Letter of Notification Tidd-Sunnyside 138-kV Transmission Line Rebuild Project

PUCO Case No. 21-0554-EL-BLN

Submitted to:
The Ohio Power Siting Board
Pursuant to Ohio Administrative Code Section 4906-6-05

Submitted by:
AEP Ohio Transmission Company, Inc.

May 28, 2021

Letter of Notification

AEP Ohio Transmission Company, Inc. (AEP Ohio Transco)
Tidd-Sunnyside 138-kV Transmission Line Rebuild Project

4906-6-05

AEP Ohio Transmission Company, Inc. (the "Company") provides the following information in accordance with the requirements of Ohio Administrative Code Section 4906-6-05.

4906-6-5(B) General Information

B(1) Project Description

The name of the project and applicant's reference number, names and reference number(s) of resulting circuits, a brief description of the project, and why the project meets the requirements for a Letter of Notification.

The Company proposes the Tidd-Sunnyside 138-kilovolt ("kV") Transmission Line Rebuild Project (the "Project"), located in Carroll, Harrison, and Jefferson Counties, Ohio. The Project involves rebuilding and upgrading a portion of the existing Windsor-Canton 138 kV double circuit transmission line, approximately 29 miles, between the existing Gable Station and the existing Carrollton Station. As part of the Project, the existing steel lattice towers will be replaced with steel monopoles and the line will be renamed the Tidd-Sunnyside 138 kV Transmission Line. The rebuild of the 138-kV transmission line will mainly use existing right-of-way ("ROW"), which is owned by Ohio Power Company. However, new ROW will be required for select areas along the alignment to avoid and maximize the distance to existing residences along the existing transmission line.

Figures 1A-1L and **Figures 2A-2AV** in **Appendix A** shows the location of the Project in relation to the surrounding vicinity.

The Project meets the requirements for a Letter of Notification (LON) because it is within the types of projects defined by item 2(b) of Ohio Administrative Code Section 4906-1-01 Appendix A of the Application Requirement Matrix For Electric Power Transmission Lines:

> *(2) Adding new circuits on existing structures designed for multiple circuit use, replacing conductors on existing structures with larger or bundled conductors, adding structures to an existing transmission line, or replacing structures with a different type of structure, for a distance of:*
>
> *(b) More than two miles*

The Project has been assigned Public Utilities Commission of Ohio (PUCO) Case No. 21-0554-EL-BLN

B(2) Statement of Need

If the proposed project is an electric power transmission line or gas or natural gas transmission line, a statement explaining the need for the proposed facility.

The Gable-Carrollton 138-kV circuit, which was originally constructed in 1916, needs to be rebuilt to address the condition, performance, and risk associated with this line. The original line consists of lattice towers carrying 6-wired 200 kcmil, thousands of circular mils, copper conductor. After a century in the field, the lattice towers have degraded significantly, with heavy corrosion and damaged tower legs. The copper conductor has become very brittle and is difficult for crews to repair. The suspension insulators and hardware are also heavily worn. The Company has identified 39 open conditions on this circuit and the majority of these issues are structural (e.g., degraded tower parts & broken insulators). In addition, deterioration of the structure below the ground is a significant concern. The Company has identified, through the replacement of similar towers, that towers of this age and design have corrosion below the ground which is not visible during inspections and that this corrosion leads to loss of structural strength and performance. The circuit experienced 5 outages in the 2016-2018 time period, including a 50-hour circuit outage due to broken conductors.

This circuit spans the center of the Ohio Utica Shale gas region in Carroll/ Harrison Counties, with major activity from existing industrial customers and frequent economic development inquiries for future loads (e.g., pipeline compressor stations & midstream processing plants). Failure to rebuild this line would increase the potential for outages as the line continues to deteriorate. Any outage along this line removes a key 138-kV power source to the Canton area. Carrollton Station serves as a source to the local 69-kV sub-transmission system and also serves AEP Ohio distribution customers at 12-kV.

The project is a PJM Supplemental project (s1859). The project is listed in the 2021 AEP Ohio Transmission Company LTFR document, page 48 (Form FE-T9, Planned Transmission Lines), see **Appendix B**.

B(3) Project Location

The applicant shall provide the location of the project in relation to existing or proposed lines and substations shown on an area system map of sufficient scale and size to show existing and proposed transmission facilities in the Project area.

The location of the Project in relation to existing and proposed transmission lines and substations is shown on **Figures 1A-1L**.

The Project directly impacts the following existing facilities:

- Tidd-Sunnyside 138-kV Transmission Line (Gable-Carrollton 138-kV circuit)
- Gable Station
- Carrollton Station
-

B(4) Alternatives Considered

The applicant shall describe the alternatives considered and reasons why the proposed location or route is best suited for the proposed facility. The discussion shall include, but not be limited to, impacts associated with socioeconomic, ecological, construction, or engineering aspects of the project.

No major alternatives were considered for the Project because the proposed route is located mainly within existing ROW and the majority of new structures will be rebuilt near their existing locations. The existing ROW and relative lack of environmental, cultural, and land use constraints confirm that rebuilding this circuit, as proposed herein, is the most feasible option from a system planning, engineering, siting, permitting, and acquisition perspective. Any other alternative would add length to the Project without any additional benefit. The Project will require one 0.6 mile reroute and six small deviations along the existing centerline, which are discussed in more detail below.

Although the Project will mainly occur within existing ROW, a reroute was identified on the southern portion of the Project near County Road 15, outside of the Gable Station, due to ten residential structures that are in close proximity to the existing centerline. Slight deviations to the existing centerline would not mitigate this issue. Therefore, three alternatives were considered for this area: one reroute along County Road 15, and two cross-country alternatives north and south of County Road 15. Residential structures along both sides of County Road 15 have small offsets between the residence and road ROW. Additionally, County Road 15 has several bends, which would require additional large foundation structures in order to parallel the road alignment. An alternative to the south of County Road 15 was also considered, but would require additional large foundation structures to exit Gable Station and head west of County Road 15 and would affect additional landowners, a majority of which would be newly affected and not previously crossed by the existing transmission line. As such, the cross-country route north of County Road 15 was selected as it maximized the distance to residences and minimized the impacts on property owners in the area.

Additionally, the six diversion areas, ranging from 20 to 58 feet off of the existing centerline, are primarily needed to avoid or maximize distance between the centerline and nearby residences or to optimize the design from an engineering perspective (i.e. to achieve an optimal road crossing or straightening out the alignment and eliminating the need for a structure).

Collectively, the proposed route is (1) most consistent with the Company's siting guidelines; (2) reasonably minimizes adverse impacts on area land uses and the natural and cultural resources; (3) minimizes special design requirements; and (4) can be constructed and operated in a safe, timely, and reliable manner.

B(5) Public Information Program

The applicant shall describe its public information program to inform affected property owners and tenants of the nature of the project and the proposed timeframe for project construction and restoration activities.

Within seven days of filing this LON, the Company will issue a public notice in a newspaper of general circulation in the Project area. The notice will comply with all requirements under O.A.C. Section 4906-6-08(A)(1-6). Further, the Company will mail a letter, via first class mail, to affected landowners, tenants,

contiguous owners, and any other landowner the Company approached for an easement necessary for the construction, operation, or maintenance of the facility. The letter will comply with all the requirements of O.A.C. Section 4906-6-08(B). The Company also maintains a website (http://aeptransmission.com/ohio/) which provides the public access to an electronic copy of this LON and the public notice for this LON. An electronic copy of the LON will be served to the public library in each political subdivision affected by this proposed Project. The Company retains ROW land agents that discuss Project timelines, construction and restoration activities and convey information to affected owners and tenants throughout the Project.

B(6) Construction Schedule

The applicant shall provide an anticipated construction schedule and proposed in-service date of the project.

Construction of the Project is planned to begin in October 2021, and the anticipated in-service date will be June 2024.

B(7) Area Map
The applicant shall provide a map of at least 1:24,000 scale clearly depicting the facility with clearly marked streets, roads, and highways, and an aerial image.

Figures 1A-1L provides the proposed Project area on a map of 1:24,000-scale (1-inch equals 2,000 feet) on the United States Geological Survey (USGS) 7.5-minute topographic map of the Amsterdam, Bergholz, Carrollton, Richmond, and Smithfield, Ohio quadrangles. **Figures 2A-2AV** show the Project area on ESRI World Imagery at a scale of 1:6,000-scale (1-inch equals 500 feet). The ESRI World Imagery is dated 2020 through most of the Project area, including the majority of Jefferson County (March 2020 and September 2020), Harrison County (September 2020), and Carroll County (August 2020), however, the imagery in the southernmost area of the Project near Gable Station is dated March 2015.

To visit the Project site from Columbus, Ohio, take I-70 East towards Wheeling for approximately 115 miles. Take Exit 225 for US-250 West/OH-7/Bridgeport and turn left onto Marion Street, following for approximately 470 feet, before turning right onto Main Street to continue following US-250 West and merge onto OH-7 North for 1.8 miles. To continue following OH-7 North, follow signs for 2nd Street/Ohio River Scenic Byway and continue approximately 6.7 miles before taking the exit towards Quaker Meeting House/OH-150/Rayland/Dillonvale. Turn right onto County Road 80 and continue for approximately 318 feet before continuing onto Liberty Avenue. Follow Liberty Avenue for approximately 0.2 mile and then turn right onto OH-150 West and continue for approximately 0.5 mile, then turn right onto Litter Road. Follow Litter Road for approximately 0.2 mile to take slight left onto Warren Ridge Smithfield Rayland Road and continue for approximately 3 miles. Take a left onto County Road 16 and continue for approximately 0.2 mile in order to turn right onto County Road 15. Finally, follow County Road for approximately 3.2 miles. The Gable Station will be on the right. The approximate address of the Gable Station is 2191 County Road 15, Rayland, Ohio 43943, at latitude 40.25462, longitude -80.751278.

B(8) Property Agreements

The applicant shall provide a list of properties for which the applicant has obtained easements, options, and/or land use agreements necessary to construct and operate the facility and a list of the additional properties for which such agreements have not been obtained.

Please refer to **Appendix C** for a table of property parcel numbers and an indication as to whether the easement/option necessary to construct and operate the facility has been obtained.

B(9) Technical Features

The applicant shall describe the following information regarding the technical features of the project:

B(9)(a) Operating characteristics, estimated number and types of structures required, and right-of-way and/or land requirements.

The Tidd-Sunnyside 138-kV transmission line is estimated to include the following:

Voltage:	138 kV
Conductors:	Double Circuit 1233.6 kcmil Type 13 (38/19) ACSS TW Yukon
Static Wire:	(2) 0.646 IN 96F OPGW
Insulators:	Polymer
ROW Width:	100 Feet
Structure Types:	Thirty-six (36) Single Pole, Double Circuit, Davit arm, dead end on Pier Foundation
	Eighty-six (86) Single Pole, Double Circuit, Davit arm, suspension on Pier Foundation
	Ninety-two (92) Single Pole, Double Circuit, Davit arm, suspension, direct embed

B(9)(b) Electric and Magnetic Fields

For electric power transmission lines that are within one hundred feet of an occupied residence or institution, the production of electric and magnetic fields during the operation of the proposed electric power transmission line.

B(9)(b)(i) Calculated Electric and Magnetic Field Strength Levels

i) Calculated Electric and Magnetic Field Levels

Three loading conditions were examined: (1) Normal Maximum Loading, (2) Emergency Loading, and (3) Winter Normal Conductor Rating, consistent with the OPSB requirements. Normal Maximum Loading represents the peak flow expected with all system facilities in service; daily/hourly flows fluctuate below this level. Emergency loading is the maximum current flow during unusual (contingency) conditions, which exist only for short periods of time. Winter Normal (WN) Conductor Rating represents the maximum current flow that a line, including its terminal equipment, can carry during winter conditions. It is not anticipated that either circuit of this line would operate at its WN rating in the foreseeable future. Loading levels and the calculated electric and magnetic fields (EMF) are summarized below.

GABLE-CARROLLTON 138 KV EMF CALCULATIONS				
Condition	**Circuit Load (A)**	**Ground Clearance (feet)**	**Electric Field (kV/m)***	**Magnetic Field (mG)***
(1) Normal Maximum Loading^	398.6	30.8	0.21/2.10/0.21	14.68/29.10/14.68
(2) Emergency Line Loading^^	763.5	37.6	0.11/2.74/0.11	32.52/74.64/32.52
(3) Winter Normal Conductor Rating^^^	2682	30.8	0.21/2.10/0.21	197.62/391.58/197.62

* EMF levels (left ROW edge/maximum/right ROW edge) computed one meter above ground at the point of minimum ground clearance, assuming balanced phase currents and 1.0 P.U. Voltages. ROW width is 50 feet (left) and 50 feet (right) of centerline, respectively.

^ Peak line flow expected with all system facilities in service

^^ Maximum flow during a critical system contingency

^^^ Maximum continuous flow that the line, including its terminal equipment, can withstand during winter conditions

The above EMF levels are well within the limits of the specified IEEE Standard C95.6tm-2002. Those limits have been established to "prevent harmful effects in human beings exposed to electromagnetic fields in the frequency range of 0-3kHz".

B(9)(b)(ii) Design Alternatives

A discussion of the applicant's consideration of design alternatives with respect to electric and magnetic fields and their strength levels, including alternate conductor configuration and phasing, tower height, corridor location, and right-of-way width.

Design alternatives were not considered due to EMF strength levels. Transmission lines, when energized, generate EMF. Laboratory studies have failed to establish a strong correlation between exposure to EMF and effects on human health. However, some people are concerned that EMF have impacts on human health. Due to these concerns, EMF associated with the new circuits was calculated and set forth in the table above. The EMF was computed in a manner to maximize the estimate, assuming the highest reasonable input values based on conditions along the proposed transmission line rebuild. Normal daily EMF levels would be less than these, which were calculated at maximum load conditions. Based on studies from the National Institutes of Health, the magnetic field (measured in milliGauss, or mG) associated with emergency loading at the highest EMF value for this transmission line is lower than those associated with normal household appliances like microwave ovens, electric shavers and hair dryers. For additional information regarding EMF, the National Institutes of Health has posted information on their website: http://www.niehs.nih.gov/health/topics/agents/emf/. Additionally, information on electric and magnetic fields is available on the Company's website: https://www.aepohio.com/info/projects/emf/OurPosition.aspx. The information found on the Company's website describes the basics of electromagnetic field theory, scientific research activities, and EMF exposures encountered in everyday life. Similar material will be made available for those affected by the construction activities for this Project.

B(9)(c) Project Cost

The estimated capital cost of the project.

The capital cost estimate for the proposed Project, which is comprised of applicable tangible and capital costs, is approximately $80,000,000, using a Class 4 estimate. Pursuant to the PJM OATT, the costs for this Project will be recovered in the AEP Ohio Transmission Company's FERC formula rate (Attachment H-20 to the PJM OATT) and allocated to the AEP Zone.

B(10) Social and Economic Impacts

The applicant shall describe the social and ecological impacts of the project:

B(10)(a) Land Use Characteristics

Provide a brief, general description of land use within the vicinity of the proposed project, including a list of municipalities, townships, and counties affected.

