APPENDIX C

THREATENED AND ENDANGERED SPECIES SURVEY REPORT

POSTON – LICK 138KV TRANSMISSION LINE REBUILD PROJECT

THREATENED AND ENDANGERED SPECIES SURVEY REPORT

Prepared for:

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January 2016

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1.0 PROJECT DESCRIPTION

This document presents the results of an assessment conducted by Commonwealth Associates, Inc. (Commonwealth) on behalf of American Electric Power Ohio Transmission Company (AEP Ohio Transco) for the Poston – Lick 138kV Transmission Line Rebuild Project (Project) located in Athens, Vinton, and Jackson County, Ohio. The Project consists of rebuilding the Poston-Lick 138kV single-circuit transmission line within the existing 100-foot wide right of way corridor from the Poston Station in York Township, Athens County to structure 72 in Madison Township, Vinton County, and from structure 138 in Milton Township, Jackson County, to the Lick Station in Lick Township, Jackson County. The total length of the rebuild is approximately 21.7 miles. The Project Overview Maps (Figure 1), included at the end of this report, shows the Project within each of the counties and in relation to nearby roads, railroads, towns, rivers and streams, and other transmission lines.

As part of the Ohio Power Siting Board (OPSB) Letter of Notification (LON) requirements, AEP Ohio Transco is required to investigate and report the presence or absence of federal and state designated species and assess potential impacts by the Project, as stated in Ohio Administrative Code (OAC) Rule 4906-11-01(E)(1). These rules state:

> *(E) Environmental data. Describe the environmental impacts of the project. This description shall contain the following information:*
>
> *(1) 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 area likely to be disturbed by the project, a statement of the findings of the investigation, and a copy of any documents produced as a result of the investigation.*

AEP Ohio Transco retained Commonwealth to review threatened and endangered species, as defined above, within the proposed Project and conduct a field habitat assessment within the 100-foot-wide Project corridor and along proposed access routes outside of the corridor. This report will be used to assist AEP Ohio Transco's efforts to avoid or minimize negatively impacting threatened and endangered species during project design and site development.

2.0 METHODS

Commonwealth began the assessment by reviewing online data from the Ohio Department of Natural Resources (ODNR) and the U.S. Fish and Wildlife Service (USFWS). Commonwealth followed that by submitting a request to the ODNR Natural Heritage Program (NHP) for database records of species of concern located in proximity to the Project. Geographic information system (GIS) shapefiles were received from the NHP and then loaded into the project GIS maps as an overlay to show the proximity of each known species record to the project area. Agency coordination e-mails requesting comments on the proposed project were then submitted to the ODNR and the USFWS. Copies of the e-mail requests to the ODNR and USFWS and their e-mail responses and letters are included in Appendix A.

Agency-identified species and available species-specific information was reviewed to determine the various habitat types the listed species are known to frequent. This information was used during the field survey to assess the potential for these species of concern in or near the Project study area.

3.0 RESULTS

Commonwealth, along with Dr. Timothy Walters Ph.D. of EnviroScience Inc. (ES), conducted species habitat survey in conjunction with the stream and wetland field survey. These surveys were conducted on July 20-24, September 1-4, and October 5-9, 2015. In addition, Commonwealth contracted Doug Wynn, ODNR Department of Wildlife approved herpetologist, to conduct a separate habitat study for the Timber Rattlesnake (*Crotalus horridus*) and Jeffrey Davis, also an ODNR Department of Wildlife approved herpetologist, for the Eastern Spadefoot (Scaphiopus holbrookii). Field work for the timber rattlesnake was conducted on June 13-21, 2015 and for the Eastern Spadefoot, on May 16-17, 2015.

3.1 State Listed Species

The ODNR NHP database search listed several species occurrences and areas of ecological concern within one mile of the project centerline (Appendix A). The database, along with the ODNR response letter, identified 32 species as either state endangered, threatened, potentially threatened, or of special concern status (Table 1). Discussion of the Project's potential impact on the species is provided after the table. Comments on the areas of ecological concern identified by the database are addressed separately in the Areas of Ecological Concern, Wetland Delineation, and Stream Assessment Report, which accompanies this Letter of Notification as Appendix D.

TABLE 1
STATE LISTED SPECIES IDENTIFIED BY ODNR

Common Name	Scientific Name	Status
Mammals		
Black Bear	*Ursus americanus*	Endangered
Indiana Bat	*Myotis sodalis*	Endangered
Birds		
Cerulean warbler*	*Dendroica cerulean*	Species of Concern
Mollusks		
Sheepnose	*Plethobasus cyphyus*	Endangered
Fanshell	*Cyprogenia stegaria*	Endangered
Pink Mucket	*Lampsilis orbiculata*	Endangered
Snuffbox	*Epioblasma triquetra*	Endangered
Little Spectaclecase	*Villosa lienosa*	Endangered
Fawnsfoot	*Truncilla donaciformis*	Threatened
Insects		
American Burying Beetle	*Nicrophorus americanus*	Endangered
Reptiles		
Eastern box turtle	*Terrapene carolina*	Species of Concern
Timber Rattlesnake	*Crotalus horridus*	Endangered
Amphibians		
Eastern Spadefoot	*Scaphiopus holbrookii*	Endangered
Eastern Hellbender	*Cryptobranchus alleganiensis*	Endangered
Fish		
Ohio Lamprey	*Ichthyomyzon bdellium*	Endangered

Plant		
Butterfly-pea*	*Clitoria mariana*	Potentially Threatened
Bartley's reed grass*	*Calamagrostis porteri ssp. insperata*	Threatened
Carolina thistle*	*Cirsium carolinianum*	Threatened
Green adder's-mouth*	*Malaxis unifolia*	Potentially Threatened
Large marsh St. john's-wort	*Triadenum tubulosum*	Threatened
Straw sedge*	*Carex straminea*	Potentially Threatened
Spotted pondweed*	*Potamogeton pulcher*	Endangered
Fringe-tree*	*Chionanthus virginicus*	Potentially Threatened
Ashy sunflower*	*Helianthus mollis*	Threatened
Round-fruited hedge-hyssop*	*Gratiola virginiana*	Threatened
Short-fringed sedge*	*Carex crinita var. brevicrinis*	Threatened
Tennessee pondweed*	*Potamogeton tennesseensis*	Threatened
White milkweed*	*Asclepias variegate*	Potentially Threatened
Dwarf hawthorn*	*Crataegus uniflora*	Potentially Threatened
Chalky ramalina*	*Ramalina pollinaria*	Threatened
Wild kidney bean*	*Phaseolus polystachios*	Potentially Threatened

* Species is identified in the NHP database and ODNR letter but is associated with the Poston-Lick removal and retirement and not the Project.

Black Bear: The Project is within the range of the black bear. Because the bear is a highly mobile species the ODNR has indicated it is not likely to be impacted by the project.

Indiana Bat: The Project is within range of the Indiana bat, a state and federally listed endangered species. During the summer months the Indiana bat utilizes roost trees that include dead or dying trees with exfoliating bark, crevices, or cavities in upland areas or riparian corridors and living trees with exfoliating bark, cavities, or hollow areas formed from broken branches or tops. AEP is committed to clearing all potential bat roosting trees from within the existing right of way, along the edges of the right away, and along proposed access routes between October 1 and March 31, while bats are hibernating and not active within the immediate Project area. If, during the summer months, an area is identified where additional clearing is needed then a survey for suitable summer habitat will be performed in that area. Any potential roost trees that are identified will then be left standing until the following winter. Therefore, the Project is not likely to negatively impact the Indiana Bat.

Freshwater Mussels: The Project is within the range of six species of mollusks. Most are found in large streams and rivers. However, no in-water work is proposed and therefore no direct impacts to these species. Stormwater Pollution Prevention Plan (SWPPP) maps with soil erosion control measures for construction and restoration will be prepared prior to construction. Sensitive areas will be demarcated on the SWPPP maps and control measures such as barrier fencing, silt fence, and signage will be installed to maintain the buffer between construction areas and nearby rivers and streams. Additionally, all spoils will be contained to avoid contamination of waterways. Due to the location and that no in-water work is being proposed in a perennial stream of sufficient size to provide suitable habitat, the ODNR has indicated this project is not likely to impact any of the species of mollusk listed in Table 1.

American Burying Beetle: The Project is within the known or believed range of this carrion beetle. Historically found in a broad geographic range currently the American burying beetle is now known to

occur only in Rhode Island, Oklahoma, Arkansas, and Nebraska. The ODNR indicates the species is not likely to be impacted by the project due to its habitat requirements.

