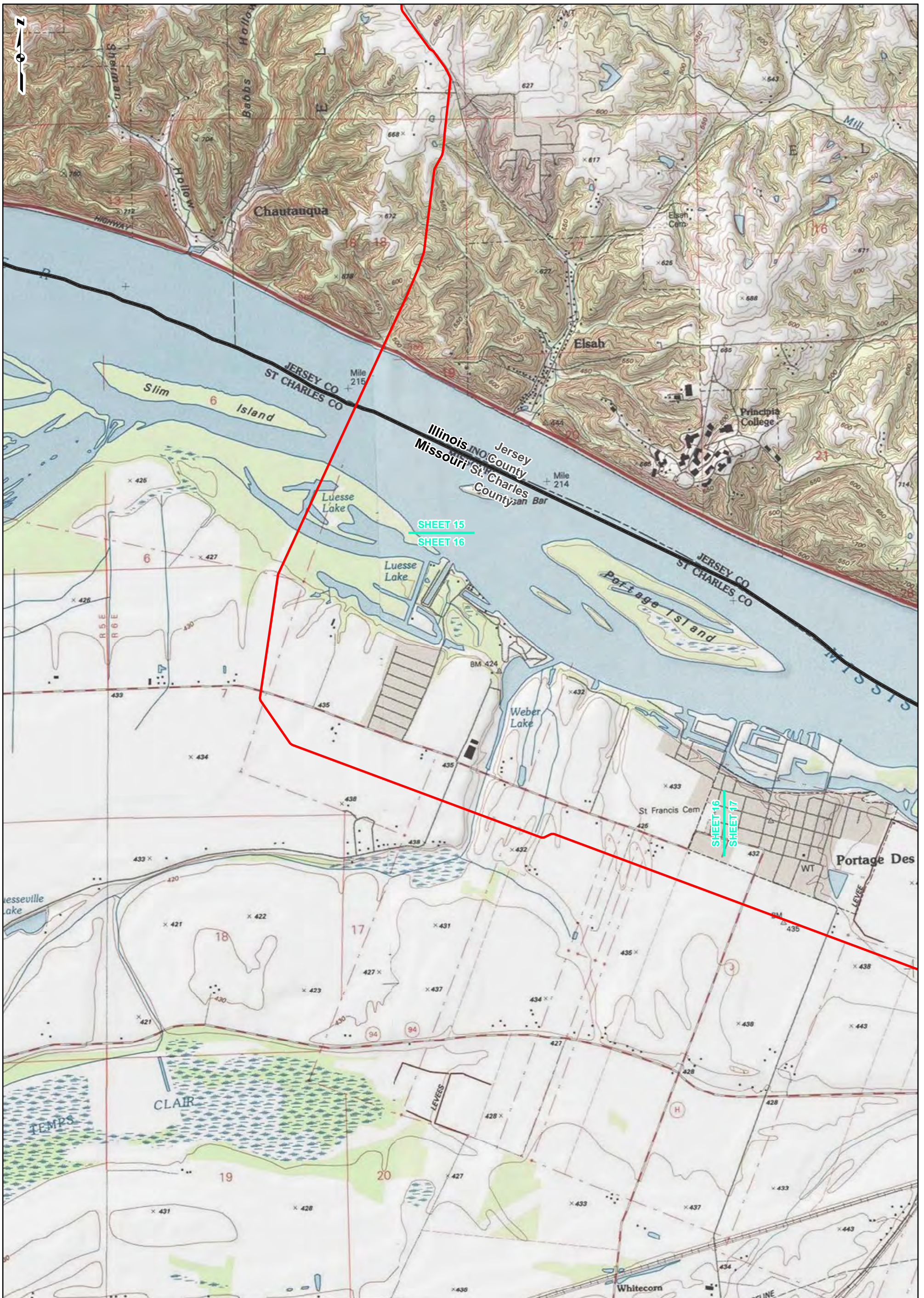
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PROJECT LOCATION MAP SHEET 15 OF 21

SPIRE STL PIPELINE PROJECT

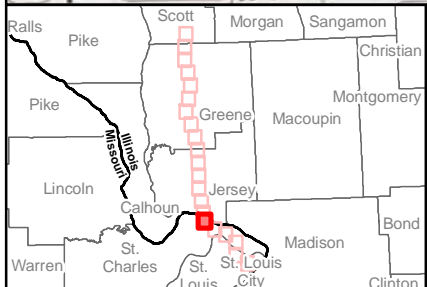
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SHEET 15
SHEET 16

SHEET 16
SHEET 17



REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1994), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1999), ELSA (1995), FLORISSANT (1999), GRAFTON (1995), JERSEYVILLE NORTH (1983), JERSEYVILLE SOUTH (1983), OTTERTVILLE (1983) AND ROADHOUSE WEST (1983), ILLINOIS AND MISSOURI. OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND I-CUBED, ACCESSED 07/2017.

LEGEND

- 24-INCH PIPELINE
- NORTH COUNTY EXTENSION
- COUNTY BOUNDARY
- STATE BOUNDARY

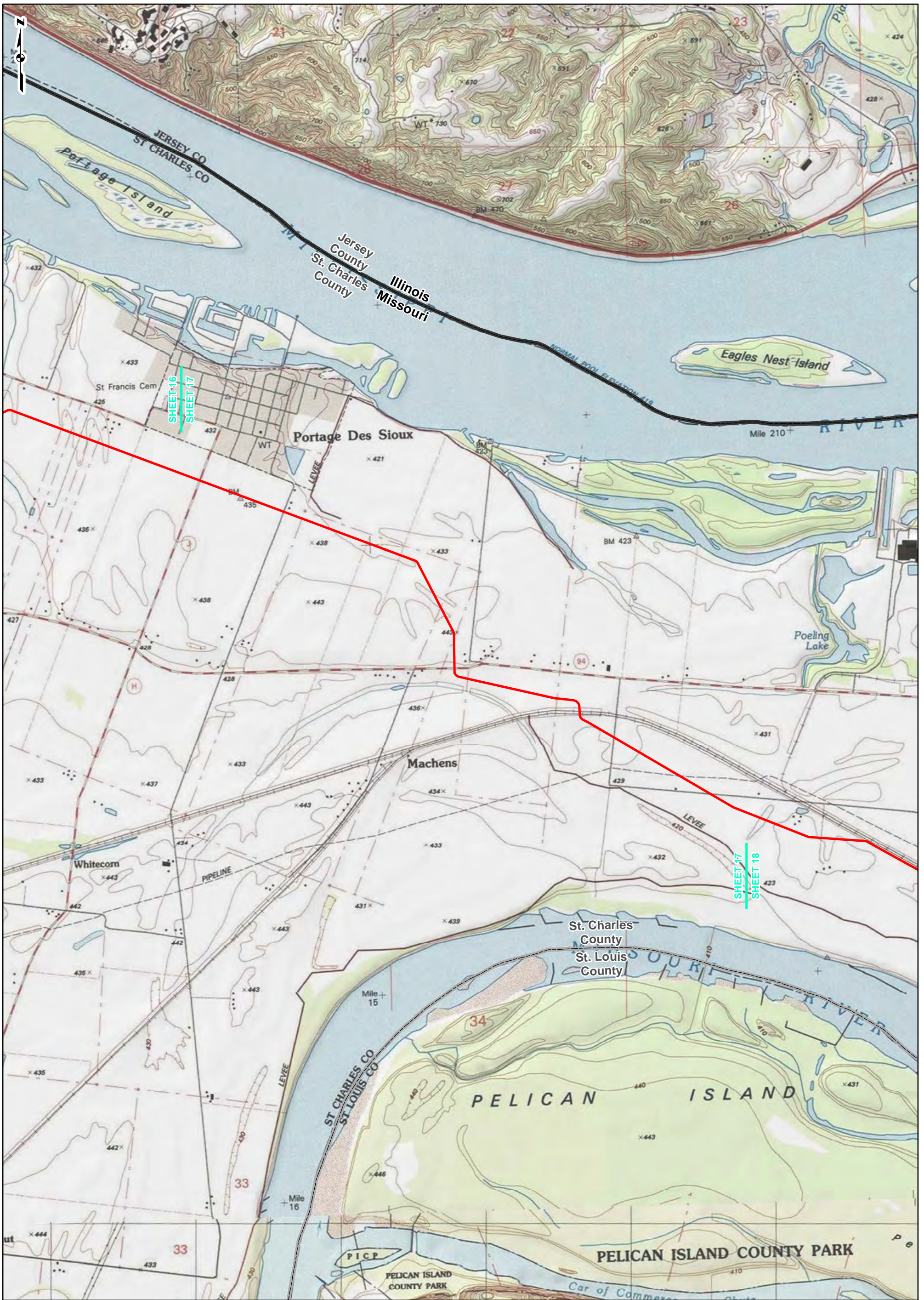
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PROJECT LOCATION MAP SHEET 16 OF 21

SPiRE STL PIPELINE PROJECT

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DRAWN BY: SWW DATE: 7/14/2017
CHECKED: EFJ APPROVED: TCW



REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1994), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1999), ELSA (1995), FLORISSANT (1999), GRAFTON (1995), 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 07/2017.

LEGEND

- 24-INCH PIPELINE
- NORTH COUNTY EXTENSION
- COUNTY BOUNDARY
- STATE BOUNDARY

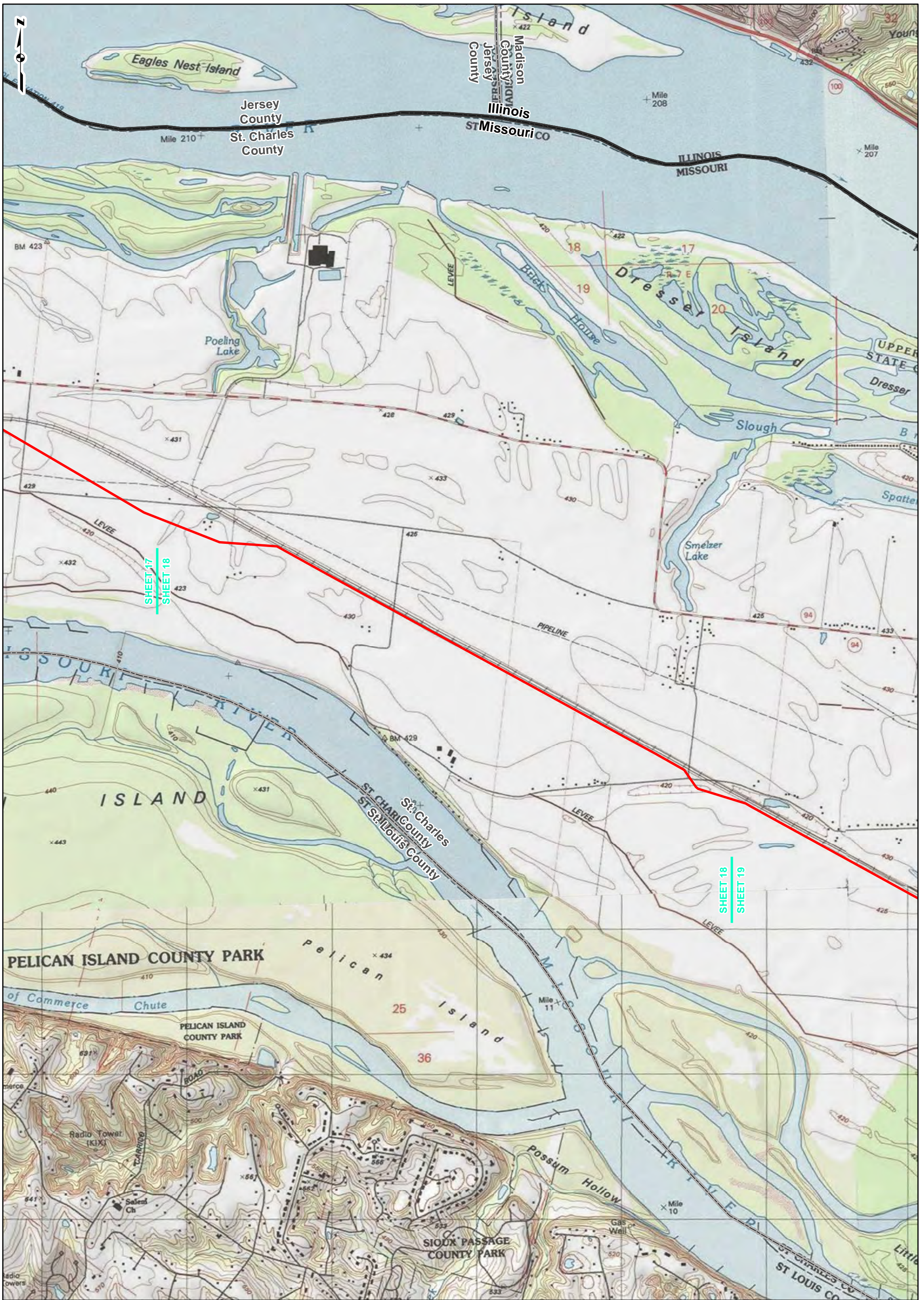
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PROJECT LOCATION MAP SHEET 17 OF 21

SPiRE STL PIPELINE PROJECT





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REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1994), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1989), ELSA (1995), FLORISSANT (1999), GRAFTON (1995), 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 07/2017.

