

Kentucky Power Company  
KPSC Case No. 2022-00236  
Commission Staff's Third Set of Data Requests  
Dated November 9, 2022

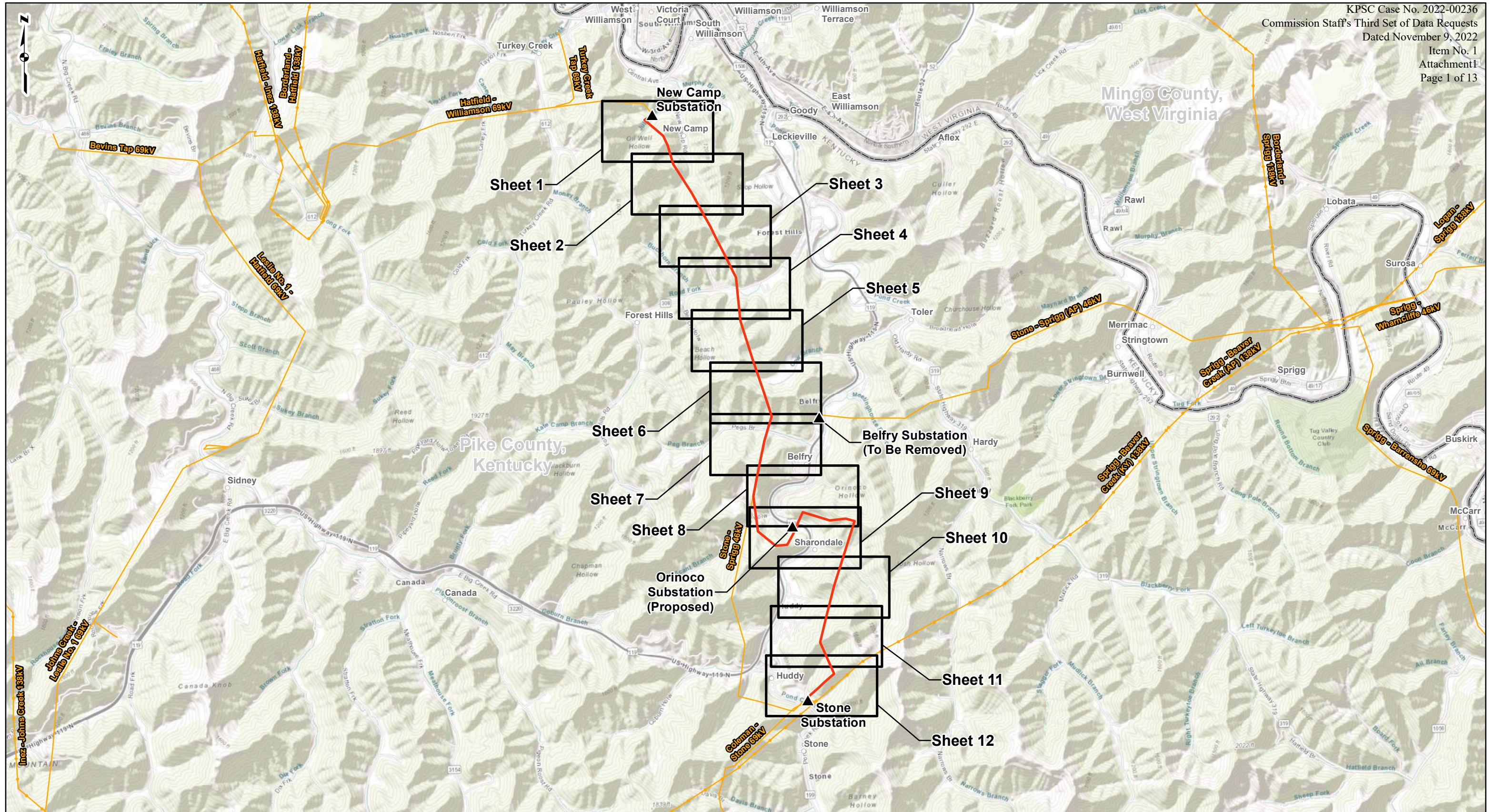
**DATA REQUEST**

- KPSC 3\_1** Refer to Kentucky Power's response to Commission Staff's Second Request for Information (Staff's Second Request), Item 1. The topographical maps in Exhibit 4 do not provide the same level of detail as the maps in Exhibit 10.
- a. Provide the siting study map of the proposed transmission route, included on pages 81 through 92 of Exhibit 10 to the Application, with the parcel numbers from Exhibit 12 to the Application used to identify any relevant parcels shown in the siting study map and showing the location of the 400-foot Filing Area.
  - b. Explain why there are more parcels shown on the siting study map than on the map provided as Exhibit 4 to the Application.

**RESPONSE**

- a. The requested mapping is provided as KPCO\_R\_KPSC\_3\_1\_Attachment1 (aerial) and KPCO\_R\_KPSC\_3\_1\_Attachment2 (topographic).
- b. The Exhibit 10 Siting Study map shows more parcels than the Exhibit 4 Proposed Route map because it includes parcels from the virtual open house. Landowners within a 1000-foot area (500 feet to either side of centerline) of all Study Segments were invited to the virtual open house. Exhibit 4 shows only those parcels on the Proposed Route that are crossed by the ROW or the 400-foot area. There were many more parcels crossed by the entire Study Segment network shown at the open house than by the final Proposed Route selected; therefore, more parcels are shown on the Siting Study map than used for the Proposed Route filing map.

Witness: George T. Reese



REFERENCE: WORLD TOPOGRAPHIC, ESRI, ARCGIS ONLINE, ACCESSED 11/2022.

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**LEGEND**

- ▲ Substation
- Proposed Route\*
- Sheet Index
- Existing 69kV or Lower Transmission Line
- Existing 138kV Transmission Line

0 2,000 4,000 8,000 Feet

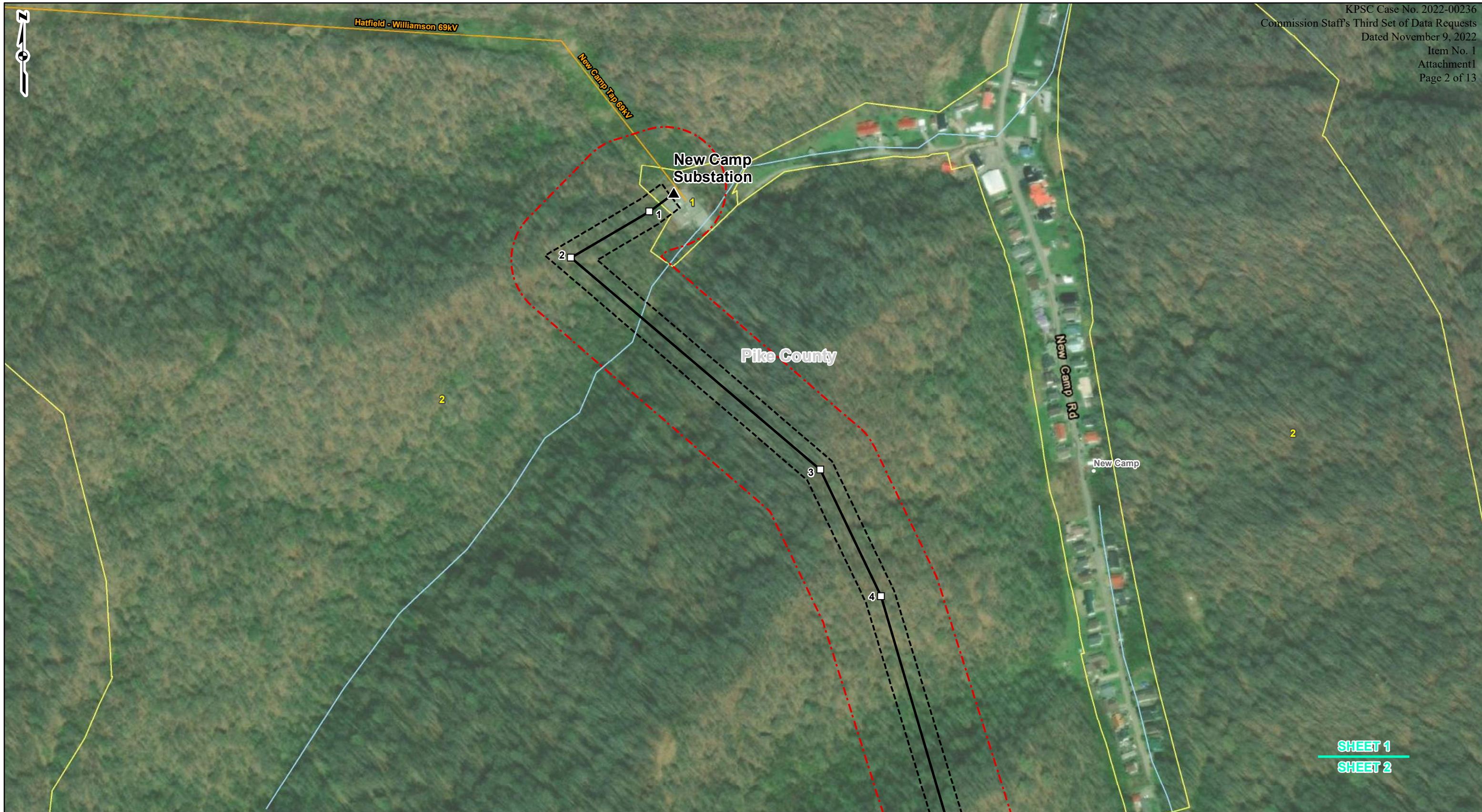
**REVISED MAPBOOK SHEET INDEX**

**Belfry Area Improvements Project**  
 American Electric Power

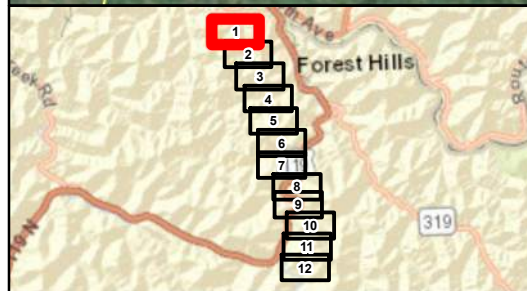
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SHEET 1  
 SHEET 2



REFERENCES: WORLD IMAGERY, MAXAR (2021), ESRI, ARCGIS ONLINE, ACCESSED 11/2022; WORLD TRANSPORTATION, ESRI, ARCGIS ONLINE, ACCESSED 11/2022; NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS, USGS, 2020; NATIONAL WETLAND INVENTORY (NWI) WETLANDS, USFWS, 2020; 100-YEAR FLOODPLAINS, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), 2020; CEMETERIES, CHURCHES, SCHOOLS, ESRI, ARCGIS ONLINE, 2021.

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LEGEND					
	Substation		Existing Transmission Line (To Be Removed)		Cemetery
	Proposed Structure*		Existing 69kV or Lower Transmission Line		School
	Proposed Route*		Existing 138kV Transmission Line		Church
	Proposed ROW*				NHD Stream
	400-foot Filing Area***				NWI Wetland
	Parcel Boundary**				100-Year Floodplain

0 150 300 600 Feet

**REVISED MAPBOOK (AERIAL)**  
 SHEET 1 OF 12



Belfry Area  
 Improvements Project  
 American Electric Power



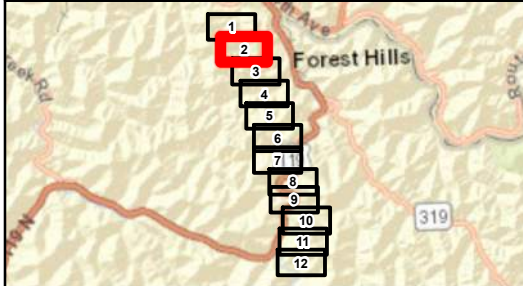
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SHEET 1  
 SHEET 2



SHEET 2  
 SHEET 3



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Proposed Structure*	Existing 69kV or Lower Transmission Line	School
Proposed Route*	Existing 138kV Transmission Line	Church
Proposed ROW*		NHD Stream
400-foot Filing Area***		NWI Wetland
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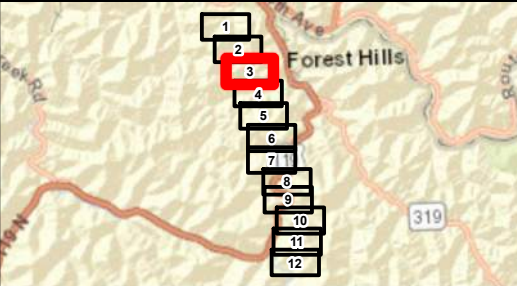
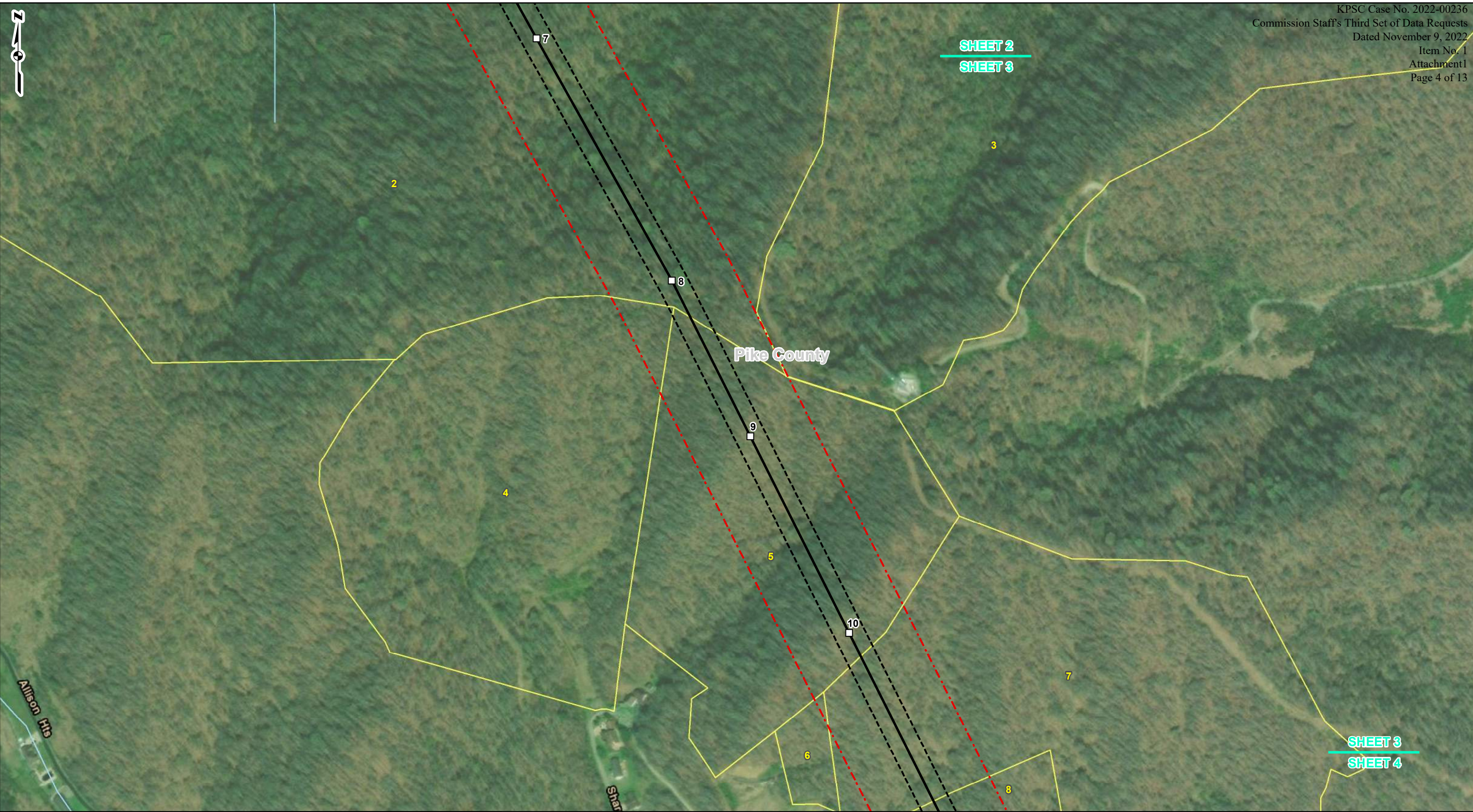
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REVISED MAPBOOK (AERIAL)  
 SHEET 2 OF 12