Timber Rattlesnake: The Project is within the range of the timber rattlesnake. Generally, this species is found in deciduous forests in rugged terrain but can also be found using the open corridors of power lines. As stated previously Commonwealth has consulted with Doug Wynn, ODW approved herpetologist. A habitat study performed by Mr. Wynn will be submitted to the OPSB under separate cover. In the report Mr. Wynn identified five potential habitat sites. Four of the sites occur between structures 1 and 62, where construction is proposed, and the fifth is in the Poston-Lick removal project area, which is outside of the focus of this LON. Where construction is a sensitive area buffer will be demarcated on the SWPPP maps and barrier fencing will be utilized to maintain the buffer. The herpetologist will review the buffer to determine if it is sufficient or if additional survey or on-site construction observation is warranted.

Eastern Spadefoot: The Project is within the range of the eastern spadefoot. This toad-like species is found in areas of sandy soils that area associated with river valleys. Breeding habitat may include flooded agricultural fields or other water holding depressions. As stated previously Commonwealth consulted with Jeffrey Davis, ODW approved herpetologist, on this species. The report prepared by Mr. Davis will be submitted to the OPSB under separate cover. The report indicates that no records were found that were collected along the transmission line corridor between Athens and Jackson counties and no suitable breeding sites were identified in the vicinity of soils suitable for Eastern Spadefoots to burrow into. The report concluded that a Presence–Absence Survey is not recommended for any point along the transmission line corridor between Poston and Lick Stations. In addition, due to the location, the type of habitat along the project route and within the vicinity of the project route, the ODNR has indicated this project is not likely to impact this species.

Eastern Hellbender: The Project is within the range of the Eastern hellbender. This aquatic salamander lives entirely within the waters of perennial streams with large, flat rocks. Due to the location, and that no in-water work is proposed in a perennial stream of sufficient size to provide suitable habitat, the ODNR has indicated the project is not likely to impact this species.

Ohio Lamprey: The Project is within the range of the Ohio Lamprey. This eel-like fish inhabits freshwater streams of the Ohio River basin. The ODNR Division of Wildlife (DOW) recommends no in-water work in perennial streams at least April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. Because no in-water work is being proposed, the DOW has indicated the project is not likely to impact this species.

Plants: The project is within the range of 16 plant species. Fifteen of the species are associated with the Poston-Lick removal and retirement project while only one, Large marsh st. john's-wort (*Triadenum tubulosum*), is associated with the Project. The habitat for this plant is swamp woods, buttonbush swamps, thickets, and streambanks and there has been three recorded occurrence of it within a one mile radius of the project. However all three occurrences are more than .5 mile from the right of way and any permanent impacts and more than .4 miles from any proposed access route that might require temporary improvement. This project will take place within an existing, maintained transmission line corridor, and is not expected to require significantly altering habitat used by this species - no forested wetlands will be cleared, permanent wetland impacts are anticipated to be insignificant (129 square

feet). No Large marsh st. john's-wort was observed within the Project corridor or along proposed access routes during the field assessment. Due to the lack of observed species, distances to known occurrences, and minimal habitat alteration being proposed the project is not likely to have a substantial impact on this species.

3.2 Federal Listed Species

Online USFWS data and the USFWS response letter (Appendix A), identified 10 species as federally endangered, threatened, or of special concern status (Table 2). Discussion of the Project's potential impact on the species is provided following the table.

TABLE 2
FEDERAL LISTED SPECIES IDENTIFIED BY USFWS

Common Name	Scientific Name	Status
Mammals		
Indiana Bat	*Myotis sodalis*	Endangered
Northern Long-Eared Bat	*Myotis septentrionalis*	Threatened
Birds		
Bald Eagle	*Haliaeetus leucocephalus*	Protected
Mussels		
Sheepnose	*Plethobasus cyphyus*	Endangered
Fanshell	*Cyprogenia stegaria*	Endangered
Pink Mucket	*Lampsilis abrupta*	Endangered
Snuffbox	*Epioblasma triquetra*	Endangered
Insects		
American Burying Beetle	*Nicrophorus americanus*	Endangered
Reptiles		
Timber Rattlesnake	*Crotalus horridus*	Species of Concern
Amphibians		
Eastern Hellbender	*Cryptobranchus alleganiensis*	Species of Concern
Plant		
Running Buffalo Clover	*Trifolium stoloniferum*	Endangered

Bats: The Project lies within the range of the Indiana bat and the Northern long eared bat, and is in the vicinity of one or more confirmed records of both Indiana bats and northern long-eared bats. In the summer, these bats typically roost singly or in colonies under bark, in cavities, and in crevices in live and dead trees. The bats may also summer roost in cooler locations such as caves and mines. They have also been found roosting under eaves on houses, behind window shutters, in bat-houses, and in open and enclosed buildings. They are documented to enter hibernation in October/November and leave in March/April. Bats have been known to hibernate in caves, mines, and tunnels within 60 miles of their summer roosts.

As outlined under discussions on the Indiana bat in section 3.1, AEP is committed to clearing all potential bat roosting trees from within the existing right of way, along the edges of the right away, and along proposed access routes between October 1 and March 31, while bats are hibernating and not active within the immediate Project area. If, during the summer months, an area is identified where additional clearing is needed then a survey for suitable summer habitat will be performed in that area. Any potential roost trees that are identified will then be left standing until the following winter. Therefore, the Project is not likely to negatively impact the Indiana Bat or the Northern long eared bat.

Bald Eagle: The Project is within the range of the bald eagle. Bald eagles are typically found near sizeable bodies of water, where water and ample food (fish) can be found within two miles of the nest (http://wildlife.ohiodnr.gov/species-and-habitats/species-guide-index/birds/bald-eagle). No eagle nests were observed within the Project corridor or along proposed access routes during the field assessment. Due to the location of eagle nests in the area the USFWS has indicated that no significant project impacts are expected for this species.

Freshwater mussels: Four of the 10 species identified by the USFWS are mussels. As outlined under Freshwater Mussels in section 3.1, no in-water work is proposed and therefore no direct impacts to these species are expected.

Running Buffalo Clover: The Project lies within the range of running buffalo clover (RBC). RBC is an endangered species and the only plant on the federal list provided by the USFWS for the Project. RBC requires periodic disturbance and a somewhat open habitat to successfully flourish, but it cannot tolerate full-sun, full-shade, or severe disturbance. No RBC was observed within the Project corridor or along proposed access routes during the field assessment. Due to the lack of observed species no significant impact to the species is expected.

Others: Considerations for the American Burying Beetle, Timber Rattlesnake, and Eastern Hellbender are outlined under section 3.1 State Species of Concern.

4.0 SUMMARY

AEP Ohio Transco retained Commonwealth to review threatened and endangered species within the proposed Project, and conduct a field habitat assessment within a 100-foot-wide corridor centered on the existing Poston – Lick 138 kV transmission line and along proposed access routes outside of the corridor. This report will be used to assist AEP Ohio Transco's efforts to avoid or minimize negatively impacting threatened and endangered species during project design and site development. The surveys were conducted on July 20-24, September 1-4, and October 5-9, 2015.

The ODNR identified 11 ecological sites within a one mile radius of the Project centerline and 32 species of wildlife listed as state endangered, threatened, potentially threatened, or of special concern status within the one mile radius. None of the ecological sites are located close enough to the Project corridor or any of the proposed access routes to be negatively impacted by the Project. No state listed species were observed within the Project corridor or within any of the proposed access routes during the field assessment. It is anticipated that the Project will not negatively impact any of these state listed species, due to the characteristics of their preferred habitats, and the timing, location, and types of activities being proposed.

The USFWS identified 10 species as endangered, threatened, protected, or of special concern status within a one mile radius of the Project centerline. No federally listed species were observed within the Project corridor or within any of the proposed access routes during the field assessment. It is anticipated that the Project will not negatively impact any of these federally listed species, due to the characteristics of their preferred habitats, and the timing, location, and types of activities being proposed.