LEGEND

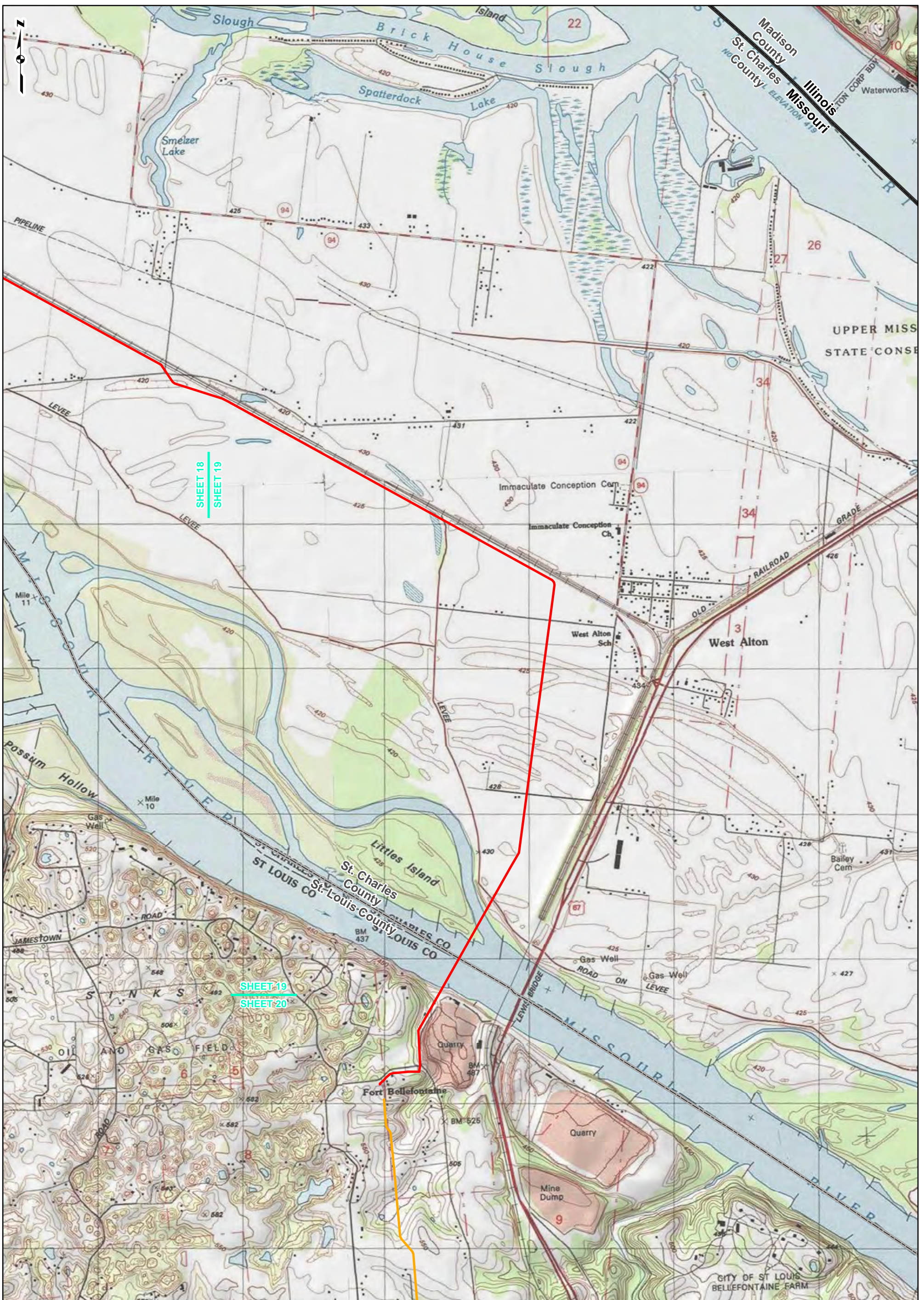
 24-INCH PIPELINE	 COUNTY BOUNDARY
 NORTH COUNTY EXTENSION	 STATE BOUNDARY

0 1,000 2,000 4,000
Feet

**PROJECT LOCATION MAP
SHEET 18 OF 21**

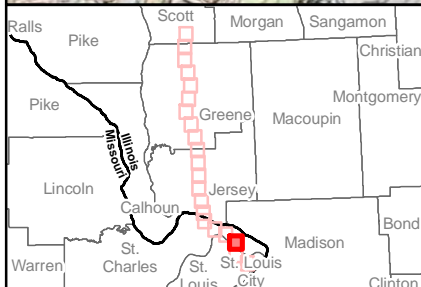



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SHEET 18
SHEET 19

SHEET 19
SHEET 20



REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1994), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1999), ELSA (1995), FLOISSANT (1999), GRAFTON (1995), 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 07/2017.

LEGEND

- 24-INCH PIPELINE
- NORTH COUNTY EXTENSION
- COUNTY BOUNDARY
- STATE BOUNDARY

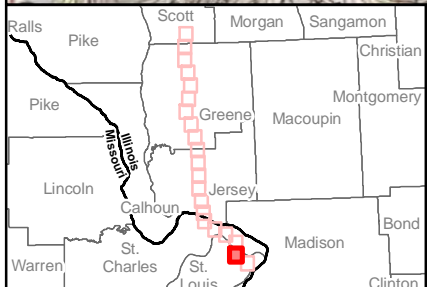
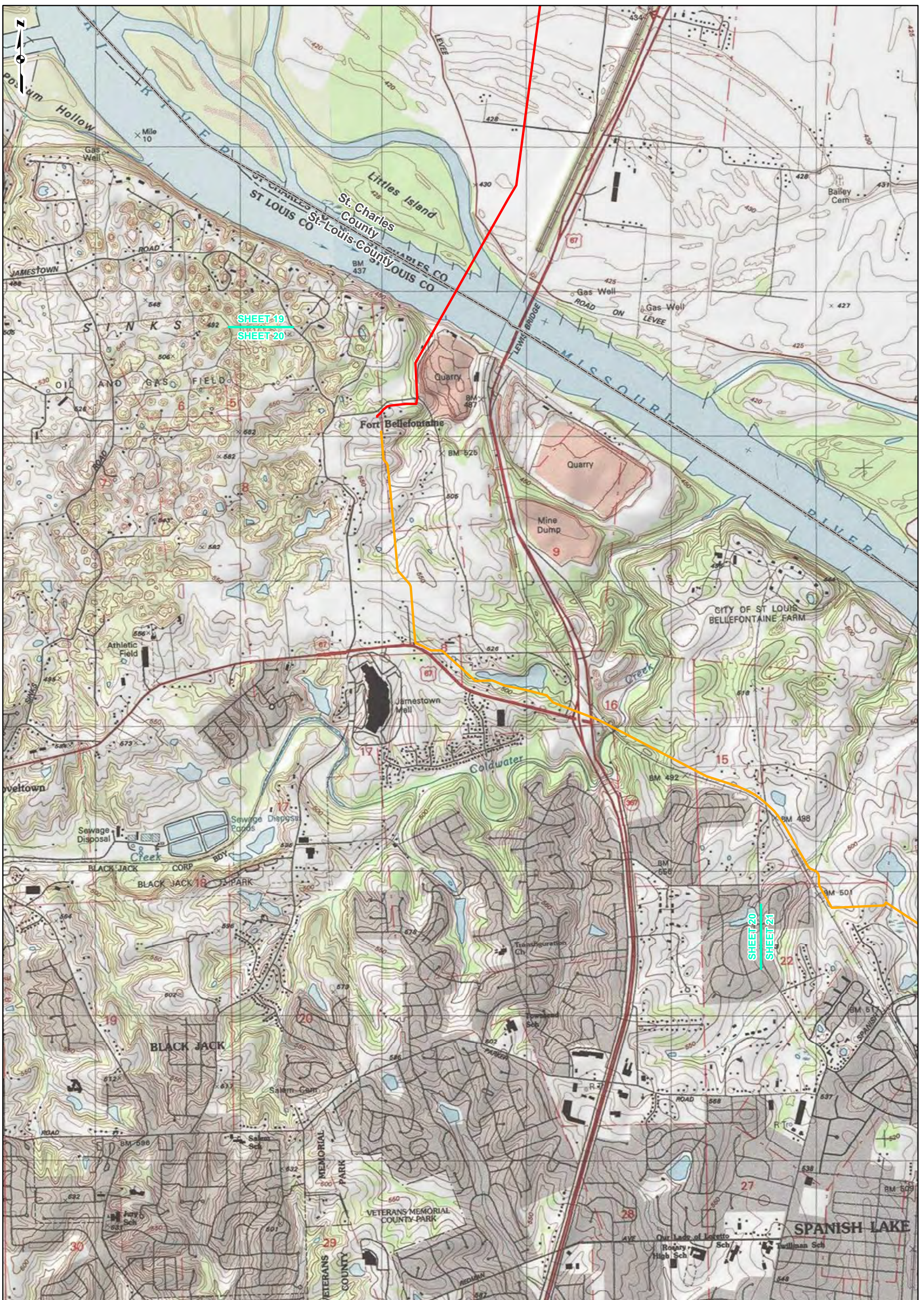
0 1,000 2,000 4,000 Feet

PROJECT LOCATION MAP SHEET 19 OF 21

SPiRE STL PIPELINE PROJECT

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REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1994), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1999), EL SAN (1995), FLORISSANT (1999), GRAFTON (1995), 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 07/2017.

LEGEND

- 24-INCH PIPELINE
- NORTH COUNTY EXTENSION
- COUNTY BOUNDARY
- STATE BOUNDARY

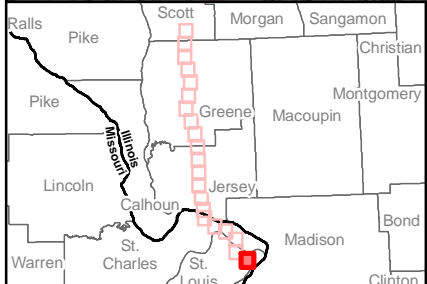
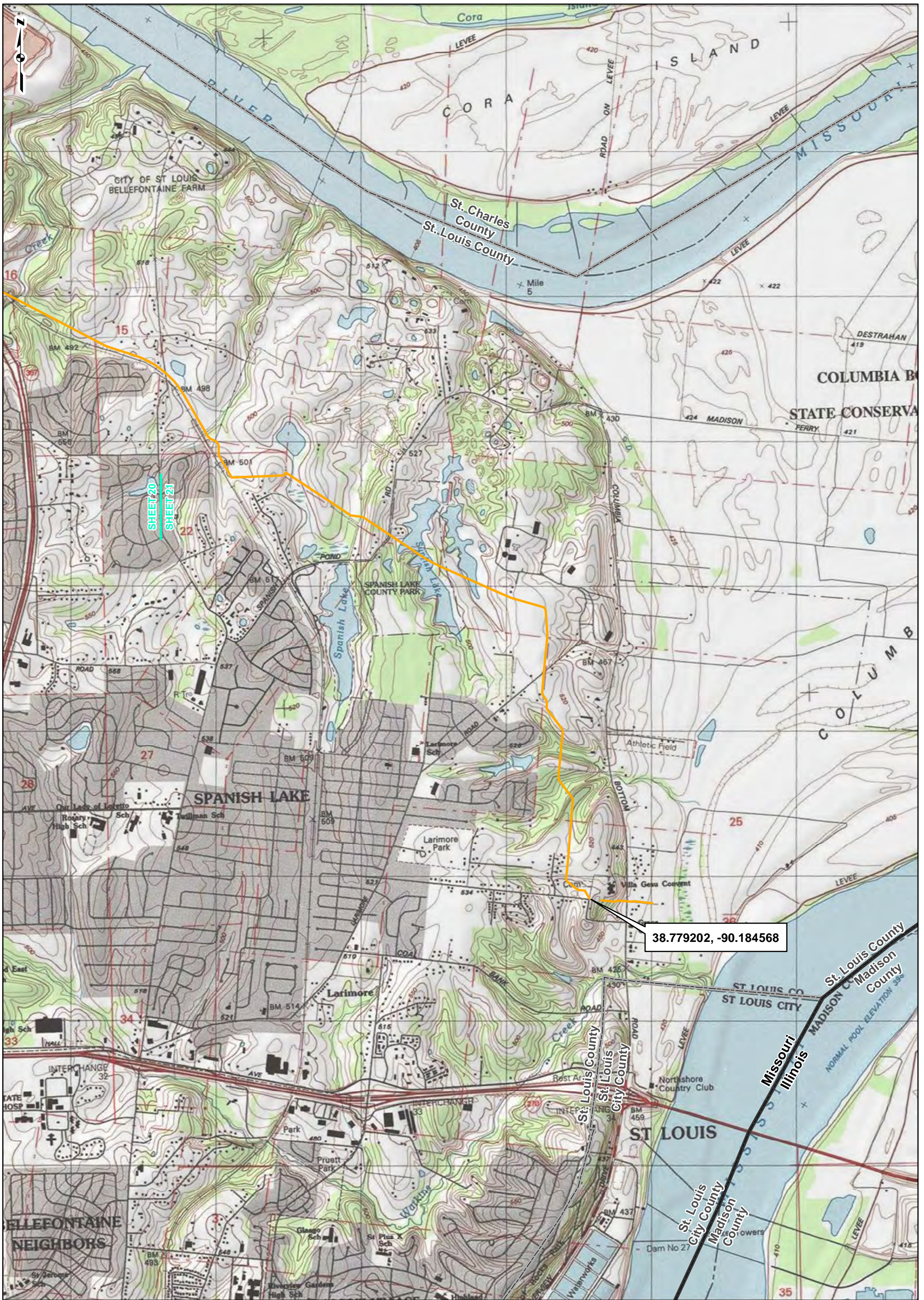
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PROJECT LOCATION MAP SHEET 20 OF 21

SPiRE STL PIPELINE PROJECT

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REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: ALSEY (1983), ALTON (1994), BOYER CREEK (1983), CARROLLTON (1983), COLUMBIA BOTTOM (1989), ELSA (1995), FLOISSANT (1989), GRAFTON (1995), JERSEYVILLE NORTH (1983), JERSEYVILLE SOUTH (1983), OTTERTVILLE (1983) AND ROODHOUSE WEST (1983), ILLINOIS AND MISSOURI, OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND I-CUBED, ACCESSED 07/2017.