Belfry Area Improvements Project  
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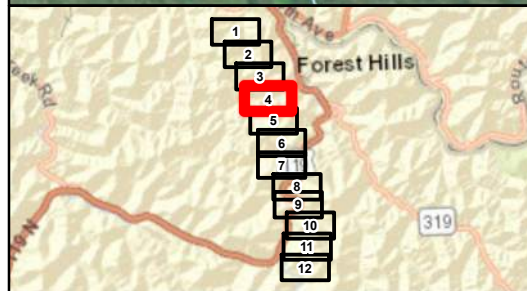
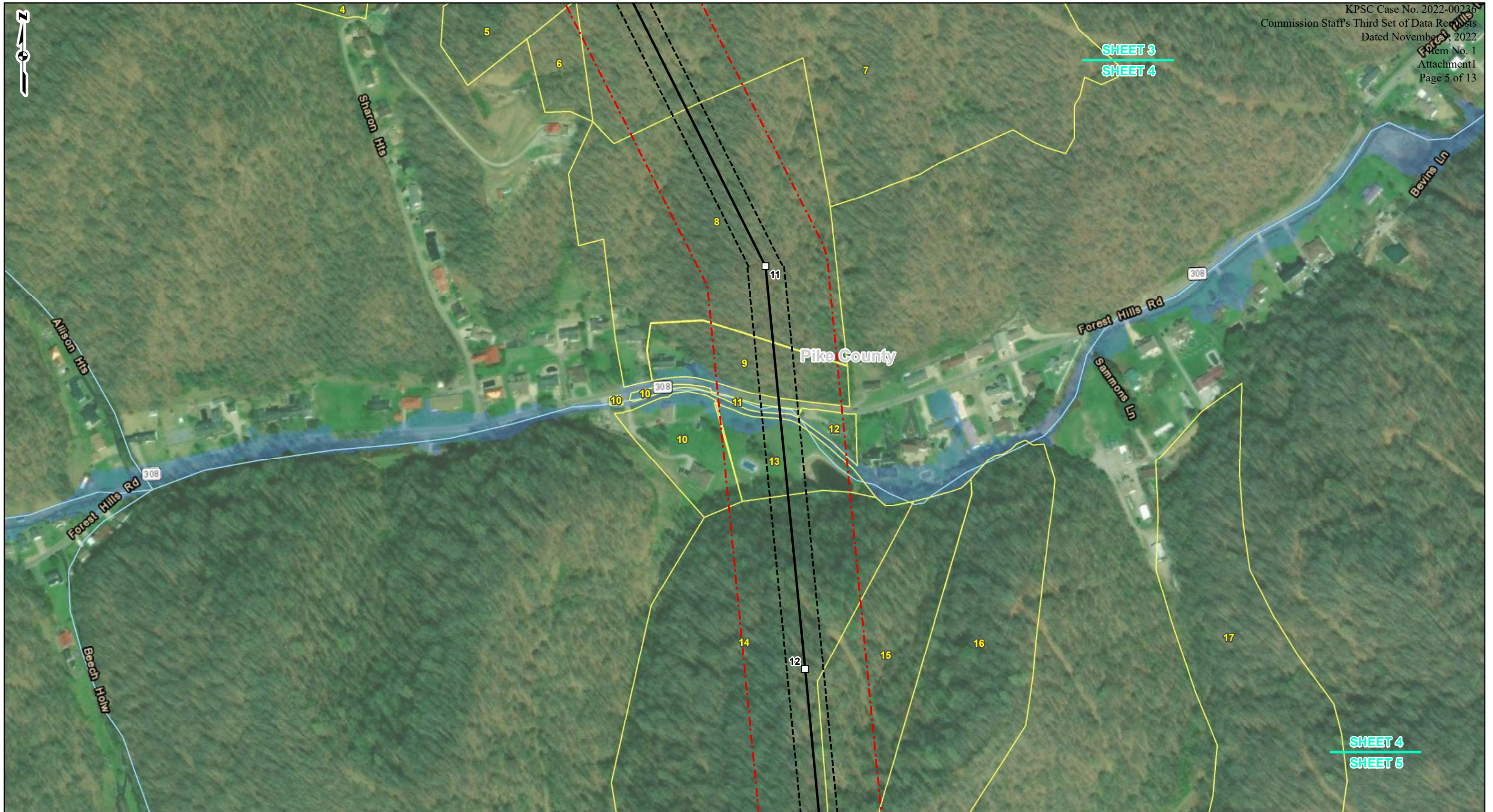
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400-foot Filing Area***		NWI Wetland
Parcel Boundary**		100-Year Floodplain

0 150 300 600 Feet

**REVISED MAPBOOK (AERIAL)**  
SHEET 3 OF 12

	Belfry Area Improvements Project American Electric Power	
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	Proposed Route*		Existing 138kV Transmission Line
	Proposed ROW*		NHD Stream
	400-foot Filing Area***		NWI Wetland
	Parcel Boundary**		100-Year Floodplain
	Cemetery		
	School		
	Church		

0 150 300 600 Feet

**REVISED MAPBOOK (AERIAL)**  
SHEET 4 OF 12



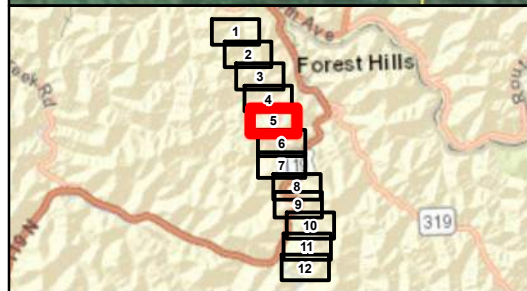
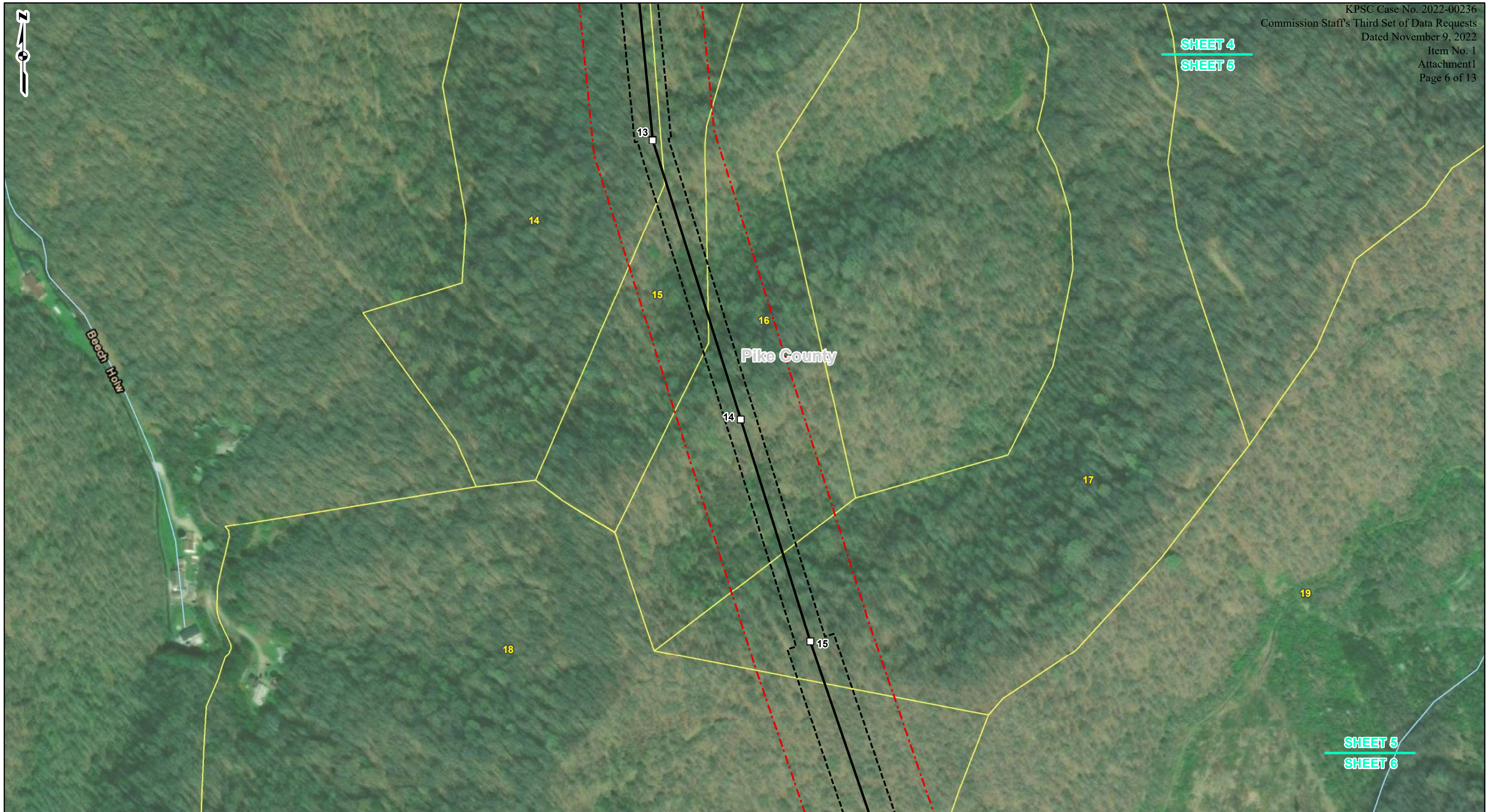
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Improvements Project  
American Electric Power



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 SHEET 5

SHEET 5  
 SHEET 6



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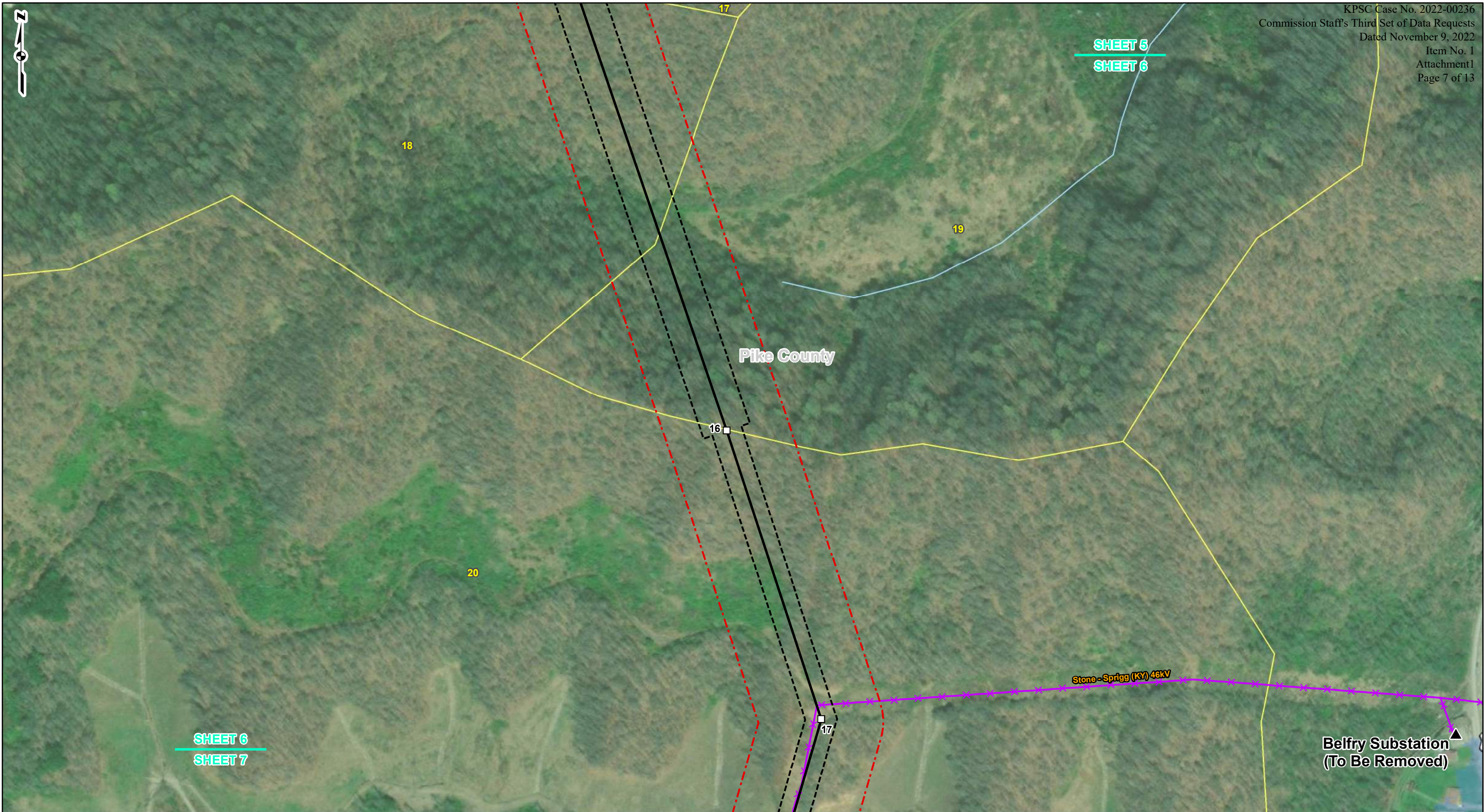
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	Proposed ROW*				NHD Stream
	400-foot Filing Area***				NWI Wetland
	Parcel Boundary**				100-Year Floodplain

0 150 300 600 Feet

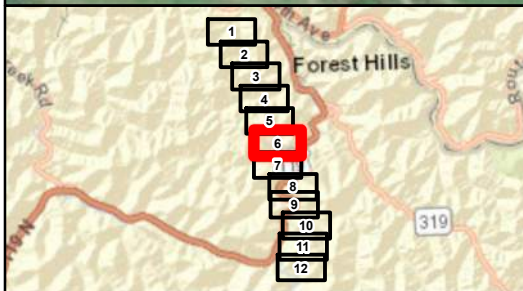
**REVISED MAPBOOK (AERIAL)  
SHEET 5 OF 12**

 gai consultants	Belfry Area Improvements Project American Electric Power	 APPALACHIAN POWER SOUNDLESS ENERGY
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 SHEET 7

SHEET 5  
 SHEET 6



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	Proposed ROW*		NHD Stream
	400-foot Filing Area***		NWI Wetland
	Parcel Boundary**		100-Year Floodplain
	Cemetery		Church
	School		

0 150 300 600 Feet

REVISED MAPBOOK (AERIAL)  
 SHEET 6 OF 12

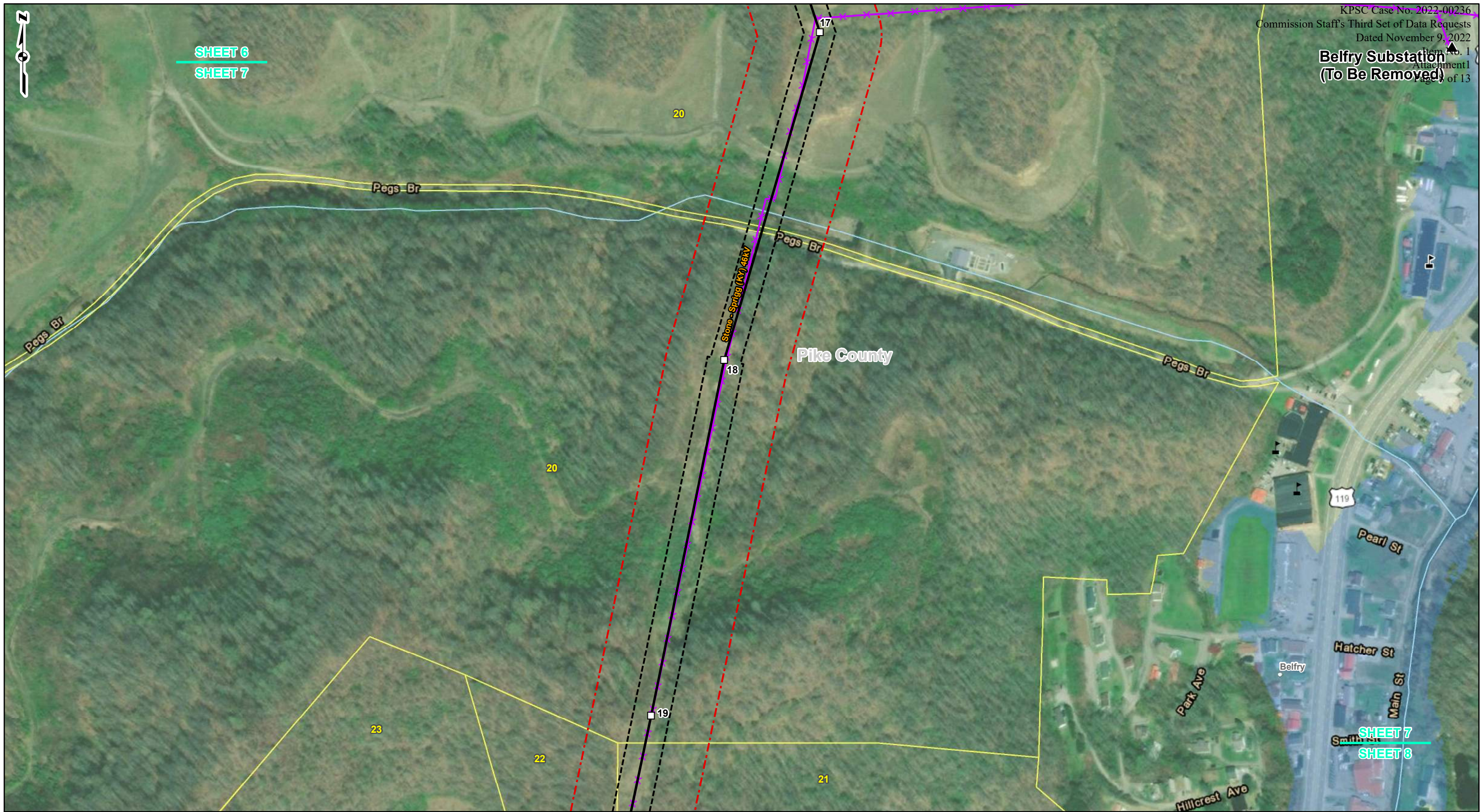
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 American Electric Power