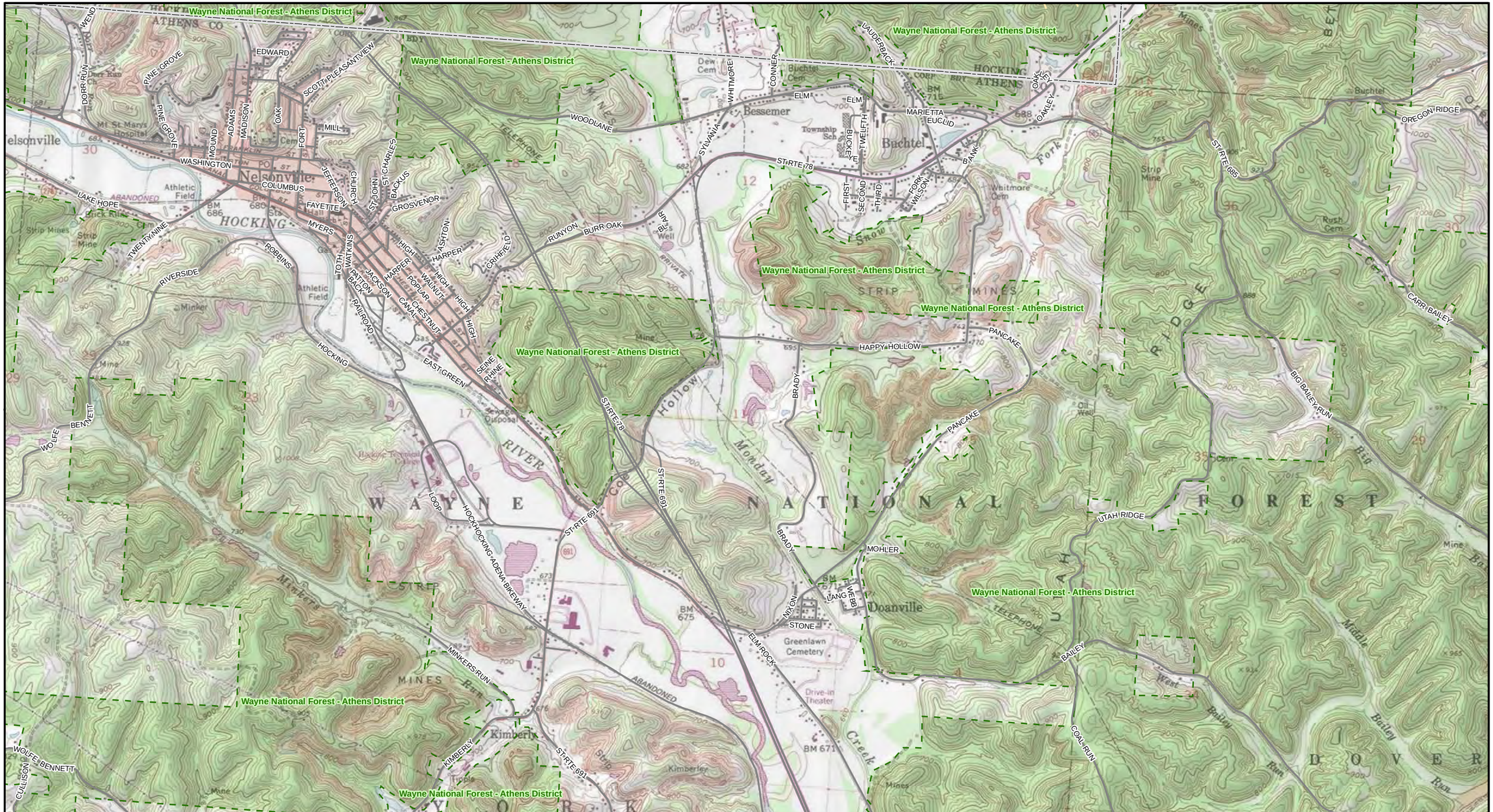
The USFWS and the ODNR identified the Project area as being within the range of the timber rattlesnake. Doug Wynn, an ODNR Department of Wildlife approved herpetologist, conducted a habitat

study for the snake and identified four potential habitat sites within the vicinity of the Project. The areas identified by Mr. Wynn will be demarcated on the SWPPP maps, fenced off in the field with barrier fence, and posted with signs indicating no construction is to occur within these areas. The maps with the demarcated areas will be forwarded to Mr. Wynn prior to construction for his review and comment.

The ODNR identified the Project area as being within the range of the Eastern spadefoot. Jeffrey Davis, an ODNR Department of Wildlife approved herpetologist, conducted a records search and a habitat study for the amphibian that resulted in no records and no suitable breeding sites being. Due to the results of the study, it is unlikely that the Eastern spadefoot will be negatively impacted by the project.

5.0 CONCLUSION

This report will be used to assist AEP Ohio Transco's efforts to avoid or minimize negatively impacting threatened and endangered species, to the extent feasible, during project design and site development. Based upon the nature and scope of the proposed project, review of federal and state records of listed species, the field surveys conducted by Commonwealth on July 20-24, September 1-4, and October 5-9, 2015 and by ODNR Department of Wildlife approved herpetologists on June 13-21 and May 16-17, 2015, it is anticipated that no federal or state listed species of wildlife or state listed ecological site will be negatively impacted by the project as currently planned.



Substation
Existing Structure
Existing 69 kV
Existing 138 kV
Major/Local Road
National/State Forest
Proposed 138 kV
To Be Removed 138 kV
(Not Part of LON)

Scale: 1" = 2,000' (1:24,000)

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

Feet

Projected Coordinate System: Ohio State Plane
Datum: North American Datum of 1983
Projection: Lambert Conformal Conic
Zone: North
Linear Unit: Feet

Figure 01 - Project Overview Map
Poston - Lick 138kV
Transmission Line Rebuild Project
Map Sheet 01 of 07

Commonwealth associates, inc.

Source: Commonwealth Asscoiates Inc., AEP, ESRI
Comments:

Drawn By: JEK
Date: 1/14/2016

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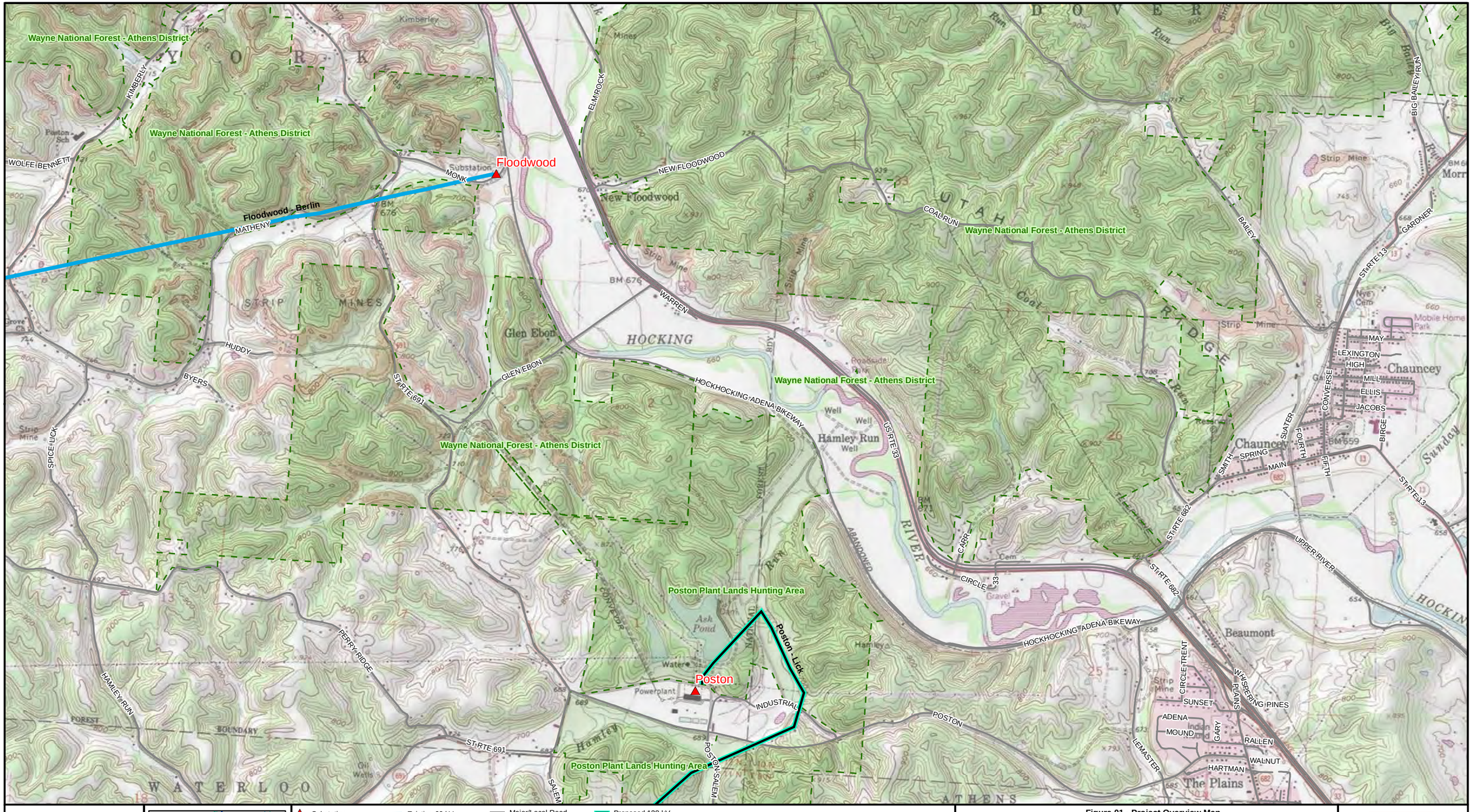