LEGEND

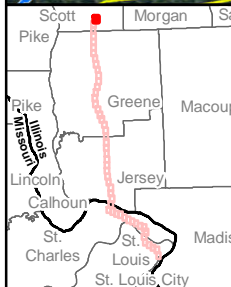
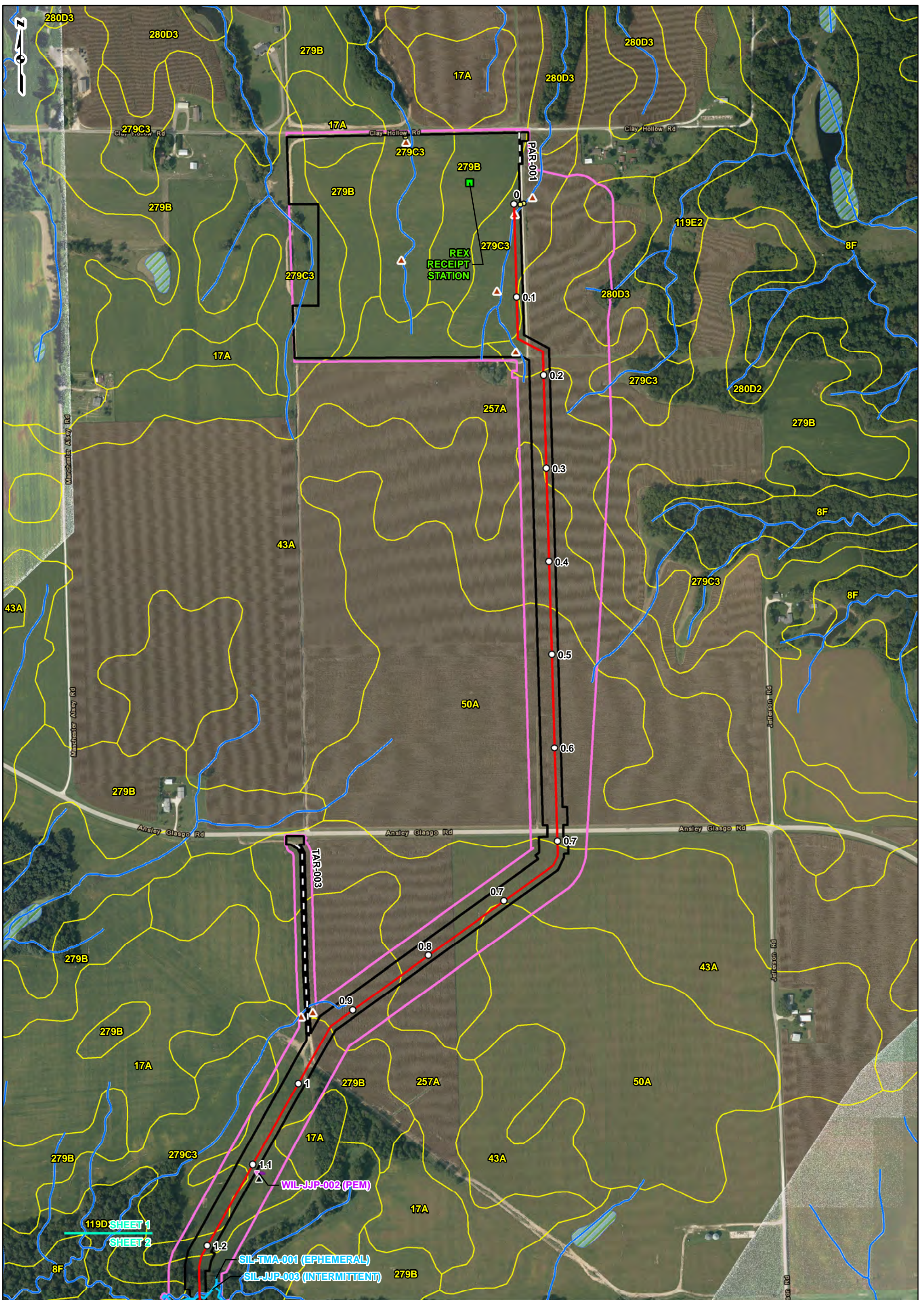
- 24-INCH PIPELINE
- NORTH COUNTY EXTENSION
- COUNTY BOUNDARY
- STATE BOUNDARY

0 1,000 2,000 4,000 Feet

PROJECT LOCATION MAP SHEET 21 OF 21

gai consultants **spire** **STL PIPELINE PROJECT**

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NOTE:
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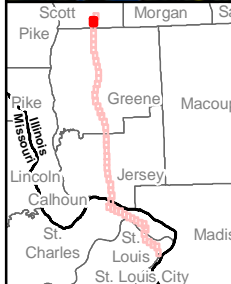
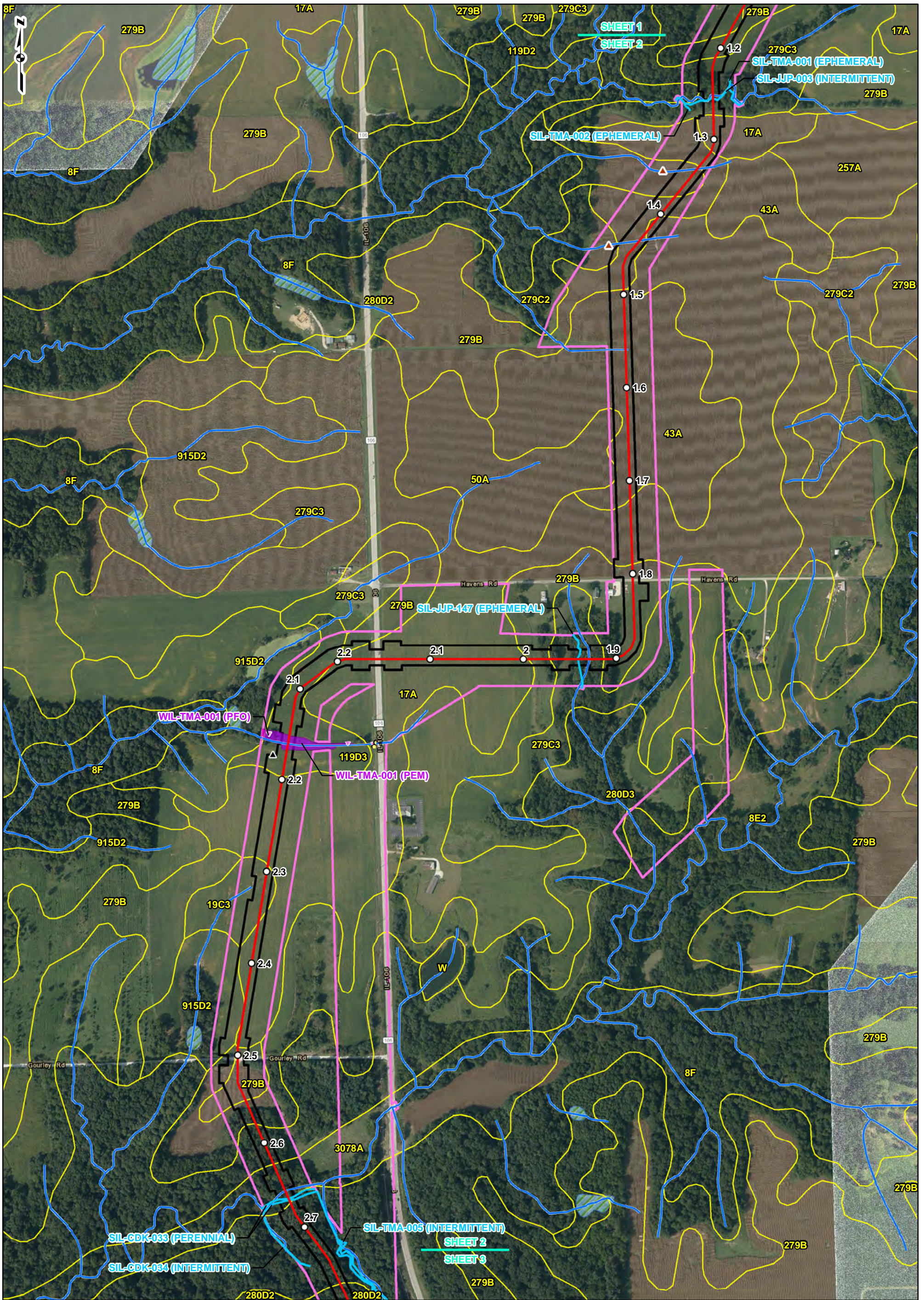
REFERENCE:
 ORTHOPHOTOGRAPHY, 2016. ESRI WORLD IMAGERY AND TRANSPORTATION, NAIP, USDA FSA, 2014, ACCESSED 07/2017. SOIL SURVEY GEOGRAPHIC (SSURGO) DATABASE FOR ILLINOIS (2014) AND MISSOURI (2015). USDA/NRCS. NATIONAL WETLAND INVENTORY (NWI) WATERBODIES AND WETLANDS, USFWS 2016. NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS FOR ILLINOIS (2015) AND MISSOURI (2016). USGS. NATIONAL FLOOD HAZARD LAYER FOR ILLINOIS (2015). FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA).

LEGEND	
■ FACILITY	— 24-INCH PIPELINE
○ MILEPOST	— NORTH COUNTY EXTENSION
● CULVERT	— STREAM
* GROUNDWATER SEEP	— NHD STREAM
▲ UPLAND LOCATION	— POND OPEN END
▼ WETLAND DATA POINT	— WETLAND OPEN END
▲ SOIL TEST PIT	■ POND
— ACCESS ROAD	■ WETLAND
■ NWI WETLAND	■ NWI WATERBODY
■ NWI WATERBODY	■ 100-YEAR FLOODPLAIN
■ SOIL TYPE BOUNDARY	— LIMIT OF DISTURBANCE
— LIMIT OF DISTURBANCE	— STUDY CORRIDOR
— STUDY CORRIDOR	— COUNTY BOUNDARY
— COUNTY BOUNDARY	— STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP SHEET 1 OF 51

SPIRE STL PIPELINE PROJECT

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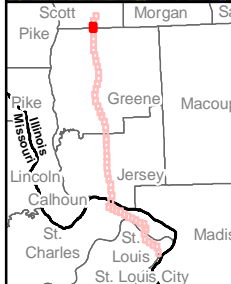
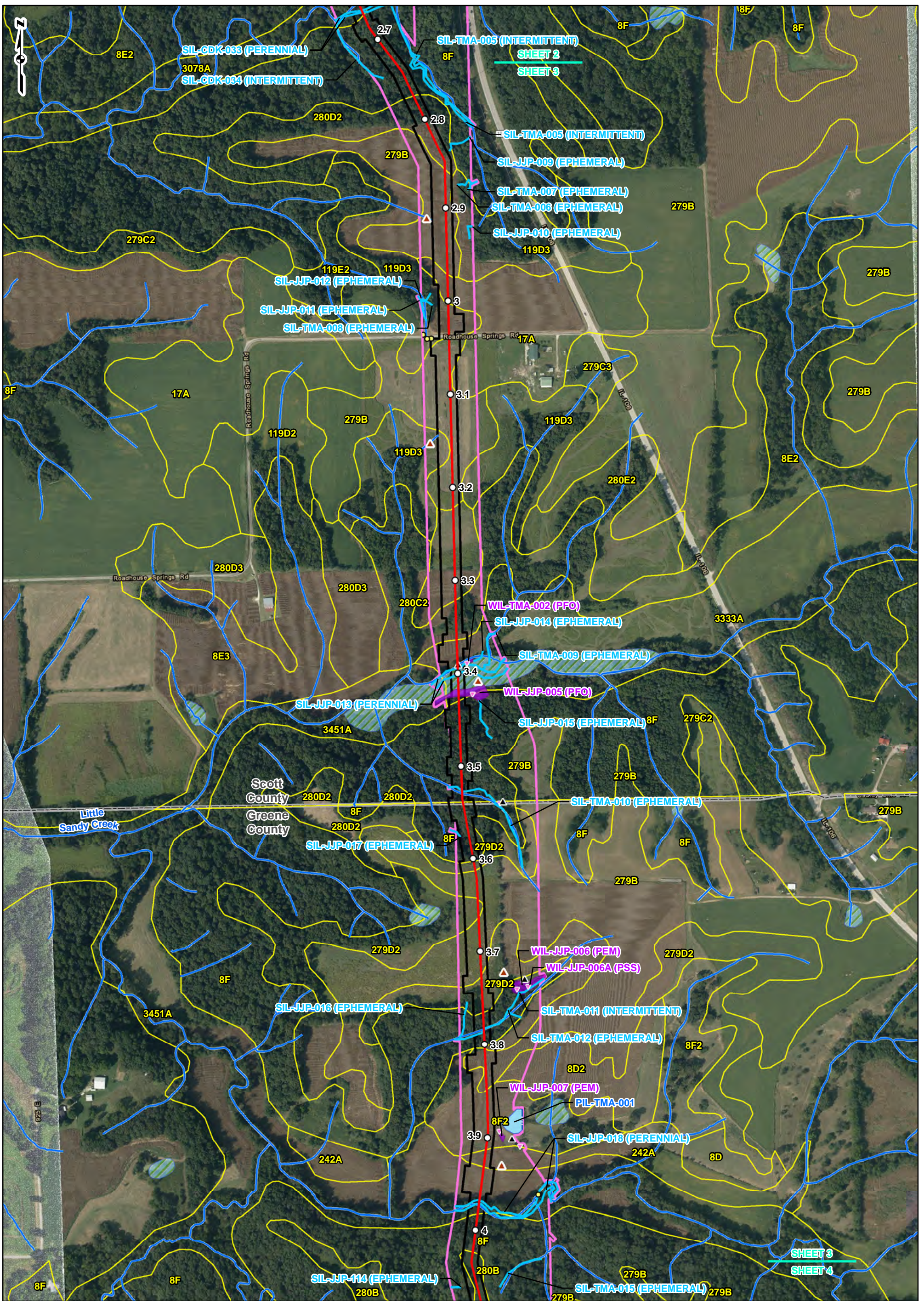
LEGEND	
	FACILITY
	MILEPOST
	CULVERT
	GROUNDWATER SEEP
	UPLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT
	ACCESS ROAD
	24-INCH PIPELINE
	NORTH COUNTY EXTENSION
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT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