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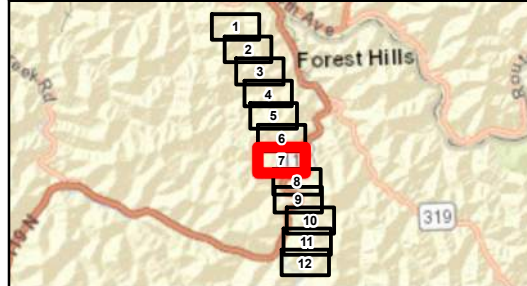
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 SHEET 7



SHEET 7  
 SHEET 8



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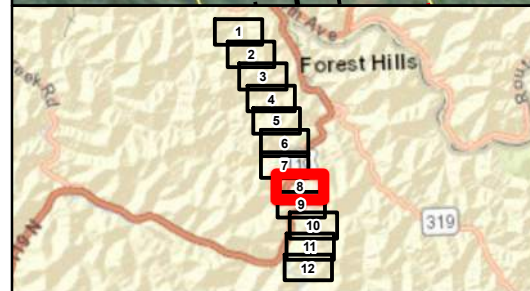
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	Parcel Boundary**		100-Year Floodplain

0 150 300 600 Feet

REVISED MAPBOOK (AERIAL)  
 SHEET 7 OF 12

Belfry Area Improvements Project  
 American Electric Power

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Proposed ROW*		NHD Stream
400-foot Filing Area***		NWI Wetland
Parcel Boundary**		100-Year Floodplain

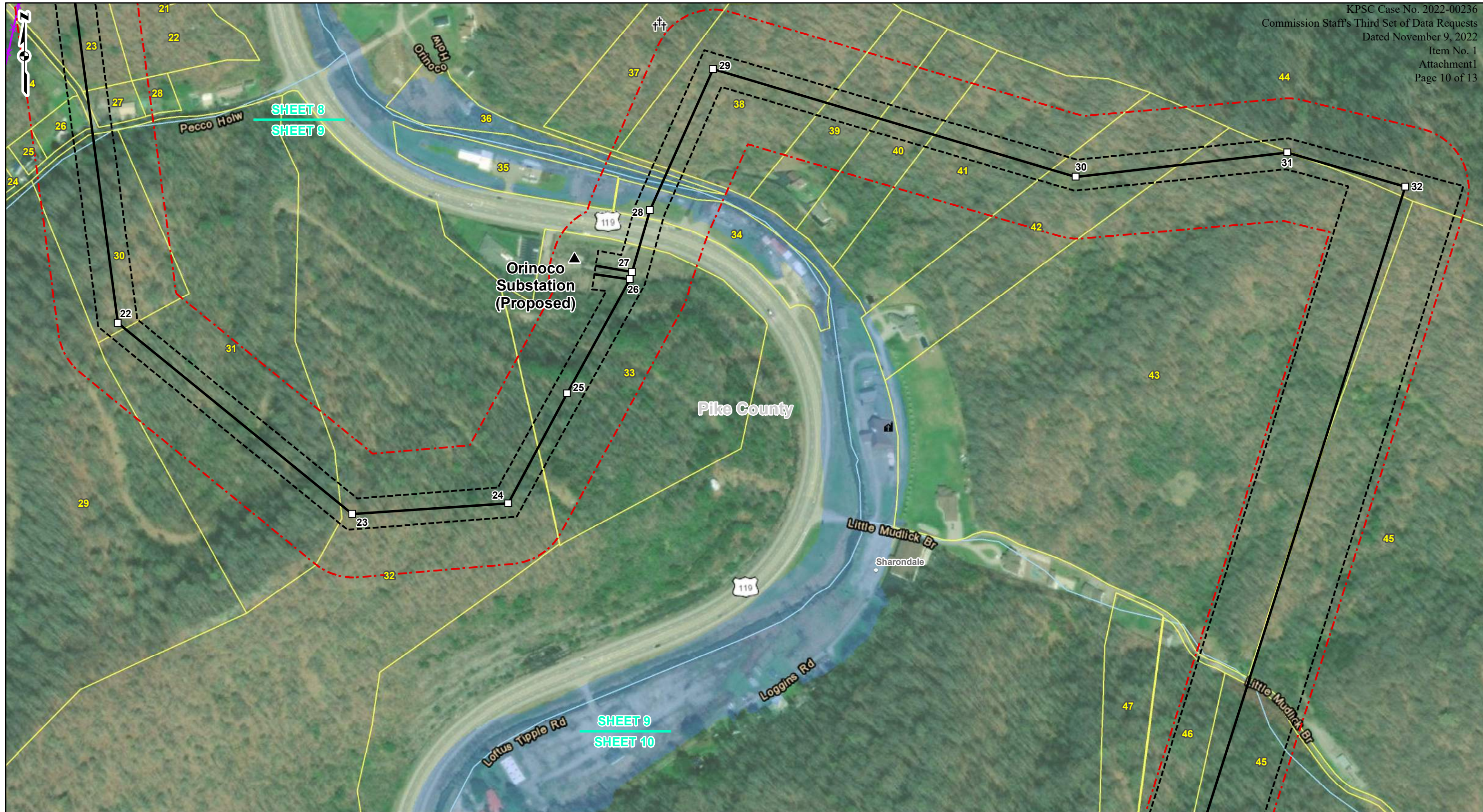
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**REVISED MAPBOOK (AERIAL)  
 SHEET 8 OF 12**

**Belfry Area Improvements Project**  
 American Electric Power

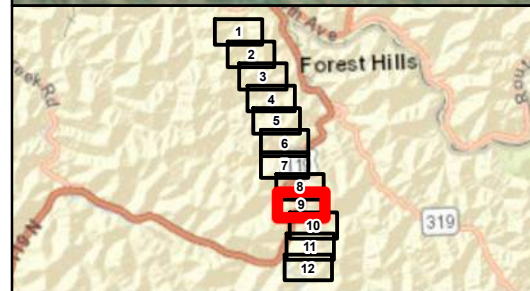
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SHEET 8  
SHEET 9

SHEET 9  
SHEET 10



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▲	Substation	✖	Existing Transmission Line (To Be Removed)	††	Cemetery
□	Proposed Structure*	—	Existing 69kV or Lower Transmission Line	🏫	School
—	Proposed Route*	—	Existing 138kV Transmission Line	🏛️	Church
⬜	Proposed ROW*	—		🌊	NHD Stream
⬜	400-foot Filing Area***	—		🟢	NWI Wetland
⬜	Parcel Boundary**	0 150 300 600		🟡	100-Year Floodplain

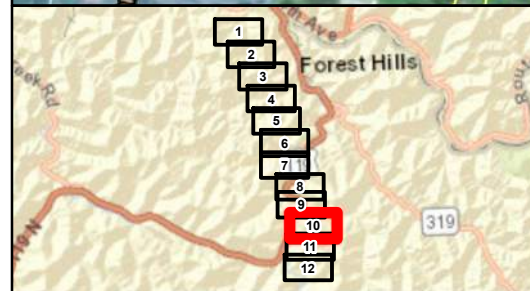
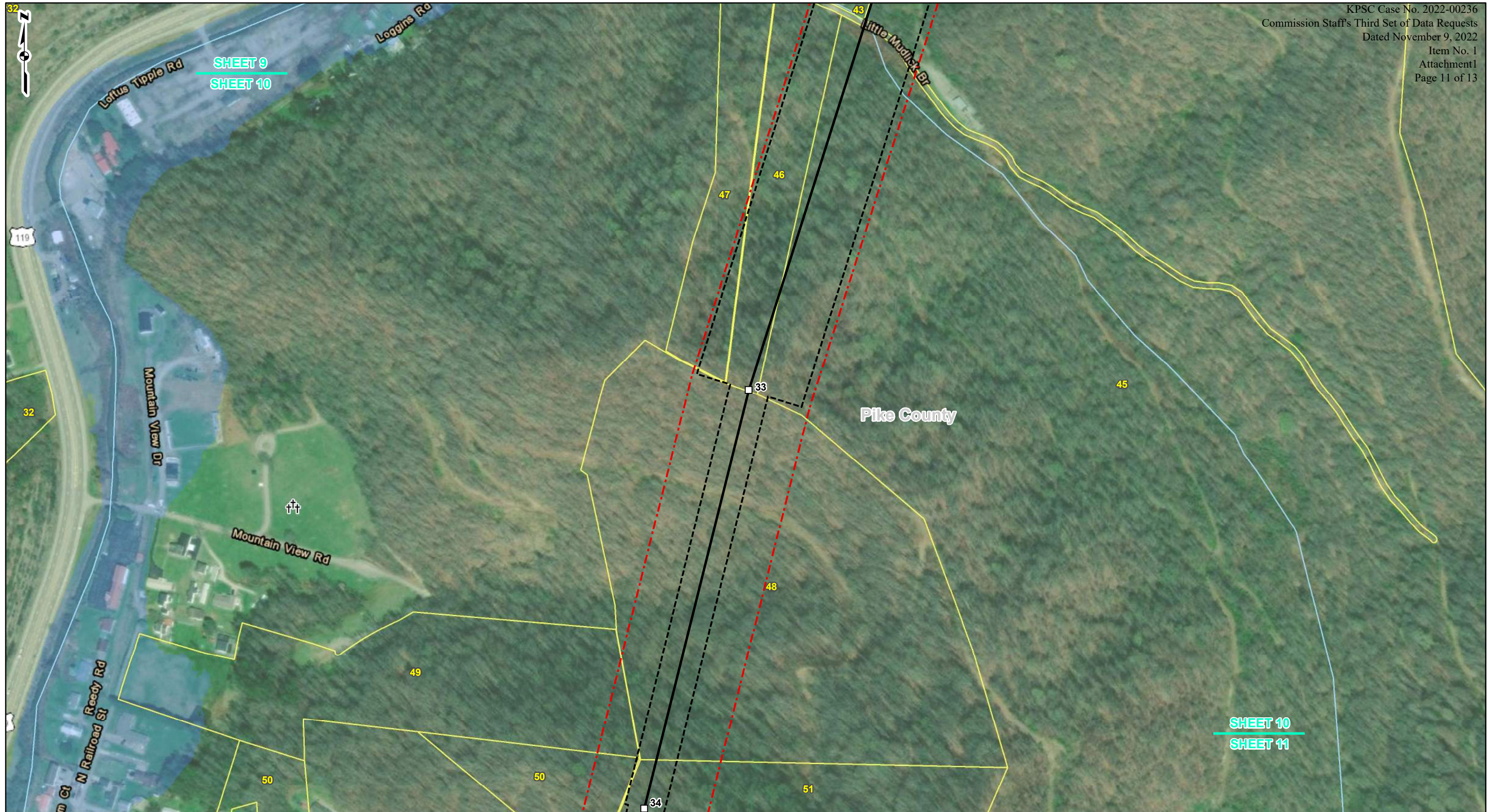
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**REVISED MAPBOOK (AERIAL)  
SHEET 9 OF 12**

**Belfry Area  
Improvements Project  
American Electric Power**

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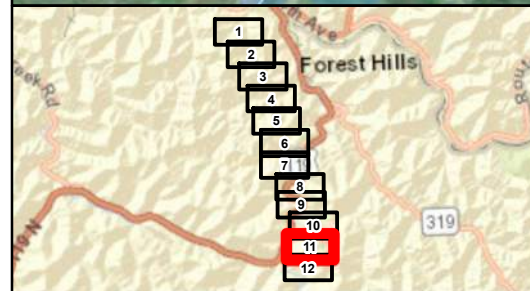
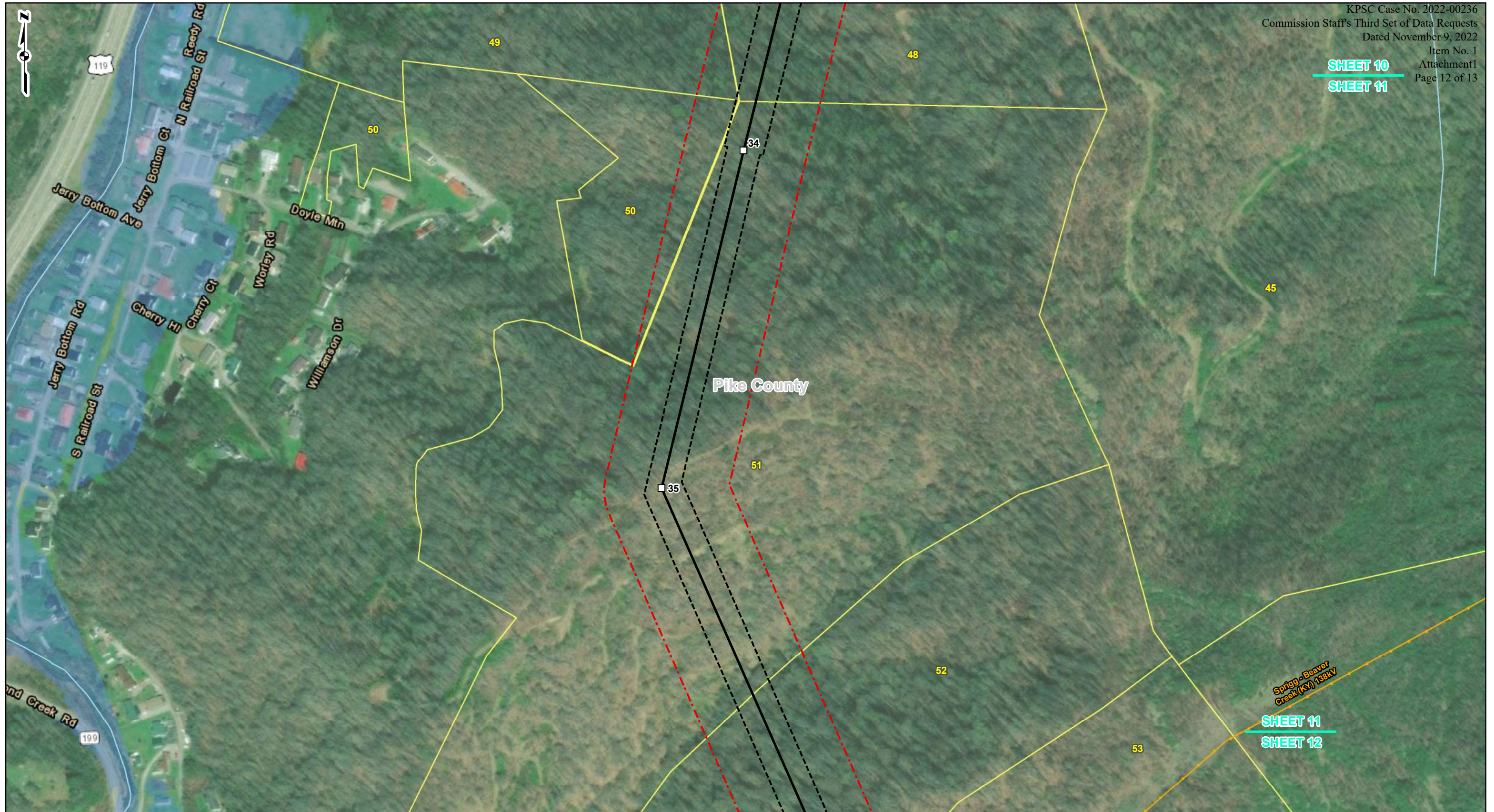
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— Proposed Route*	— Existing 138kV Transmission Line	🏛 Church
⬜ Proposed ROW*		🌊 NHD Stream
⬜ 400-foot Filing Area***		🟢 NWI Wetland
🟡 Parcel Boundary**		🟦 100-Year Floodplain

0 150 300 600 Feet

**REVISED MAPBOOK (AERIAL)**  
SHEET 10 OF 12

Belfry Area  
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400-foot Filing Area***		NWI Wetland
Parcel Boundary**		100-Year Floodplain

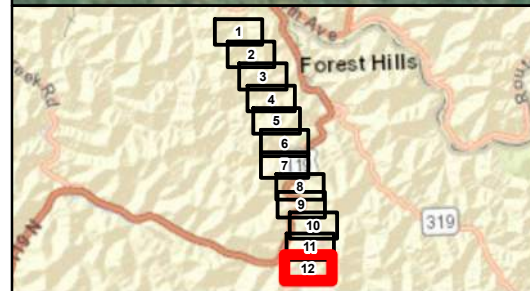
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**REVISED MAPBOOK (AERIAL)  
 SHEET 11 OF 12**

**Belfry Area Improvements Project**  
 American Electric Power

DRAWN BY: EFJ  
 CHECKED:

DATE: 11/16/2022  
 APPROVED:



REFERENCES: WORLD IMAGERY, MAXAR (2021), ESRI, ARCGIS ONLINE, ACCESSED 11/2022; WORLD TRANSPORTATION, ESRI, ARCGIS ONLINE, ACCESSED 11/2022; NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS, USGS, 2020; NATIONAL WETLAND INVENTORY (NWI) WETLANDS, USFWS, 2020; 100-YEAR FLOODPLAINS, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), 2020; CEMETERIES, CHURCHES, SCHOOLS, ESRI, ARCGIS ONLINE, 2021.