An aerial photograph of the Project vicinity is provided as **Figures 2A-2AV**. The Project location and vicinity have historically been primarily agricultural land with scattered woodlots. The Project is mapped within the Village of Carrollton and Center, Lee, and Loudon Townships in Carroll County; within the Village of Smithfield and Salem, Smithfield, Springfield, Wayne, and Wells Townships in Jefferson County; and within German Township in Harrison County. The Project vicinity is currently rural in nature, and is comprised primarily of agricultural land used for row crops, and lesser amounts of old fields, forested land, landscaped areas, and scattered residences with denser areas of development in the Village of Carrollton and Village of Smithfield.

B(10)(b) Agricultural Land Information

Provide the acreage and a general description of all agricultural land, and separately all agricultural district land, existing at least sixty days prior to submission of the application within the potential disturbance area of the project.

The Carroll County, Harrison County, and Jefferson County Auditors provided a list of parcels registered as Agricultural District Land in May 2021. The Agricultural District Land parcel lists are updated each calendar year. The Project intersects 72 parcels that were identified as Agricultural District Land parcels. Approximately 147 acres of agricultural district land span the proposed ROW of the Project.

It is anticipated that only the small footprint of the proposed pole locations along the 138-kV transmission lines will be converted from agricultural use as a result of the Project.

B(10)(c) Archaeological and Cultural Resources

Provide a description of the applicant's investigation concerning the presence or absence of significant archaeological or cultural resources that may be located within the potential disturbance area of the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

A cultural resource survey and report were conducted by the Company's consultant for the Project in August 2020. Correspondence from the State Historic Preservation Office ("SHPO") was received in September 2020, see **Appendix D**. The SHPO stated that that the Project will have no adverse effect on historic properties and that no further archaeological work is necessary.

B(10)(d) Local, State, and Federal Agency Correspondence

Provide a list of the local, state, and federal governmental agencies known to have requirements that must be met in connection with the construction of the project, and a list of documents that have been or are being filed with those agencies in connection with siting and constructing the project.

A Notice of Intent will be filed with the Ohio Environmental Protection Agency for authorization of construction storm water discharges under General Permit OHC000005. The Company will also coordinate storm water permitting needs with local government agencies, as necessary. The Company will implement and maintain best management practices as outlined in the Project-specific Storm Water Pollution Prevention Plan (SWPPP) to minimize erosion control sediment to protect surface water quality during storm events.

There are no other known local, state, or federal requirements that must be met prior to commencement of the proposed Project.

B(10)(e) Threatened, Endangered, and Rare Species

Provide a description of the applicant's investigation concerning the presence or absence of federal and state designated species (including endangered species, threatened species, rare species, species proposed for listing, species under review for listing, and species of special interest) that may be located within the potential disturbance area of the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

The United States Fish and Wildlife Service (USFWS) *Ohio County Distribution of Federally-Listed Threatened, Endangered, Proposed, and Candidate Species* (available at https://www.fws.gov/midwest/Endangered/lists/pdf/OhioCtyList29Jan2018.pdf) was reviewed to identify the threatened and endangered species known to occur in the Project counties. This USFWS publication lists the Indiana bat (*Myotis sodalist*; federally endangered) and northern long-eared bat (*Myotis sepententrionalis*; federally threatened) in the Project counties. On July 20, 2018, coordination letters were sent to USFWS and the Ohio Department of Natural Resources (ODNR) soliciting responses.

A response was received from the USFWS on August 9, 2018. The USFWS advised that the Project area occurs within the range of the federally endangered Indiana bat (*Myotis sodalis*) and the federally threatened Northern long-eared bat (*Myotis septentrionalis*).

A response was received from the ODNR on September 20, 2018, in which the ODNR Division of Wildlife (DOW) advised that the Project area occurs within the range of the state and federal endangered Indiana bat, the state threatened black sandshell (*ligumia recta*), the state threatened threehorn wartyback (*obliquaria reflexa*), the state threatened river darter (*percina shumardi*), the state threatened paddlefish (p*olyodon* spathula), the state threatened channel darter (*percina* copelandi), the state threatened

Tippecanoe darter (e*theostoma Tippecanoe*), the state endangered species and federal species of concern Eastern hellbender (c*ryptobranchus alleganiensis*), the state endangered upland sandpiper (b*artramia longicauda*), and the state threatened least bittern (*Ixobrychus exilis*). The ODNR Natural Heritage Database (NHD) returned records of the state threatened shale barren pussy-toes (*Antennaria virginica*), the state threatened Bowman's-root (*Gillenia trifoliata*), the state threatened Narrow-leaved blue-eyed-grass (*Sisyrinchium mucronatum*), the state threatened Drummond's aster (*Symphyotrichum drummondii*), the state species of concern sharp-shinned hawk (*Accipiter striatus*), the state and federal species of concern Henslow's sparrow (*Ammodramus henslowii*), and the Buffalo Hill Pioneer Cemetery Prairie Conservation Site within a one-mile radius search of the Project site.

Both the ODNR and the USFWS proposed implementation of seasonal tree cutting (clearing of trees ≥3 inches diameter at breast height between October 1 and March 31) to avoid impacts to Indiana bats and Northern long-eared bats, if suitable habitat occurs within the Project area. Successional hardwood woodland habitat is present within the Project and presents potentially suitable habitat for the Indiana bat and the Northern long-eared bat. If seasonal tree cutting is implemented, impacts to these species are not likely. If seasonal tree cutting is not possible, ODNR requests that a net survey be conducted between June 1 and August 15, prior to cutting. The Company anticipates clearing trees between October 1 and March 31.

No in-water work is planned for the Project. ODNR DOW indicated that impacts to the black sandshell, threehorn wartyback, river darter, paddlefish, channel darter, Tippecanoe darter, and Eastern hellbender are not likely if in-water work is not planned for the Project.

Based on ODNR DOW guidance and general observations during the field survey, potentially suitable habitat for the upland sandpiper (pasture/fay field and old field areas) was observed in the Project area. The ODNR DOW recommends that this habitat be avoided during the species' nesting period (April 15 to July 31). Potentially suitable habitat was also observed during field survey for the least bittern (dense emergent wetlands with thick stands of cattails, sedges, sawgrass or other semiaquatic vegetation interspersed with woody vegetation and open water) in the Project area. The ODNR DOW recommends that this habitat be avoided during the species' nesting period (May 1 to July 31). The Company's avian specialists have identified three areas along the Project as potential habitat for the upland sandpiper and least bittern, coordination with ODNR is ongoing and will be provided to OPSB once completed.

Additional details regarding species are provided in the agency correspondence letters, see **Appendix D**.

B(10)(f) Areas of Ecological Concern

Provide a description of the applicant's investigation concerning the presence or absence of areas of ecological concern (including national and state forests and parks, floodplains, wetlands, designated or proposed wilderness areas, national and state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, and wildlife sanctuaries) that may be located within the potential disturbance area of the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

During the 2018 coordination with USFWS, they indicated that no federal wilderness areas, wildlife refuges, or designated critical habitat occurs within the vicinity of the Project area

The Company's consultant prepared a Wetland Delineation and Stream Assessment Report, see **Appendix E**. The ecological survey of the Project survey corridor identified a total of 118 wetlands, 146 streams, and 12 ponds. The wetlands consisted of 88 PEM wetlands, seven palustrine shrub/scrub (PSS) wetlands, two palustrine forested (PFO) wetlands, four palustrine unconsolidated bottom (PUB) wetlands, eight PEM/PSS complexes, six PEM/PFO complexes, two PEM/PSS/PFO complexes, and one PEM/PUB complex. The streams consisted of 51 ephemeral, 69 intermittent, and 26 perennial streams. No permanent impacts to streams or wetlands are anticipated. Three existing structures are mapped within wetlands and will be removed. No proposed structures are mapped within wetlands. Minimal temporary impacts to wetlands are anticipated from timber matting associated with work pads and access roads. The Company will utilize erosion and sediment control best management practices to avoid or minimize impacts to natural resources where possible.

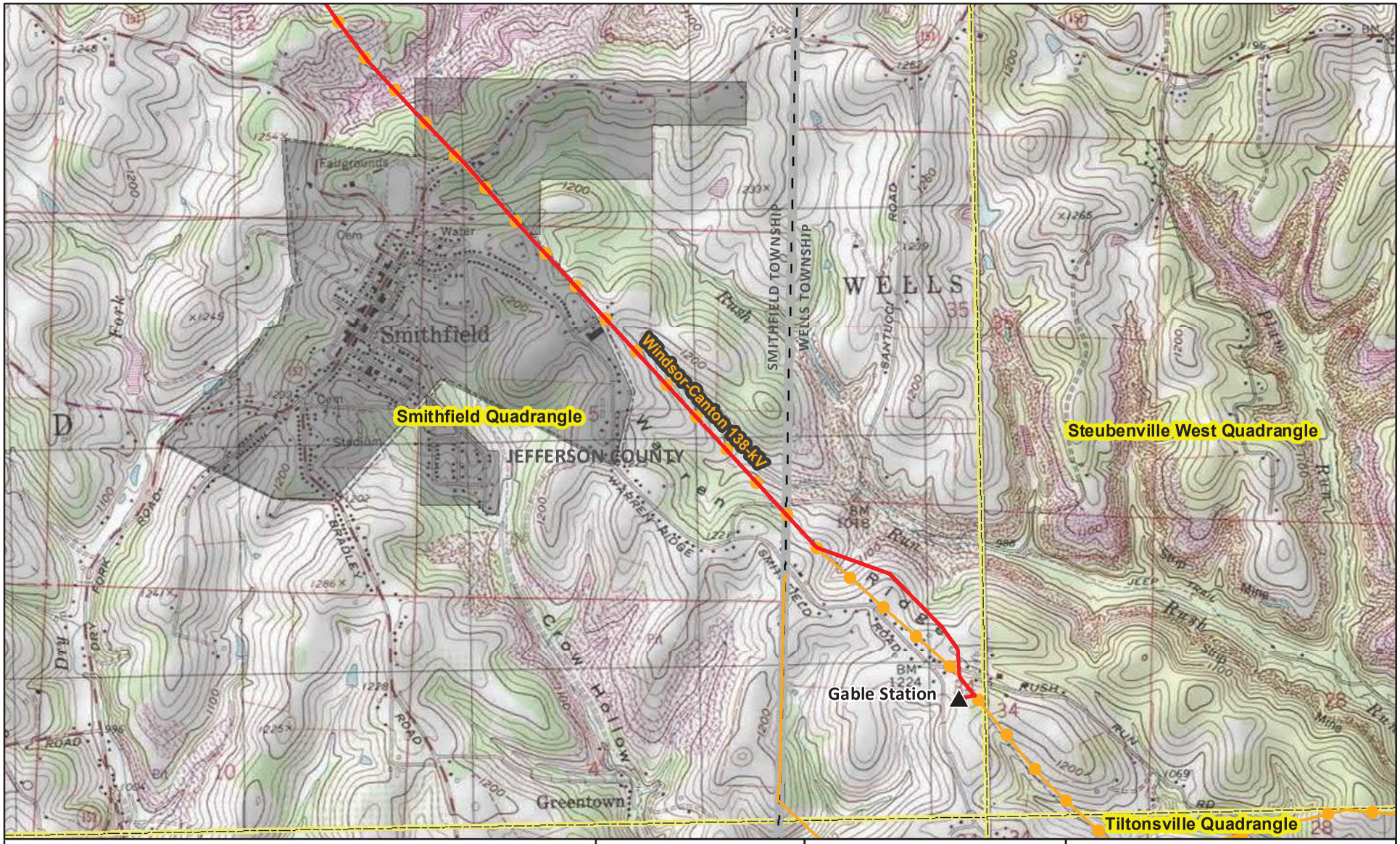
The Project crosses four areas of 100-year floodplain (flood area IDs 39019C_705, 39019C_709, 39019C_719, and 39081C_2828) based on review of the Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL) datasets for Jefferson, Harrison, and Carroll counties. Approximately 7 acres of 100-year floodplain are mapped within the Project ROW. Three proposed structures and four existing structures are mapped win the 100-year floodplain. The Company will coordinate floodplain permits with Jefferson, Harrison, and Carroll counties closer to starting construction for the Project.

B(10)(g) Unusual Conditions

Provide any known additional information that will describe any unusual conditions resulting in significant environmental, social, health, or safety impacts.

To the best of the Company's knowledge, no unusual conditions exist that would result in significant environmental, social, health, or safety impacts.

Appendix A Project Figures



- Station
- Proposed Tidd-Sunnyside 138-kV Line
- Existing 69-kV Transmission Line
- Existing 138-kV Transmission Line
- Township Boundary
- County Boundary
- USGS 7.5' Topographical Quadrangle

Data Sources: AEP (2021), ESRI (2013), USGS (2018), PowerMap (2010)

Coordinate System: State Plane Ohio North NAD 83

May 08, 2021

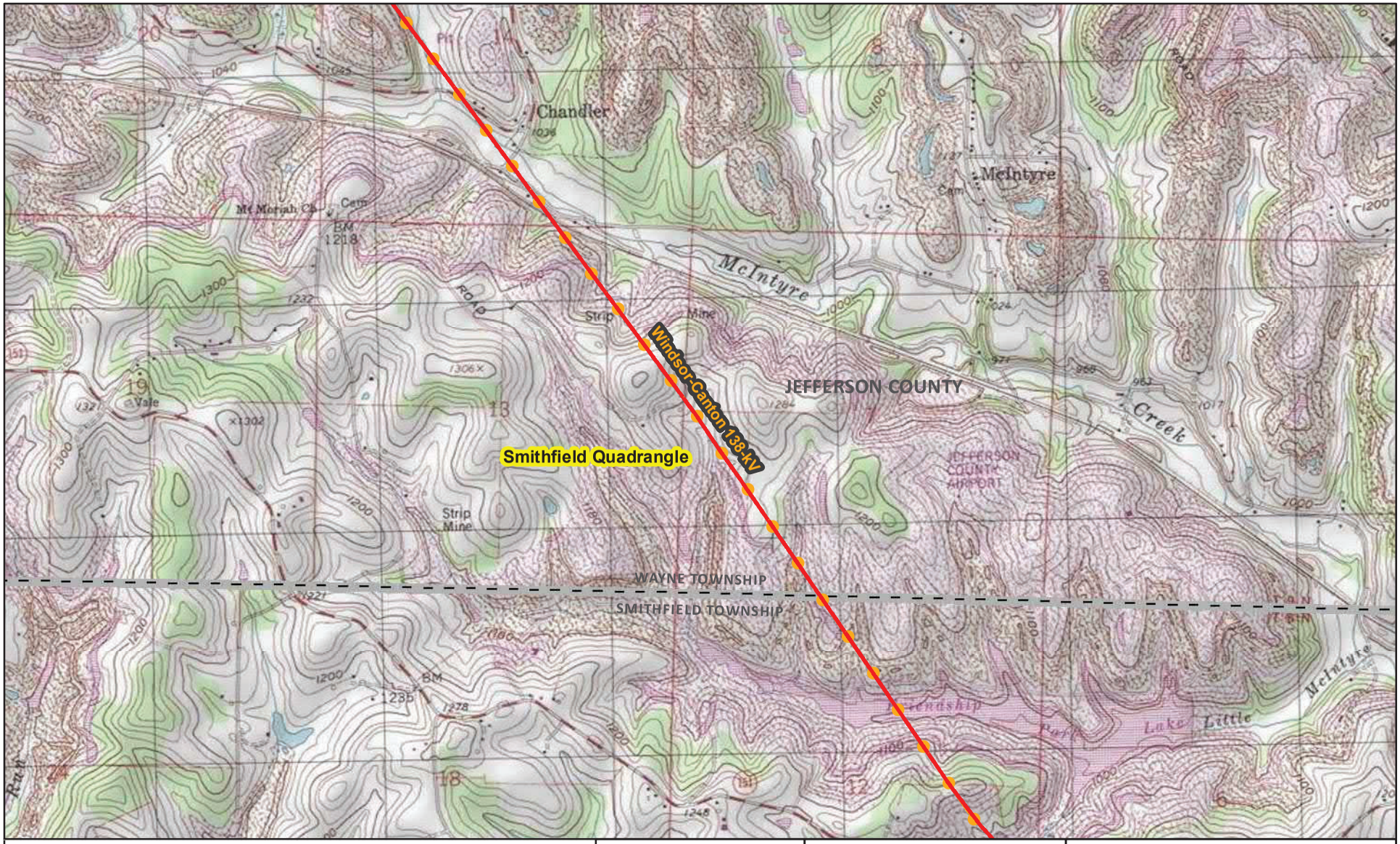
FIGURE 1A
TOPOGRAPHIC OVERVIEW

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV
Transmission Line Rebuild Project