RESOURCE LOCATION AND SOILS MAP SHEET 2 OF 51

DRAWN BY: SWW
CHECKED: EFJ

DATE: 7/14/2017
APPROVED: TCW



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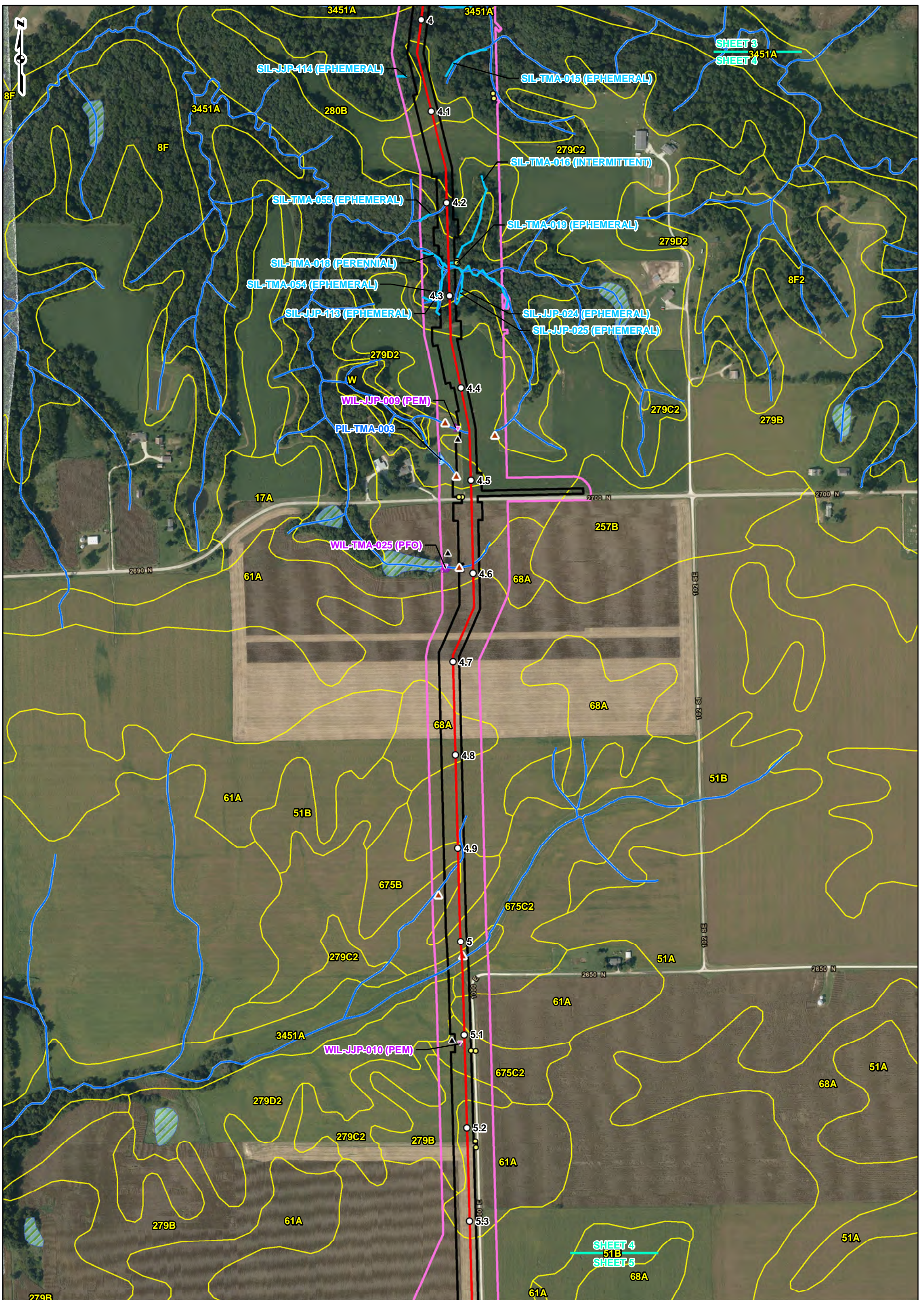
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 EMERGENCY MANAGEMENT
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LEGEND	
	FACILITY
	MILEPOST
	CULVERT
	GROUNDWATER SEEP
	UPLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT
	ACCESS ROAD
	24-INCH PIPELINE
	NORTH COUNTY EXTENSION
	STREAM
	NHD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

**RESOURCE LOCATION
AND SOILS MAP
SHEET 3 OF 51**

**SPIRE STL
PIPELINE
PROJECT**

DRAWN BY: SWW DATE: 7/14/2017
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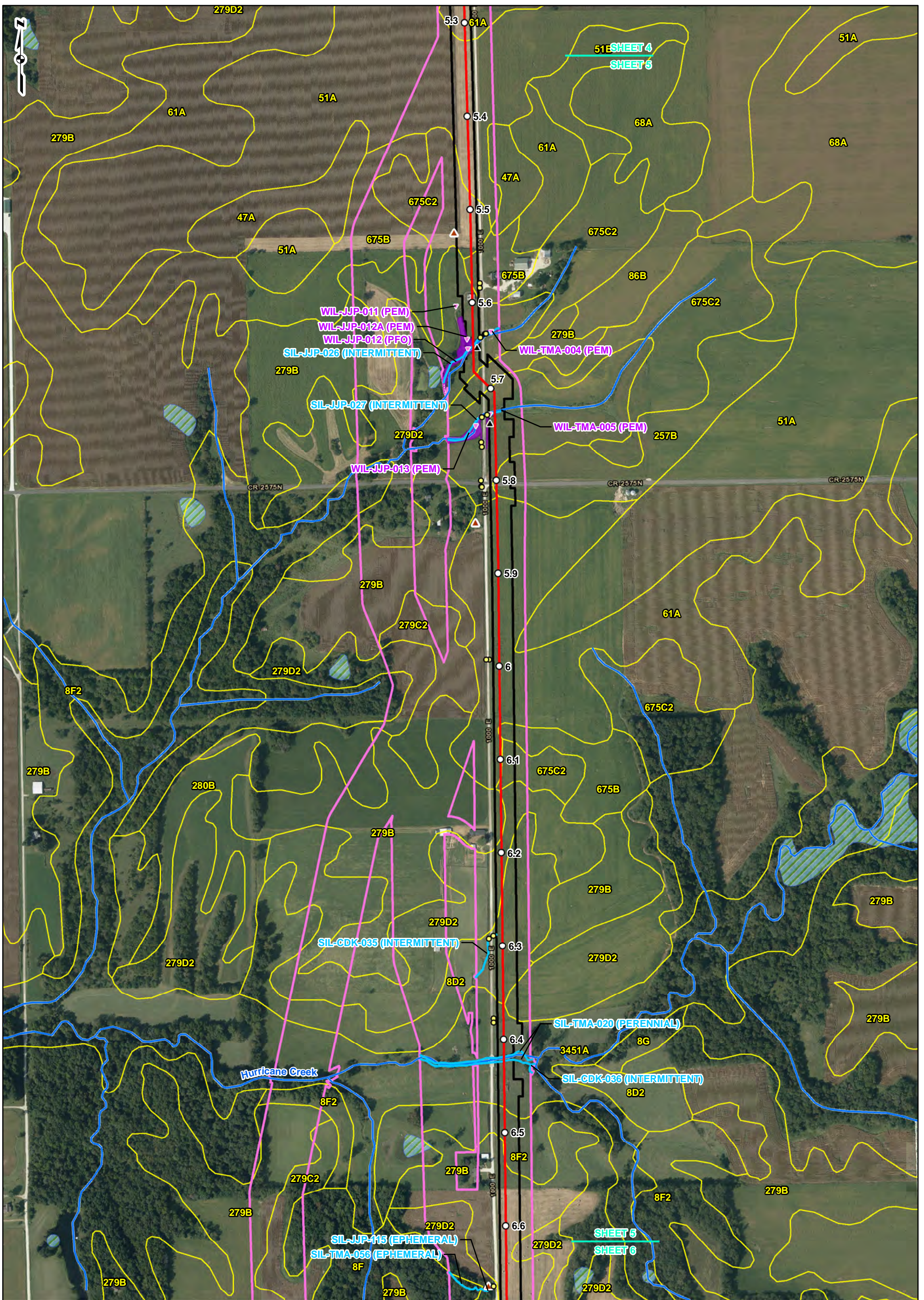
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 EMERGENCY MANAGEMENT
 AGENCY (FEMA).

LEGEND	
■ FACILITY	— 24-INCH PIPELINE
○ MILEPOST	— NORTH COUNTY EXTENSION
● CULVERT	— STREAM
* GROUNDWATER SEEP	— NHD STREAM
▲ UPLAND LOCATION	— POND OPEN END
▼ WETLAND DATA POINT	— WETLAND OPEN END
▲ SOIL TEST PIT	■ POND
— ACCESS ROAD	■ WETLAND
■ NWI WETLAND	■ NWI WATERBODY
■ 100-YEAR FLOODPLAIN	■ SOIL TYPE BOUNDARY
— LIMIT OF DISTURBANCE	— STUDY CORRIDOR
— COUNTY BOUNDARY	— STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP SHEET 4 OF 51

SPIRE STL PIPELINE PROJECT

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 FLOOD HAZARD LAYER FOR
 ILLINOIS (2015), FEDERAL
 EMERGENCY MANAGEMENT
 AGENCY (FEMA).

LEGEND			
■	FACILITY	—	24-INCH PIPELINE
○	MILEPOST	—	NORTH COUNTY EXTENSION
●	CULVERT	—	STREAM
*	GROUNDWATER SEEP	—	NHD STREAM
▲	UPLAND LOCATION	—	POND OPEN END
▼	WETLAND DATA POINT	—	WETLAND OPEN END
▲	SOIL TEST PIT	—	POND
—	ACCESS ROAD	—	WETLAND
■	NWI WETLAND	—	NWI WATERBODY
—	NWI WATERBODY	—	100-YEAR FLOODPLAIN
—	100-YEAR FLOODPLAIN	—	SOIL TYPE BOUNDARY
—	SOIL TYPE BOUNDARY	—	LIMIT OF DISTURBANCE
—	LIMIT OF DISTURBANCE	—	STUDY CORRIDOR
—	STUDY CORRIDOR	—	COUNTY BOUNDARY
—	COUNTY BOUNDARY	—	STATE BOUNDARY
—	STATE BOUNDARY		

RESOURCE LOCATION AND SOILS MAP SHEET 5 OF 51

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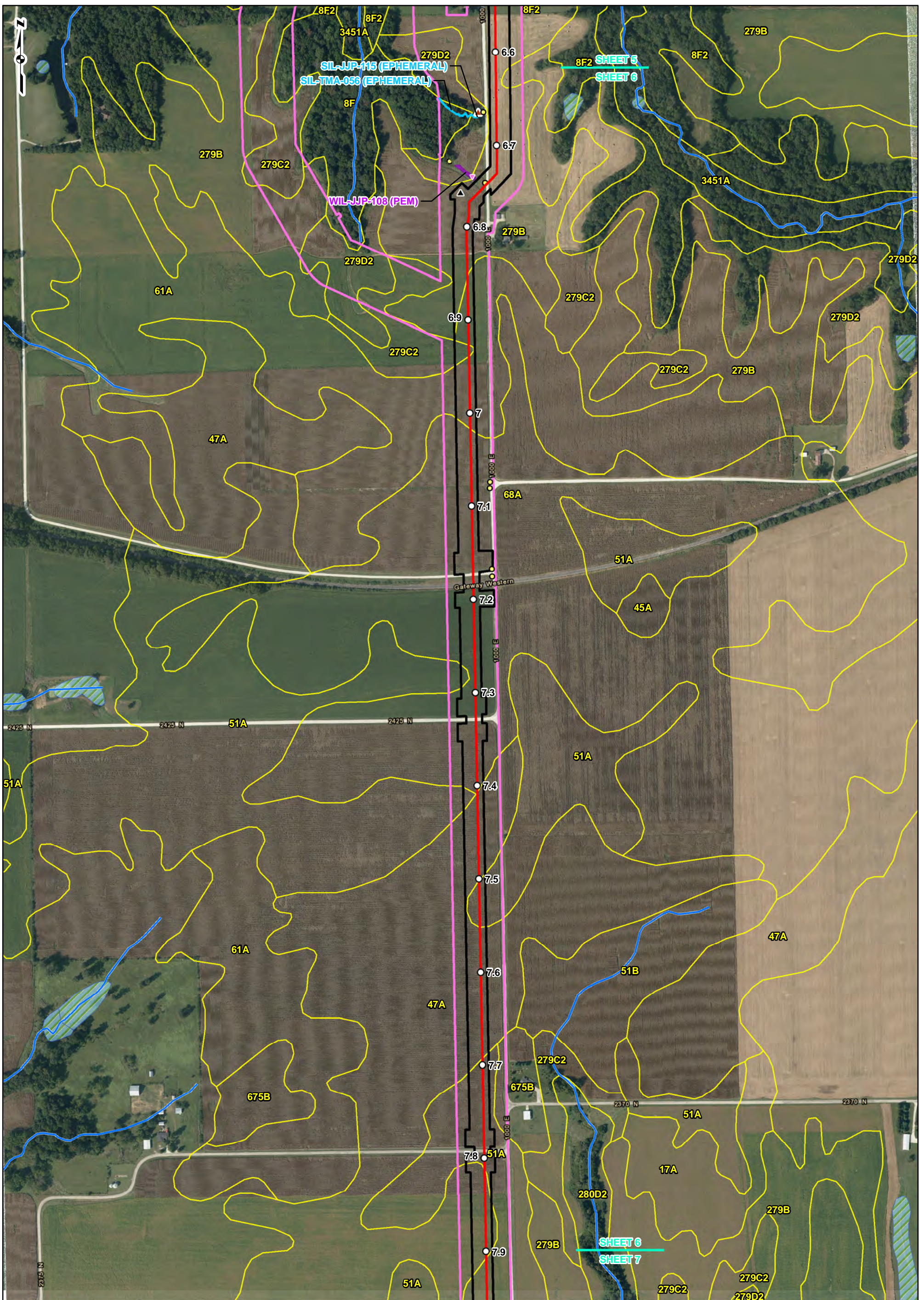
**SPIRE STL
PIPELINE
PROJECT**