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LEGEND					
	Substation		Existing Transmission Line (To Be Removed)		Cemetery
	Proposed Structure*		Existing 69kV or Lower Transmission Line		School
	Proposed Route*		Existing 138kV Transmission Line		Church
	Proposed ROW*				NHD Stream
	400-foot Filing Area***				NWI Wetland
	Parcel Boundary**				100-Year Floodplain

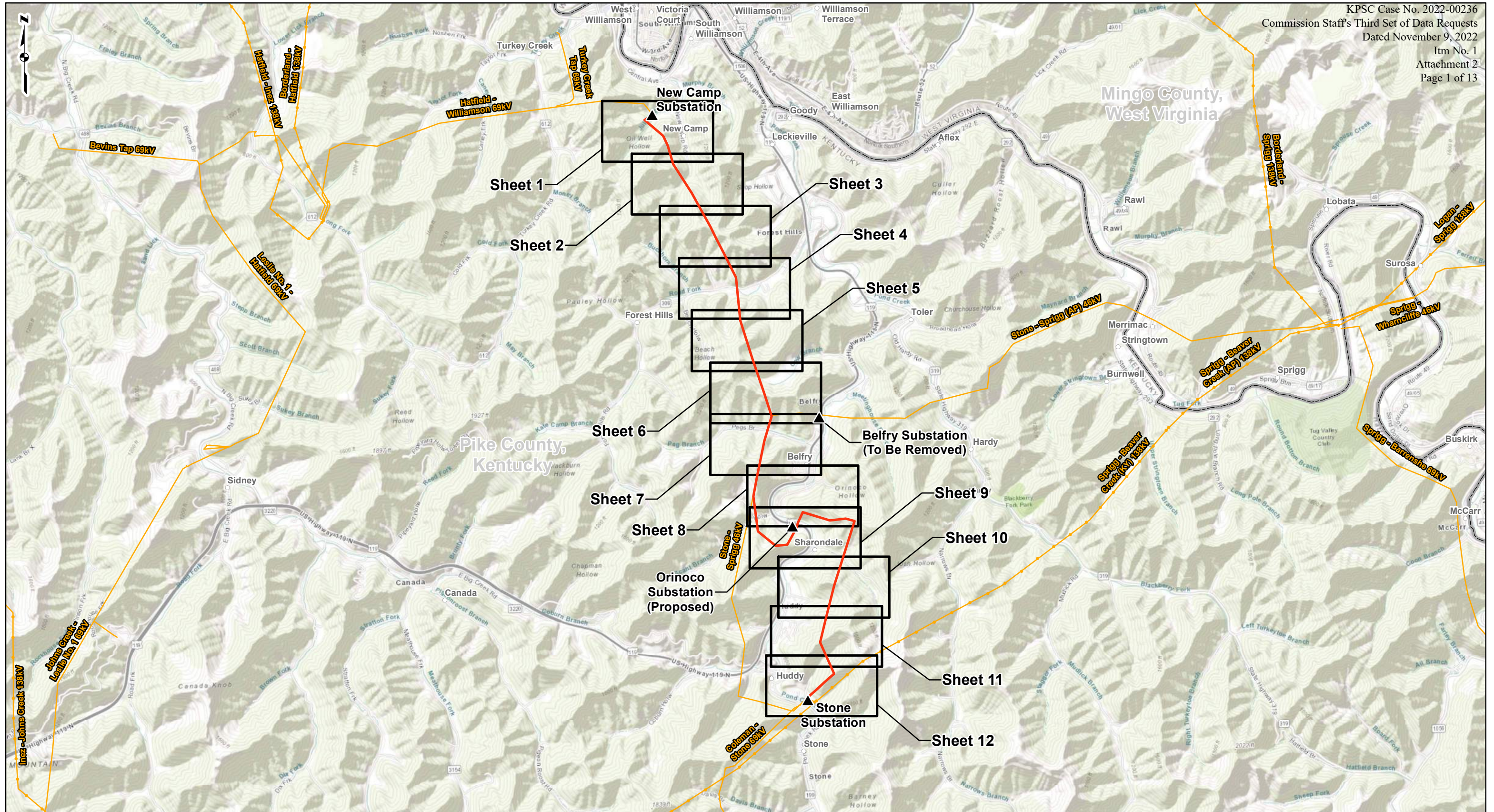
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**REVISED MAPBOOK (AERIAL)**  
**SHEET 12 OF 12**

Belfry Area  
 Improvements Project  
 American Electric Power

DRAWN BY: EFJ  
 CHECKED:

DATE: 11/16/2022  
 APPROVED:



REFERENCE: WORLD TOPOGRAPHIC, ESRI, ARCGIS ONLINE, ACCESSED 11/2022.

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**LEGEND**

- ▲ Substation
- Proposed Route\*
- Sheet Index
- Existing 69kV or Lower Transmission Line
- Existing 138kV Transmission Line

0 2,000 4,000 8,000 Feet

**REVISED MAPBOOK SHEET INDEX**

**Belfry Area Improvements Project**  
 American Electric Power

**APPALACHIAN POWER**  
 SOUNDLESS ENERGY

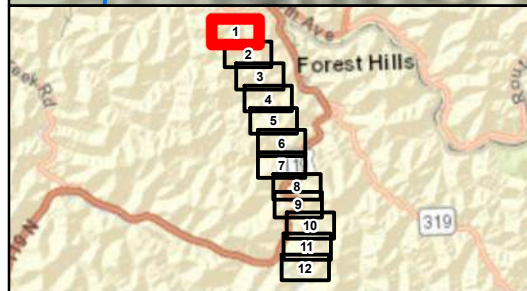
gai consultants

DRAWN BY: EFJ  
 CHECKED:

DATE: 11/16/2022  
 APPROVED:



SHEET 1  
 SHEET 2



REFERENCES: USGS 7.5' TOPOGRAPHIC QUADRANGLES, ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 11/2022, NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS, USGS, 2020, NATIONAL WETLAND INVENTORY (NWI) WETLANDS, USFWS, 2020, 100-YEAR FLOODPLAINS, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), 2020, CEMETERIES, CHURCHES, SCHOOLS, ESRI, ARCGIS ONLINE, 2021.

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LEGEND					
	Substation		Existing Transmission Line (To Be Removed)		Cemetery
	Proposed Structure*		Existing 69kV or Lower Transmission Line		School
	Proposed Route*		Existing 138kV Transmission Line		Church
	Proposed ROW*				NHD Stream
	400-foot Filing Area***				NWI Wetland
	Parcel Boundary**				100-Year Floodplain

0 150 300 600 Feet

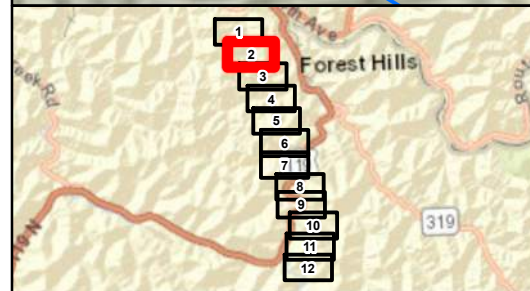
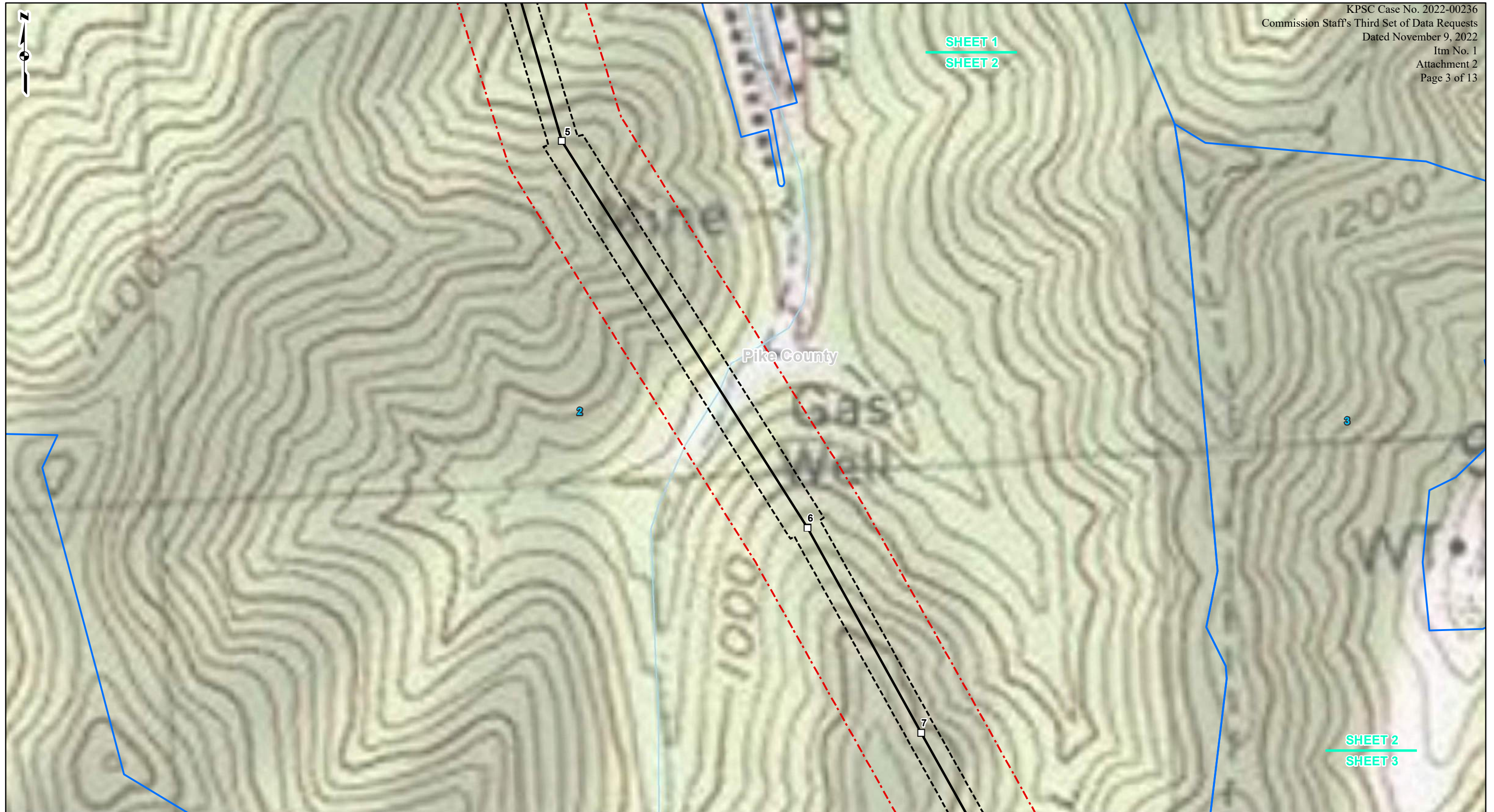
REVISED MAPBOOK (TOPOGRAPHIC)  
 SHEET 1 OF 12

Belfry Area Improvements Project  
 American Electric Power

DRAWN BY: EFJ  
 CHECKED:

DATE: 11/16/2022  
 APPROVED:





REFERENCES: USGS 7.5' TOPOGRAPHIC QUADRANGLES, ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 11/2022, NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS, USGS, 2020, NATIONAL WETLAND INVENTORY (NWI) WETLANDS, USFWS, 2020, 100-YEAR FLOODPLAINS, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), 2020, CEMETERIES, CHURCHES, SCHOOLS, ESRI, ARCGIS ONLINE, 2021.

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**LEGEND**

Substation	Existing Transmission Line (To Be Removed)	Cemetery
Proposed Structure*	Existing 69kV or Lower Transmission Line	School
Proposed Route*	Existing 138kV Transmission Line	Church
Proposed ROW*		NHD Stream
400-foot Filing Area***		NWI Wetland
Parcel Boundary**		100-Year Floodplain

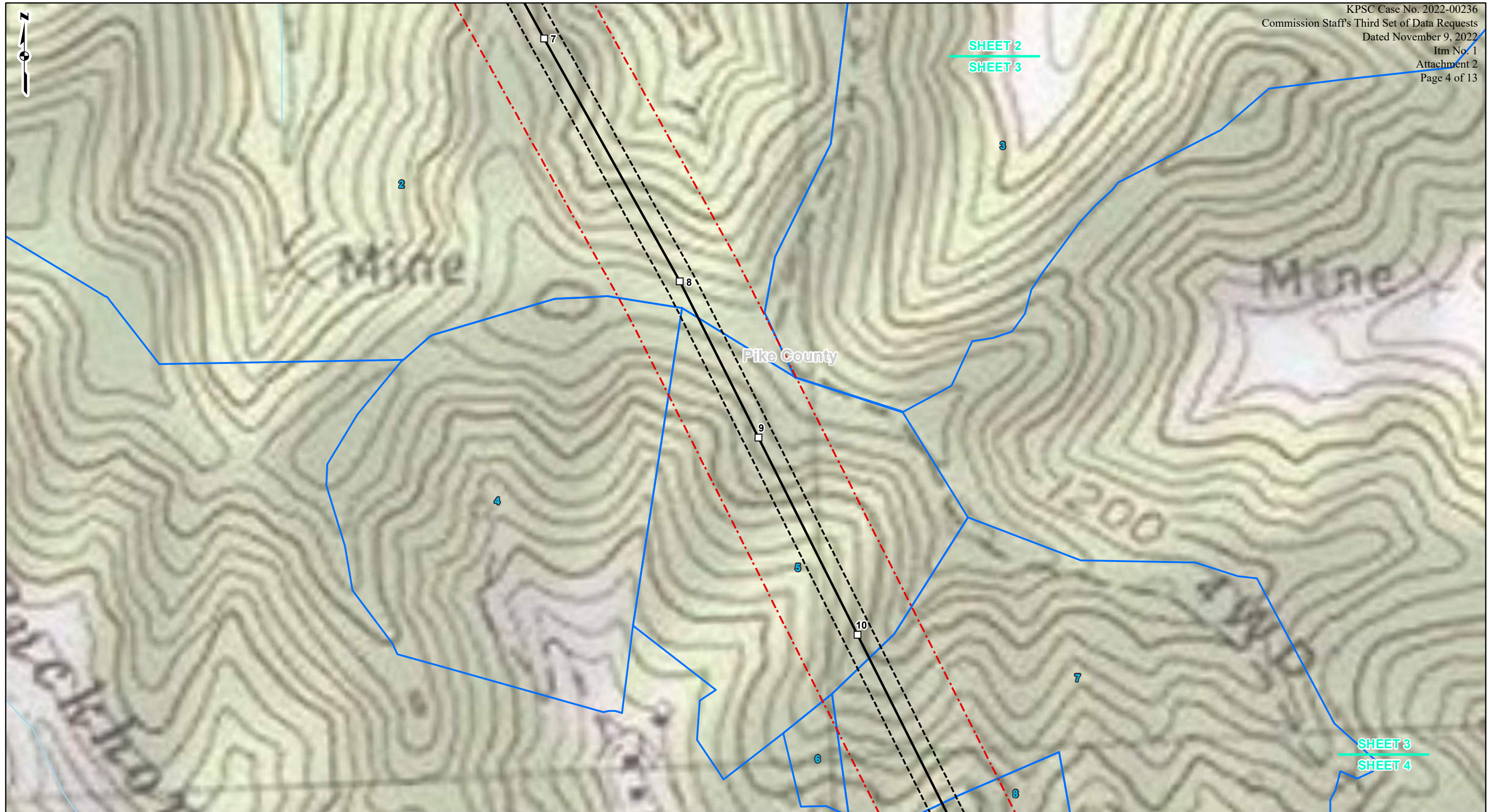
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**REVISED MAPBOOK (TOPOGRAPHIC)  
SHEET 2 OF 12**

**Belfry Area Improvements Project**  
American Electric Power

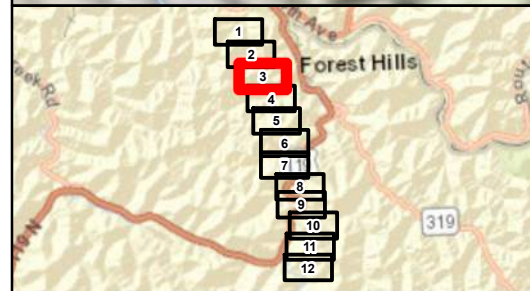
DRAWN BY: EFJ  
CHECKED:

DATE: 11/16/2022  
APPROVED:



SHEET 2  
 SHEET 3

SHEET 3  
 SHEET 4



REFERENCES: USGS 7.5' TOPOGRAPHIC QUADRANGLES, ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 11/2022, NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS, USGS, 2020, NATIONAL WETLAND INVENTORY (NWI) WETLANDS, USFWS, 2020, 100-YEAR FLOODPLAINS, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), 2020, CEMETERIES, CHURCHES, SCHOOLS, ESRI, ARCGIS ONLINE, 2021.