0 1,000 2,000 3,000 4,000

Feet



Proposed Tidd-Sunnyside 138-kV Line

Existing 138-kV Transmission Line

Township Boundary

County Boundary

USGS 7.5' Topographical Quadrangle

Data Sources: AEP (2021), ESRI (2013), USGS (2018), PowerMap (2010)

Coordinate System: State Plane Ohio North NAD 83

May 08, 2021

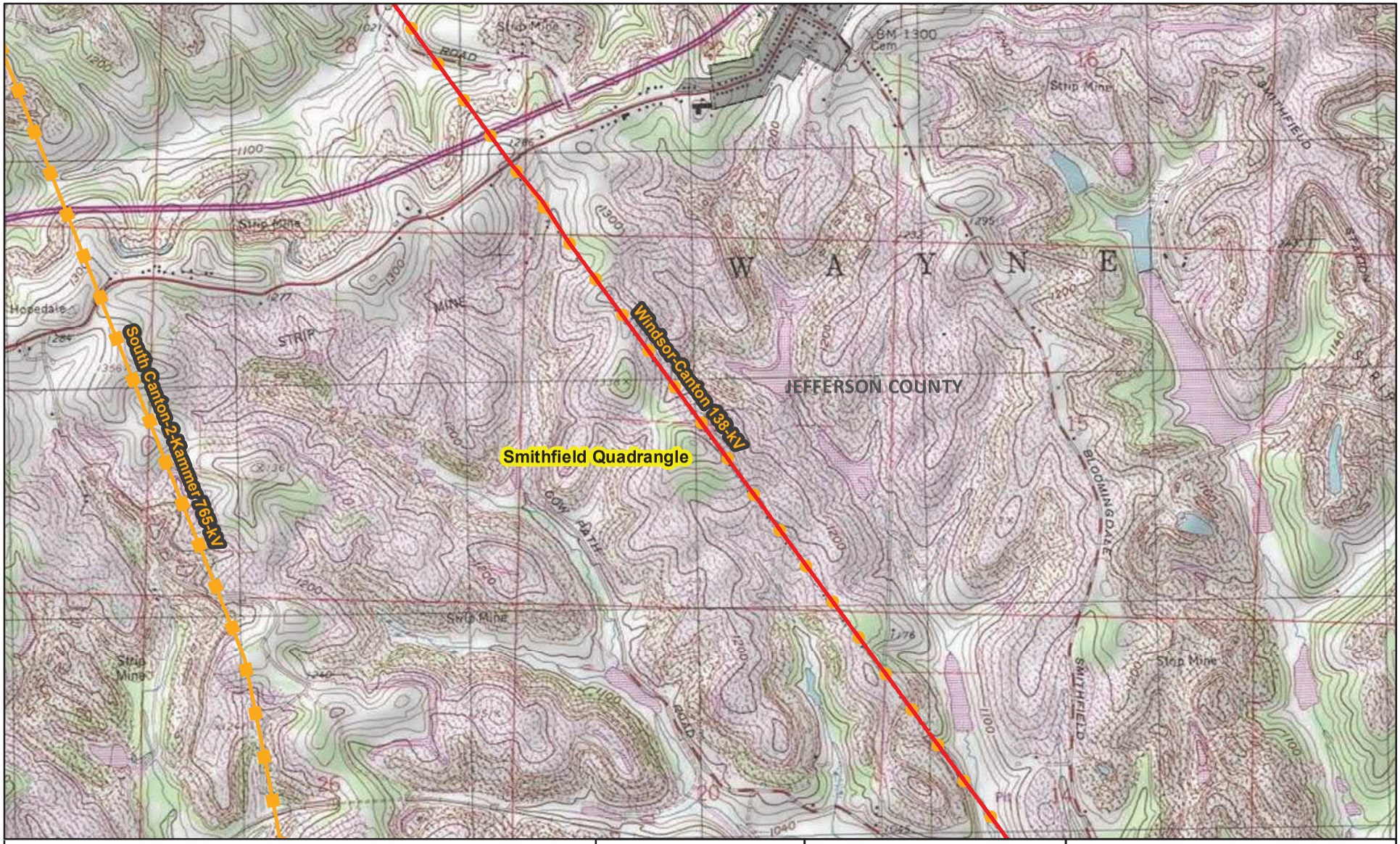
FIGURE 1B
TOPOGRAPHIC OVERVIEW

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV
Transmission Line Rebuild Project

0 1,000 2,000 3,000 4,000

Feet



Proposed Tidd-Sunnyside 138-kV Line

Existing 138-kV Transmission Line

Existing 765-kV Transmission Line

Township Boundary

County Boundary

USGS 7.5' Topographical Quadrangle

Data Sources: AEP (2021), ESRI (2013), USGS (2018), PowerMap (2010)

Coordinate System: State Plane Ohio North NAD 83

May 08, 2021

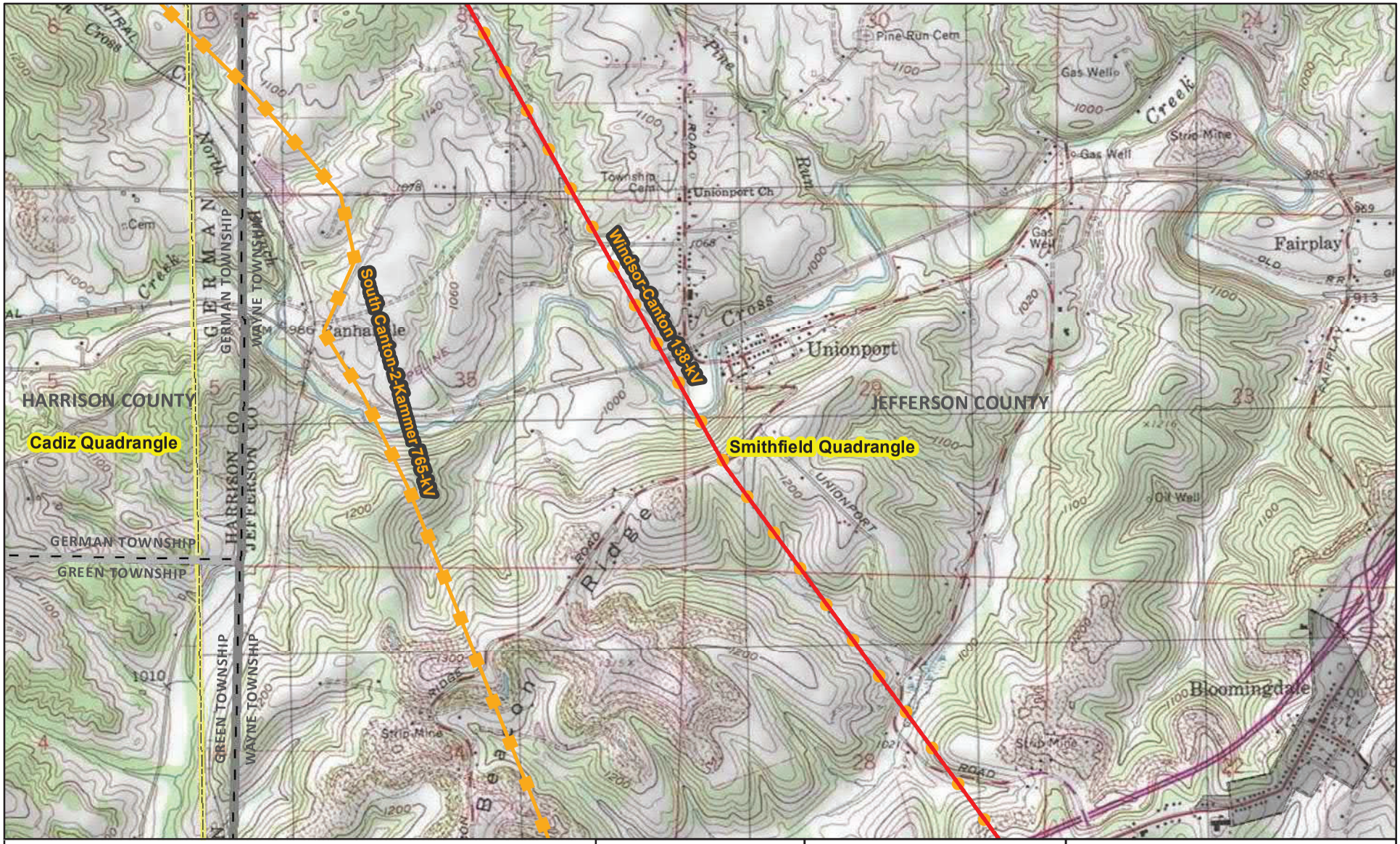
FIGURE 1C
TOPOGRAPHIC OVERVIEW

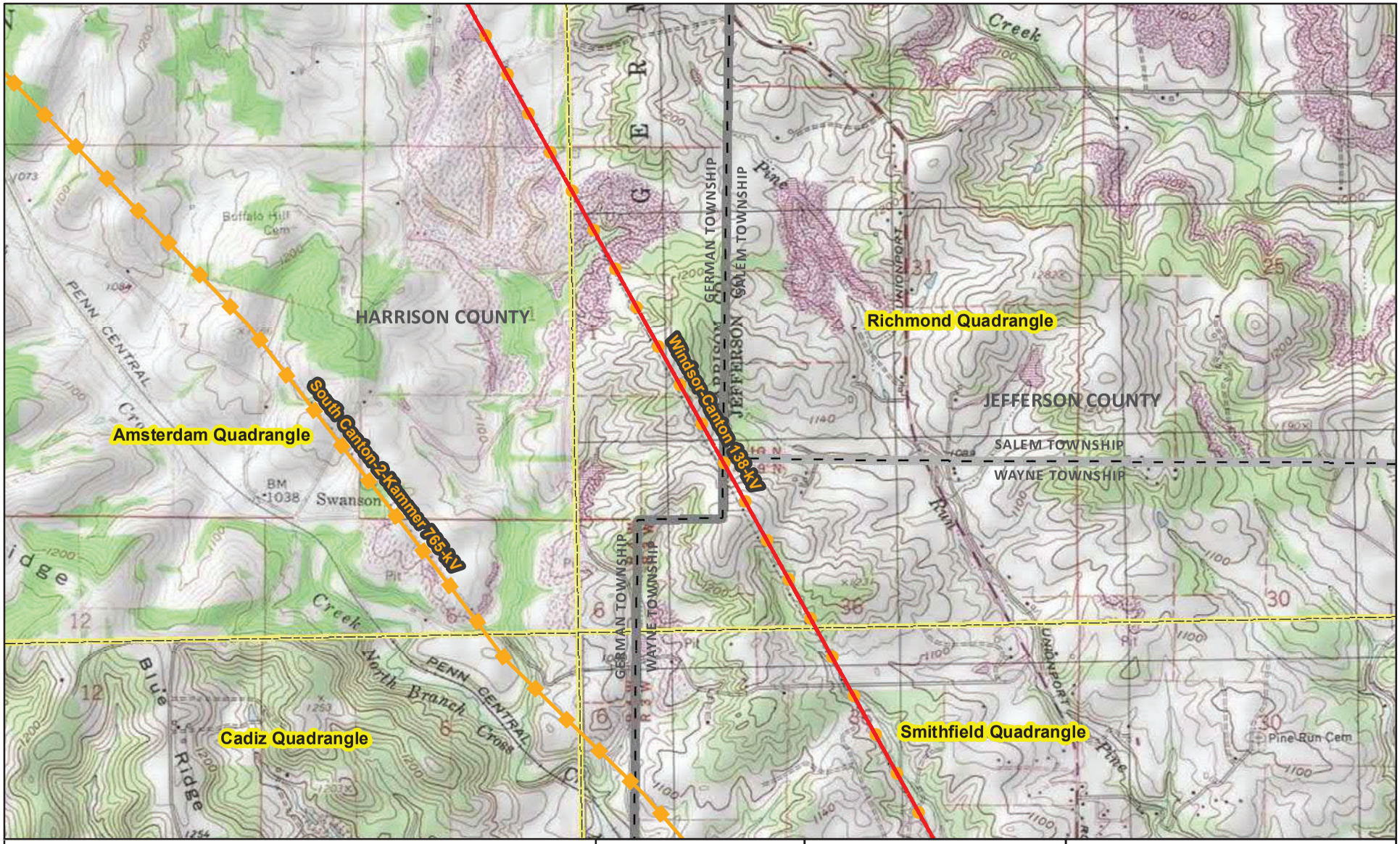
AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV
Transmission Line Rebuild Project

0 1,000 2,000 3,000 4,000

Feet


Windsor-Canton 138-kV
South Canton-Kammer 765-kV
Cadiz Quadrangle
Smithfield Quadrangle
HARRISON COUNTY
JEFFERSON COUNTY
GERMAN TOWNSHIP
GREEN TOWNSHIP
WAYNE TOWNSHIP
Unionport
Fairplay
Bloomingdale
Pine Run Cem
Unionport Ch
Township Cem
Strip Mine
Gas Wells
Gas Well
Oil Well
Proposed Tidd-Sunnyside 138-kV Line
Existing 138-kV Transmission Line
Existing 765-kV Transmission Line
Township Boundary
County Boundary
USGS 7.5' Topographical Quadrangle
Data Sources: AEP (2021), ESRI (2013), USGS (2018), PowerMap (2010)
Coordinate System: State Plane Ohio North NAD 83
May 08, 2021
FIGURE 1D
TOPOGRAPHIC OVERVIEW
AEP OHIO TRANSMISSION COMPANY
Tidd-Sunnyside 138-kV
Transmission Line Rebuild Project
0 1,000 2,000 3,000 4,000
Feet