DRAWN BY: SWW

DATE: 7/14/2017

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NOTE:
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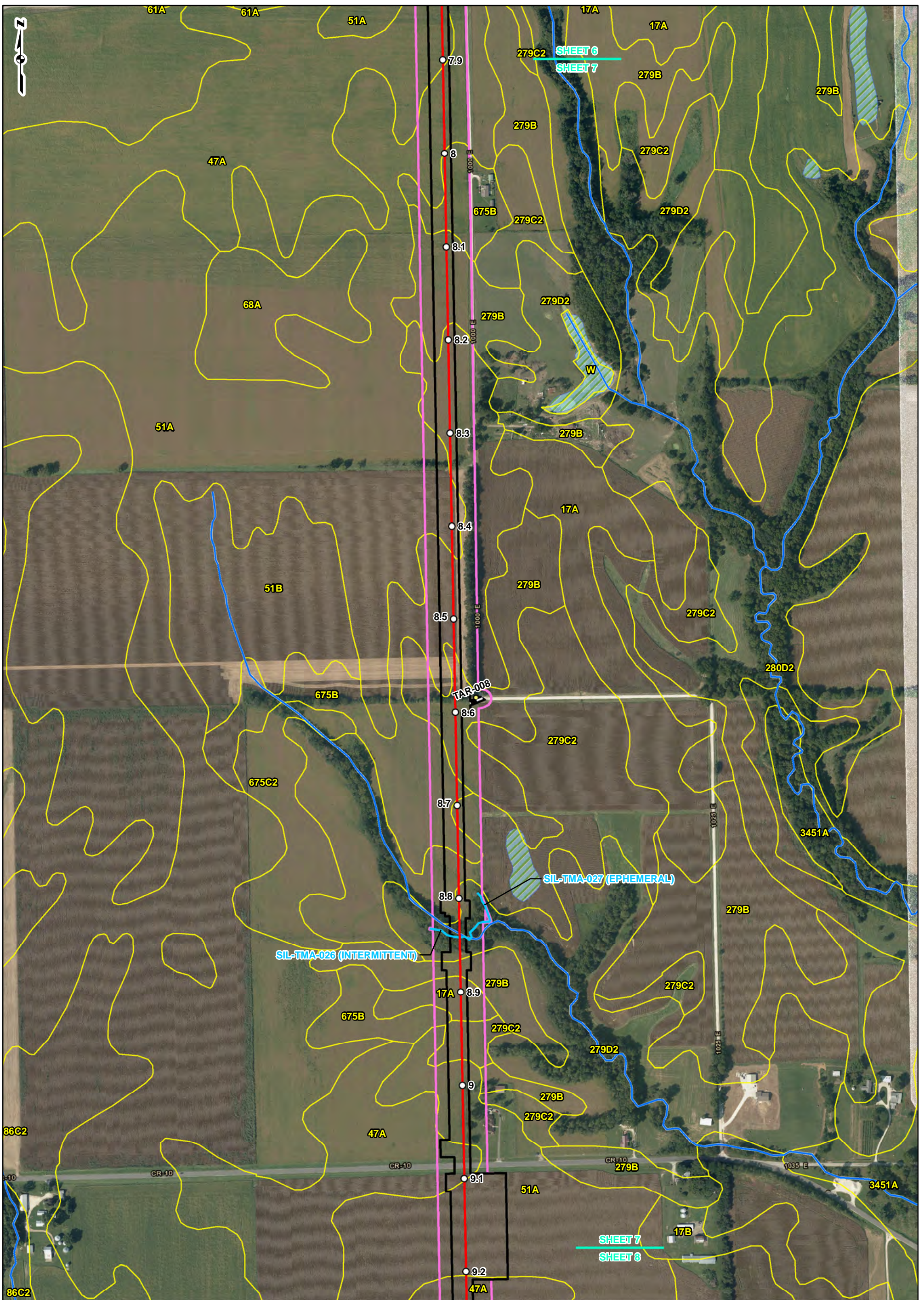
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 AGENCY (FEMA).

LEGEND	
■ FACILITY	— 24-INCH PIPELINE
○ MILEPOST	— NORTH COUNTY EXTENSION
● CULVERT	— STREAM
* GROUNDWATER SEEP	— NHD STREAM
▲ UPLAND LOCATION	— POND OPEN END
▼ WETLAND DATA POINT	— WETLAND OPEN END
▲ SOIL TEST PIT	— POND
— ACCESS ROAD	— WETLAND
▨ NWI WETLAND	▨ NWI WATERBODY
▨ 100-YEAR FLOODPLAIN	▨ LIMIT OF DISTURBANCE
▨ SOIL TYPE BOUNDARY	▨ STUDY CORRIDOR
▨ COUNTY BOUNDARY	▨ STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP SHEET 6 OF 51

SPIRE STL PIPELINE PROJECT

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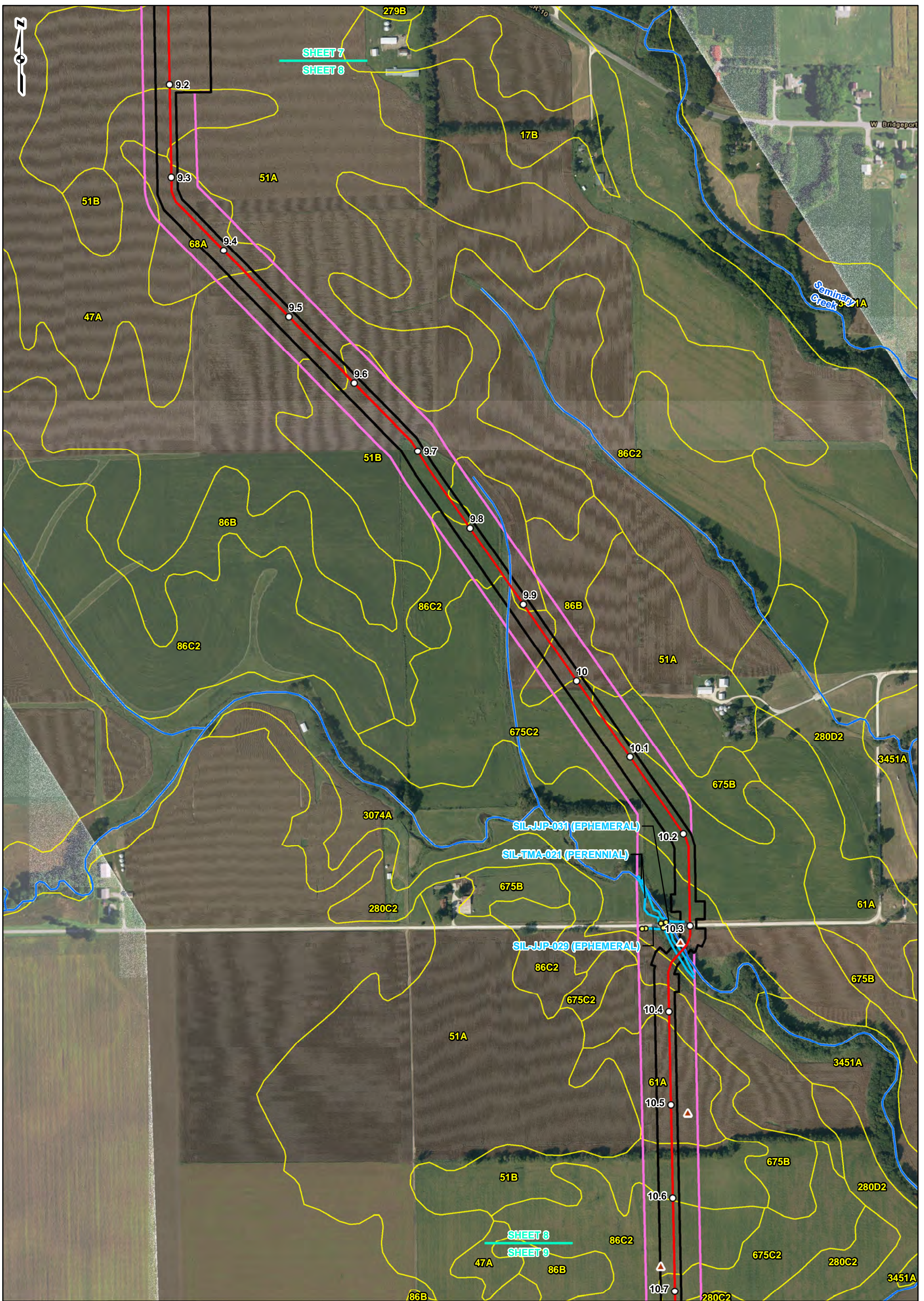
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LEGEND			
■	FACILITY	—	24-INCH PIPELINE
○	MILEPOST	—	NORTH COUNTY EXTENSION
○	CULVERT	—	STREAM
*	GROUNDWATER SEEP	—	NHD STREAM
▲	UPLAND LOCATION	—	POND OPEN END
▼	WETLAND DATA POINT	—	WETLAND OPEN END
▲	SOIL TEST PIT	—	POND
—	ACCESS ROAD	—	WETLAND
■	NWI WETLAND	—	NWI WATERBODY
—	NWI WATERBODY	—	100-YEAR FLOODPLAIN
—	100-YEAR FLOODPLAIN	—	SOIL TYPE BOUNDARY
—	SOIL TYPE BOUNDARY	—	LIMIT OF DISTURBANCE
—	LIMIT OF DISTURBANCE	—	STUDY CORRIDOR
—	STUDY CORRIDOR	—	COUNTY BOUNDARY
—	COUNTY BOUNDARY	—	STATE BOUNDARY
—	STATE BOUNDARY		

RESOURCE LOCATION AND SOILS MAP SHEET 7 OF 51

**SPIRE STL
PIPELINE
PROJECT**

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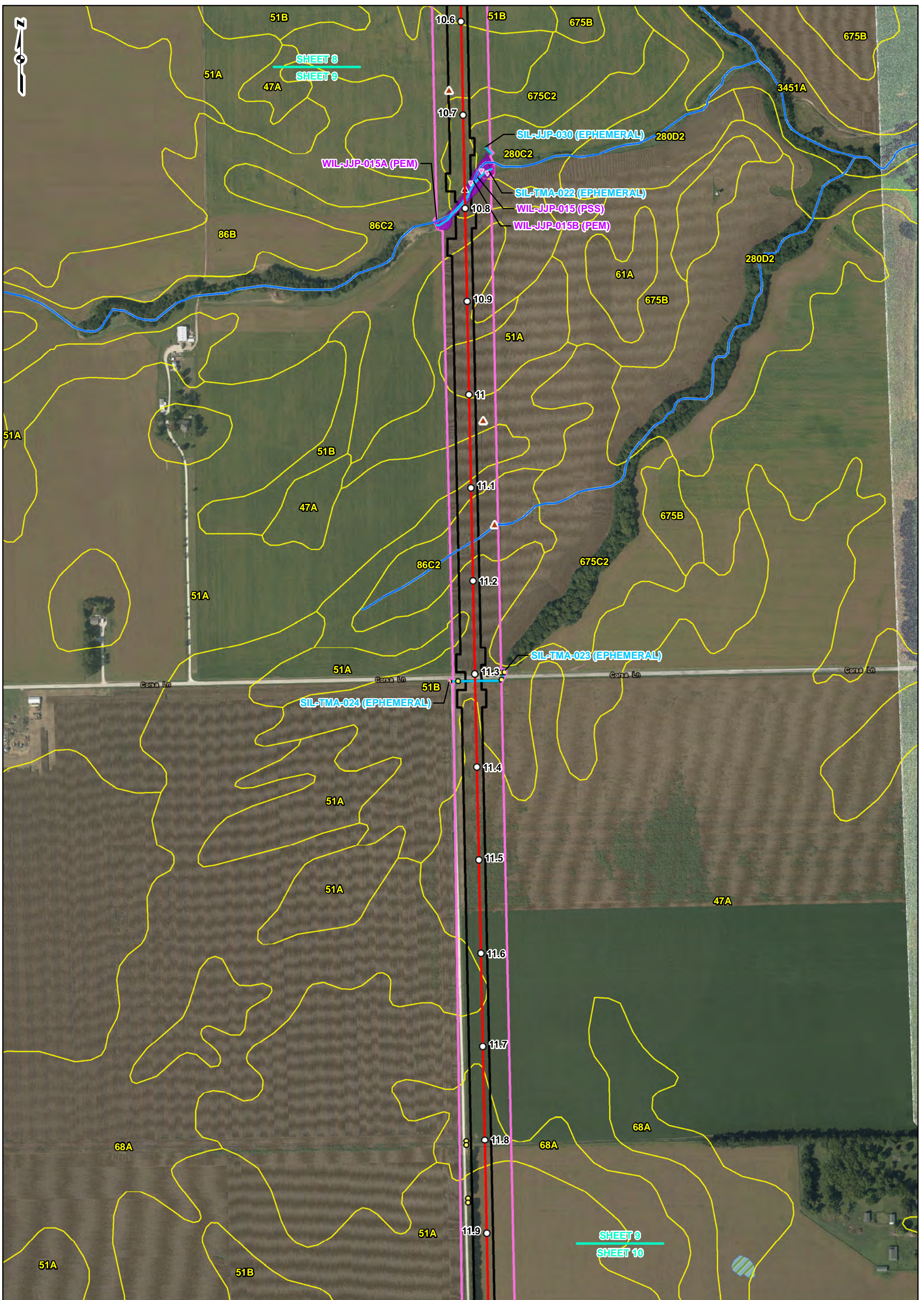
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LEGEND	
■ FACILITY	— 24-INCH PIPELINE
○ MILEPOST	— NORTH COUNTY EXTENSION
● CULVERT	— STREAM
* GROUNDWATER SEEP	— NHD STREAM
▲ UPLAND LOCATION	— POND OPEN END
▼ WETLAND DATA POINT	— WETLAND OPEN END
▲ SOIL TEST PIT	■ POND
— ACCESS ROAD	■ WETLAND
■ NWI WETLAND	■ NWI WATERBODY
■ 100-YEAR FLOODPLAIN	■ SOIL TYPE BOUNDARY
— LIMIT OF DISTURBANCE	— STUDY CORRIDOR
— COUNTY BOUNDARY	— STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP SHEET 8 OF 51