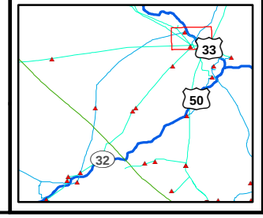

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Figure 01 - Project Overview Map
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Map Sheet 02 of 07

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Comments:

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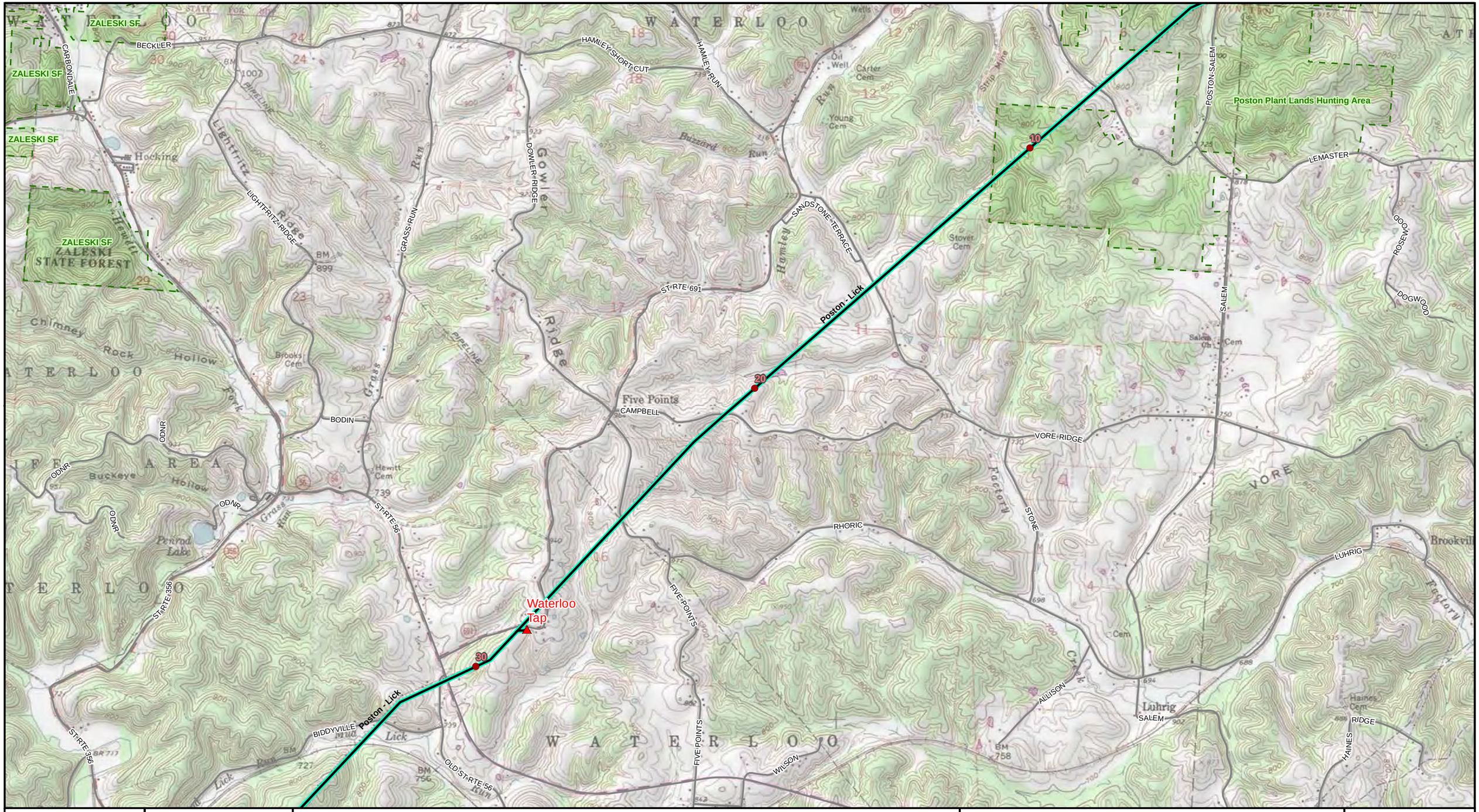

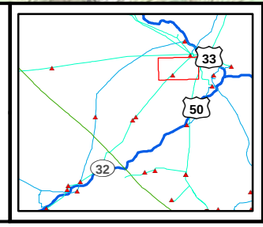

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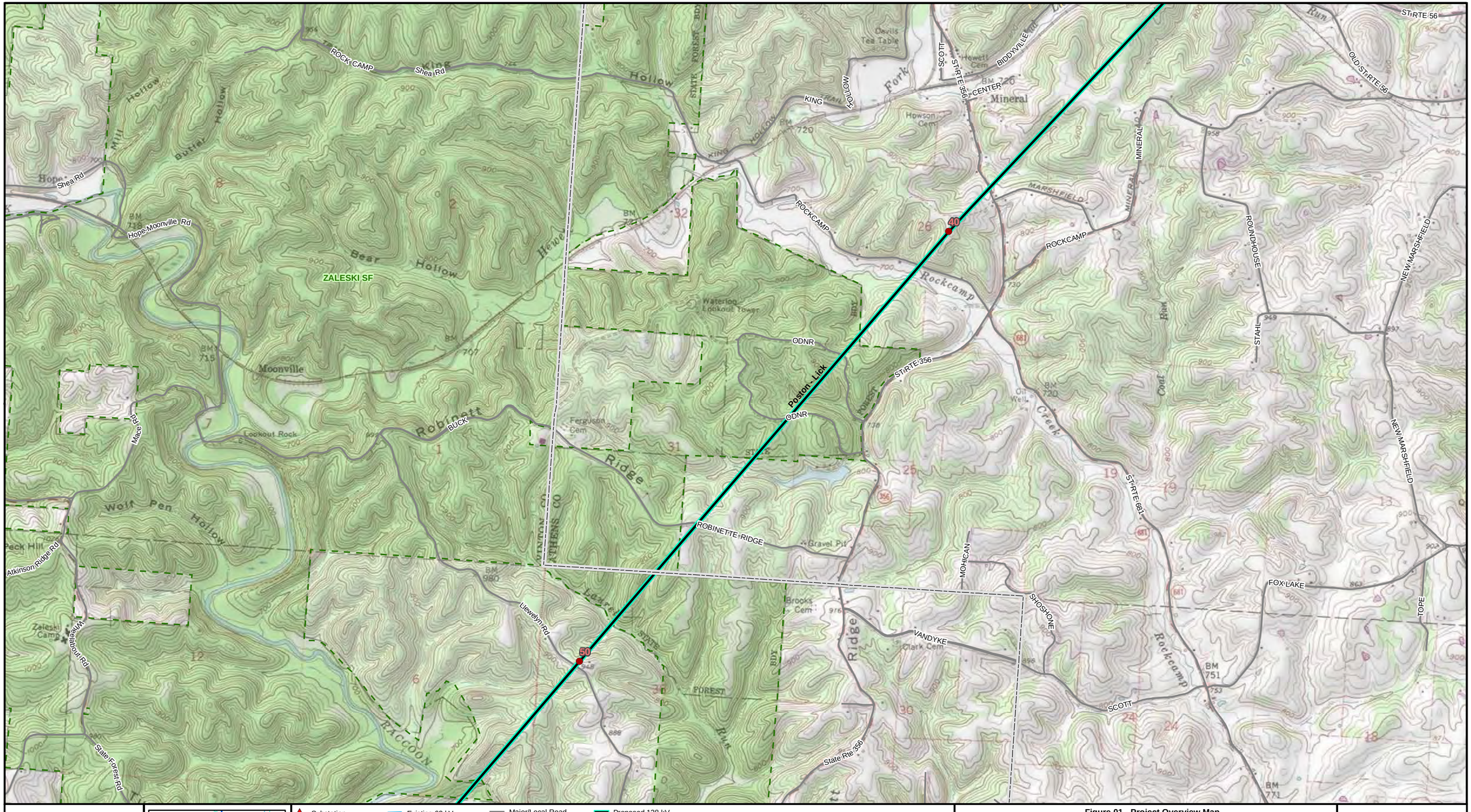