HARRISON COUNTY
JEFFERSON COUNTY
Amsterdam Quadrangle
Richmond Quadrangle
Cadiz Quadrangle
Smithfield Quadrangle
South Canton-2-Kammer 765-kV
Windsor-Canton 138-kV
GERMAN TOWNSHIP
SALEM TOWNSHIP
WAYNE TOWNSHIP
Swanson
Pine Run Cem
Buffalo Hill Cem
PENN CENTRAL
UNIONPORT
Proposed Tidd-Sunnyside 138-kV Line
Existing 138-kV Transmission Line
Existing 765-kV Transmission Line
Township Boundary
County Boundary
USGS 7.5' Topographical Quadrangle
Data Sources: AEP (2021), ESRI (2013), USGS (2018), PowerMap (2010)
Coordinate System: State Plane Ohio North NAD 83
May 08, 2021
FIGURE 1E
TOPOGRAPHIC OVERVIEW
AEP OHIO TRANSMISSION COMPANY
Tidd-Sunnyside 138-kV
Transmission Line Rebuild Project
0 1,000 2,000 3,000 4,000
Feet

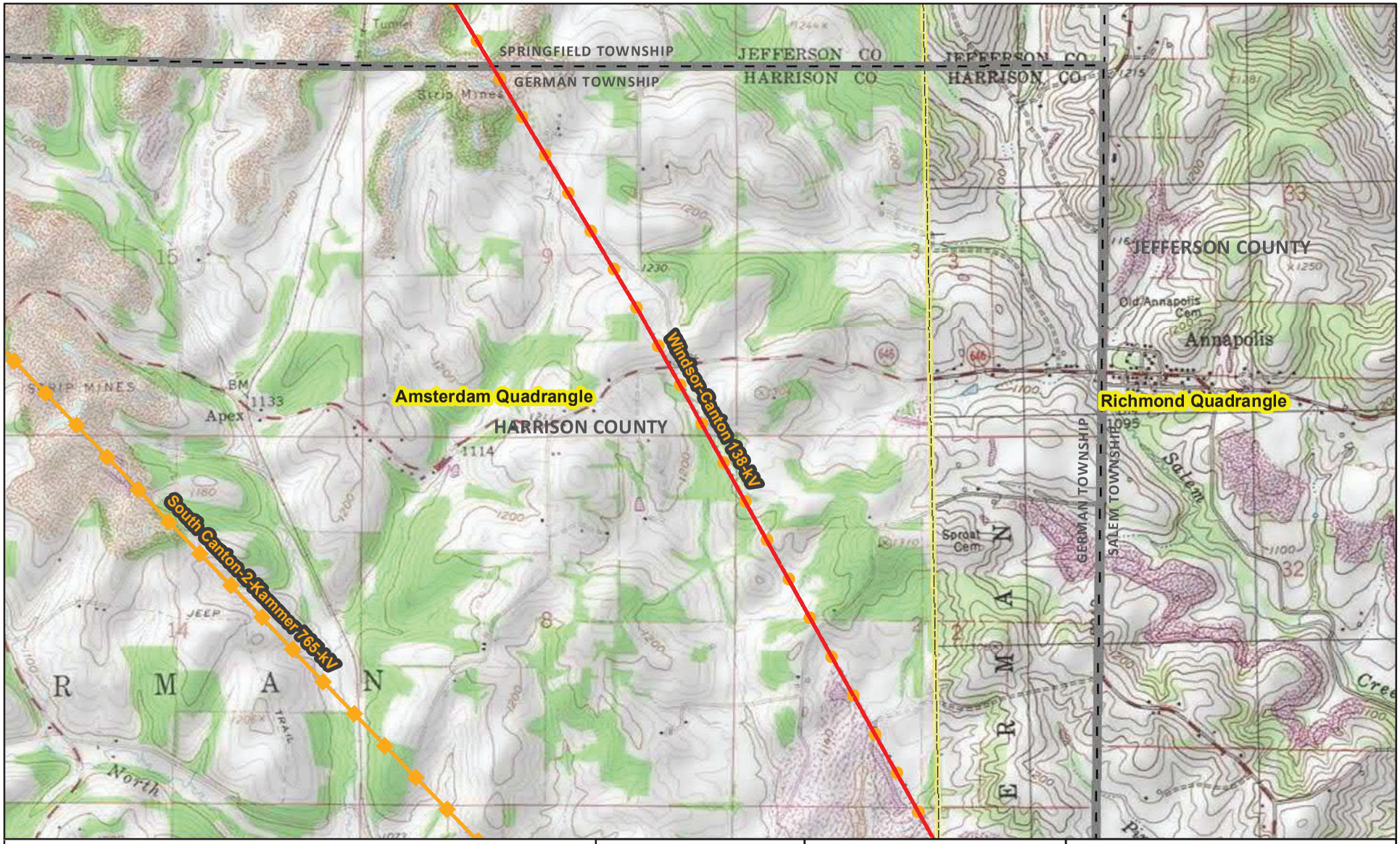

SPRINGFIELD TOWNSHIP
GERMAN TOWNSHIP
JEFFERSON CO
HARRISON CO
JEFFERSON COUNTY
HARRISON COUNTY
Amsterdam Quadrangle
Richmond Quadrangle
Windsor-Canton 138-kV
South Canton-2-Kammer 765-kV
Annapolis
Old Annapolis Cem
Sproat Cem
Apex
Strip Mines
GERMAN TOWNSHIP
SALEM TOWNSHIP
Salem
North
Proposed Tidd-Sunnyside 138-kV Line
Existing 138-kV Transmission Line
Existing 765-kV Transmission Line
Township Boundary
County Boundary
USGS 7.5' Topographical Quadrangle
Data Sources: AEP (2021), ESRI (2013), USGS (2018), PowerMap (2010)
Coordinate System: State Plane Ohio North NAD 83
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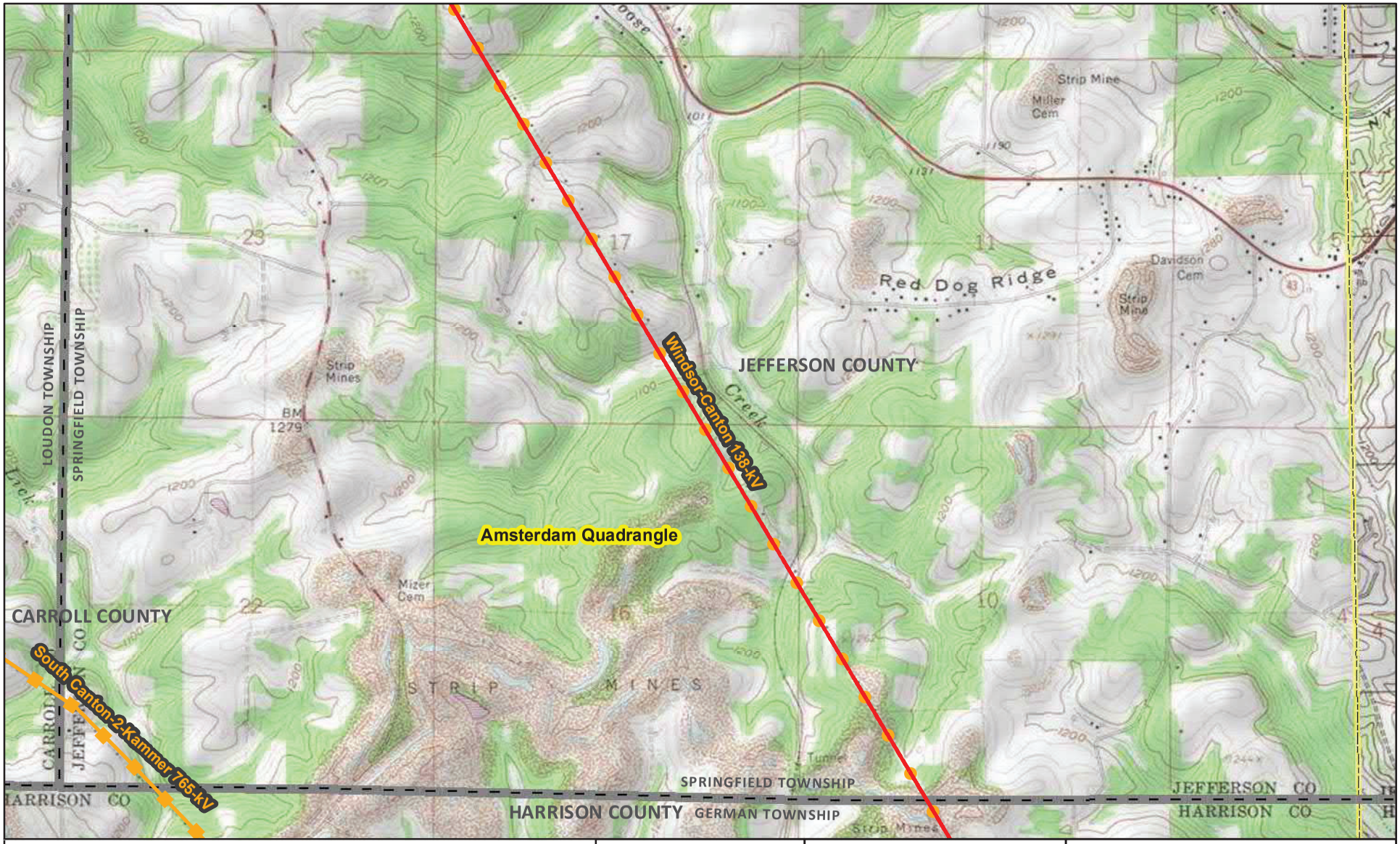
FIGURE 1F
TOPOGRAPHIC OVERVIEW
AEP OHIO TRANSMISSION COMPANY
Tidd-Sunnyside 138-kV
Transmission Line Rebuild Project
0
1,000
2,000
3,000
4,000
Feet



Proposed Tidd-Sunnyside 138-kV Line

Existing 138-kV Transmission Line

Existing 765-kV Transmission Line

Township Boundary

County Boundary

USGS 7.5' Topographical Quadrangle

Data Sources: AEP (2021), ESRI (2013), USGS (2018), PowerMap (2010)

Coordinate System: State Plane Ohio North NAD 83

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FIGURE 1G
TOPOGRAPHIC OVERVIEW

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV
Transmission Line Rebuild Project

0 1,000 2,000 3,000 4,000

Feet

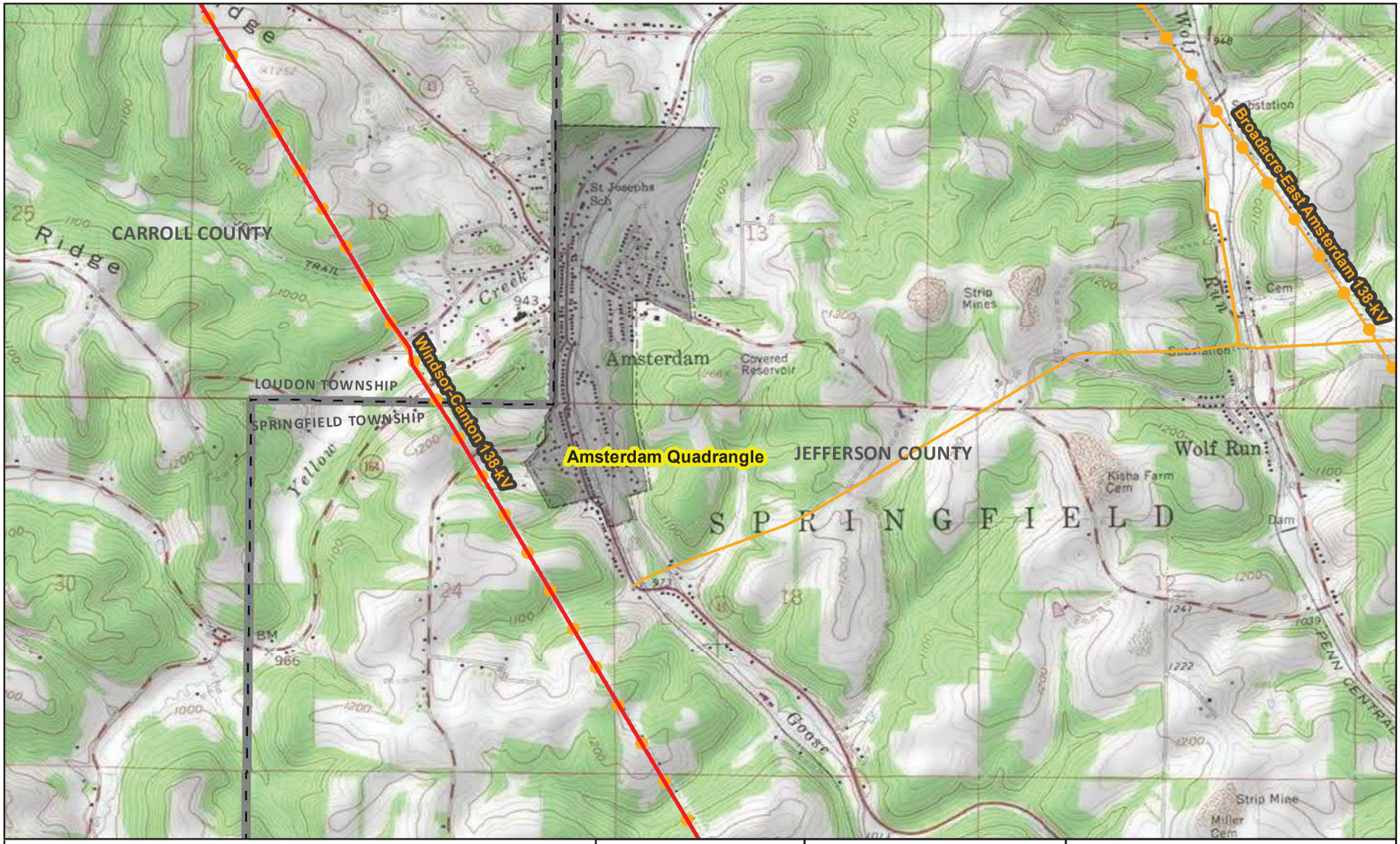
Windsor-Canton 138-kV
Broadacre-East Amsterdam 138-kV
Amsterdam Quadrangle
CARROLL COUNTY
JEFFERSON COUNTY
LOUDON TOWNSHIP
SPRINGFIELD TOWNSHIP
Amsterdam
Covered Reservoir
St Josephs Sch
Strip Mines
Wolf Run
Kisha Farm Cem
Strip Mine
Miller Cem
Yellow Creek
Goose
PENN CENTRAL
S P R I N G F I E L D
Proposed Tidd-Sunnyside 138-kV Line
Existing 69-kV Transmission Line
Existing 138-kV Transmission Line
Township Boundary
County Boundary
USGS 7.5' Topographical Quadrangle
Data Sources: AEP (2021), ESRI (2013), USGS (2018), PowerMap (2010)
Coordinate System: State Plane Ohio North NAD 83
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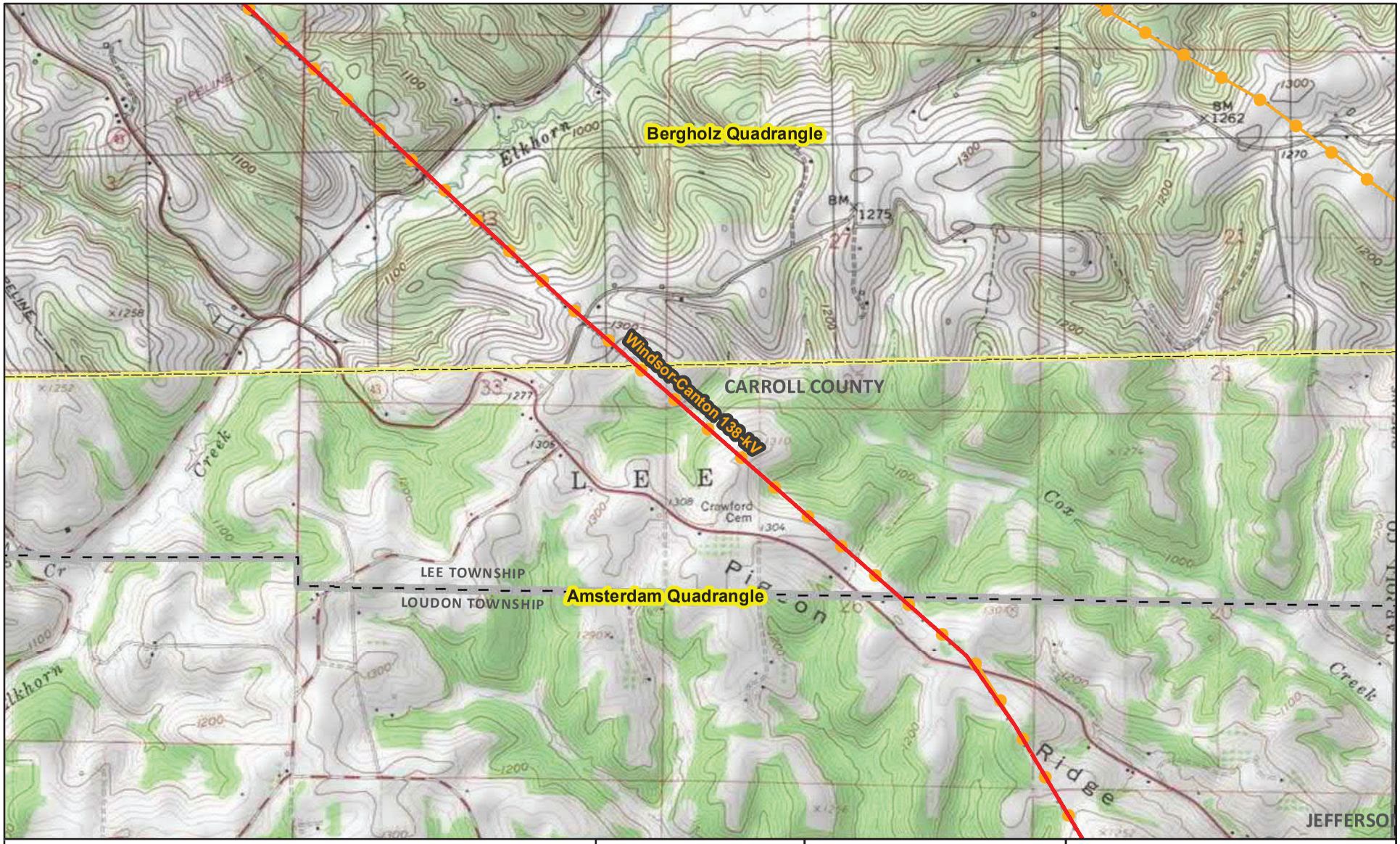
FIGURE 1H
TOPOGRAPHIC OVERVIEW
AEP OHIO TRANSMISSION COMPANY
Tidd-Sunnyside 138-kV
Transmission Line Rebuild Project
0 1,000 2,000 3,000 4,000
Feet