SPIRE STL PIPELINE PROJECT

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LEGEND			
■	FACILITY	—	24-INCH PIPELINE
○	MILEPOST	—	NORTH COUNTY EXTENSION
●	CULVERT	—	STREAM
*	GROUNDWATER SEEP	—	NHD STREAM
▲	UPLAND LOCATION	—	POND OPEN END
▲	WETLAND DATA POINT	—	WETLAND OPEN END
▲	SOIL TEST PIT	—	POND
—	ACCESS ROAD	—	WETLAND
■	NWI WETLAND	—	NWI WATERBODY
—	NWI WATERBODY	—	100-YEAR FLOODPLAIN
—	100-YEAR FLOODPLAIN	—	SOIL TYPE BOUNDARY
—	SOIL TYPE BOUNDARY	—	LIMIT OF DISTURBANCE
—	LIMIT OF DISTURBANCE	—	STUDY CORRIDOR
—	STUDY CORRIDOR	—	COUNTY BOUNDARY
—	COUNTY BOUNDARY	—	STATE BOUNDARY
—	STATE BOUNDARY		

**RESOURCE LOCATION
AND SOILS MAP
SHEET 9 OF 51**



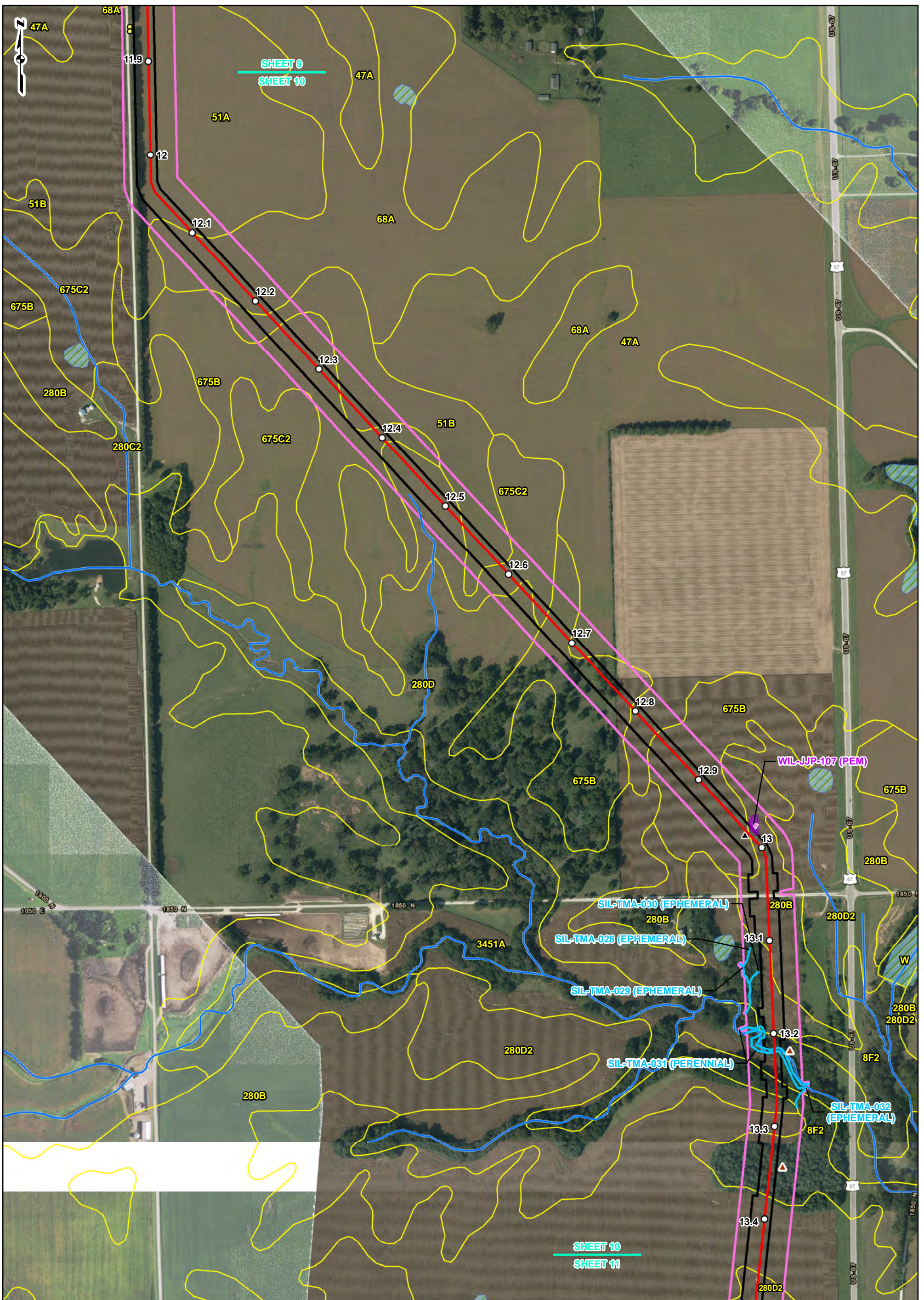
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**SPIRE STL
PIPELINE
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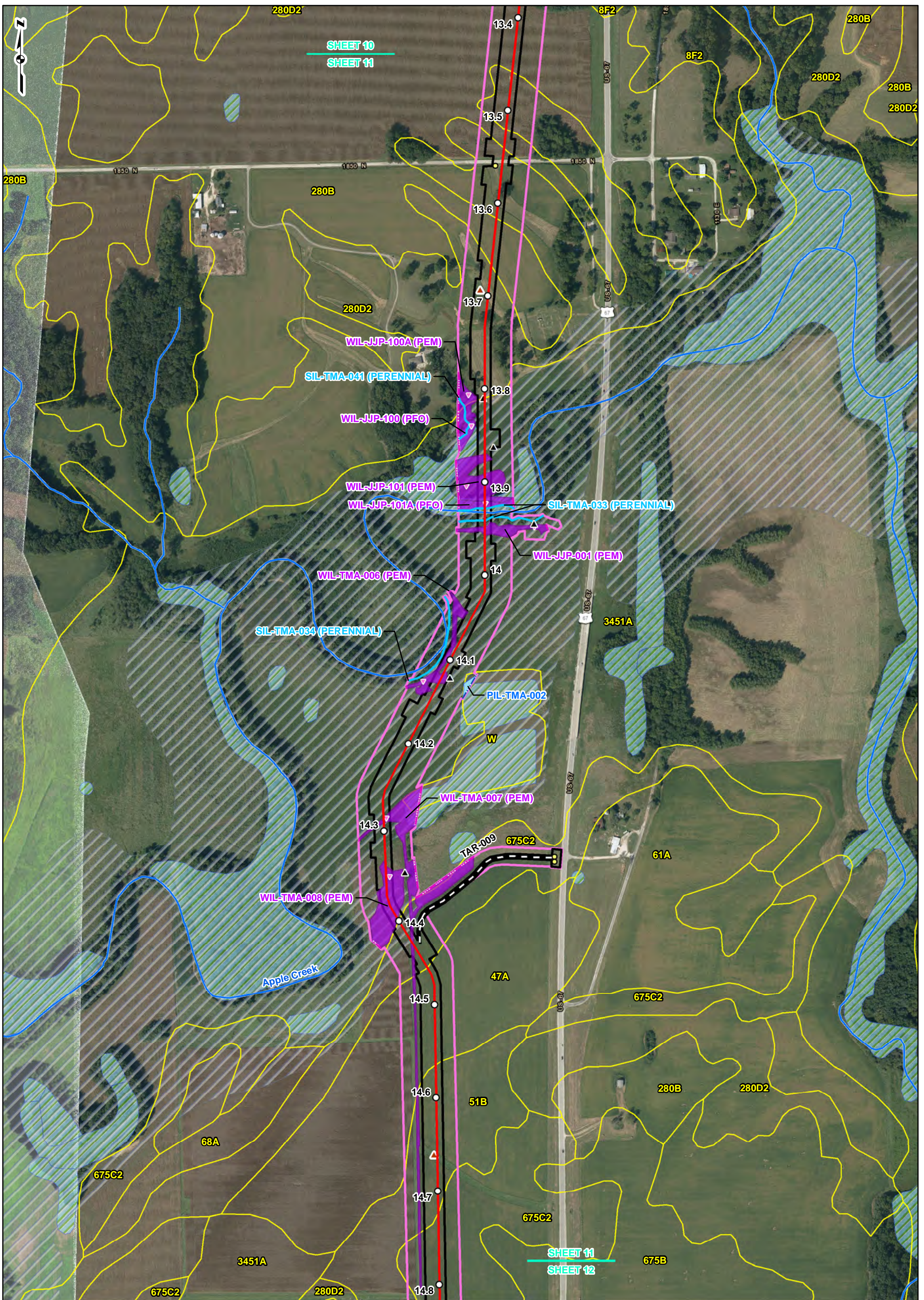
LEGEND			
■	FACILITY	—	24-INCH PIPELINE
○	MILEPOST	—	NORTH COUNTY EXTENSION
●	CULVERT	—	STREAM
*	GROUNDWATER SEEP	—	NHD STREAM
▲	UPLAND LOCATION	—	POND OPEN END
▼	WETLAND DATA POINT	—	WETLAND OPEN END
▲	SOIL TEST PIT	■	POND
—	ACCESS ROAD	■	WETLAND
■	NWI WETLAND	■	NWI WATERBODY
■	NWI WATERBODY	■	100-YEAR FLOODPLAIN
■	SOIL TYPE BOUNDARY	—	LIMIT OF DISTURBANCE
—	LIMIT OF DISTURBANCE	—	STUDY CORRIDOR
—	STUDY CORRIDOR	—	COUNTY BOUNDARY
—	COUNTY BOUNDARY	—	STATE BOUNDARY

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

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**SPIRE STL
PIPELINE
PROJECT**

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LEGEND	
■ FACILITY	— 24-INCH PIPELINE
○ MILEPOST	— NORTH COUNTY
● CULVERT	— EXTENSION
* GROUNDWATER SEEP	— STREAM
▲ UPLAND LOCATION	— NHD STREAM
▼ WETLAND DATA POINT	— POND OPEN END
▲ SOIL TEST PIT	— WETLAND OPEN END
— ACCESS ROAD	■ POND
	■ WETLAND
	■ NWI WETLAND
	■ NWI WATERBODY
	■ 100-YEAR FLOODPLAIN
	■ SOIL TYPE BOUNDARY
	— LIMIT OF DISTURBANCE
	— STUDY CORRIDOR
	— COUNTY BOUNDARY
	— STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP SHEET 11 OF 51