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Map Sheet 04 of 07

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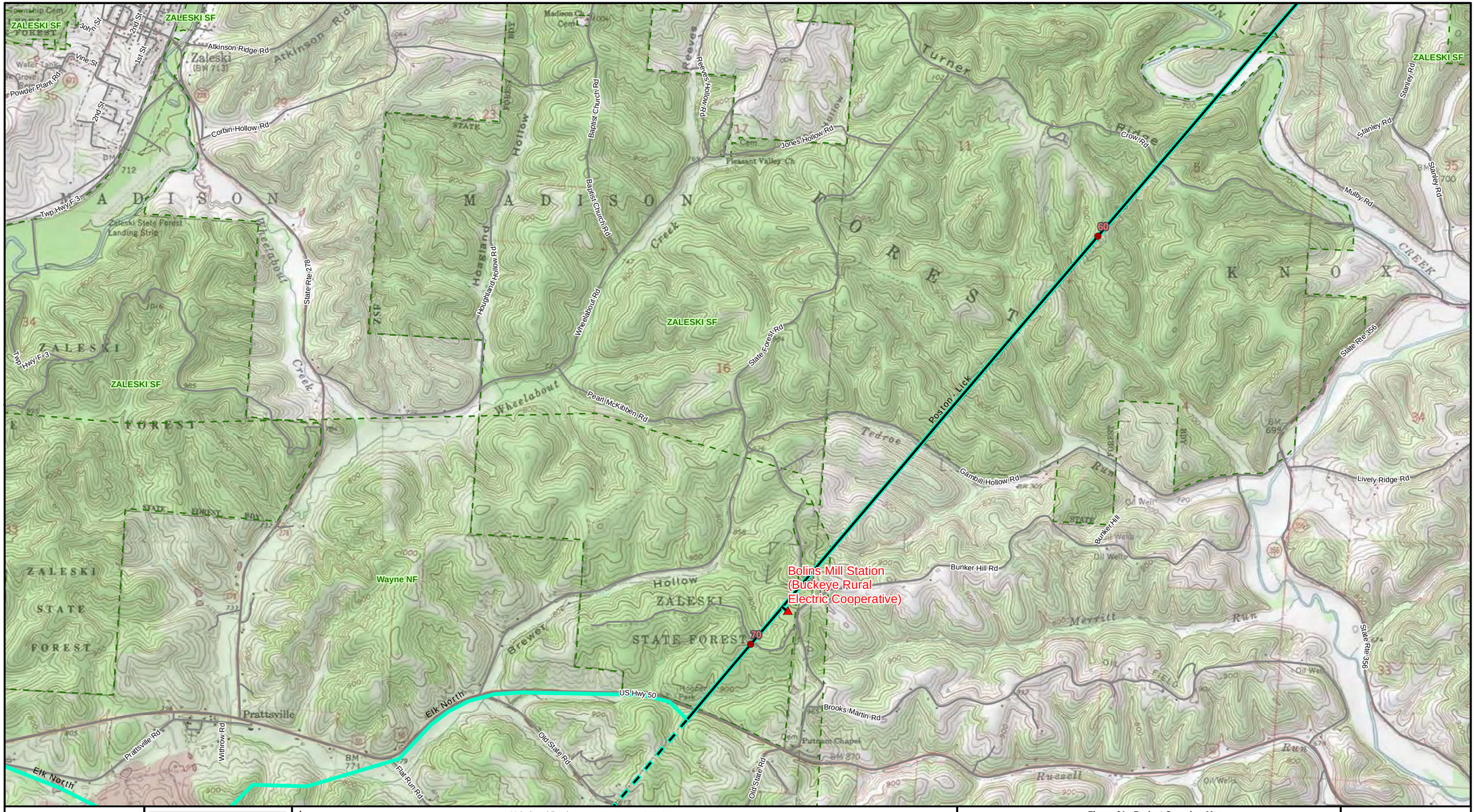

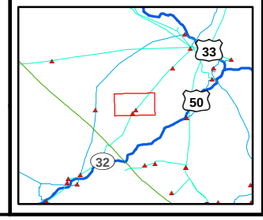

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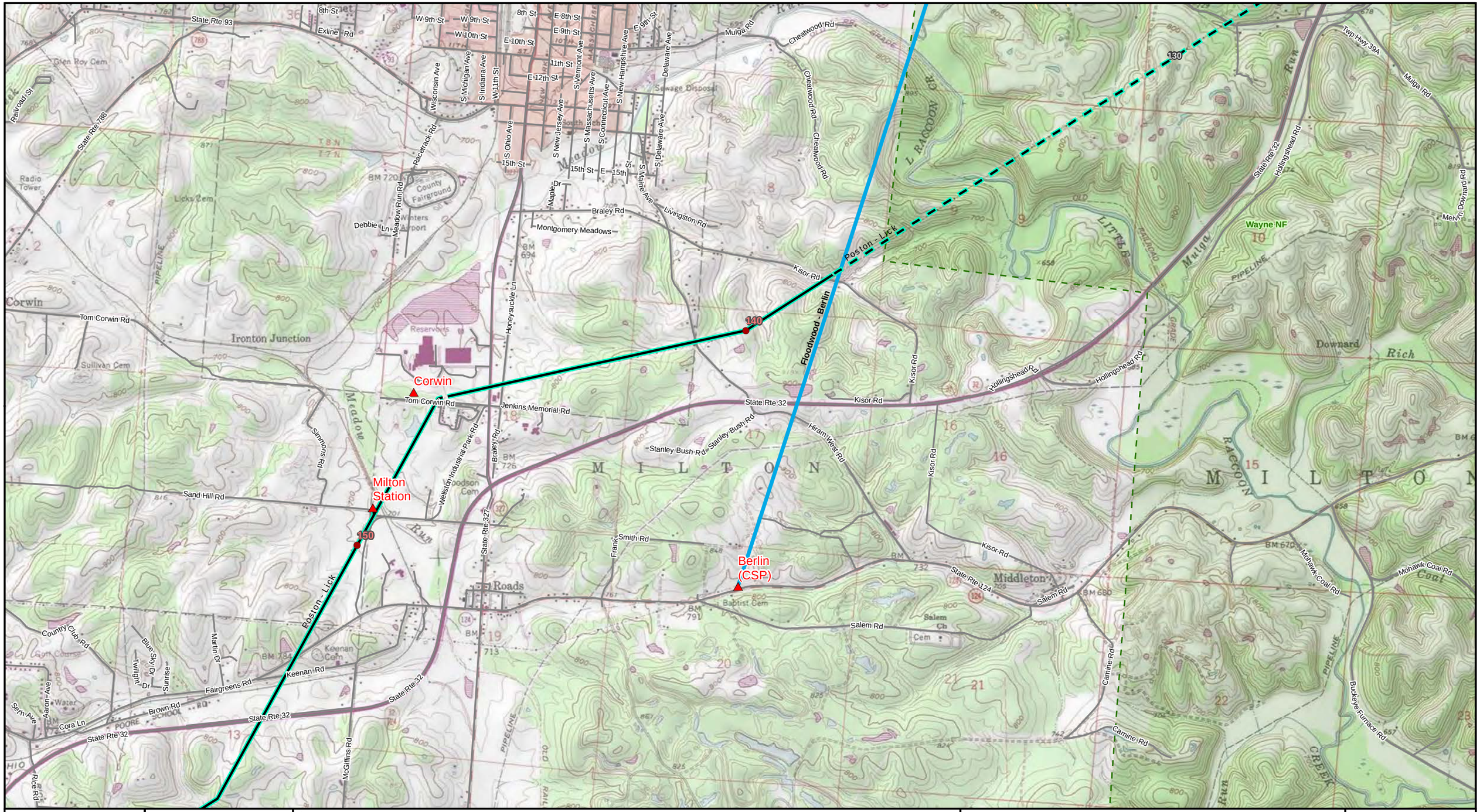