Proposed Tidd-Sunnyside 138-kV Line

Existing 138-kV Transmission Line

Township Boundary

County Boundary

USGS 7.5' Topographical Quadrangle

Data Sources: AEP (2021), ESRI (2013), USGS (2018), PowerMap (2010)

Coordinate System: State Plane Ohio North NAD 83

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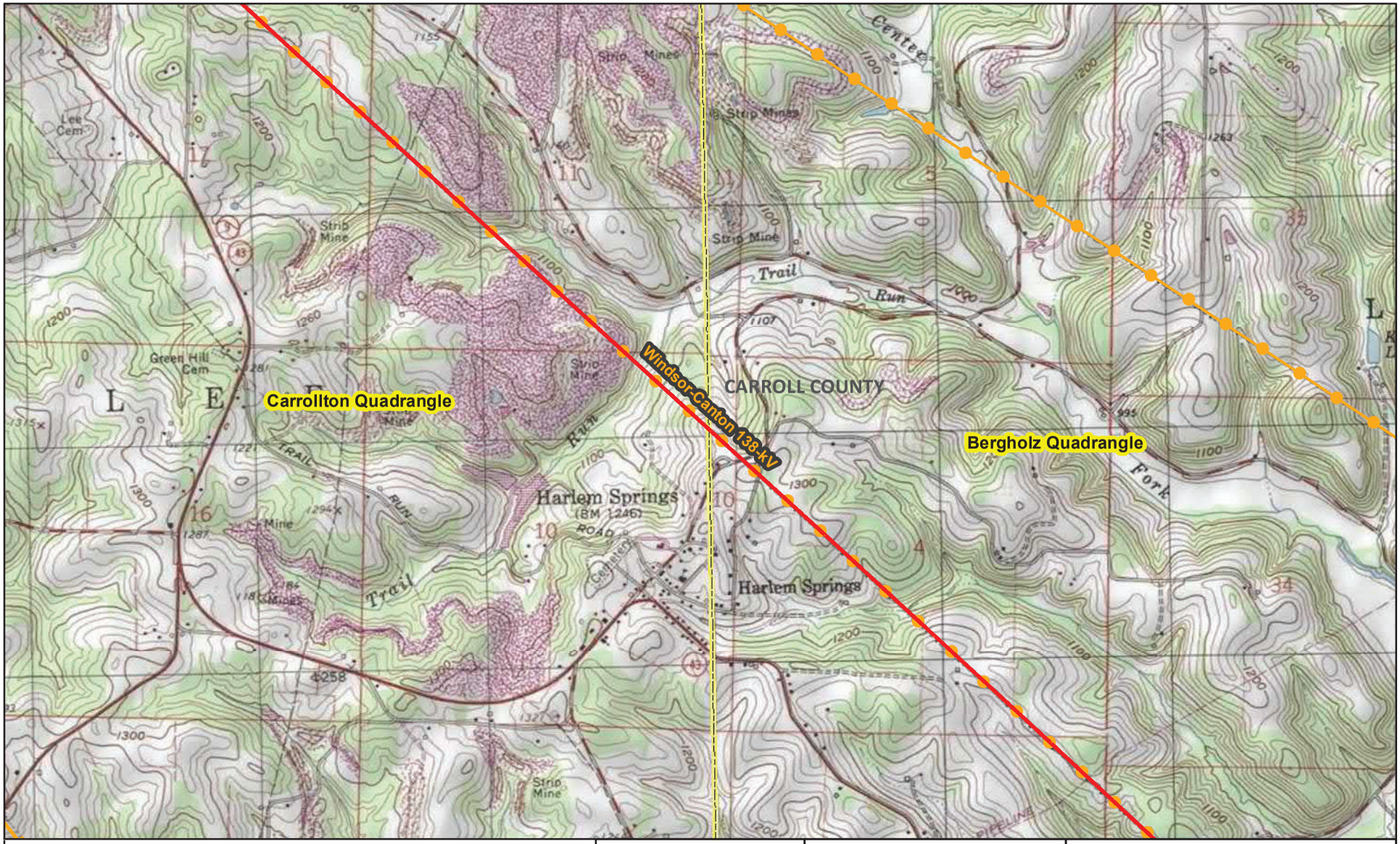
FIGURE 1I
TOPOGRAPHIC OVERVIEW

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV
Transmission Line Rebuild Project

0 1,000 2,000 3,000 4,000

Feet



Data Sources: AEP (2021), ESRI (2013), USGS (2018), PowerMap (2010)

Coordinate System:
State Plane Ohio North
NAD 83

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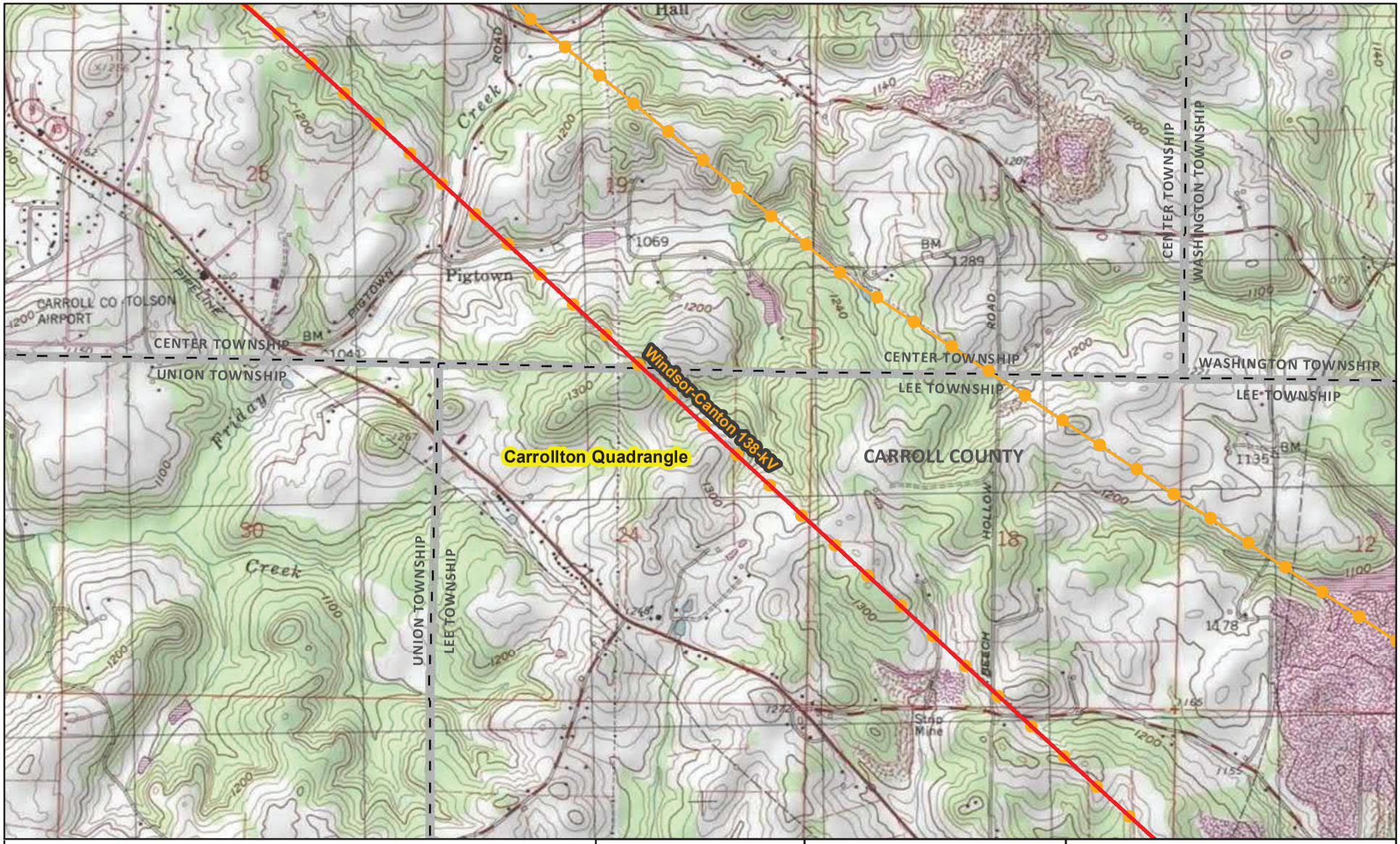
FIGURE 1J
TOPOGRAPHIC OVERVIEW

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV Transmission Line Rebuild Project

0 1,000 2,000 3,000 4,000

Feet



Proposed Tidd-Sunnyside 138-kV Line

Existing 138-kV Transmission Line

Township Boundary

County Boundary

USGS 7.5' Topographical Quadrangle

Data Sources: AEP (2021), ESRI (2013), USGS (2018), PowerMap (2010)

Coordinate System: State Plane Ohio North NAD 83

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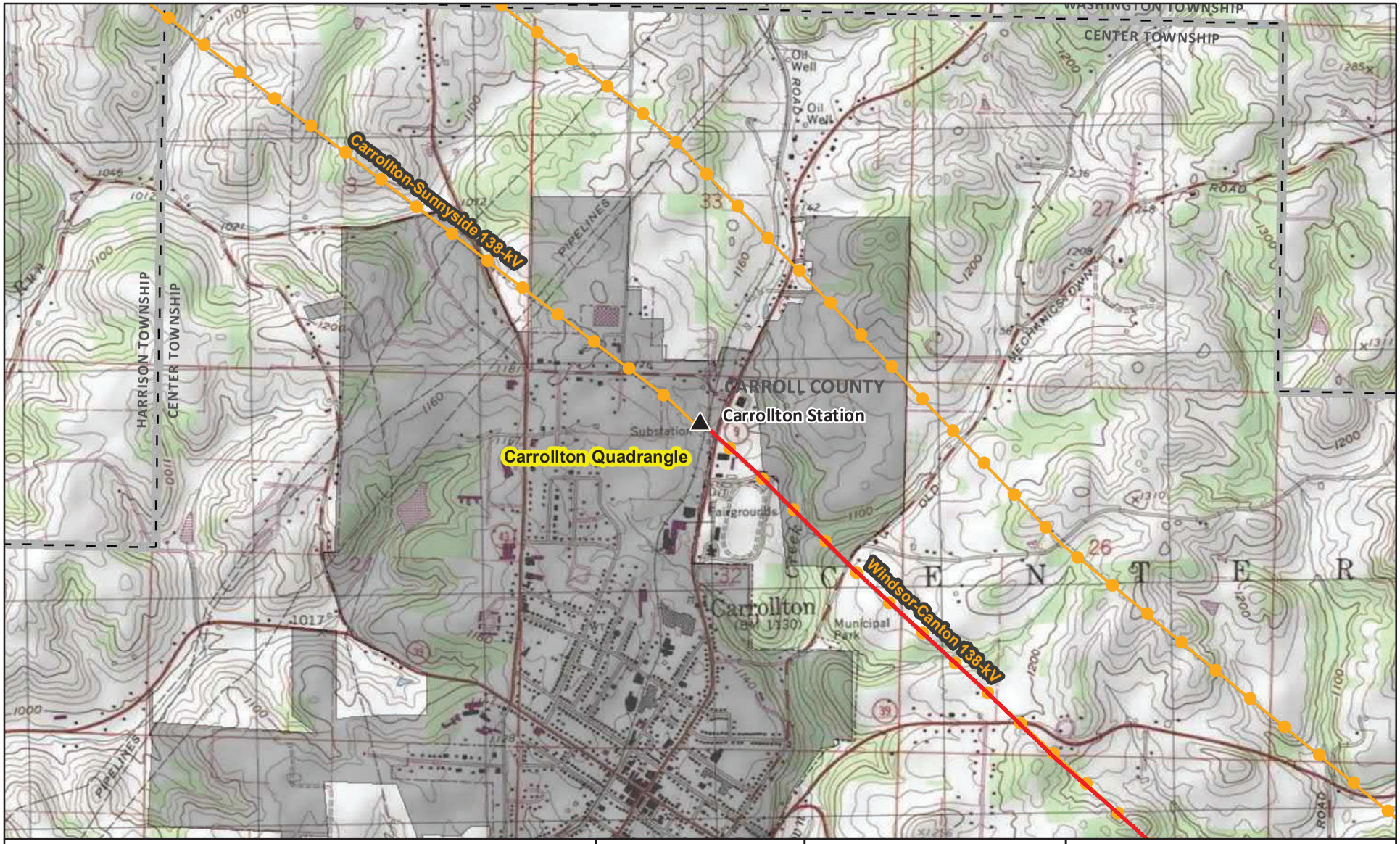
FIGURE 1K
TOPOGRAPHIC OVERVIEW