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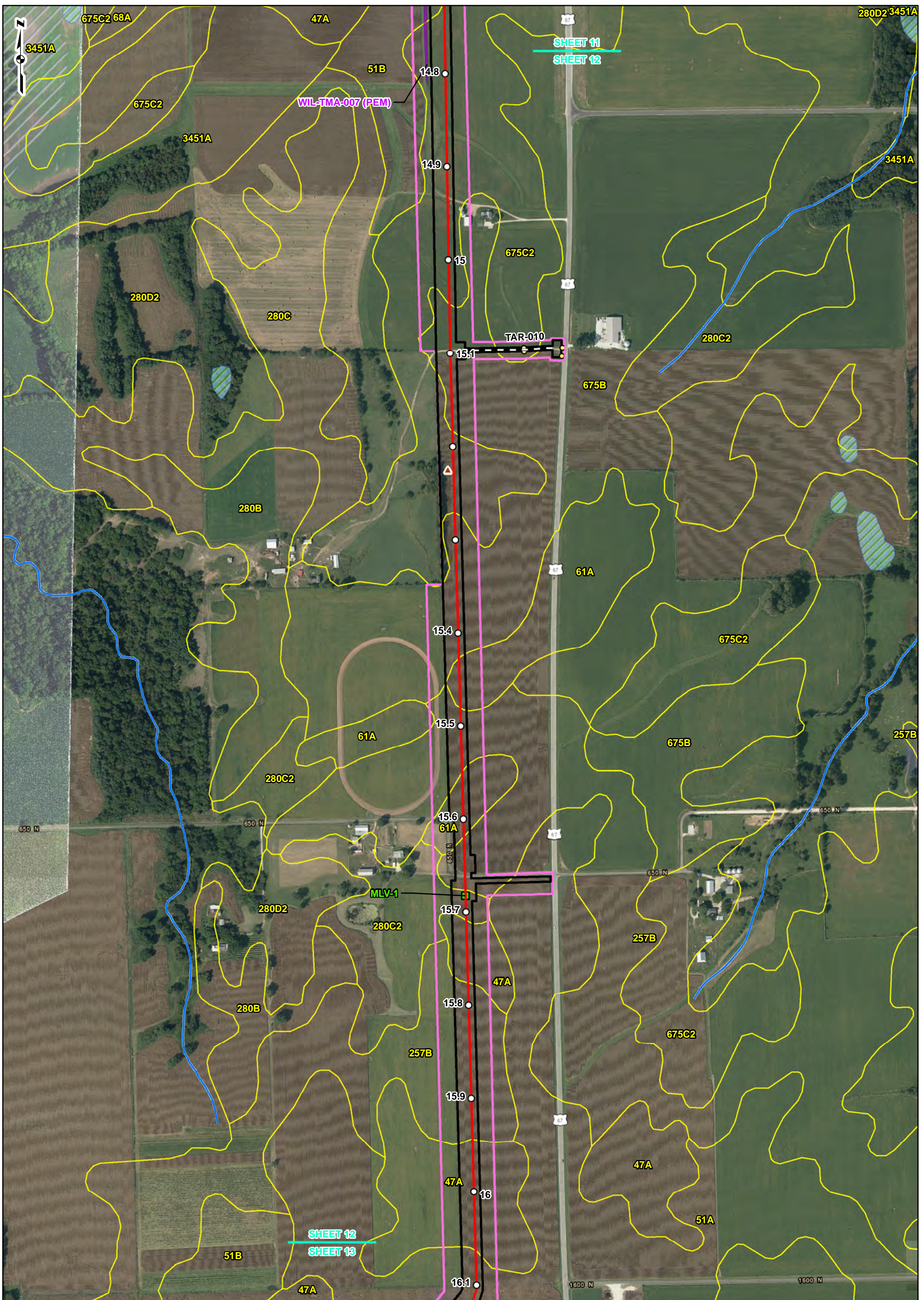
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 AGENCY (FEMA).

LEGEND			
■	FACILITY	—	24-INCH PIPELINE
○	MILEPOST	—	NORTH COUNTY EXTENSION
●	CULVERT	—	STREAM
*	GROUNDWATER SEEP	—	NHD STREAM
▲	UPLAND LOCATION	—	POND OPEN END
▼	WETLAND DATA POINT	—	WETLAND OPEN END
▲	SOIL TEST PIT	■	POND
—	ACCESS ROAD	■	WETLAND
■	NWI WETLAND	■	NWI WATERBODY
■	NWI WATERBODY	■	100-YEAR FLOODPLAIN
■	SOIL TYPE BOUNDARY	—	LIMIT OF DISTURBANCE
—	LIMIT OF DISTURBANCE	—	STUDY CORRIDOR
—	STUDY CORRIDOR	—	COUNTY BOUNDARY
—	COUNTY BOUNDARY	—	STATE BOUNDARY
—	STATE BOUNDARY		

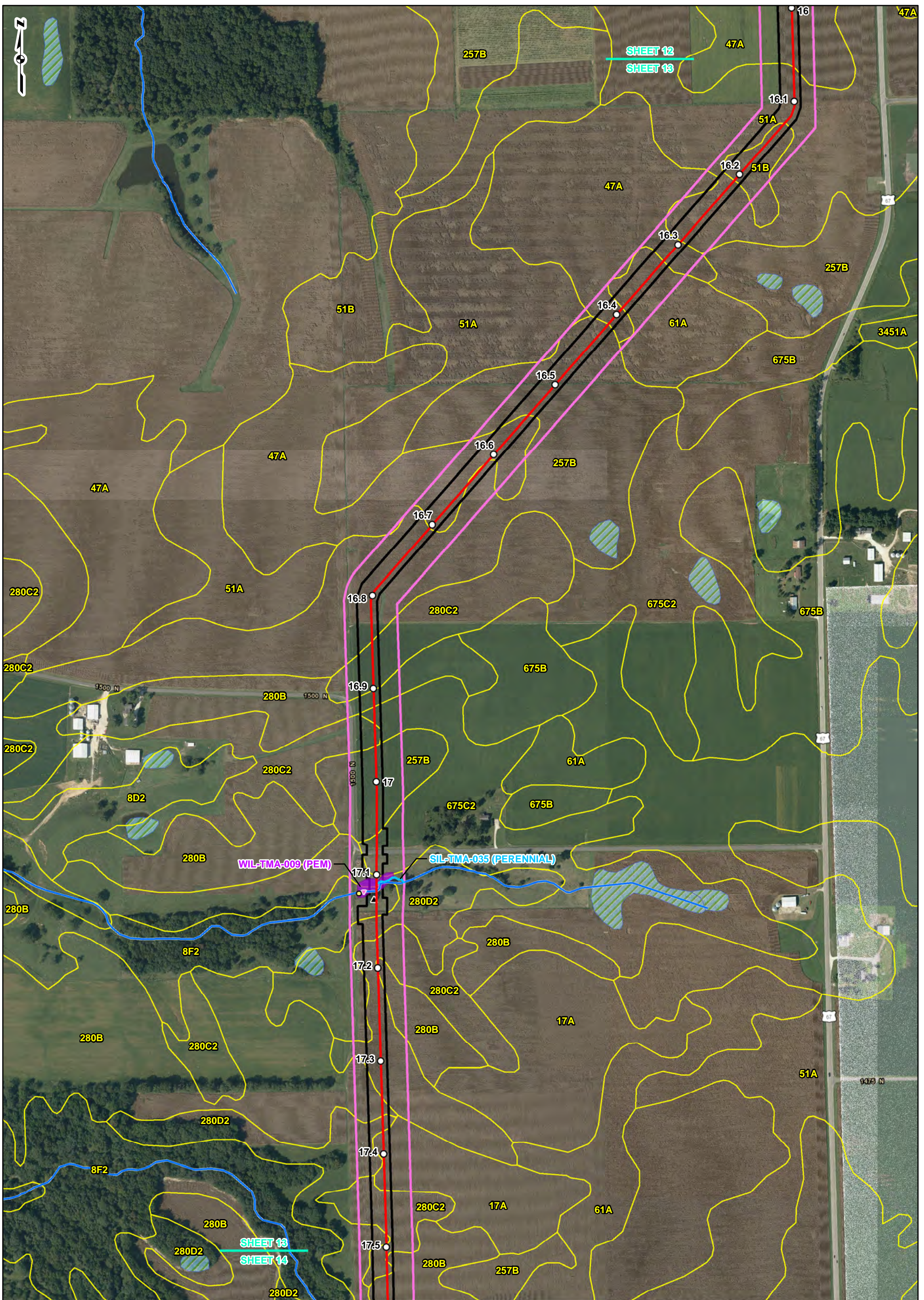
RESOURCE LOCATION AND SOILS MAP SHEET 12 OF 51

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**SPIRE STL
PIPELINE
PROJECT**

DRAWN BY: SWW
CHECKED: EFJ

DATE: 7/14/2017
APPROVED: TCW





NOTE:
 DELINEATED FEATURES
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 WORKSPACES, AND NOT
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REFERENCE:
 ORTHOPHOTOGRAPHY, 2016. ESRI
 WORLD IMAGERY AND
 TRANSPORTATION, NAIP, USDA FSA,
 2014, ACCESSED 07/2017. SOIL
 SURVEY GEOGRAPHIC (SSURGO)
 DATABASE FOR ILLINOIS (2014) AND
 MISSOURI (2015). USDA/NRCS.
 NATIONAL WETLAND INVENTORY
 (NWI) WATERBODIES AND
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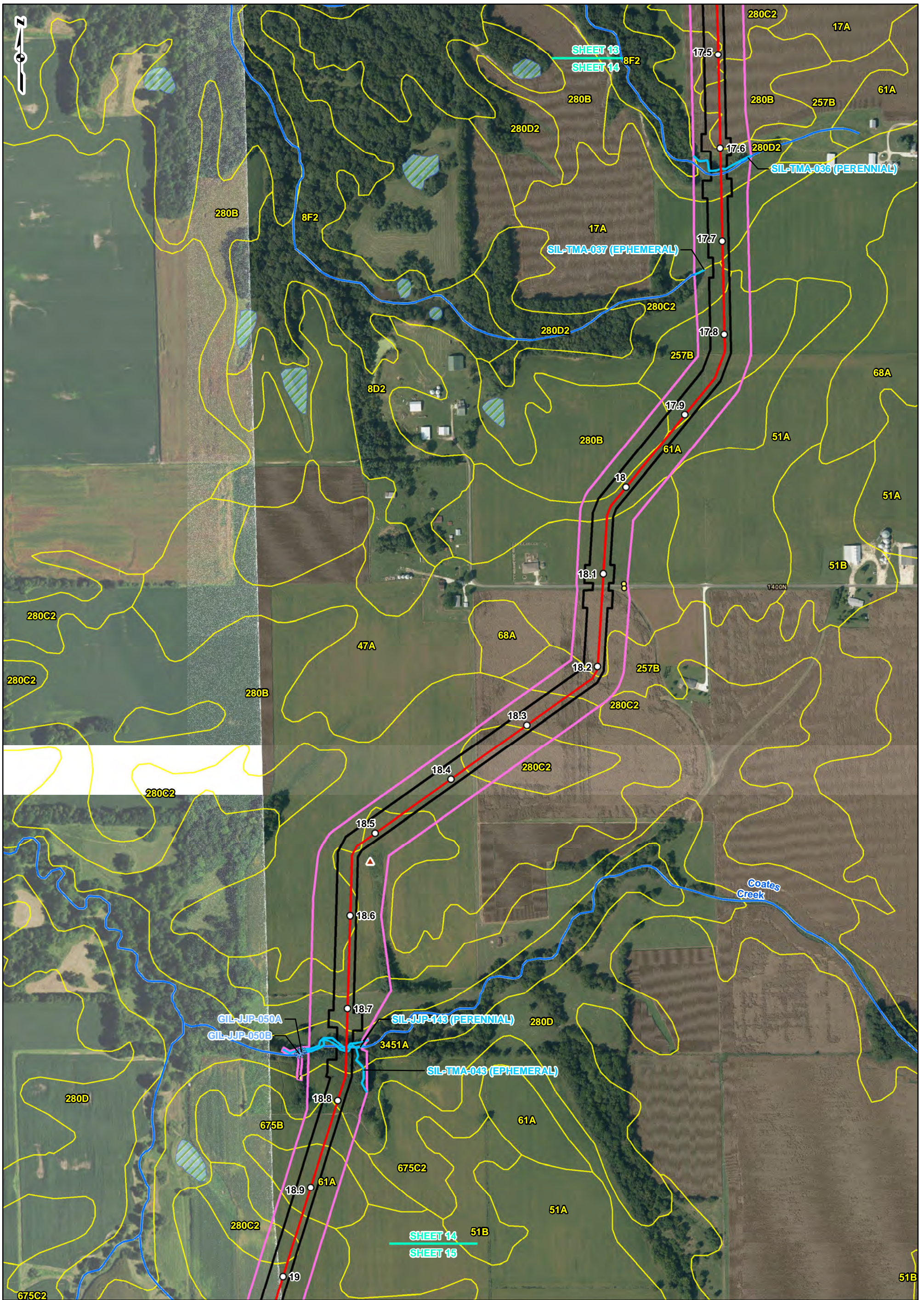
LEGEND	
	FACILITY
	MILEPOST
	CULVERT
	GROUNDWATER SEEP
	UPLAND LOCATION
	WETLAND DATA POINT
	SOIL TEST PIT
	ACCESS ROAD
	24-INCH PIPELINE
	NORTH COUNTY EXTENSION
	STREAM
	NHD STREAM
	POND OPEN END
	WETLAND OPEN END
	POND
	WETLAND
	NWI WETLAND
	NWI WATERBODY
	100-YEAR FLOODPLAIN
	SOIL TYPE BOUNDARY
	LIMIT OF DISTURBANCE
	STUDY CORRIDOR
	COUNTY BOUNDARY
	STATE BOUNDARY