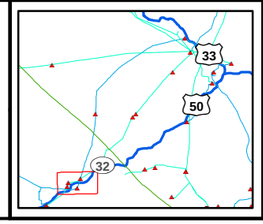

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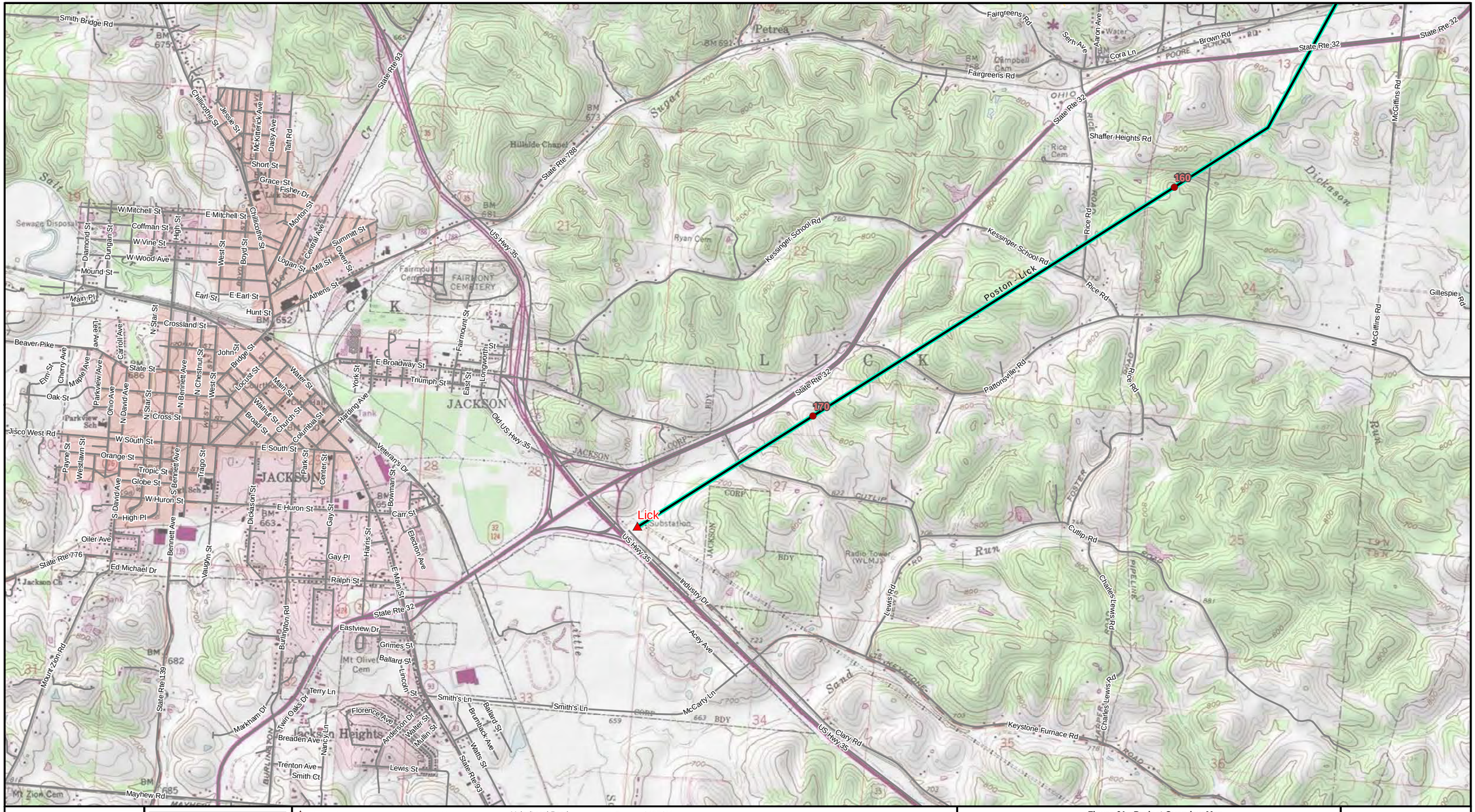

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POSTON – LICK 138KV TRANSMISSION LINE REBUILD PROJECT

AREAS OF ECOLOGICAL CONCERN, WETLAND DELINEATION, AND STREAM ASSESSMENT REPORT

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1.0 PROJECT DESCRIPTION

This document presents the results of a study conducted by Commonwealth Associates, Inc. (Commonwealth) on behalf of American Electric Power Ohio Transmission Company (AEP Ohio Transco) for the Poston – Lick 138kV Transmission Line Rebuild Project (Project) located in Athens, Vinton, and Jackson County, Ohio. The Project consists of rebuilding the Poston-Lick 138kV single-circuit transmission line within the existing 100-foot wide right of way corridor from the Poston Station in York Township, Athens County to structure 72 in Madison Township, Vinton County, and from structure 138 in Milton Township, Jackson County, to the Lick Station in Lick Township, Jackson County. The total length of the rebuild is approximately 21.7 miles. The Project Overview Map (Figure 1), included at the end of this report, shows the Project within each of the counties and in relation to nearby roads, railroads, towns, rivers and streams, and other transmission lines. The Map Sheet Index (Figure 2) shows where an individual map sheet can be found along the length of the Project.

As part of the Ohio Power Siting Board (OPSB) Letter of Notification (LON) requirements, AEP Ohio Transco is required to describe the investigation concerning the presence or absence of areas of ecological concern as stated in Ohio Administrative Code (OAC) Rule 4906-15-11-01(E)(2). This rule states:

> *(E) Environmental data. Describe the environmental impacts of the proposed project. This description shall include the following information:*
>
> *(2) 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 areas likely to be disturbed by the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.*

AEP Ohio Transco retained Commonwealth to review areas of ecological concern, as defined above, within the proposed Project and conduct a field assessment of wetlands and streams within the 100-foot-wide Project corridor and along proposed access routes outside of the corridor. This report will be used to assist AEP Ohio Transco's efforts to avoid or minimize negatively impacting these areas during project design and site development.

2.0 METHODS

2.1 Preliminary Resource Review

Prior to conducting the field portion of the study, Commonwealth reviewed maps, GIS data, and other readily available information to identify national and state forests and parks, designated or proposed wilderness areas, national and state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, and wildlife sanctuaries likely to be disturbed by the Project. The review also provided valuable site information, including relief, cover, soils, landownership, and land use that was then used to make preliminary determinations of wetlands and streams that might be present within the Project corridor. The review included, but was not limited to, the following resources:

- Google Earth, digital aerial photographs
- U.S. Geological Survey (USGS), topographic quadrangle maps

- Natural Resources Conservation Service (NRCS), Web Soil Survey (WSS)
- Natural Resources Conservation Service (NRCS), WETS data
- Ohio Department of Natural Resources, Natural Heritage Database
- U.S. Fish and Wildlife Service (USFWS), National Wetlands Inventory (NWI) Wetlands Mapper
- Federal Emergency Management Agency (FEMA), National Flood Hazard Layer (NFHL)

2.2 Field Review

After completing the office review, Commonwealth conducted site visits to evaluate any preliminary wetland or stream determinations that had been made in the office and, where necessary, to make new determinations by identifying vegetation communities, characterizing soils, assessing hydrology, and noting disturbances. Two methodologies were relied upon during the field review; one for identifying and delineating wetlands and the other for assessing rivers and streams. The methods are described further in the following sections.

2.2.1 Wetland Identification and Delineation

The identification and delineation of wetlands followed those methods outlined in the U.S. Army Corps of Engineers (USACE) *Corps of Engineers Wetlands Delineation Manual* (1987 Manual) and the USACE *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountain and Piedmont Region (Version 2.0)*. In the 1987 Manual a definition is provided that indicates "wetlands" are essentially areas that have positive evidence of three parameters: hydric soils, wetland hydrology, and hydrophytic vegetation. During the preliminary resource review Commonwealth collected available information regarding the three parameters and used the data to identify potential wetlands likely to be disturbed by the Project. Site visits were then conducted to identify vegetation communities, characterize soils, assess hydrology, and note disturbances. Preliminary wetland boundaries were estimated where one or more of these criteria gave way to upland characteristics. Sample plots were then established, wetland data was collected and recorded, wetland boundaries were delineated, and sample plots and boundary points were GPS surveyed.

Preliminary data gathered prior to the site visit is summarized in Section 3.1 of this report. Data collected during the delineation of any wetland is summarized in Section 3.2 of this report. The methodology used to examine each parameter is described in the following sections.