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV
Transmission Line Rebuild Project

0 1,000 2,000 3,000 4,000

Feet



- Station
- Proposed Tidd-Sunnyside 138-kV Line
- Existing 138-kV Transmission Line
- Township Boundary
- County Boundary
- USGS 7.5' Topographical Quadrangle

Data Sources: AEP (2021), ESRI (2013), USGS (2018), PowerMap (2010)

Coordinate System: State Plane Ohio North NAD 83

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FIGURE 1L
TOPOGRAPHIC OVERVIEW

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV Transmission Line Rebuild Project

0 1,000 2,000 3,000 4,000

Feet

- Station
- Existing 69-kV Transmission Line
- Existing 138-kV Transmission Line
- Proposed Tidd-Sunnyside 138-kV Line
- Parcel Boundary
- Municipality Boundary
- Township Boundary
- County Boundary

Data Sources: AEP (2021), OSIP Roads (2014), ESRI World Imagery (2015, 2020)

Coordinate System: State Plane Ohio North NAD 83

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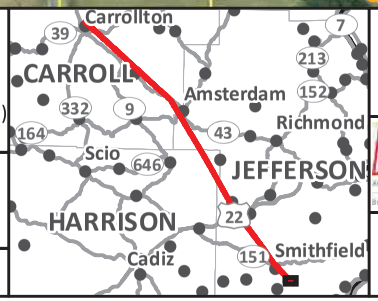

FIGURE 2A
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV
Transmission Line Rebuild Project

0 500 1,000
Feet

- Existing 138-kV Transmission Line
- Proposed Tidd-Sunnyside 138-kV Line
- Parcel Boundary
- Municipality Boundary
- Township Boundary
- County Boundary

Data Sources: AEP (2021), OSIP Roads (2014), ESRI World Imagery (2015, 2020)

Coordinate System: State Plane Ohio North NAD 83

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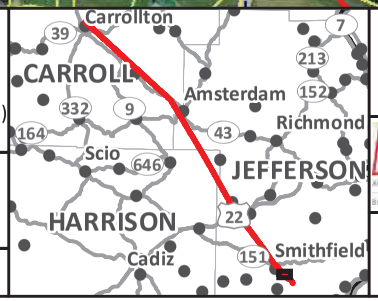
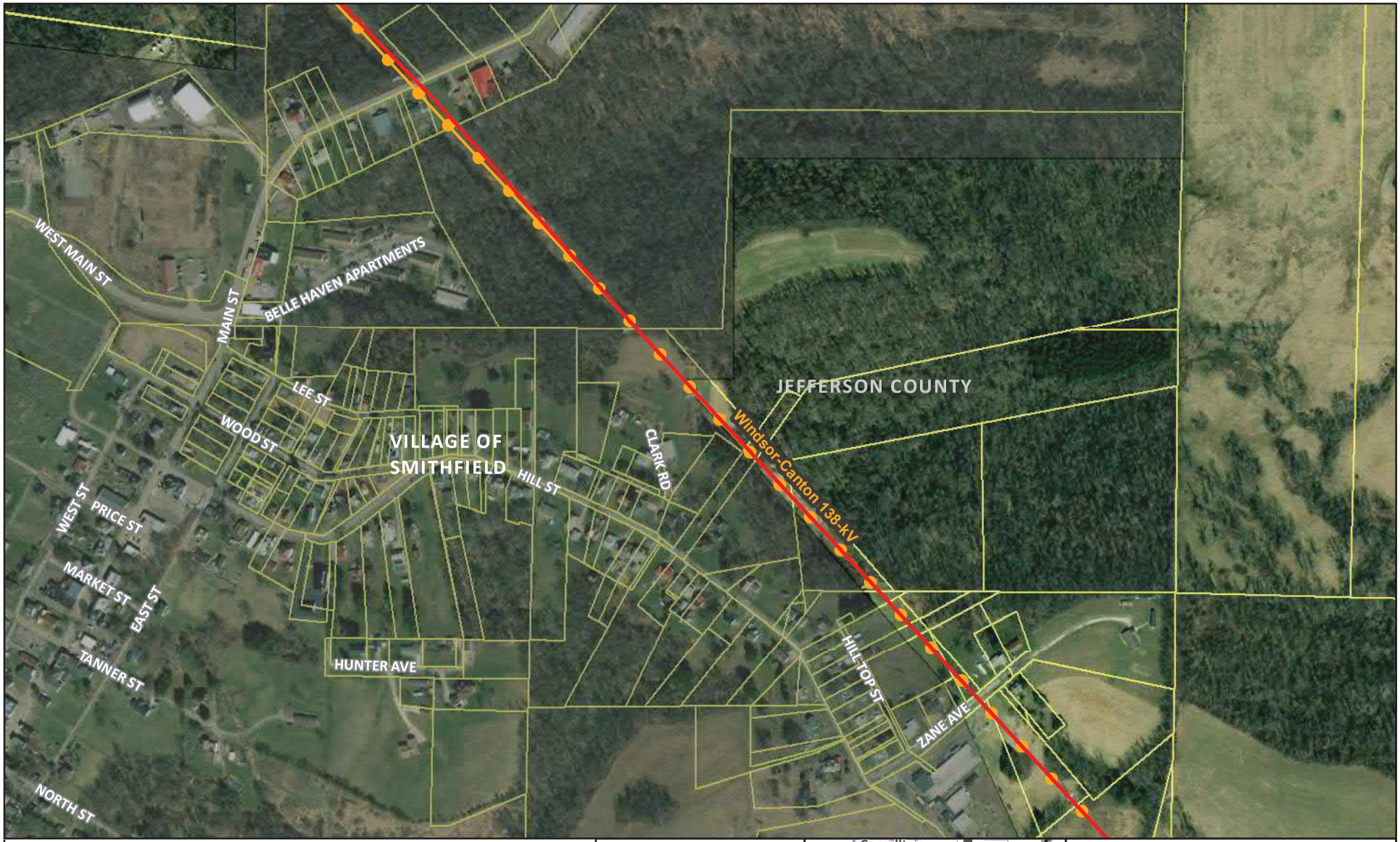


FIGURE 2B
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV
Transmission Line Rebuild Project

0 500 1,000
Feet



- Existing 138-kV Transmission Line
- Proposed Tidd-Sunnyside 138-kV Line
- Parcel Boundary
- Municipality Boundary
- Township Boundary
- County Boundary

Data Sources: AEP (2021), OSIP Roads (2014), ESRI World Imagery (2015, 2020)

Coordinate System: State Plane Ohio North NAD 83

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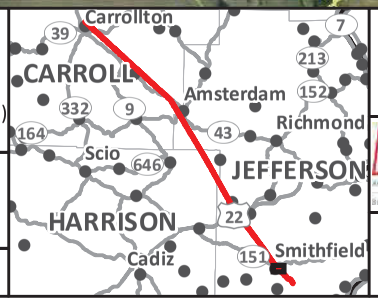


FIGURE 2C
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV
Transmission Line Rebuild Project

0 500 1,000
Feet

Existing 138-kV Transmission Line
Proposed Tidd-Sunnyside 138-kV Line
Parcel Boundary
Municipality Boundary
Township Boundary
County Boundary

Data Sources: AEP (2021), OSIP Roads (2014), ESRI World Imagery (2015, 2020)

Coordinate System: State Plane Ohio North NAD 83

May 08, 2021

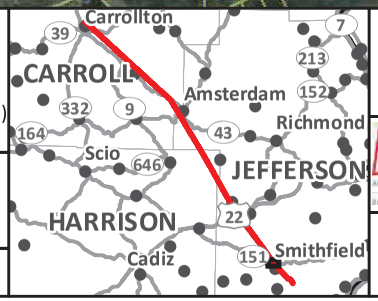


FIGURE 2D
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV
Transmission Line Rebuild Project

0 500 1,000
Feet

Existing 138-kV Transmission Line
Proposed Tidd-Sunnyside 138-kV Line
Parcel Boundary
Municipality Boundary
Township Boundary
County Boundary

Data Sources: AEP (2021), OSIP Roads (2014), ESRI World Imagery (2015, 2020)

Coordinate System: State Plane Ohio North NAD 83

May 08, 2021

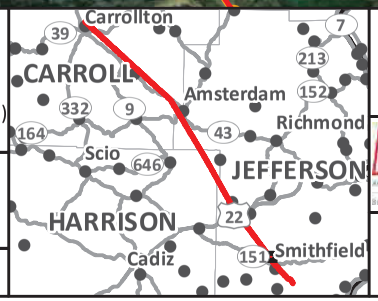


FIGURE 2E
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV
Transmission Line Rebuild Project

0 500 1,000
Feet

Existing 138-kV Transmission Line
Proposed Tidd-Sunnyside 138-kV Line
Parcel Boundary
Municipality Boundary
Township Boundary
County Boundary

Data Sources: AEP (2021), OSIP Roads (2014), ESRI World Imagery (2015, 2020)

Coordinate System: State Plane Ohio North NAD 83

May 08, 2021

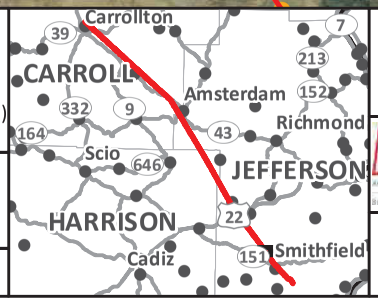
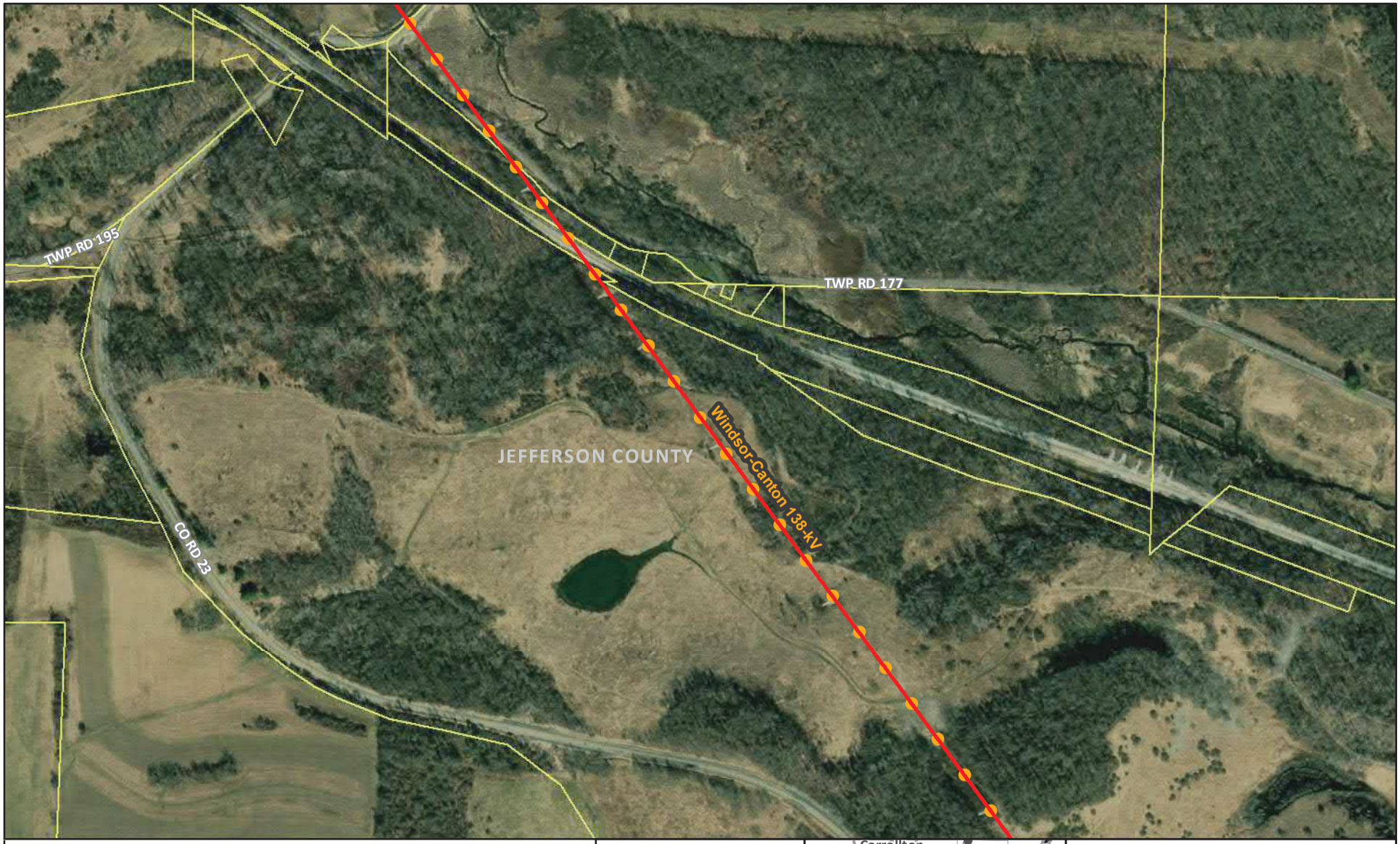


FIGURE 2F
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV Transmission Line Rebuild Project

0 500 1,000
Feet



Existing 138-kV Transmission Line
Proposed Tidd-Sunnyside 138-kV Line
Parcel Boundary
Municipality Boundary
Township Boundary
County Boundary

Data Sources: AEP (2021), OSIP Roads (2014), ESRI World Imagery (2015, 2020)