**RESOURCE LOCATION
AND SOILS MAP
SHEET 13 OF 51**

**SPIRE STL
PIPELINE
PROJECT**

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 CHECKED: EFJ APPROVED: TCW



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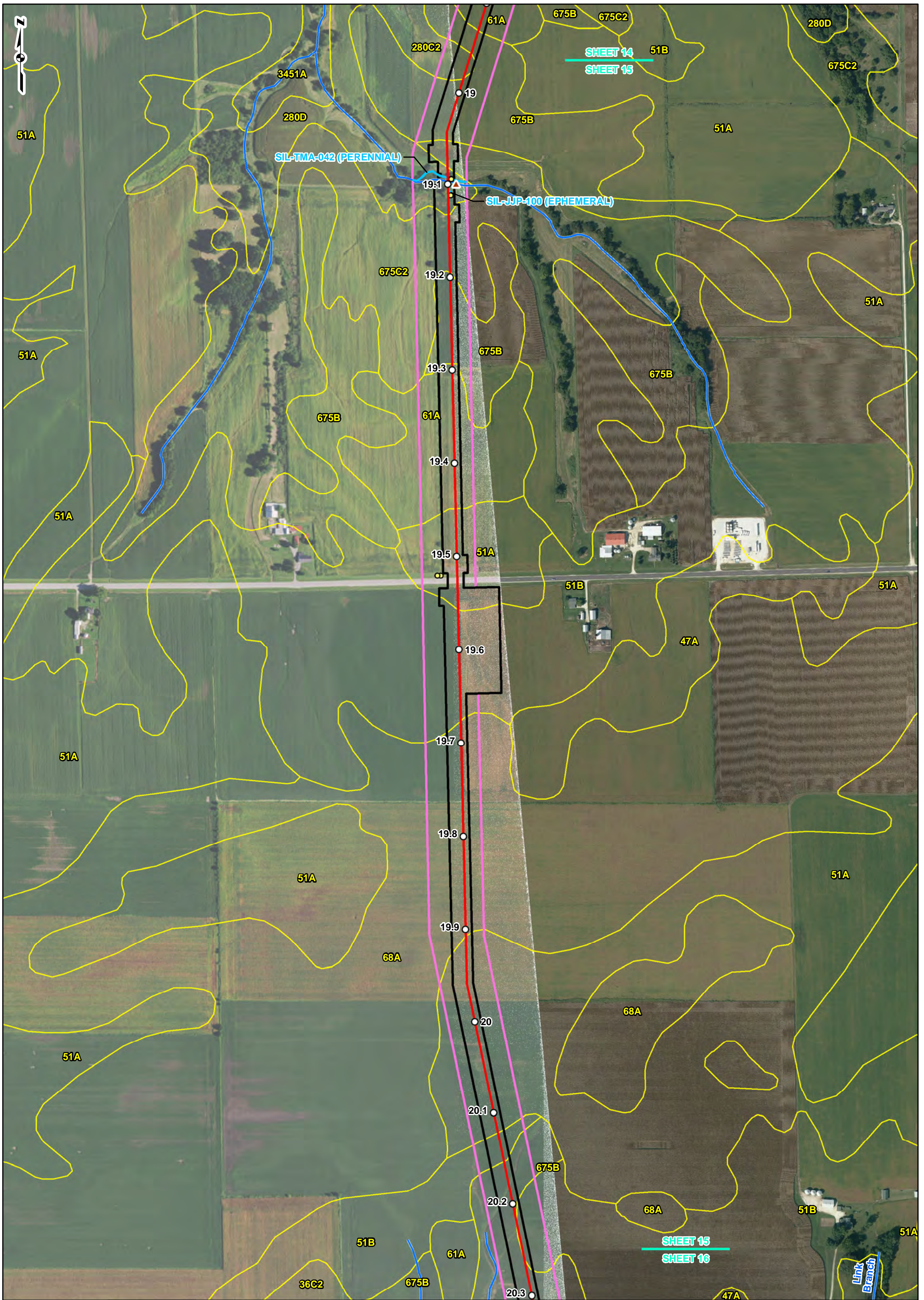
REFERENCE:
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LEGEND	
■ FACILITY	— 24-INCH PIPELINE
○ MILEPOST	— NORTH COUNTY EXTENSION
● CULVERT	— STREAM
* GROUNDWATER SEEP	— NHD STREAM
▲ UPLAND LOCATION	— POND OPEN END
▼ WETLAND DATA POINT	— WETLAND OPEN END
▲ SOIL TEST PIT	■ POND
— ACCESS ROAD	■ WETLAND
■ NWI WETLAND	■ NWI WATERBODY
■ 100-YEAR FLOODPLAIN	■ SOIL TYPE BOUNDARY
— LIMIT OF DISTURBANCE	— COUNTY BOUNDARY
— STUDY CORRIDOR	— STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP SHEET 14 OF 51

SPiRE STL PIPELINE PROJECT

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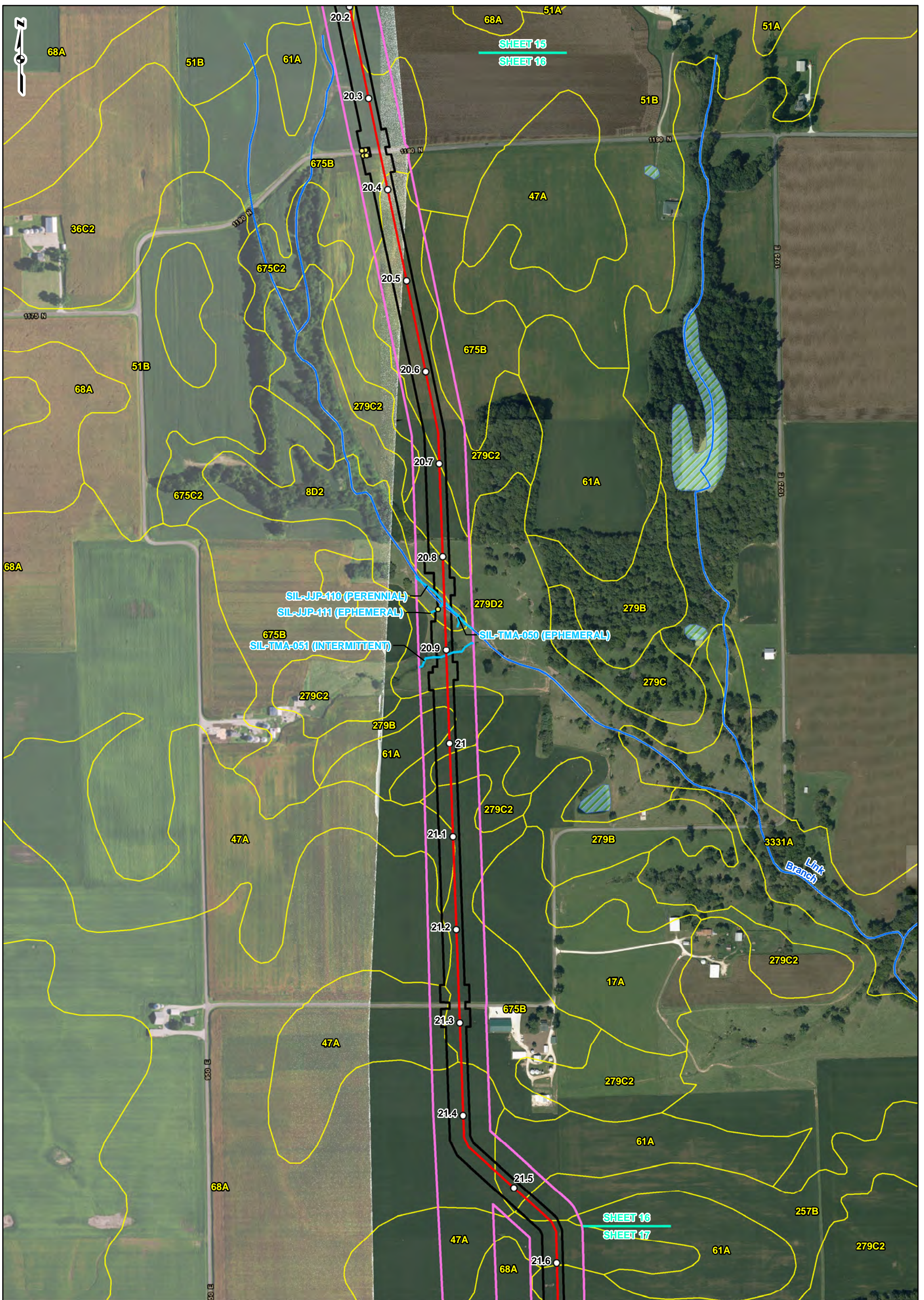
LEGEND					
■	FACILITY	—	24-INCH PIPELINE	▨	NWI WETLAND
○	MILEPOST	—	NORTH COUNTY EXTENSION	▨	NWI WATERBODY
●	CULVERT	—	STREAM	▨	100-YEAR FLOODPLAIN
*	GROUNDWATER SEEP	—	NHD STREAM	▨	SOIL TYPE BOUNDARY
▲	UPLAND LOCATION	—	POND OPEN END	▨	LIMIT OF DISTURBANCE
▼	WETLAND DATA POINT	—	WETLAND OPEN END	▨	STUDY CORRIDOR
▲	SOIL TEST PIT	—	POND	▨	COUNTY BOUNDARY
—	ACCESS ROAD	▨	WETLAND	▨	STATE BOUNDARY

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

**SPIRE STL
PIPELINE
PROJECT**

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 STREAMS FOR ILLINOIS (2015) AND
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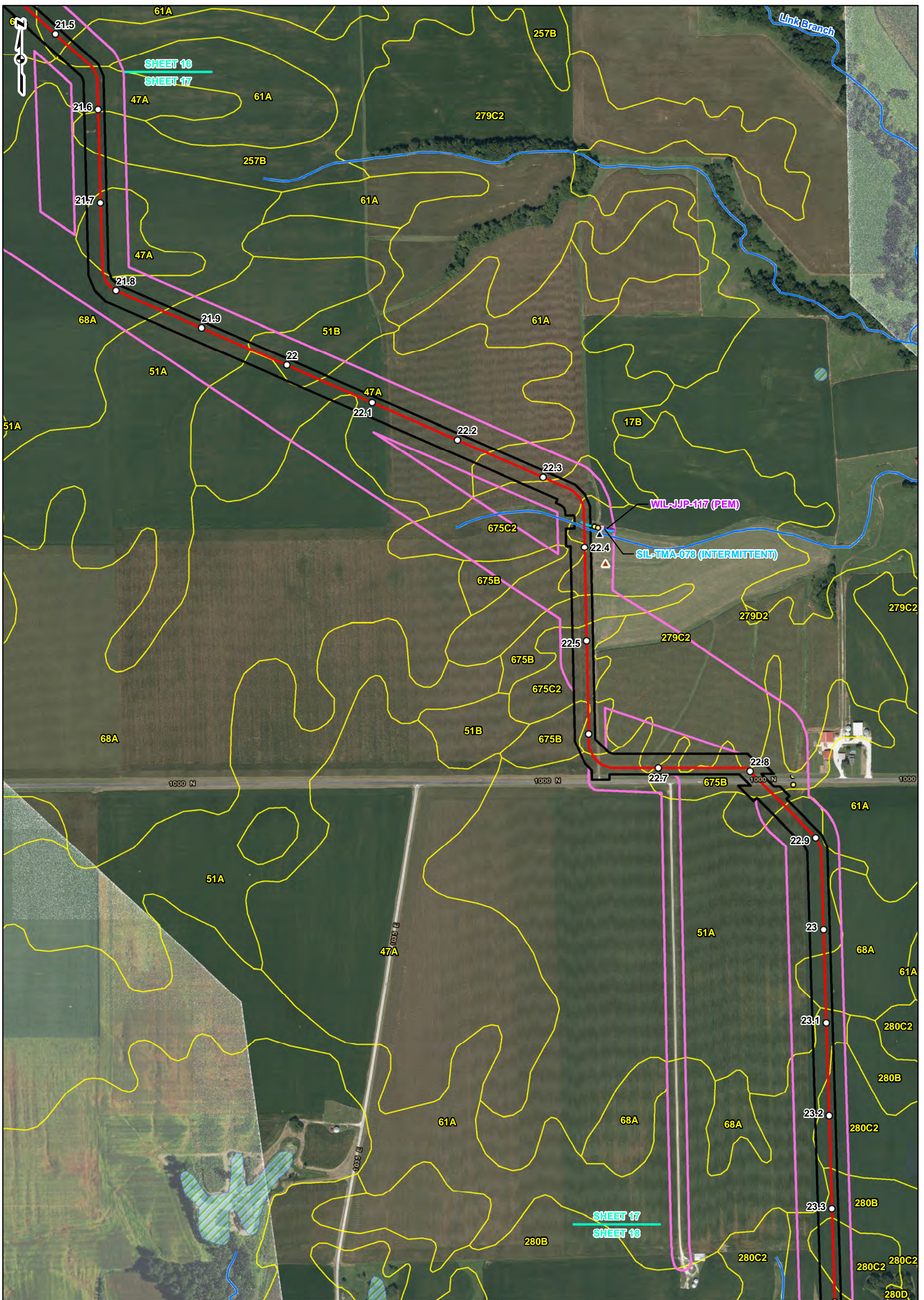
LEGEND					
	FACILITY		24-INCH PIPELINE		NWI WETLAND
	MILEPOST		NORTH COUNTY EXTENSION		NWI WATERBODY
	CULVERT		STREAM		100-YEAR FLOODPLAIN
	GROUNDWATER SEEP		NHD STREAM		SOIL TYPE BOUNDARY
	UPLAND LOCATION		POND OPEN END		LIMIT OF DISTURBANCE
	WETLAND DATA POINT		WETLAND OPEN END		STUDY CORRIDOR
	SOIL TEST PIT		POND		COUNTY BOUNDARY
	ACCESS ROAD		WETLAND		STATE BOUNDARY

**RESOURCE LOCATION
AND SOILS MAP
SHEET 16 OF 51**

**SPIRE STL
PIPELINE
PROJECT**

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LEGEND	
■ FACILITY	— 24-INCH PIPELINE
○ MILEPOST	— NORTH COUNTY EXTENSION
● CULVERT	— STREAM
* GROUNDWATER SEEP	— NHD STREAM
▲ UPLAND LOCATION	— POND OPEN END
▼ WETLAND DATA POINT	— WETLAND OPEN END
▲ SOIL TEST PIT	■ POND
— ACCESS ROAD	■ WETLAND
■ NWI WETLAND	■ NWI WATERBODY
■ 100-YEAR FLOODPLAIN	■ SOIL TYPE BOUNDARY
— LIMIT OF DISTURBANCE	— STUDY CORRIDOR
— COUNTY BOUNDARY	— STATE BOUNDARY

RESOURCE LOCATION AND SOILS MAP SHEET 17 OF 51

SPIRE STL PIPELINE PROJECT

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