Soils: Soil profiles were examined by digging soil pits and recording hydric soil characteristics. A *Munsell Soil Color Chart* was used to identify the hue, value, and chroma of the matrix and mottles of the soil. Generally, mottled soils with a matrix chroma of two or less, and unmottled soils with a matrix chroma of one or less are considered to exhibit hydric soil characteristics. In sandy soils, mottled soils with a matrix chroma of three or less, and unmottled soils with a matrix chroma of two or less are considered to be hydric soils.

Hydrology: The 1987 Manual requires that an area be inundated or saturated to the surface for a minimum of 5 percent of the growing season (areas saturated between 5 percent and 12.5 percent of the growing season may or may not be wetlands, while areas saturated over 12.5 percent of the growing season fulfill the hydrology requirements for wetlands). The Regional Supplement states that the growing season dates are determined through onsite observations of the following indicators of biological activity in a given year: (1) above-ground growth and development of vascular plants, and/or

(2) soil temperature at the 12-inch depth is 41°F or higher. Therefore, the beginning of the growing season in a given year is indicated by whichever condition occurs earlier, and the end of the growing season by whichever persists later. The Regional Supplement also state that if onsite data gathering is not practical, the growing season can be approximated by the median dates (i.e., 5 years in 10, or 50 percent probability) of 28°F.

The soils and ground surface were examined for evidence of wetland hydrology in lieu of seeking detailed hydrological data. This is an acceptable approach according to the 1987 Manual and the Regional Supplements. Evidence indicating wetland hydrology typically includes primary indicators such as surface water (A2), saturation (A3), water marks (B1), sediment deposits (B2), drift deposits (B3), water-stained leaves (B9), and oxidized rhizospheres along living roots (C3), as well as secondary indicators such as drainage patterns (B10), geomorphic position (D2), saturation visible on aerial imagery (C9), and FAC-neutral test (D5).

Vegetation: Dominant vegetation was assessed for each stratum (tree, sapling/shrub, herbaceous and woody vine) and an indicator status of obligate (OBL), facultative wet (FACW), facultative (FAC), facultative upland (FACU), and/or upland (UPL) were assigned to each plant species based on the *The National Wetland Plant List: 2014 Update of Wetland Ratings.* The wetland indicator status reflects the likelihood of a species occurring in a wetland versus non-wetland habitat. The various indicator status designations are explained further in Table 1 below. An area was determined to have hydrophytic vegetation when, under normal circumstances, 50 percent or more of the composition of the dominant species are OBL, FACW and/or FAC species. Vegetation of an area was determined to be non-hydrophytic when more than 50 percent of the composition of the dominant species was FACU and/or UPL species. In addition to the dominance test, the FAC-Neutral test and prevalence tests were used to determine if a wetland has a predominance of hydrophytic vegetation.

TABLE 1
WETLAND INDICATOR STATUS DESIGNATIONS

Indicator Category	Indicator Symbol[1]	Definition
Obligate	OBL	Almost always is a hydrophyte, rarely in uplands
Facultative Wet	FACW	Usually is a hydrophyte but occasionally found in uplands
Facultative	FAC	Commonly occurs as either a hydrophyte or non-hydrophyte
Facultative Upland	FACU	Occasionally is a hydrophyte but usually occurs in uplands
Upland	UPL	Rarely is a hydrophyte, almost always occurs in uplands

[1] Indicator status modifiers (+ and -) are no longer used

2.2.2 Wetland Categorization

Categorizing wetlands at the site followed those methods described in the Ohio Environmental Protection Agency (Ohio EPA) *Ohio Rapid Assessment Method for Wetlands v. 5.0* (ORAM). Under ORAM wetlands are scored on the basis of hydrology, upland buffer, habitat alteration, special wetland communities, and vegetation communities. The scores range from 0 (low quality and high disturbance) to 100 (high quality and low disturbance). Wetlands scored from 0 to 29.9 are grouped into 'Category 1', from 30 to 34.9 into 'Category 1 or 2 (Gray Zone)', from 35 to 44.9 into 'Modified category 2', from 45 to 59.9 into 'Category 2', from 60 to 64.9 into 'Category 2 or 3 (Gray Zone)', and from 65 to 100 into Category 3'. Wetlands whose scores fall into the gray zone between Categories 1 and 2 (1 or 2 gray

zone wetlands) will be considered Category 2 wetlands for purposes of this report and wetlands whose scores fall into the gray zone between Categories 2 and 3 (2 or 3 gray zone wetlands) will be considered Category 3 wetlands for purposes of this report. Results obtained through the use of the ORAM are discussed in Section 3.2 of this report. The categories of wetlands defined by the individual wetland ORAM scores are defined in the following paragraphs:

Category 1 Wetlands – Category 1 wetlands "…support minimal wildlife habitat, hydrological and recreational functions," and "…do not provide for or contain critical habitats for threatened or endangered species." In addition, Category 1 wetlands are often hydrologically isolated and have some or all of the following characteristics: low species diversity, no significant habitat or wildlife use, limited potential to achieve wetland functions, and/or a predominance of non-native species. These limited quality waters are considered to be a resource that has been so degraded or with such limited potential for restoration, or of such low functionality, that no social or economic justification and lower standards for avoidance, minimization, and mitigation are applied.

Category 2 Wetlands – Category 2 wetlands "...support moderate wildlife habitat, or hydrological or recreational functions," and as wetlands which are "...dominated by native species but generally without the presence of, or habitat for, rare, threatened or endangered species; and wetlands which are degraded but have a reasonable potential for reestablishing lost wetland functions." Category 2 wetlands constitute the broad middle category of "good" quality wetlands, and can be considered a functioning, diverse, healthy water resource that has ecological integrity and human value.

Category 3 Wetlands – Wetlands that are assigned to Category 3 have "...superior habitat, or superior hydrological or recreational functions." They are typified by high levels of diversity, a high proportion of native species, and/or high functional values. Category 3 wetlands include wetlands which contain or provide habitat for threatened or endangered species, are high quality mature forested wetlands, vernal pools, bogs, fens, or which are scarce regionally and/or statewide.

2.2.3 Rivers and Streams Assessment

The Clean Water Act provides states the authority to issue water quality standards and "designated uses" to all "Waters of the U.S." upstream to the highest reaches of the tributary streams. In addition, the Federal Water Pollution Control Act (FWPCA) and its amendments require knowledge of the potential fish or biological communities that can be supported in a stream or river, including upstream headwaters. Streams were identified by the presence of a defined bed and bank, and evidence of an ordinary high water mark (OHWM). Each stream was then placed into one of three regulatory types, listed below, and the channel of the stream was GPS surveyed.

- Ephemeral: An ephemeral stream only conveys runoff precipitation and meltwater. It is permanently located above the water table and is most often dry.
- Intermittent: An intermittent stream is located below the water table for parts of the year, but does have dry periods.
- Perennial: A perennial stream typically has flowing water throughout the entire year.

Results obtained are discussed in Section 3.3 of this report.

3.0 RESULTS

The results presented herein apply to the existing and reasonably foreseeable site conditions at the time of the assessment. They cannot apply to site changes of which Commonwealth is unaware and has not had the opportunity to review. Changes in the condition of a property may occur with time due to natural processes or human impacts at the Project site or on adjacent properties. Changes in applicable standards may also occur as a result of legislation or the expansion of knowledge over time. Accordingly, the findings of this report may become invalidated, wholly or in part, by changes beyond the control of Commonwealth.

Field investigations for areas of ecological concern, wetlands, and streams were conducted on July 20-24, September 1-4, and October 5-9, 2015.

3.1 Areas of Ecological Concern

Ecological Sites: The ODNR Natural Heritage Database identified the following 11 ecological sites within a one mile radius of the Project centerline: Pedestal rock, Mixed mesophytic forest plant community, Buttonbush shrub swamp plant community, Hemlock-hardwood forest plant community, Floodplain forest plant community, Natural bridge or arch, Hamley Run Floodplain Forest Conservation Site, Lick Swamp Conservation Site, Little Raccoon Creek Marsh Conservation Site (Figure 3). Only one of the 11 sites is located within 1,000 feet of the Project centerline. The site, identified as Natural bridge or arch, is located approximately 580 feet west of the access route to structure 33 and is separated from the Project by Biddyville Road and a pond. Neither this site nor any of the other sites are expected to be impacted by the Project.

The ODNR indicated they are unaware of any animal assemblages, scenic rivers, state nature preserves, state or national parks or national wildlife refuges within the project area.