Coordinate System: State Plane Ohio North NAD 83

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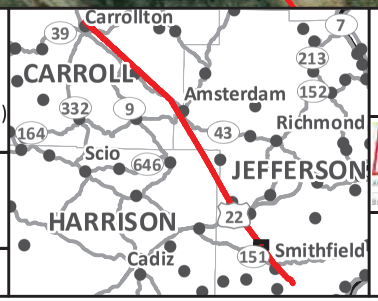
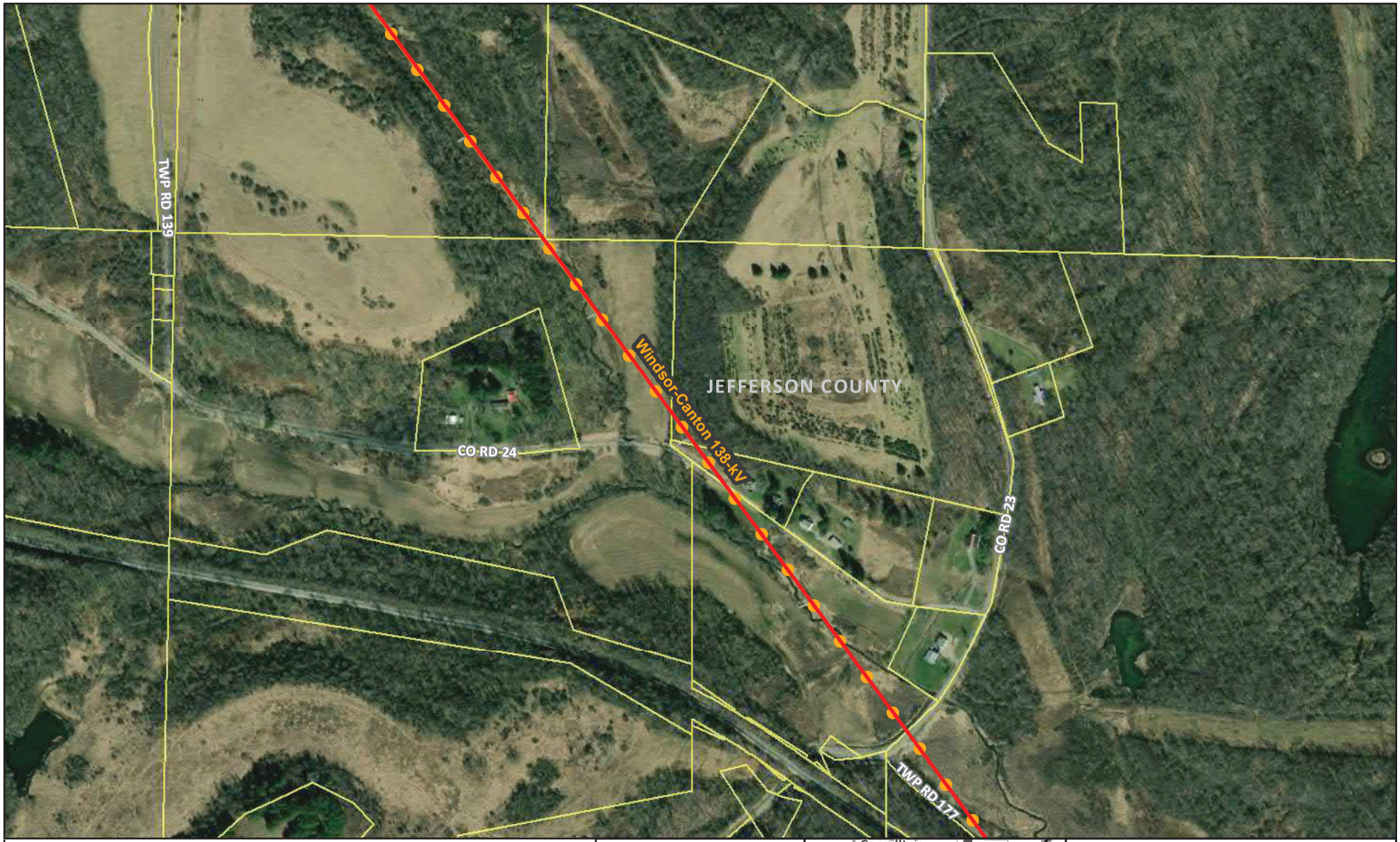


FIGURE 2G
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV Transmission Line Rebuild Project

0 500 1,000
Feet



- Existing 138-kV Transmission Line
- Proposed Tidd-Sunnyside 138-kV Line
- Parcel Boundary
- Municipality Boundary
- Township Boundary
- County Boundary

Data Sources: AEP (2021), OSIP Roads (2014), ESRI World Imagery (2015, 2020)

Coordinate System: State Plane Ohio North NAD 83

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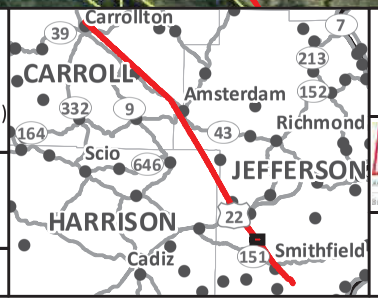

FIGURE 2H
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV Transmission Line Rebuild Project

0 500 1,000

Feet

Existing 138-kV Transmission Line
Proposed Tidd-Sunnyside 138-kV Line
Parcel Boundary
Municipality Boundary
Township Boundary
County Boundary

Data Sources: AEP (2021), OSIP Roads (2014), ESRI World Imagery (2015, 2020)

Coordinate System: State Plane Ohio North NAD 83

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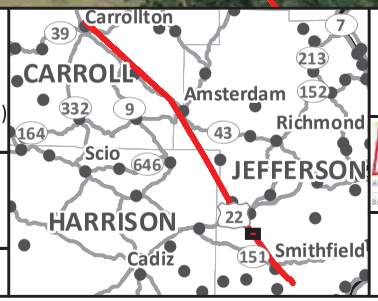

FIGURE 2I
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV Transmission Line Rebuild Project

0 500 1,000
Feet

Existing 138-kV Transmission Line
Proposed Tidd-Sunnyside 138-kV Line
Parcel Boundary
Municipality Boundary
Township Boundary
County Boundary

Data Sources: AEP (2021), OSIP Roads (2014), ESRI World Imagery (2015, 2020)

Coordinate System: State Plane Ohio North NAD 83

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FIGURE 2J
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV Transmission Line Rebuild Project

0 500 1,000
Feet

Existing 138-kV Transmission Line
Proposed Tidd-Sunnyside 138-kV Line
Parcel Boundary
Municipality Boundary
Township Boundary
County Boundary

Data Sources: AEP (2021), OSIP Roads (2014), ESRI World Imagery (2015, 2020)

Coordinate System: State Plane Ohio North NAD 83

May 08, 2021

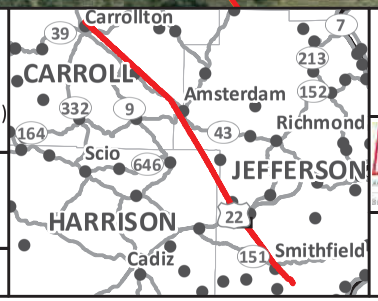

FIGURE 2K
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV
Transmission Line Rebuild Project

0 500 1,000
Feet

- Existing 138-kV Transmission Line
- Proposed Tidd-Sunnyside 138-kV Line
- Parcel Boundary
- Municipality Boundary
- Township Boundary
- County Boundary

Data Sources: AEP (2021), OSIP Roads (2014), ESRI World Imagery (2015, 2020)

Coordinate System: State Plane Ohio North NAD 83

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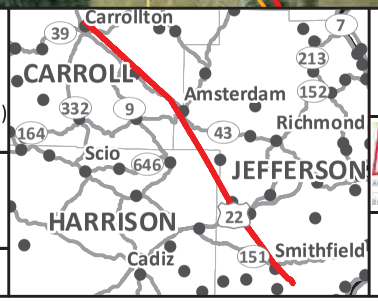


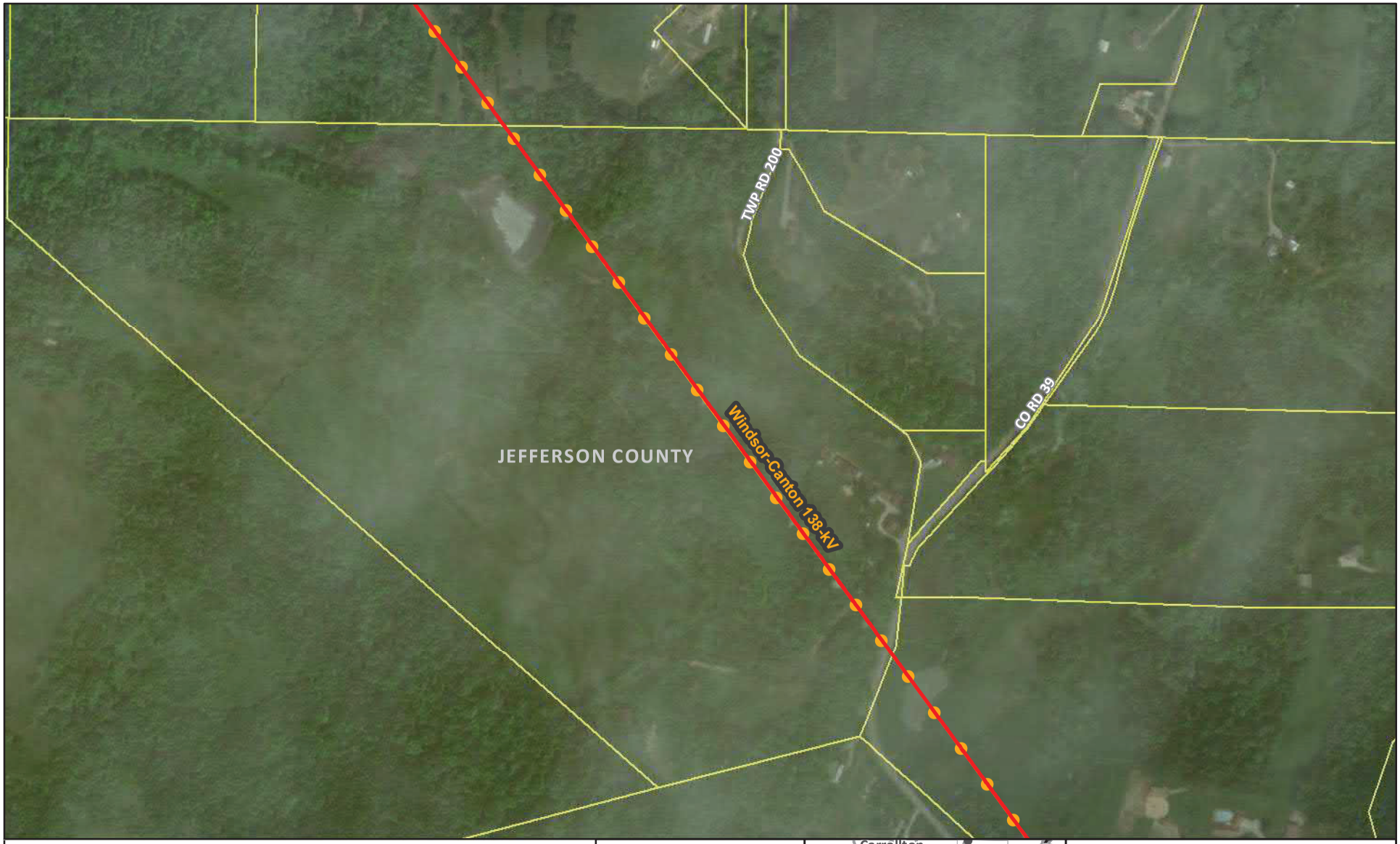
FIGURE 2L
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV Transmission Line Rebuild Project

0 500 1,000

Feet



- Existing 138-kV Transmission Line
- Proposed Tidd-Sunnyside 138-kV Line
- Parcel Boundary
- Municipality Boundary
- Township Boundary
- County Boundary

Data Sources: AEP (2021), OSIP Roads (2014), ESRI World Imagery (2015, 2020)

Coordinate System: State Plane Ohio North NAD 83

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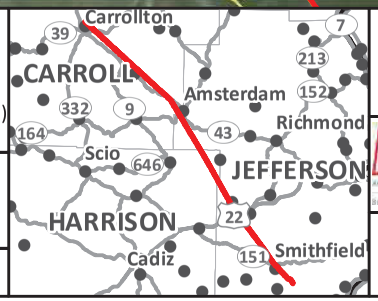
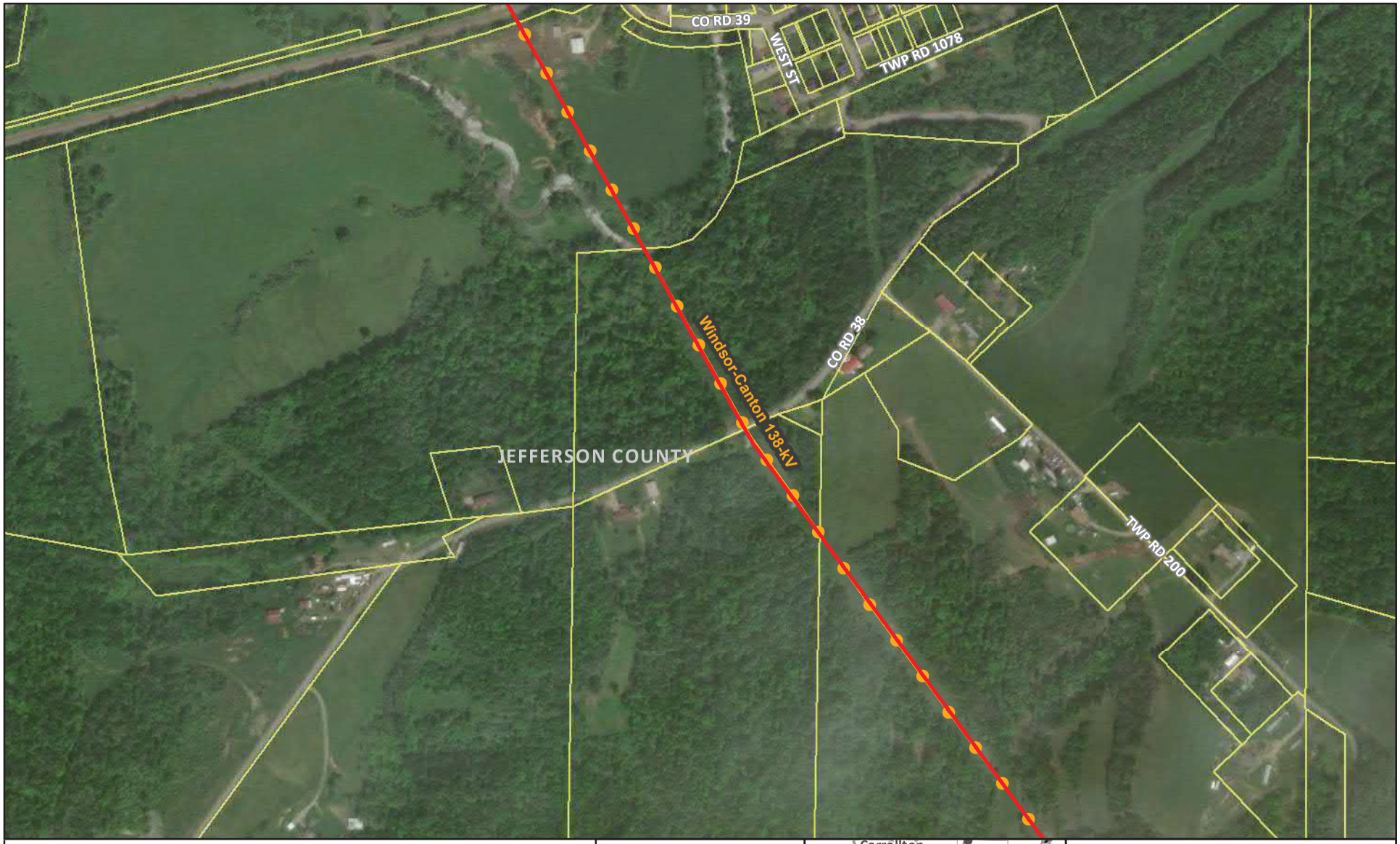