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**LEGEND**

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Proposed Structure*	Existing 69kV or Lower Transmission Line	School
Proposed Route*	Existing 138kV Transmission Line	Church
Proposed ROW*		NHD Stream
400-foot Filing Area***		NWI Wetland
Parcel Boundary**		100-Year Floodplain

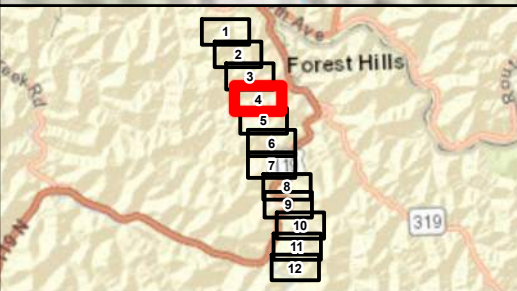
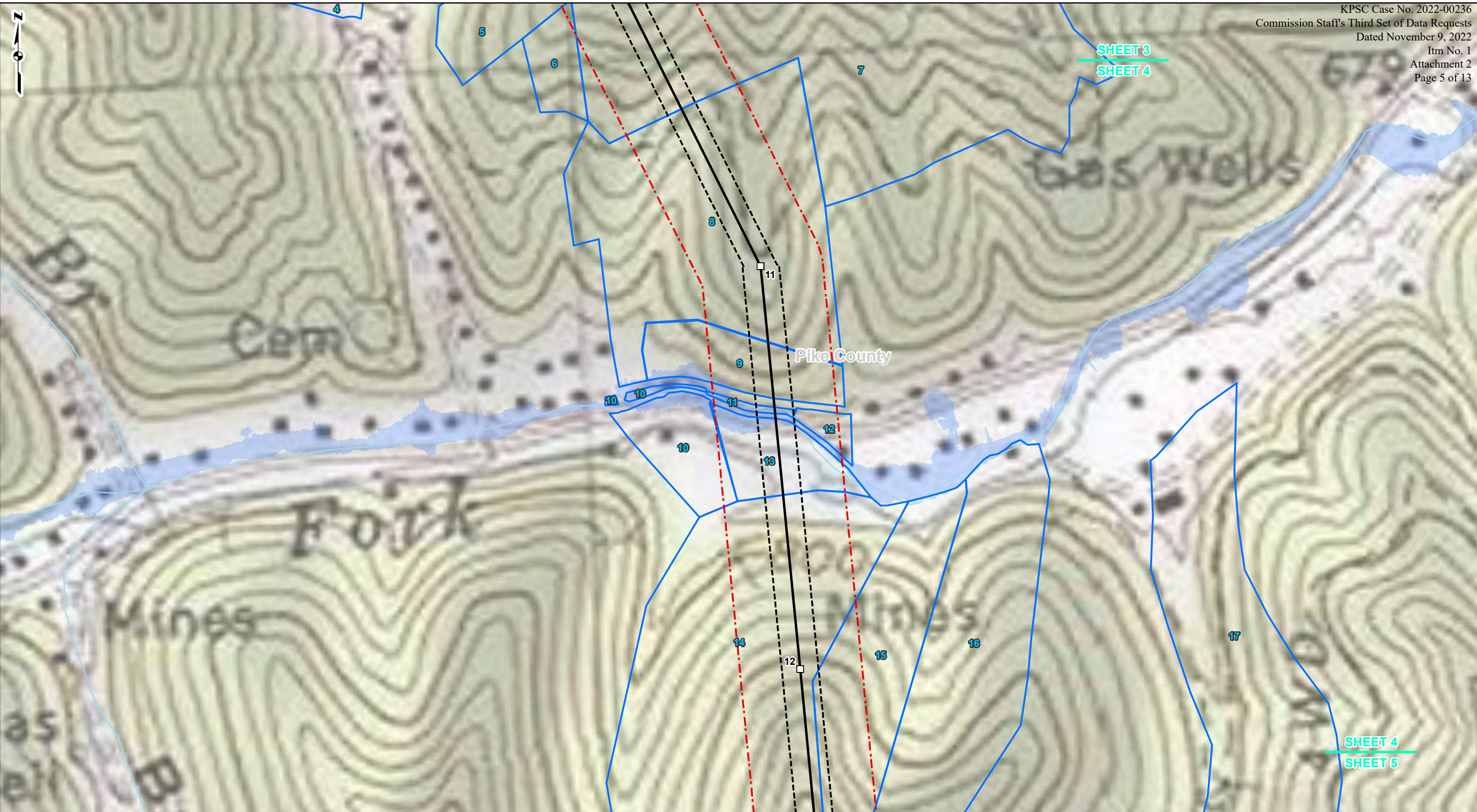
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**REVISED MAPBOOK (TOPOGRAPHIC)  
 SHEET 3 OF 12**

Belfry Area Improvements Project  
 American Electric Power

DRAWN BY: EFJ  
 CHECKED:

DATE: 11/16/2022  
 APPROVED:



REFERENCES: USGS 7.5' TOPOGRAPHIC QUADRANGLES, ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 11/2022, NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS, USGS, 2020, NATIONAL WETLAND INVENTORY (NWI) WETLANDS, USFWS, 2020, 100-YEAR FLOODPLAINS, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), 2020, CEMETERIES, CHURCHES, SCHOOLS, ESRI, ARCGIS ONLINE, 2021.

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**LEGEND**

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Proposed Structure*	Existing 69kV or Lower Transmission Line	School
Proposed Route*	Existing 138kV Transmission Line	Church
Proposed ROW*		NHD Stream
400-foot Filing Area***		NWI Wetland
Parcel Boundary**		100-Year Floodplain

0 150 300 600 Feet

**REVISED MAPBOOK (TOPOGRAPHIC)  
SHEET 4 OF 12**

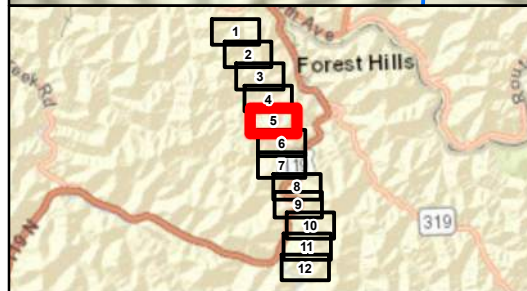
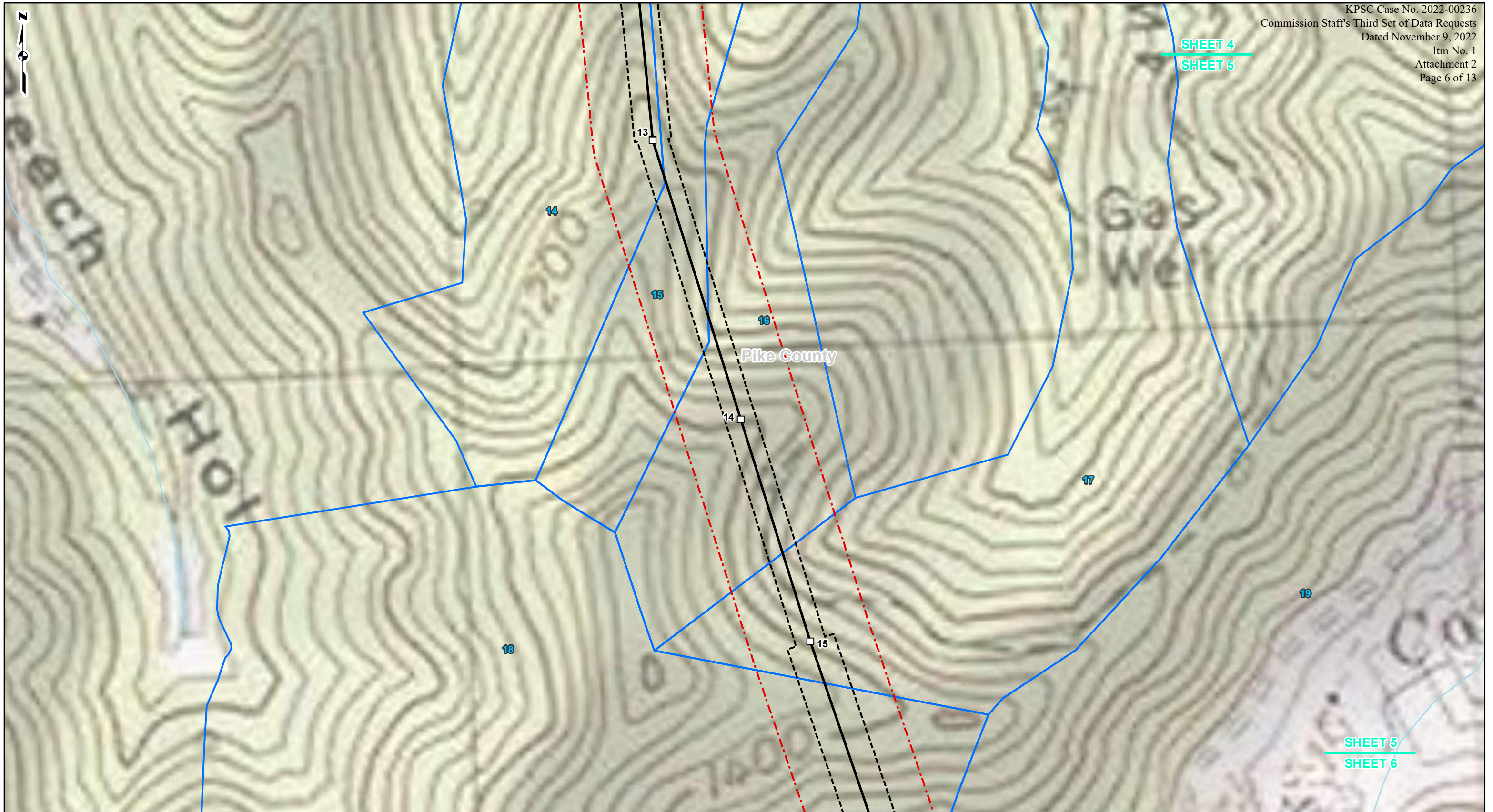
**Belfry Area Improvements Project**  
American Electric Power

DRAWN BY: EFJ  
CHECKED:

DATE: 11/16/2022  
APPROVED:

SHEET 4  
 SHEET 5

SHEET 5  
 SHEET 6



REFERENCES: USGS 7.5' TOPOGRAPHIC QUADRANGLES, ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 11/2022, NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS, USGS, 2020, NATIONAL WETLAND INVENTORY (NWI) WETLANDS, USFWS, 2020, 100-YEAR FLOODPLAINS, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), 2020, CEMETERIES, CHURCHES, SCHOOLS, ESRI, ARCGIS ONLINE, 2021.

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**LEGEND**

Substation	Existing Transmission Line (To Be Removed)	Cemetery
Proposed Structure*	Existing 69kV or Lower Transmission Line	School
Proposed Route*	Existing 138kV Transmission Line	Church
Proposed ROW*		NHD Stream
400-foot Filing Area***		NWI Wetland
Parcel Boundary**		100-Year Floodplain

0 150 300 600 Feet

**REVISED MAPBOOK (TOPOGRAPHIC)  
 SHEET 5 OF 12**

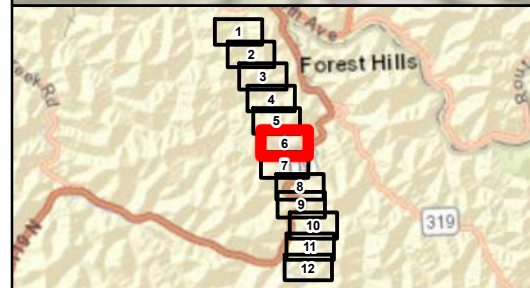
**Belfry Area  
 Improvements Project  
 American Electric Power**

DRAWN BY: EFJ  
 CHECKED:

DATE: 11/16/2022  
 APPROVED:



SHEET 6  
 SHEET 7



REFERENCES: USGS 7.5' TOPOGRAPHIC QUADRANGLES, ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 11/2022, NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS, USGS, 2020, NATIONAL WETLAND INVENTORY (NWI) WETLANDS, USFWS, 2020, 100-YEAR FLOODPLAINS, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), 2020, CEMETERIES, CHURCHES, SCHOOLS, ESRI, ARCGIS ONLINE, 2021.

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**LEGEND**

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□ Proposed Structure*	— Existing 69kV or Lower Transmission Line	⚓ School
— Proposed Route*	— Existing 138kV Transmission Line	⛪ Church
- - - Proposed ROW*		— NHD Stream
- - - 400-foot Filing Area***		■ NWI Wetland
▭ Parcel Boundary**		■ 100-Year Floodplain

0 150 300 600 Feet

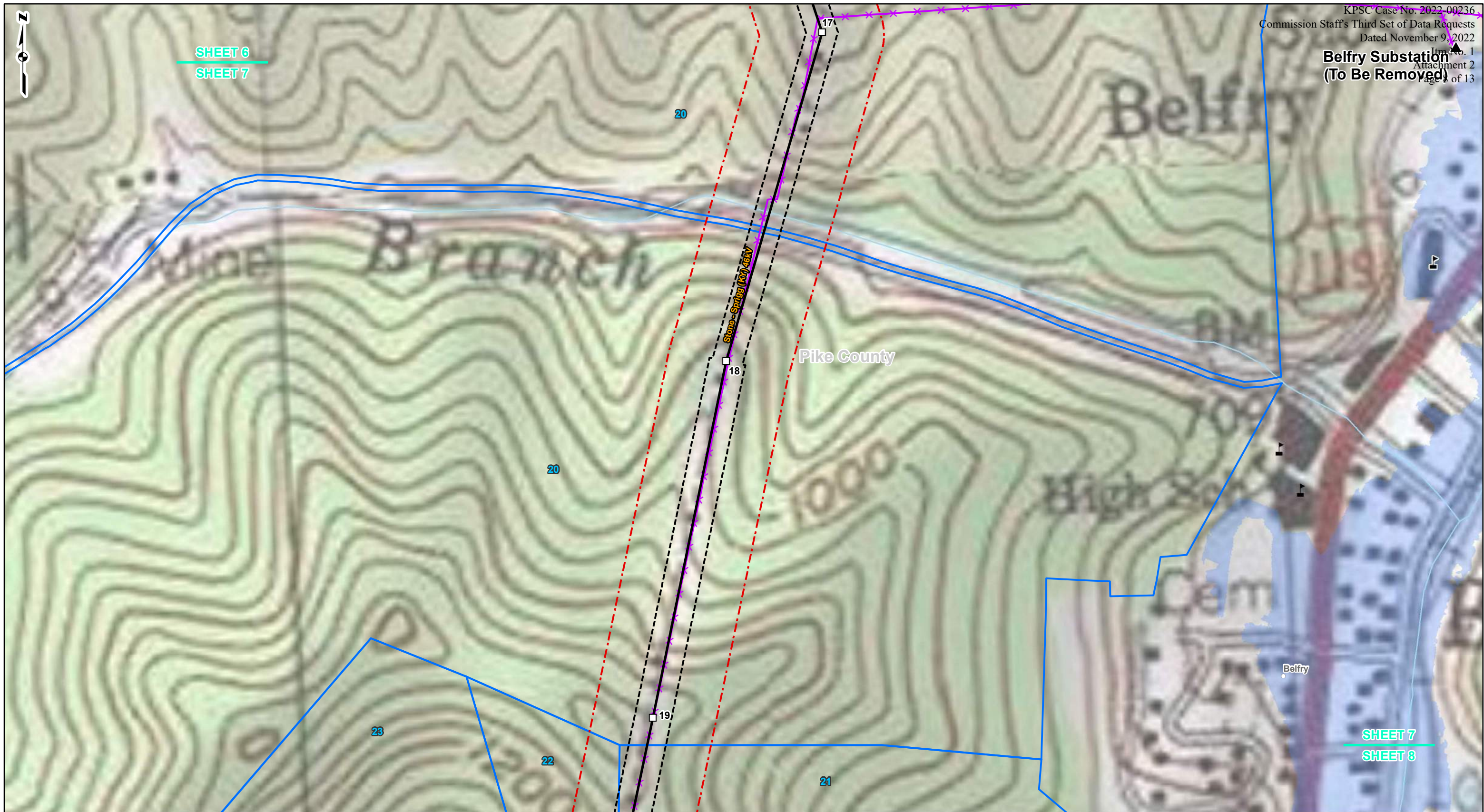
REVISED MAPBOOK (TOPOGRAPHIC)  
 SHEET 6 OF 12

Belfry Area Improvements Project

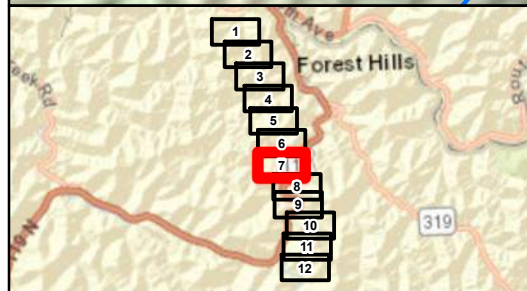
DRAWN BY: EFJ  
 CHECKED:

DATE: 11/16/2022  
 APPROVED:

SHEET 6  
 SHEET 7



SHEET 7  
 SHEET 8



REFERENCES: USGS 7.5' TOPOGRAPHIC QUADRANGLES, ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 11/2022, NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS, USGS, 2020, NATIONAL WETLAND INVENTORY (NWI) WETLANDS, USFWS, 2020, 100-YEAR FLOODPLAINS, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), 2020, CEMETERIES, CHURCHES, SCHOOLS, ESRI, ARCGIS ONLINE, 2021.