FIGURE 2M
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV Transmission Line Rebuild Project

0 500 1,000
Feet



Existing 138-kV Transmission Line
Proposed Tidd-Sunnyside 138-kV Line
Parcel Boundary
Municipality Boundary
Township Boundary
County Boundary

Data Sources: AEP (2021), OSIP Roads (2014), ESRI World Imagery (2015, 2020)

Coordinate System: State Plane Ohio North NAD 83

May 08, 2021

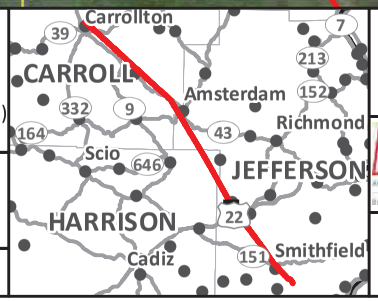


FIGURE 2N
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV
Transmission Line Rebuild Project

0 500 1,000
Feet

- Existing 138-kV Transmission Line
- Proposed Tidd-Sunnyside 138-kV Line
- Parcel Boundary
- Municipality Boundary
- Township Boundary
- County Boundary

Data Sources: AEP (2021), OSIP Roads (2014), ESRI World Imagery (2015, 2020)

Coordinate System: State Plane Ohio North NAD 83

May 08, 2021

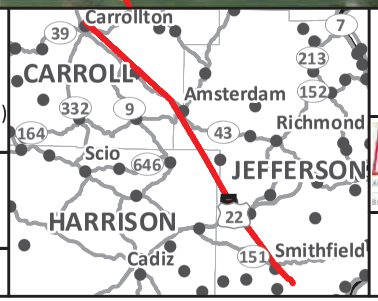


FIGURE 2O
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV Transmission Line Rebuild Project

0 500 1,000

Feet

- Existing 138-kV Transmission Line
- Proposed Tidd-Sunnyside 138-kV Line
- Parcel Boundary
- Municipality Boundary
- Township Boundary
- County Boundary

Data Sources: AEP (2021), OSIP Roads (2014), ESRI World Imagery (2015, 2020)

Coordinate System: State Plane Ohio North NAD 83

May 08, 2021

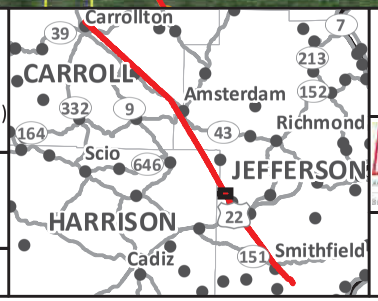
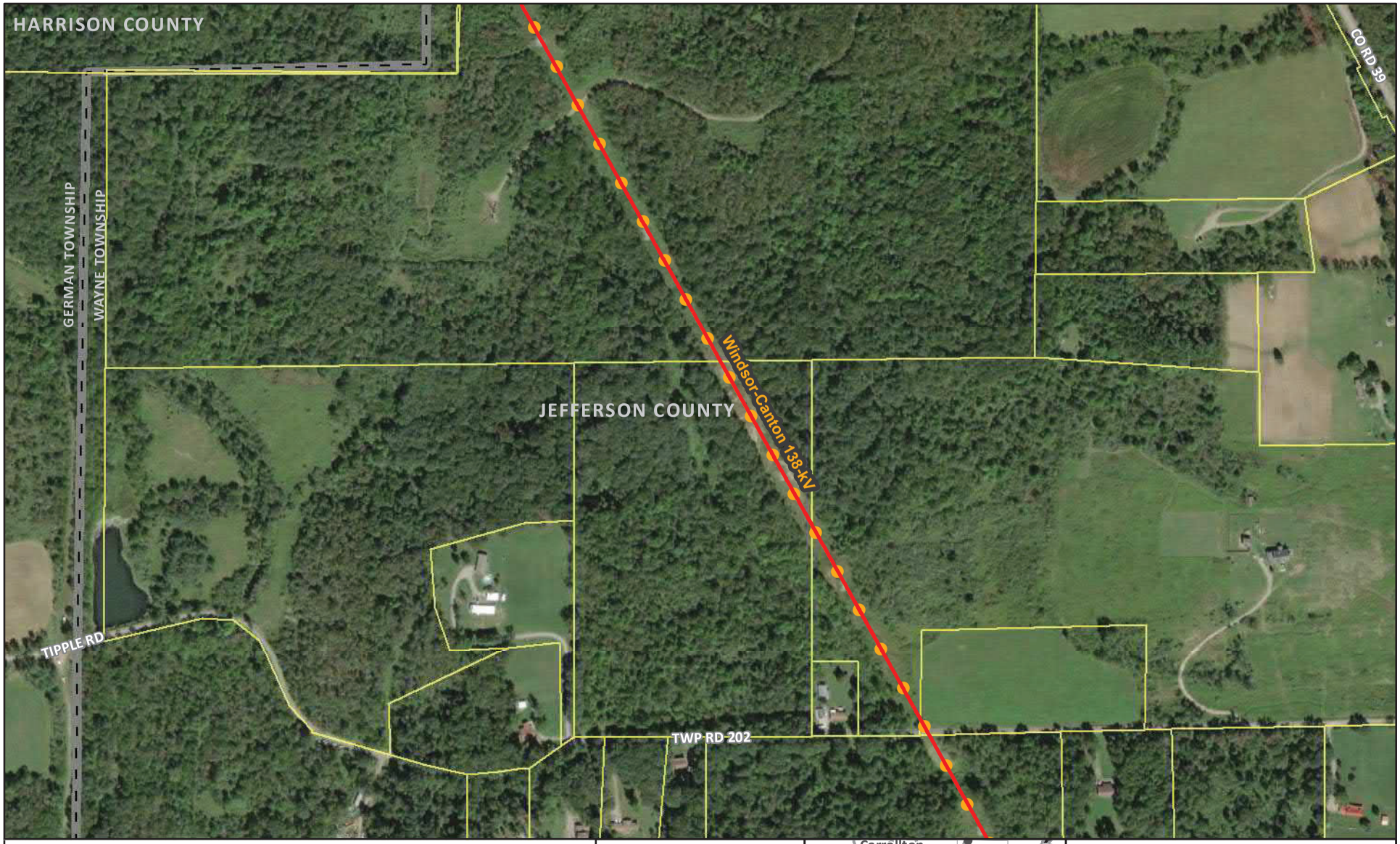


FIGURE 2P
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV Transmission Line Rebuild Project

0 500 1,000
Feet



- Existing 138-kV Transmission Line
- Proposed Tidd-Sunnyside 138-kV Line
- Parcel Boundary
- Municipality Boundary
- Township Boundary
- County Boundary

Data Sources: AEP (2021), OSIP Roads (2014), ESRI World Imagery (2015, 2020)

Coordinate System: State Plane Ohio North NAD 83

May 08, 2021

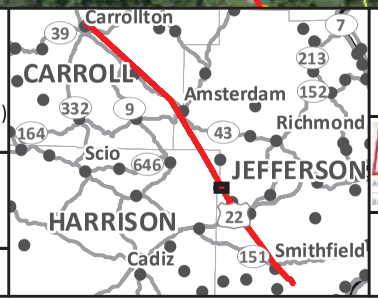


FIGURE 2Q
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV Transmission Line Rebuild Project

0 500 1,000

Feet

Existing 138-kV Transmission Line
Proposed Tidd-Sunnyside 138-kV Line
Parcel Boundary
Municipality Boundary
Township Boundary
County Boundary

Data Sources: AEP (2021), OSIP Roads (2014), ESRI World Imagery (2015, 2020)

Coordinate System: State Plane Ohio North NAD 83

May 08, 2021

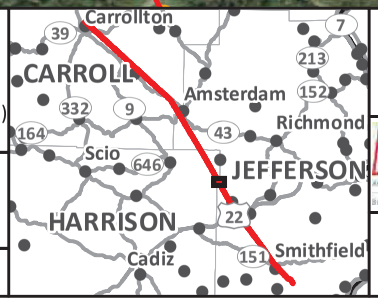


FIGURE 2R
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV
Transmission Line Rebuild Project

0 500 1,000
Feet

Existing 138-kV Transmission Line
Proposed Tidd-Sunnyside 138-kV Line
Parcel Boundary
Municipality Boundary
Township Boundary
County Boundary

Data Sources: AEP (2021), OSIP Roads (2014), ESRI World Imagery (2015, 2020)

Coordinate System: State Plane Ohio North NAD 83

May 08, 2021

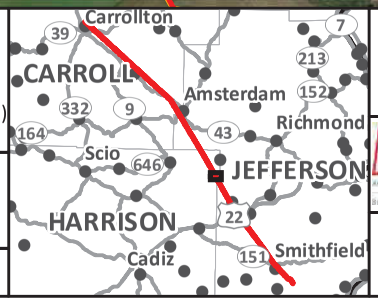


FIGURE 2S
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV Transmission Line Rebuild Project

0 500 1,000
Feet

Existing 138-kV Transmission Line
Proposed Tidd-Sunnyside 138-kV Line
Parcel Boundary
Municipality Boundary
Township Boundary
County Boundary

Data Sources: AEP (2021), OSIP Roads (2014), ESRI World Imagery (2015, 2020)

Coordinate System: State Plane Ohio North NAD 83

May 08, 2021

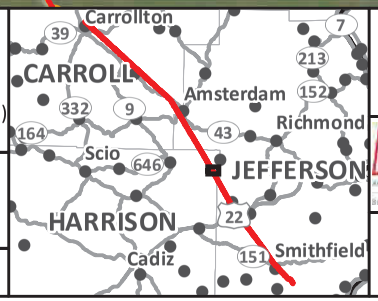


FIGURE 2T
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV Transmission Line Rebuild Project

0 500 1,000
Feet

Existing 138-kV Transmission Line
Proposed Tidd-Sunnyside 138-kV Line
Parcel Boundary
Municipality Boundary
Township Boundary
County Boundary

Data Sources: AEP (2021), OSIP Roads (2014), ESRI World Imagery (2015, 2020)

Coordinate System: State Plane Ohio North NAD 83

May 08, 2021

FIGURE 2U
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV Transmission Line Rebuild Project

0 500 1,000
Feet

Existing 138-kV Transmission Line
Proposed Tidd-Sunnyside 138-kV Line
Parcel Boundary
Municipality Boundary
Township Boundary
County Boundary

Data Sources: AEP (2021), OSIP Roads (2014), ESRI World Imagery (2015, 2020)

Coordinate System: State Plane Ohio North NAD 83

May 08, 2021

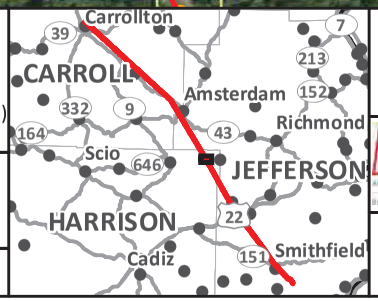


FIGURE 2V
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV
Transmission Line Rebuild Project

0 500 1,000
Feet

- Existing 138-kV Transmission Line
- Proposed Tidd-Sunnyside 138-kV Line
- Parcel Boundary
- Municipality Boundary
- Township Boundary
- County Boundary

Data Sources: AEP (2021), OSIP Roads (2014), ESRI World Imagery (2015, 2020)

Coordinate System: State Plane Ohio North NAD 83

May 08, 2021

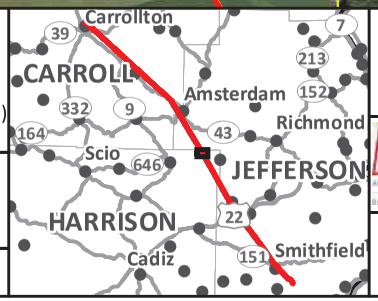


FIGURE 2W
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV Transmission Line Rebuild Project

0 500 1,000

Feet

Existing 138-kV Transmission Line
Proposed Tidd-Sunnyside 138-kV Line
Parcel Boundary
Municipality Boundary
Township Boundary
County Boundary

Data Sources: AEP (2021), OSIP Roads (2014), ESRI World Imagery (2015, 2020)

Coordinate System: State Plane Ohio North NAD 83

May 08, 2021

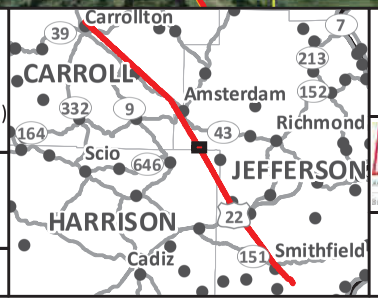


FIGURE 2X
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV Transmission Line Rebuild Project

0 500 1,000
Feet

Existing 138-kV Transmission Line
Proposed Tidd-Sunnyside 138-kV Line
Parcel Boundary
Municipality Boundary
Township Boundary
County Boundary

Data Sources: AEP (2021), OSIP Roads (2014), ESRI World Imagery (2015, 2020)

Coordinate System: State Plane Ohio North NAD 83

May 08, 2021

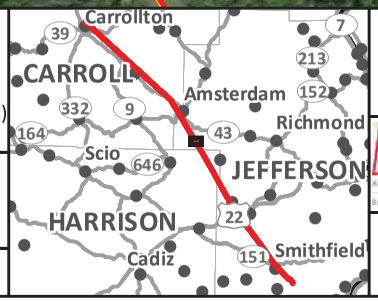


FIGURE 2Y
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV
Transmission Line Rebuild Project

0 500 1,000
Feet

Existing 138-kV Transmission Line
Proposed Tidd-Sunnyside 138-kV Line
Parcel Boundary
Municipality Boundary
Township Boundary
County Boundary

Data Sources: AEP (2021), OSIP Roads (2014), ESRI World Imagery (2015, 2020)

Coordinate System: State Plane Ohio North NAD 83

May 08, 2021

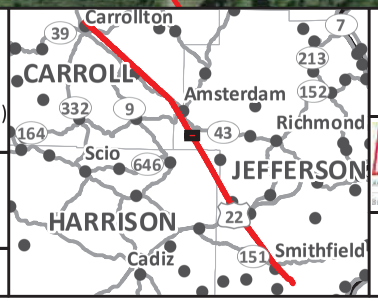


FIGURE 2Z
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

Tidd-Sunnyside 138-kV Transmission Line Rebuild Project

0 500 1,000
Feet

Summary: Notice Pre-Application Notification Letter for the Tidd-Sunnyside 138 kV Transmission Line Rebuild Project electronically filed by Ms. Christen M. Blend on behalf of AEP Ohio Transmission Power Company, Inc.