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**LEGEND**

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Proposed Route*	Existing 138kV Transmission Line	Church
Proposed ROW*		NHD Stream
400-foot Filing Area***		NWI Wetland
Parcel Boundary**		100-Year Floodplain

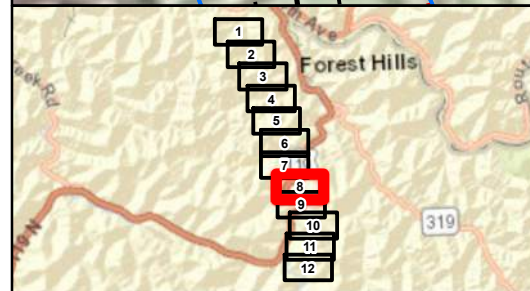
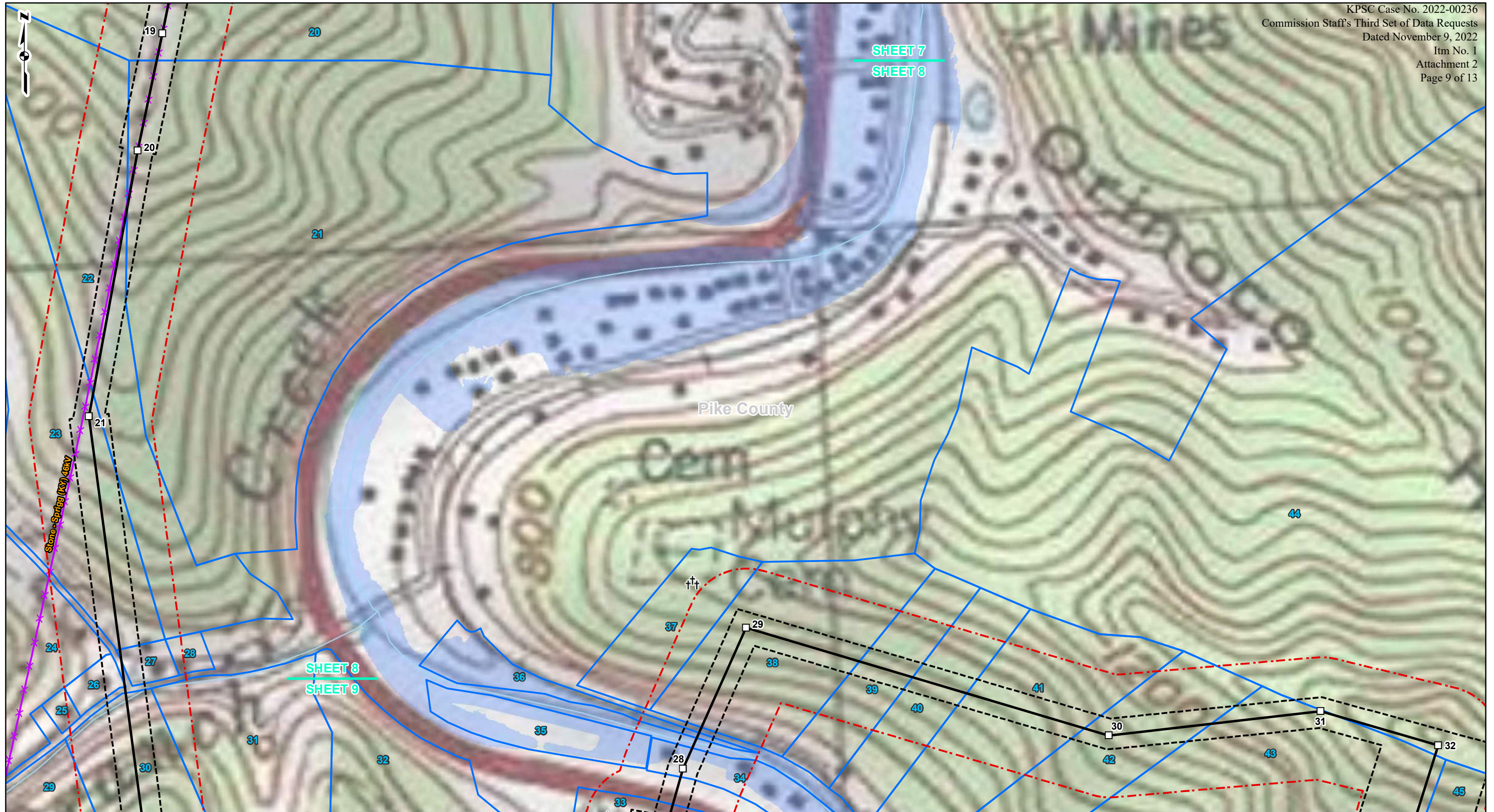
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REVISED MAPBOOK (TOPOGRAPHIC)  
 SHEET 7 OF 12

Belfry Area Improvements Project  
 American Electric Power

DRAWN BY: EFJ  
 CHECKED:

DATE: 11/16/2022  
 APPROVED:



REFERENCES: USGS 7.5' TOPOGRAPHIC QUADRANGLES, ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 11/2022. NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS, USGS, 2020. NATIONAL WETLAND INVENTORY (NWI) WETLANDS, USFWS, 2020. 100-YEAR FLOODPLAINS, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), 2020. CEMETERIES, CHURCHES, SCHOOLS, ESRI, ARCGIS ONLINE, 2021.

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**LEGEND**

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Proposed Route*	Existing 138kV Transmission Line	Church
Proposed ROW*		NHD Stream
400-foot Filing Area***		NWI Wetland
Parcel Boundary**		100-Year Floodplain

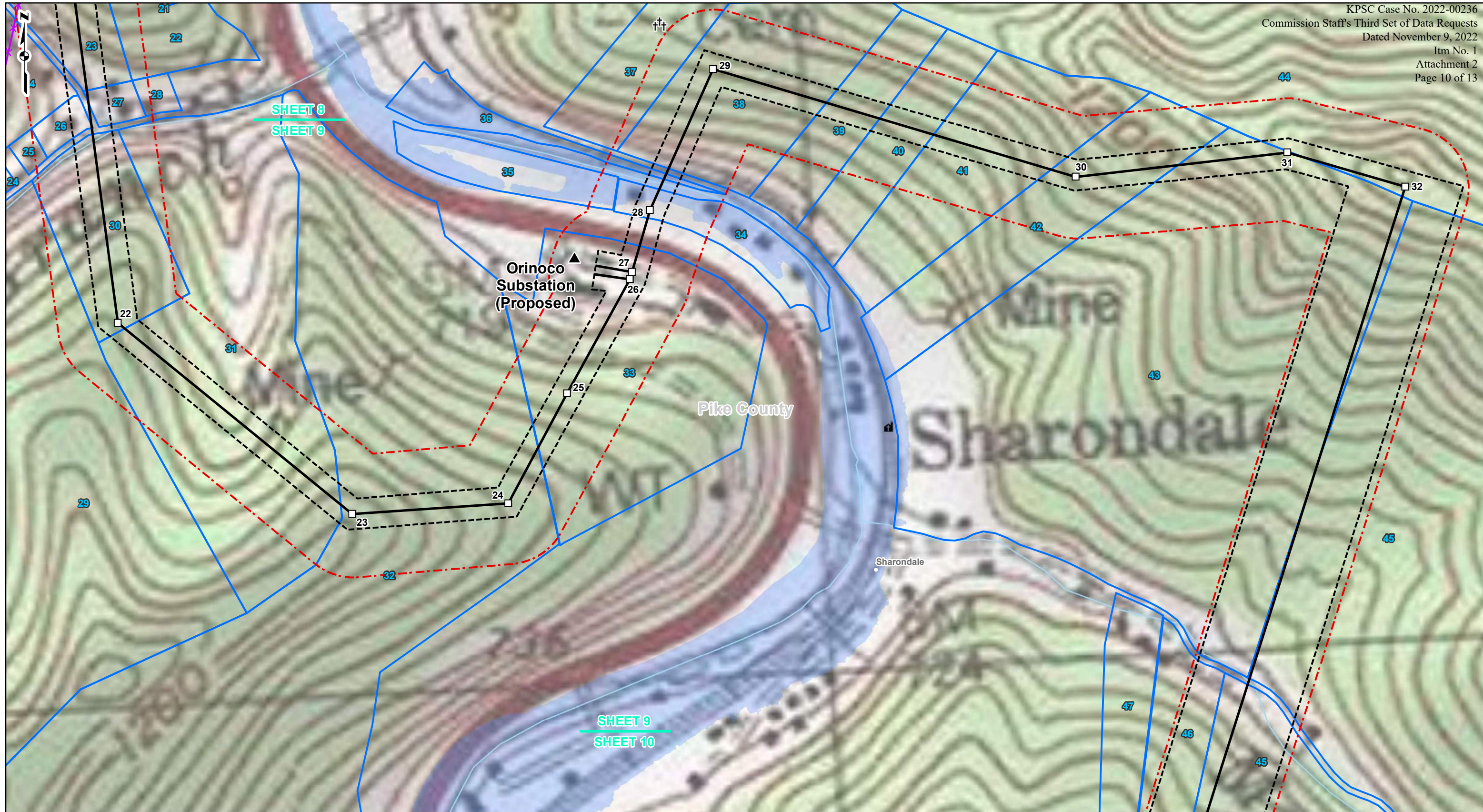
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**REVISED MAPBOOK (TOPOGRAPHIC)  
SHEET 8 OF 12**

**Belfry Area Improvements Project**  
American Electric Power

DRAWN BY: EFJ  
CHECKED:

DATE: 11/16/2022  
APPROVED:



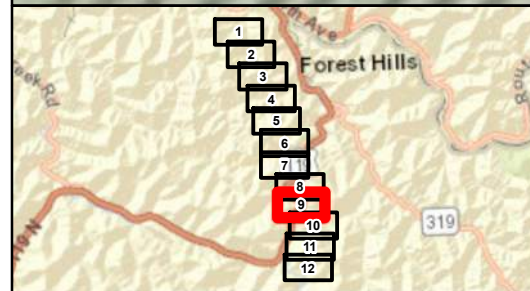
SHEET 8  
SHEET 9

SHEET 9  
SHEET 10

Orinoco  
Substation  
(Proposed)

Pike County

Sharondale



REFERENCES: USGS 7.5' TOPOGRAPHIC QUADRANGLES, ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 11/2022, NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS, USGS, 2020, NATIONAL WETLAND INVENTORY (NWI) WETLANDS, USFWS, 2020, 100-YEAR FLOODPLAINS, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), 2020, CEMETERIES, CHURCHES, SCHOOLS, ESRI, ARCGIS ONLINE, 2021.

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— Proposed Route*	— Existing 138kV Transmission Line	⚎ Church
- - - Proposed ROW*		— NHD Stream
- - - 400-foot Filing Area***		■ NWI Wetland
□ Parcel Boundary**		■ 100-Year Floodplain

0 150 300 600 Feet

REVISED MAPBOOK (TOPOGRAPHIC)  
SHEET 9 OF 12

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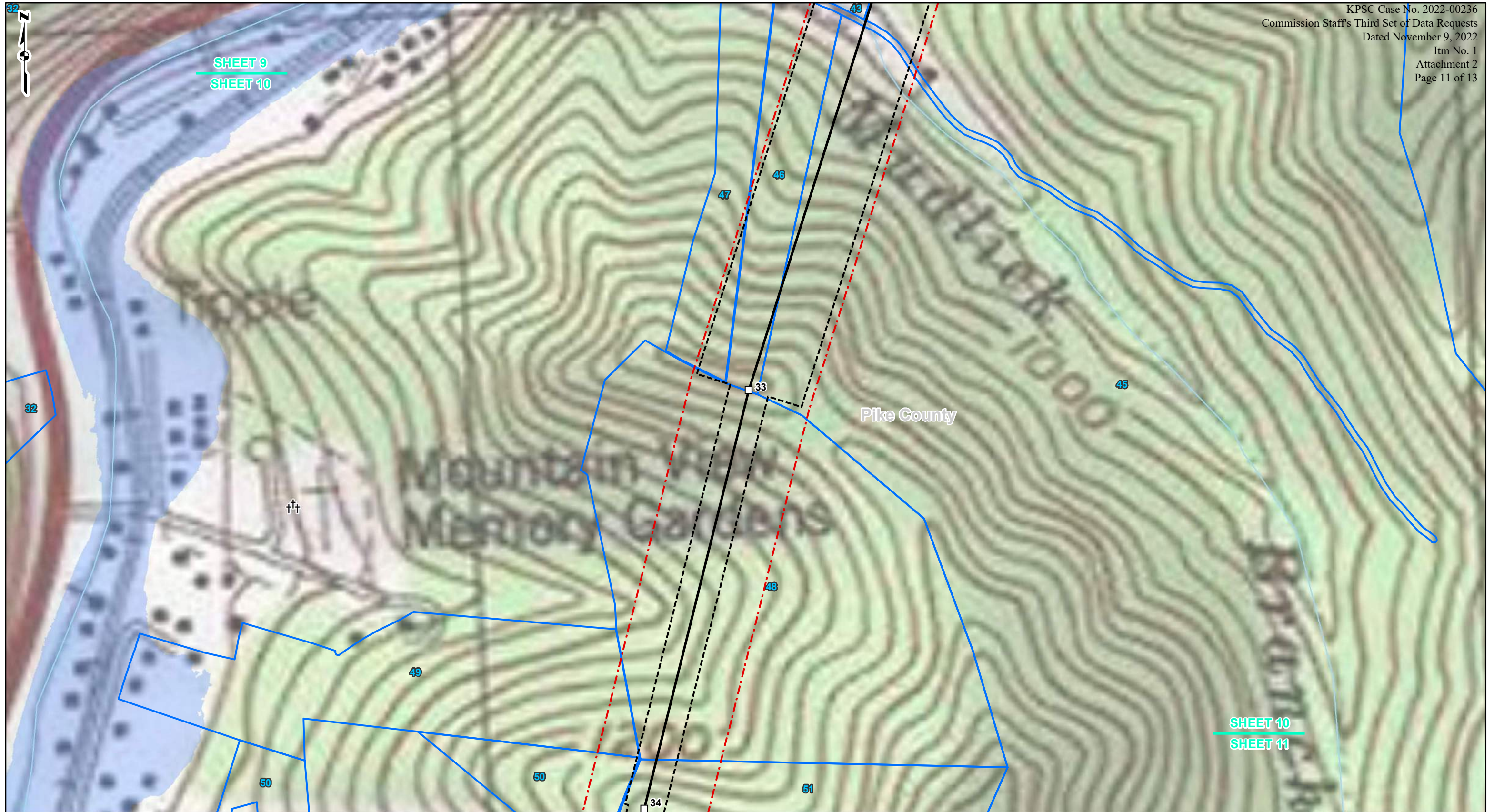
Belfry Area Improvements Project  
American Electric Power

APPALACHIAN POWER  
SOUNDLESS ENERGY

DRAWN BY: EFJ  
CHECKED:

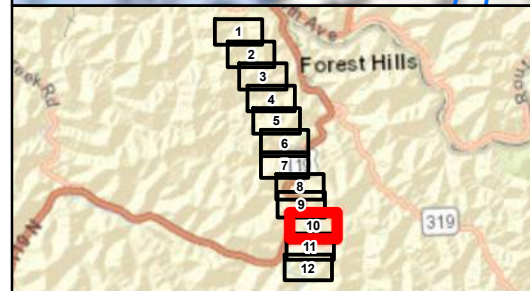
DATE: 11/16/2022  
APPROVED:





SHEET 9  
 SHEET 10

SHEET 10  
 SHEET 11



REFERENCES: USGS 7.5' TOPOGRAPHIC QUADRANGLES, ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 11/2022, NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS, USGS, 2020, NATIONAL WETLAND INVENTORY (NWI) WETLANDS, USFWS, 2020, 100-YEAR FLOODPLAINS, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), 2020, CEMETERIES, CHURCHES, SCHOOLS, ESRI, ARCGIS ONLINE, 2021.

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— Proposed Route*	— Existing 138kV Transmission Line	🏛 Church
⬜ Proposed ROW*		🌊 NHD Stream
⬜ 400-foot Filing Area***		🟢 NWI Wetland
⬜ Parcel Boundary**		🟡 100-Year Floodplain

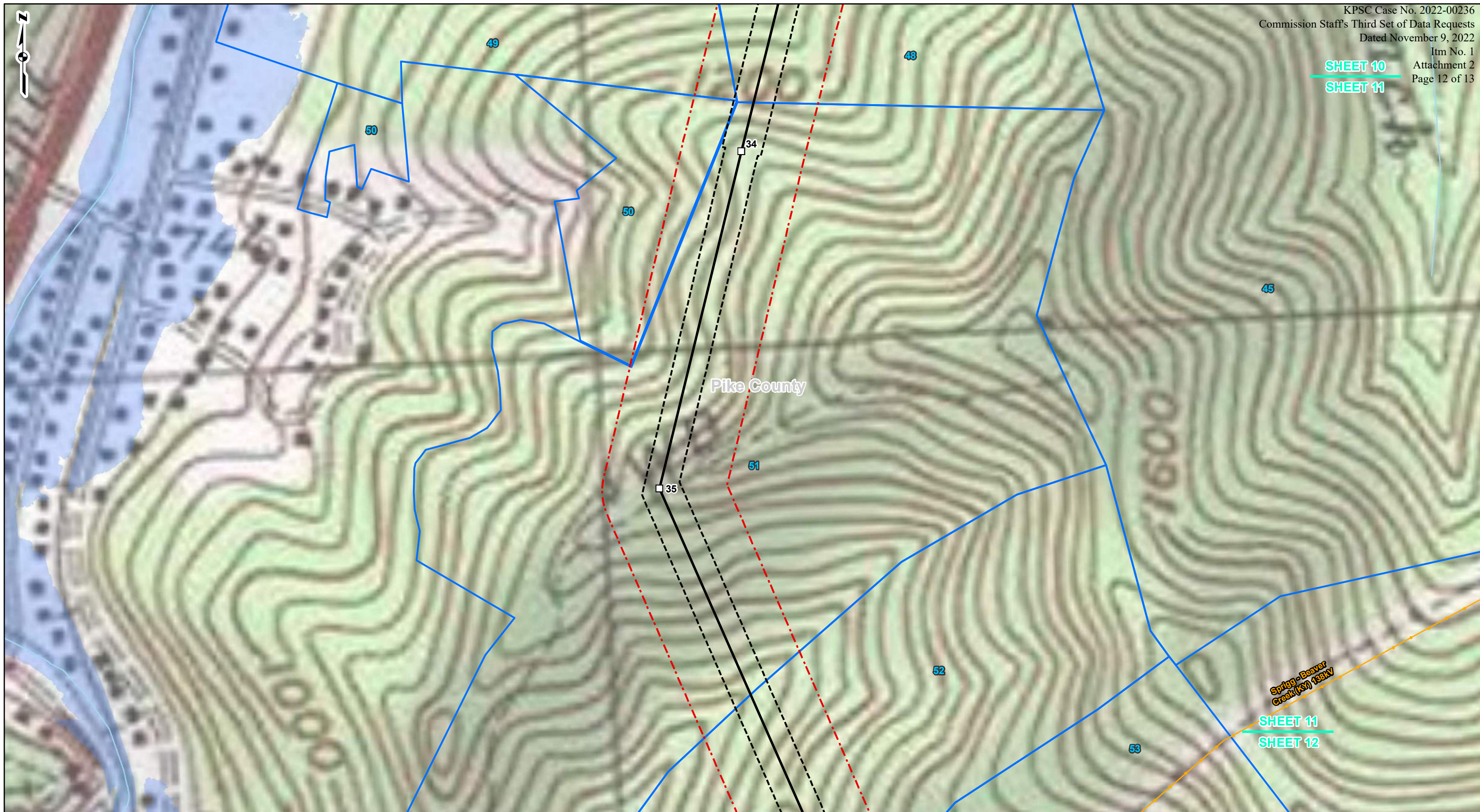
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REVISED MAPBOOK (TOPOGRAPHIC)  
 SHEET 10 OF 12

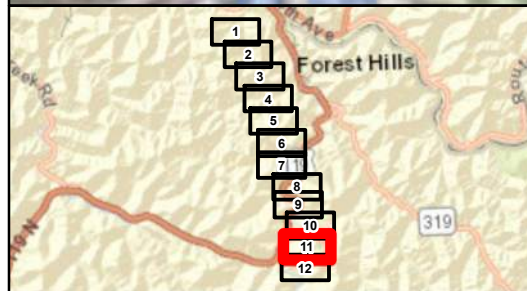
 Belfry Area Improvements Project  
 American Electric Power 

DRAWN BY: EFJ  
 CHECKED:

DATE: 11/16/2022  
 APPROVED:



**SHEET 11**  
**SHEET 12**



REFERENCES: USGS 7.5' TOPOGRAPHIC QUADRANGLES, ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 11/2022, NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS, USGS, 2020, NATIONAL WETLAND INVENTORY (NWI) WETLANDS, USFWS, 2020, 100-YEAR FLOODPLAINS, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), 2020, CEMETERIES, CHURCHES, SCHOOLS, ESRI, ARCGIS ONLINE, 2021.

\* Shown is a preliminary design. This design is not the final route centerline. Final line route and structure locations will be determined during final engineering, which includes ground survey and geotechnical and environmental studies. Nonetheless, the Company believes the centerline illustrated is the most suitable alignment based upon preliminary analysis.

\*\*Parcels are not based on an accurate ground survey and should not be construed or used as exact descriptions of legal boundaries.

\*\*\* A right-of-way will be sited within the 400-foot Filing Area. The Company needs the flexibility to shift the centerline no more than 200 feet in either direction from the centerline indicated as necessary after completion of the final engineering, ground surveys and interviews with the landowners.

**LEGEND**

Substation	Existing Transmission Line (To Be Removed)	Cemetery
Proposed Structure*	Existing 69kV or Lower Transmission Line	School
Proposed Route*	Existing 138kV Transmission Line	Church
Proposed ROW*		NHD Stream
400-foot Filing Area***		NWI Wetland
Parcel Boundary**		100-Year Floodplain

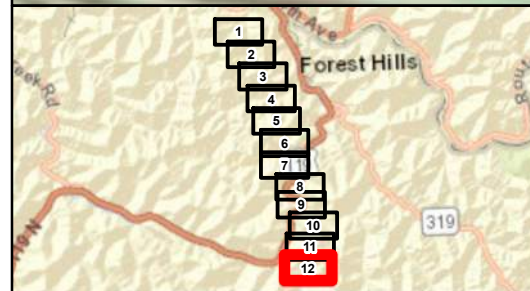
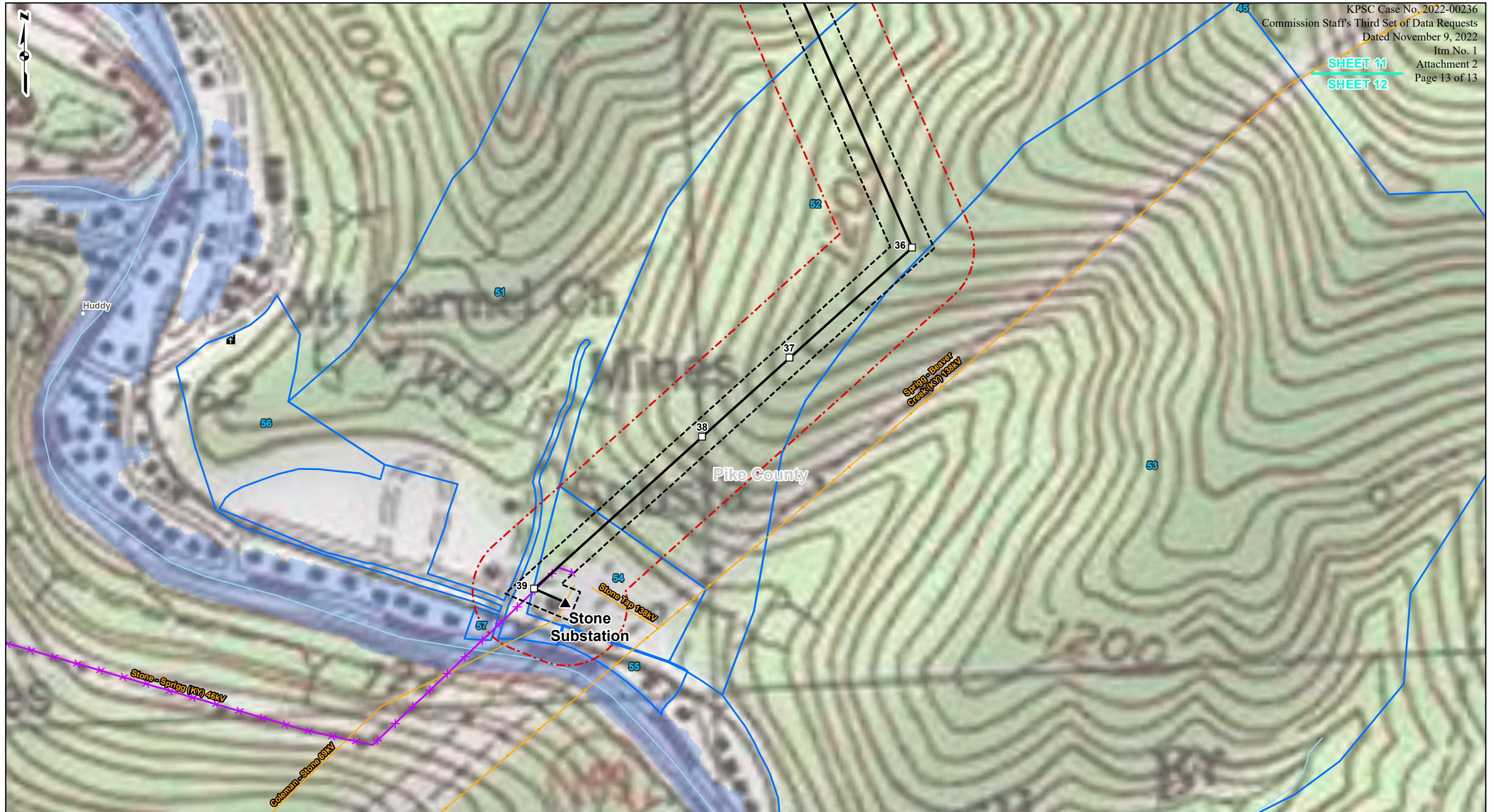
0 150 300 600 Feet

**REVISED MAPBOOK (TOPOGRAPHIC)  
 SHEET 11 OF 12**

**Belfry Area Improvements Project**  
 American Electric Power

DRAWN BY: EFJ  
 CHECKED:

DATE: 11/16/2022  
 APPROVED:



REFERENCES: USGS 7.5' TOPOGRAPHIC QUADRANGLES, ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 11/2022. NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS, USGS, 2020. NATIONAL WETLAND INVENTORY (NWI) WETLANDS, USFWS, 2020. 100-YEAR FLOODPLAINS, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), 2020. CEMETERIES, CHURCHES, SCHOOLS, ESRI, ARCGIS ONLINE, 2021.

\* Shown is a preliminary design. This design is not the final route centerline. Final line route and structure locations will be determined during final engineering, which includes ground survey and geotechnical and environmental studies. Nonetheless, the Company believes the centerline illustrated is the most suitable alignment based upon preliminary analysis.

\*\*Parcels are not based on an accurate ground survey and should not be construed or used as exact descriptions of legal boundaries.

\*\*\* A right-of-way will be sited within the 400-foot Filing Area. The Company needs the flexibility to shift the centerline no more than 200 feet in either direction from the centerline indicated as necessary after completion of the final engineering, ground surveys and interviews with the landowners.

**LEGEND**

Substation	Existing Transmission Line (To Be Removed)	Cemetery
Proposed Structure*	Existing 69kV or Lower Transmission Line	School
Proposed Route*	Existing 138kV Transmission Line	Church
Proposed ROW*		NHD Stream
400-foot Filing Area***		NWI Wetland
Parcel Boundary**		100-Year Floodplain

0 150 300 600 Feet

REVISED MAPBOOK (TOPOGRAPHIC)  
 SHEET 12 OF 12

Belfry Area  
 Improvements Project  
 American Electric Power

DRAWN BY: EFJ  
 CHECKED:

DATE: 11/16/2022  
 APPROVED:

Kentucky Power Company  
KPSC Case No. 2022-00236  
Commission Staff's Third Set of Data Requests  
Dated November 9, 2022

**DATA REQUEST**

**KPSC 3\_2** Refer to Kentucky Power's response to Staff's Second Request for Information, Item 1. Explain why the right of way (ROW) for Parcel 43 will need to be 360 feet.

**RESPONSE**

As currently engineered, the span crossing Little Mudlick Branch Road between Structures 32 and 33 is approximately 3,000 feet long and does require additional conductor blowout area (refer to The Company's response to KPSC 1\_13 for an explanation of conductor blow-out) on Parcel 43. At its widest, the right of way (ROW) is approximately 360 feet on Parcel 43.

It is the Company's standard that the width of secured transmission line ROW will be sufficient that the installed facilities can operate to their full design capacity without limitations from current or reasonably anticipated changes in land use within or beyond the limits of the secured ROW. A width of 100 feet has historically been adequate to establish conductor clearances to the edge of ROW; however, steep mountainous terrain, long span lengths, and varying structure types are a few of the factors that may influence the need for additional width in certain spans. At a minimum, the determined final ROW width must encompass conductor blow-out extents, structure components, and sufficient clearances to vegetation in order to maintain a reliable electric transmission system while accounting for the adequate safety of the public.

It should be noted that despite the expected easement width of 360 feet for the span between Structures 32 and 33, only an anticipated 25% of the span will be cleared of vegetation due to the significant distance between the projected conductor location and the ground as you move over 500 feet away from Structure 32 and before getting within 300 feet of Structure 33.

Witness: Mary Jane L. McMillen

Kentucky Power Company  
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Commission Staff's Third Set of Data Requests  
Dated November 9, 2022  
Page 1 of 2

**DATA REQUEST**

- KPSC 3\_3** Refer to Kentucky Power's response to Staff's Second Request, Item 9. For each encroachment:
- a. Provide a map(s) of the corresponding parcel depicting each building encroachment with a scale as well as measurements depicting the encroachment into the ROW and identifying the parcel using the parcel number from Exhibit 12 to the Application, if applicable.
  - b. Provide the date each encroachment was discovered.
  - c. Provide the date of the inspection, either in person or aerial, of that area prior to the encroachment being discovered.
  - d. Describe Kentucky Power's actions upon discovering the encroachment in each instance.

**RESPONSE**

- a. Please see KPCO\_R\_KPSC\_3\_3\_Attachment1 for maps depicting potential existing encroachments along the existing transmission line. Only those areas of the existing transmission line where rebuilding on-centerline was considered are depicted in the maps.
- b. and c. Kentucky Power does not maintain the requested information in the manner requested. The Company identifies encroachments in the context of inspecting its facilities. There are several ways that an encroachment is typically identified:
  - 1. As part of a routine or special inspection;
  - 2. Identified by an AEP employee or the public as a potential concern;
  - 3. As part of the activity preparing for a maintenance or capital project.

Any building within an existing transmission ROW is only considered a potential encroachment until an engineering study is conducted. The first consideration is whether there is potential risk to the public. If so, immediate action is required.

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d. In this instance, the encroachments were identified during the engineering of this Project. Once the Company developed Study Segments for the Project that considered rebuilding on centerline, engineers reviewed those areas for potential encroachments. The two areas identified in the maps would have potential encroachments to the line if rebuilt in place. No actions were taken because in both cases, no immediate safety risks were identified, relocating the line off centerline in both cases was necessary for terrain access and outage constraints, and the encroachments could be, and were, mitigated by relocating the line.

Witness: George T. Reese (a&d)

Witness: Mary Jane L. McMillen (b&c)



**LEGEND**

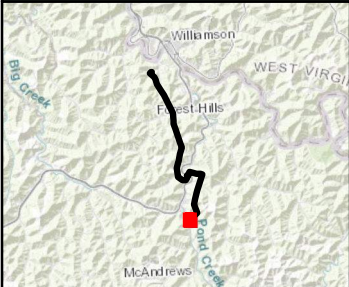
- ★ Potential Encroachment
- ▲ Existing Substation
- Existing Transmission Line

0 1,750 3,500 7,000 Feet

**ENCROACHMENTS OVERVIEW**

**BELFRY AREA TRANSMISSION LINE PROJECT**  
 KENTUCKY POWER

DRAWN BY: EFJ      DATE: 11/21/2022  
 CHECKED: LMJ      APPROVED:



**LEGEND**

- Existing Substation
- Existing Transmission Line
- Existing 100-Ft ROW
- Parcel Boundary
- Potential Encroachment

0 25 50 100 Feet

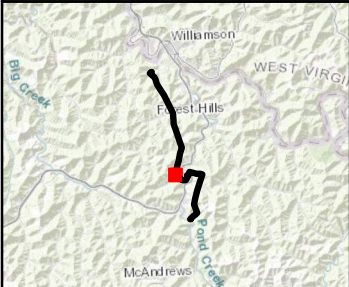
**POTENTIAL ENCROACHMENT #1**

BELFRY AREA  
 TRANSMISSION LINE PROJECT  
 KENTUCKY POWER





DRAWN BY: EFJ      DATE: 11/21/2022  
 CHECKED: LMJ      APPROVED:

REFERENCES: AERIAL IMAGERY, MAXAR, 2021, ESRI, ARCGIS ONLINE, ACCESSED 11/2022. WORLD TRANSPORTATION, ESRI, ARCGIS ONLINE, ACCESSED 11/2022. CONTOUR DATA, DERIVED FROM USGS DIGITAL ELEVATION MODELS (DEM), DOWNLOADED 2022.






**LEGEND**

-  Existing Transmission Line
-  Existing 100-Ft ROW
-  Parcel Boundary
-  Potential Encroachment

0      25      50      100  
 Feet

**POTENTIAL ENCROACHMENT #2**


 BELFRY AREA  
 TRANSMISSION LINE PROJECT  
 KENTUCKY POWER

DRAWN BY: EFJ      DATE: 11/21/2022  
 CHECKED: LMJ      APPROVED:

REFERENCES: AERIAL IMAGERY, MAXAR, 2021, ESRI, ARCGIS ONLINE, ACCESSED 11/2022. WORLD TRANSPORTATION, ESRI, ARCGIS ONLINE, ACCESSED 11/2022. CONTOUR DATA, DERIVED FROM USGS DIGITAL ELEVATION MODELS (DEM), DOWNLOADED 2022.

Kentucky Power Company  
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**DATA REQUEST**

**KPSC 3\_4** Refer to Kentucky Power's response to Staff's Second Request, Item 9e, which appears to indicate that Alternate Route D is still being considered. Clarify whether the utility views the proposed route and Alternate Route D as both viable options for construction.

**RESPONSE**

No, Alternative D is not considered a viable option due to the outage constraints described in the Company's response to KPSC 2-10. Alternative D was considered but not selected as the proposed route as further described in the Siting Study (Exhibit 10 to the Application).

Witness: George T. Reese

Kentucky Power Company  
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**DATA REQUEST**

**KPSC 3\_5** Provide the known number of buildings or other structures currently encroaching Kentucky Power transmission ROWs.

**RESPONSE**

The Company's last desktop review of possible encroachments within Kentucky Power's ROW was completed in 2017 using the best aerial photography available at that time. The 2017 review indicates 1,213 possible encroachments (of which 673 are potentially habitable buildings) possibly located in the Company's 1,226 miles of transmission line ROW. The exact location or condition of any potential encroachment, along with the accuracy or completeness of the aerial data, has not been fully verified with ground inspections and engineering analysis. See KPCO\_R\_KPSC\_3\_5\_Attachment1 which describes how the data was created, its intended use, and limitations.

Witness: George T. Reese

## Description

In 2017, WSP was hired by American Electric Power (AEP) to conduct a desktop inventory of habitable and non-habitable obstructions within or near AEP's transmission rights-of-way (ROW). The inventory was conducted as a desktop level analysis using Geographic Information System (GIS) software to perform aerial photo interpretation of potential habitable and non-habitable obstructions within AEP's transmission rights-of-way.

Bing Maps aerial imagery was the primary imagery source for this effort. Supplemental imagery resources included more recent or higher resolution imagery that was publicly available in a given area as of late-summer 2017, such as imagery from ESRI World Imagery, National Agricultural Imagery Program (NAIP), Earth Resources Observation and Science (EROS), Google Street View, or state specific imagery services.

The transmission centerline GIS data was provided to WSP by AEP. To prevent digitizing incorrect potential habitable and non-habitable obstructions, WSP compared the AEP transmission centerline data to the transmission centerline in the aerial imagery at an absolute scale between 1:500 and 1:1500. In places where the transmission line deviated > 5 feet from the transmission structures visible on the aerial imagery, editors moved the transmission line vertices to the base of the transmission structures. Contiguous segments of transmission lines that ran through rural areas with no potential obstructions were not edited to match the aerial imagery and marked as "Skipped" in the attribute table.

Digitized potential obstruction points were placed at the edge of the obstruction closest to the transmission centerline. An obstruction is any object that may pose an access or constructability concern. Habitable and non-habitable obstruction classes were determined using aerial and Google Street View interpretation. Industrial and other obstructions fell in both classifications dependent upon assumed obstruction type and use. Potential obstructions classified as habitable and non-habitable are defined in Table 1 below.

<b>Table 1. Classification of Obstruction Types</b>		
<b>Obstruction Type</b>	<b>Habitable</b>	<b>Non-Habitable</b>
Apartment	X	
Commercial	X	
Cemetery		X
Church	X	
Industrial*	partial	partial
Large Outbuilding	X	
Residential	X	
School	X	
Small Outbuilding		X
Other* (in-ground pool, sign, trampoline, ect.)	partial	partial

*\*Any obstruction classified as "other" or "industrial" were reviewed individually to determine if it was habitable or not. For that reason, obstruction classification "Other" and "Industrial" are represented as "Partial".*

Conductor zones and ROW widths can vary along any given transmission line based on a variety of factors including span length, transmission structure types, conductor type, tension, and terrain, etc. So, generalized buffer categories were created based solely on transmission line voltage. Potential obstructions were grouped into two distance categories: within the assumed conductor zone, or within the assumed right of way area. If the digitized potential obstruction fell within the Digitizing Zone Corridor and outside either distance category, it was not grouped into any distance group and left blank. Assumed conductor zones and assumed right of way corridor widths were approximated by line voltage according to Table 2 below:

<b>Table 2. Assumed ROW, Conductor Zone, and Digitization Corridor Widths</b>			
Line Voltage	Right of Way Corridor2 (feet)	Conductor Zone Corridor2 (feet)	Digitizing Zone Corridor (feet)
23-69 kV	50	15	100
88-161 kV	100	25	150
230 kV	130	70	200
345 kV	150	70	200
500-765 kV	200	100	250

Each transmission line was assigned a level rating of one through five based on the count of potential habitable obstructions within the assumed conductor zone and assumed right of way. The ranges in Table 3 below were determined by the use of a histogram and through judgement based off subject matter experience.

<b>Table 3. Assumed ROW and Conductor Zone Obstruction Levels</b>		
Obstruction Level	Habitable Obstructions in Assumed Right of Way	Habitable Obstructions in Assumed Conductor Zone
1	0	0
2	1 to 5	1 to 2
3	6 to 15	3 to 5
4	16 to 25	6 to 10
5	>25	>10

## Terms of Use

The use of this data is intended to identify areas for further analysis and to assist AEP Transmission Planning and Asset Management when determining preliminary cost estimates and schedules for brownfield rebuild projects. This data is not intended to replace functional scoping. All digitized obstruction points are potential obstructions. Detailed on-the-ground surveys and/or right-of-way documentation searches will provide a more detailed and accurate assessment of any asset limitations.

Assumed Conductor zone and assumed ROW corridor widths can vary greatly due a multitude of factors including span length, transmission structure types, conductor type, tension, and terrain, etc. That level of information was not available for this effort so generalized buffer categories were created by a team of subject matter experts based solely on transmission line voltage.

Assumed ROW and Assumed Conductor Zone Obstruction Levels rating system is an approximation with the publicly available data and should not be used to replace functional and detailed scoping methods. The intent of this rating system is to communicate potential impact to scope, schedule and cost when Planning is identifying upcoming line rebuild projects.

The digitized potential obstructions and obstruction level rating system was done with AEP transmission centerline data from 2017. This means there are transmission lines included that have changed names and/or were rebuilt since 2017. Any transmission lines that were rebuilt after 2017 could be represented differently in the existing AEP Transmission GIS data.

- For any given area, the availability of high resolution, clear imagery is not guaranteed. Line placement and identification in some areas may be less accurate due to the increased difficulty of interpreting lower quality aerial imagery, although using the same aerial imagery source and the same editor for each line help ensure that data is placed with higher precision (i.e., if the line is inaccurate, it is at least consistently inaccurate in relation to the points digitized along it).
- Aerial imagery web services are compiled from multiple sensors with varying spatial and temporal resolutions. Imagery along a single transmission line may have been taken in different years and during different weather conditions, resulting in discrepancies when aligning the transmission line and identifying/locating transmission structures.
- Orthorectification of different imagery sources also introduces error when comparing transmission structure locations between multiple imagery sources; in some places, a secondary imagery source may shift a transmission line in excess of 20 feet from where it is shown in the primary imagery source.
- It is not always possible to determine which imagery source is the most recent, and the most recent imagery is not always the highest quality imagery. Lines marked in this dataset can only be as recent and accurate as the imagery sources used to correct them, and they do not necessarily represent current ground conditions, as transmission lines may have been built or re-built since aerial imagery was last taken.
- Imagery web services are controlled remotely and are subject to change. For example, in some areas, Bing imagery was updated between when a potential obstruction was originally digitized and when it was reviewed, and the USGS EROS high-resolution orthoimagery web service was shut down in October, preventing further use of this service. New spatial, temporal, and meteorological errors will be introduced in each new imagery update, making the corrected transmission lines appear to be placed incorrectly in reference to the new imagery. For this reason, lines in this dataset should not be considered as the "one true location" of any given transmission line; this data is a snapshot in time and should only be used to gauge relative distances from a transmission line centerline to any potential encroachment.

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**DATA REQUEST**

**KPSC 3\_6** Explain whether a structure encroaching in a transmission line ROW is a violation of NERC reliability standards.

**RESPONSE**

As a preliminary matter, North American Electric Reliability Corporation's (NERC) jurisdiction generally applies to voltage levels 100kV and above.

A structure encroaching on a transmission line ROW itself is not a per se violation of the NERC standards; however, a violation could result if a NERC registered entity does not respond in accordance with its policies and procedures implementing NERC Reliability Standards.

The Company has not identified any potential encroachments on the existing or proposed line that is the subject of this case that would be the basis for a NERC reliability standards violation.

Witness: Mary Jane L. McMillen

Kentucky Power Company  
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**DATA REQUEST**

**KPSC 3\_7** Explain whether the same Kentucky Power personnel who inspect distribution lines, especially in urban areas, also inspect transmission lines. If not, explain whether personnel who inspect distribution lines in urban areas look over nearby transmission line facilities in order to proactively identify and report problem areas.

**RESPONSE**

Distribution line inspectors are a different group from transmission line inspectors; however, the Company has personnel regularly inspecting the distribution lines in urban and in rural areas. If distribution personnel notices anomalies or concerns on nearby transmission lines, these concerns are reported to transmission personnel for further inspection. Transmission personnel will evaluate these concerns and if a potential encroachment is identified, detailed engineering analysis and surveying will determine if the concern is compliant with National Electrical Safety Code clearances.

Witness: Brian K. West



Kentucky Power Company  
KPSC Case No. 2022-00236  
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Dated November 9, 2022

**DATA REQUEST**

**KPSC 3\_8** Explain whether a developer or property owner is required to contact Kentucky Power prior to constructing a building or anything else that could encroach on a transmission line ROW. If so, explain whether and by what means Kentucky Power has the authority to require the proposed structure to be moved out of the encroachment area.

**RESPONSE**

No, a developer or property owner is not required to contact Kentucky Power prior to construction in proximity to a transmission line ROW; however, a developer or property owner is responsible for upholding the terms of any easements on their properties. The confirmation that building code and land use requirements are upheld could fall to the building inspector for the locality. Kentucky Power serves 20 counties which are located in the eastern part of Kentucky and are primarily rural. There are no building permits required outside the incorporated areas. The only county or municipal requirement is that prior to electrical service being provided that the dwelling have established an approved septic system or be connected to a municipal sewer system. Kentucky Power does have the right to legally enforce easement agreements within easement areas.

Witness: Brian K. West

Kentucky Power Company  
KPSC Case No. 2022-00236  
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**DATA REQUEST**

**KPSC 3\_9** Explain whether Kentucky Power has ever required the removal of or purchased an existing structure found to be encroaching in a transmission line ROW.

**RESPONSE**

Recognizing and preventing encroachments from being established within the ROWs of the Company's service territory can be a challenge for numerous reasons, the largest being the terrain in rural areas. There are often long distances between the valley floors and the line, which makes identification of an encroachment difficult to detect without detailed ground survey and engineering analysis.

Nonetheless, Kentucky Power has in the past required removal of, relocation of, or purchased an existing structure found to be encroaching in a transmission line ROW.

Witness: Brian K. West

Kentucky Power Company  
KPSC Case No. 2022-00236  
Commission Staff's Third Set of Data Requests  
Dated November 9, 2022

**DATA REQUEST**

**KPSC 3\_10** Describe the steps Kentucky Power has taken to prevent future encroachments into Kentucky Power's ROWs.

**RESPONSE**

Kentucky Power conducts periodic inspections of its transmission lines in efforts to examine the physical condition of the facilities, including any potential encroachments. During those inspections, potential encroachments are noted for further investigation. Additionally, training presentations on encroachment awareness and prevention are conducted and are available to Kentucky Power employees in order to mitigate future infringement upon ROWs. Please also see the Company's response to KPSC 3-7.

Witness: Brian K. West



### Verification Draft MJM 002.docx

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#### E-Signature Summary

**E-Signature 1: Mary Jane Lineberry McMillen (MJM)**

November 21, 2022 09:31:59 -8:00 [F3115F056071] [167.239.221.103]  
 mjmcmillen@aep.com (Principal) (Personally Known)

**E-Signature Notary: Jennifer Young (JAY)**

November 21, 2022 09:31:59 -8:00 [A8FD0D61E8D6] [167.239.221.105]  
 jayoung1@aep.com

I, Jennifer Young, did witness the participants named above electronically sign this document.



VERIFICATION

The undersigned, Mary Jane L. McMillen, being duly sworn, deposes and says she is Transmission Line Engineer Manager for American Electric Power Service Corporation, that she has personal knowledge of the matters set forth in the foregoing responses, and the information contained therein is true and correct to the best of her information, knowledge, and belief.

Mary Jane Lineberry McMillen

Mary Jane L. McMillen

Commonwealth of Kentucky )
) Case No. 2022-000236
County of Boyd )

Subscribed and sworn before me, a Notary Public, by Mary Jane L. McMillen this 21st day of November, 2022.

JAY Notary Public



My Commission Expires 6/21/2025

Notarial act performed by audio-visual communication

Notary ID Number KYNP31964

032B3D16-5865-4F05-A928-846392FDB62C --- 2022/11/21 09:11:51 -8:00 --- Remote Notary



**VERIFICATION**

The undersigned, George T. Reese, being duly sworn, deposes and says he is the Vice President, Business Sector Manager for Power Delivery – Environmental for GAI Consultants, Inc., that he has personal knowledge of the matters set forth in the foregoing responses, and the information contained therein is true and correct to the best of his information, knowledge, and belief.



George T. Reese

State of Pennsylvania )  
County of Butler ) Case No. 2022-000236

Subscribed and sworn before me, a Notary Public, by George T. Reese this 18<sup>th</sup> day of November, 2022.



Notary Public

My Commission Expires 6/17/2026