Public Lands: A review of desktop GIS materials, and subsequent field investigations determined that the Project crosses approximately 1.9 miles of Poston Plant Lands Public Hunting Area and includes structures 1-3, 5-7, and 9-11 (Figure 4, Map Sheets 1-5). While the hunting area is owned by AEP, an agreement is in place between AEP and the Ohio Department of Natural Resources, Division of Wildlife to allow public use of the land. The field investigation found many existing access routes to the right of way and pole locations to be deeply rutted and piled with dirt from recent logging activities. The review also determined that the Project crosses approximately 3.9 miles of the Zaleski State Forest and includes structures 43-45, 49, 55, 57-64, and 69-71 (Figure 4, Map Sheets 16, 18, 20, 21-23, 25, 26). Because the Project involves the rebuild of existing line within existing cleared right-of-way (ROW), no substantial impacts to either area are anticipated. AEP will work closely with representatives from the Division of Wildlife and the Division of Forestry to minimize potential impacts to these areas during construction. The Project does not cross any national or state parks, designated or proposed wilderness areas, national or state wild or scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, or wildlife sanctuaries.

Floodplains/Floodways: A review of the FEMA National Flood Hazard Layer (NFHL) identified two Special Flood Hazard Areas (SFHA's) crossed by the Project. The floodplain of Hamley Run is located between structures 2 and 6 (Figure 4, Map Sheets 1-3) and the floodplain of Rockcamp Creek is located between Structures 41 and 42 (Figure 4, Map Sheet 15). The Project proposes to replace

structures 2A, 2B, 2C, and 5, which are located within the 100-year flood zone of Hamley Run. According to the Athens County, major utility facilities permitted by the Ohio Power Siting Board under Section 4906 of the Ohio Revised Code are exempt from filing a floodplain permit (Special Purpose Flood Damage Reduction Resolution, Section 3.9 C). Impacts to water resources within the floodplain are expected to be minimized through implementation of the project's SWPPP and associated erosion control best management practices. The Project also proposes to cross the floodplain of Rockcamp Creek. However, the crossing is an aerial crossing and no structures are proposed within the floodplain, and therefore no floodplain impacts are anticipated.

Topography: The Project extends across the Nelsonville, The Plains, Mineral, Vales Mills, and Wellston USGS topographic quadrangle maps and is depicted as being a mix of open fields and second growth and plantation forests dissected by drainageways of Hamley Run, Factory Creek, Mud Lick Run, Rock Camp Creek, Laurel Run, Raccoon Creek, Tedroe Run, Meadow Run, and Dickason Run. The landscape is gently rolling to steeply sloped in the stream valleys with elevations Above Mean Sea Level (AMSL) ranging from approximately 990 feet near pole 68 and Brooks Martin Road to approximately 650 feet near pole 175 and Lick Station. USGS contours and elevations have been included on the Map Sheets in Figure 4.

Landforms: The Project is located within the physiographic region known as the unglaciated Allegheny Plateaus. The unglaciated Allegheny Plateau is located in an arc around southeastern Ohio that extends into western Pennsylvania and West Virginia. This area is a dissected plateau, characterized by sandstone, shale, and coal seams that are Mississippian through Permian in age. It is dominated by Inceptisols, which have thin, light-colored surface horizons. The bedrock is mostly composed of shales, limestones, and sandstones that are Devonian through Permian in age but still have only thinly developed soils.

Growing Season: The National Weather Service WETS data, obtained from the NRCS National Water and Climate Center and from the Natural Resources Conservation Service (NRCS), Web Soil Survey (WSS) for Vinton and Athens Counties reveals that, in an average year, the growing season in Athens County begins on April 24 and lasts until October 16, or 175 days; in Vinton County the season begins on April 25 and lasts until October 18, or 174 days; and in Jackson County it begins on April 19 and lasts until October 20, or 184 days. Five percent of the growing season equates to approximately nine days.

Watersheds: A review of United States Geological Survey (USGS) watershed data indicates the Project is located in the Upper Ohio-Little Kanawha, Middle Ohio-Raccoon, and Scioto watersheds. Sub-basins and sub-watersheds crossed by the Project, as well as the structures located in each sub-watershed, are provided in Table 2. The Hydrologic Unit Code's (HUC's) and their boundaries, as well as rivers, streams, wetlands, any significant ponds or ditches crossed by the Project, have been included on the Map Sheets in Figure 4.

TABLE 2
WATERSHEDS CROSSED BY THE PROJECT

Sub-basin Name	Sub-watershed Name	Hydrologic Unit Code (HUC-12)	Structure #
Hocking	Hamley Run-Hocking River	050302040801	Poston Station-18
	Factory Creek-Margaret Creek	050302040803	19-23

Sub-basin Name	Sub-watershed Name	Hydrologic Unit Code (HUC-12)	Structure #
Raccoon-Symmes	Hewett Fork	050901010301	24-47
	Flat Run-Raccoon Creek	050901010304	48-68
	Town of Zaleski-Raccoon Creek	050901010205	69-72
	Meadow Run-Little Raccoon Creek	050901010403	138-140
	Headwaters Little Raccoon Creek	050901010401	141-155
	Dickason Run	050901010402	156-163
Lower Scioto	Headwaters Little Salt Creek	050600020801	164-Lick Station

Soils: According to the USDA-NRCS Web Soil Survey (WSS), 88 mapping units within 42 soil series are crossed by the Project. Thirteen of the mapping units are listed on the National List of Hydric Soils (USDA, 2014) as "hydric" because they contain components that are hydric or suggest a water regime that results in a hydric soil. Five of the hydric soils - Chagrin, Fitchville, Gurnsey, Piopolis, and Stendal, are expected to be permanently impacted by pole installation and removal. The remaining 8 soils will either be temporarily impacted by timber mat for use as access roads and work pads or aerially crossed and not impacted at all. A list of hydric soils crossed by the Project, along with their basic attributes, is provided in Table 3. Soil maps for the Project are provided at the end of this report in Appendix A.

TABLE 3
USDA MAPPED SOILS CROSSED BY THE PROJECT

Soil Series	Mapping Unit Symbol[1]	Mapping Unit Description	Slopes (%)	Hydric Component	Hydric Criteria[2]
Chagrin	Chg1AF	Chagrin silt loam	0 to 3	Melvin	2
Fitchville	FcA	Fitchville silt loam	0 to 3	Poorly drained soils	2
Guernsey	GsB	Guernsey silt loam	3 to 8	Poorly drained soils	2
McGary	McA	McGary silt loam	0 to 3	Poorly drained soils	2
Melvin	Mel1AF	Melvin silt loam	0 to 2	Melvin	2, 4
Newark	New1AF	Newark silt loam	0 to 3	Poorly drained soils	2
Orrville	Orr1AF	Orrville silt loam	0 to 3	Poorly drained soils	2
Philo	Phi1AF	Philo silt loam	0 to 3	Bonnie	2
Doles	Dol1A1	Doles silt loam	0 to 2	Poorly drained soils	2
Piopolis	Pio1AF	Piopolis silt loam	0 to 2	Piopolis	2, 3, 4
Pope	Pop1AF	Pope silt loam	0 to 3	Poorly drained soils	2
Pope, Stokly	PpS1AF	Pope-Stokly silt loams	0 to 3	Pope	2
Stendal	St	Stendal silt loam	0 to 2	Piopolis	2

[1] Soil Surveys of Athens, Vinton, Jackson Counties, USDA

[2] USDA-NRCS. Soil Survey Staff. Soil Taxonomy, A Basic System of Soil Classification for Making and Interpreting Soil Surveys, Agriculture Handbook, Second Edition, Service Number 436. 1999

National Wetland Inventory: National Wetland Inventory (NWI) wetlands are areas of potential wetland that have been identified from U.S. Fish and Wildlife Service (USFWS) aerial photograph interpretation and have typically not been field verified. Forested and heavy scrub-shrub wetlands are often not shown on NWI maps, as foliage effectively hides the visual signature that indicates the presence of standing water and moist soils from an aerial view. As a result, NWI maps do not show all

the wetlands found in a particular area nor do they necessarily provide accurate wetland boundaries. NWI maps are useful for providing indications of potential wetland areas, which are often supported by soil mapping and hydrologic predictions, based upon topographical analysis using USGS topographic maps.

The NWI includes 22 mapped wetlands within the survey corridor: three riverine (RUB) wetlands associated with aerial crossings of Hamley Run, Rockcamp Creek, and Raccoon Creek, three palustrine unconsolidated bottom (PUB) wetlands, one palustrine forested (PFO) wetland, two palustrine forested/scrub-shrub (PFO/SS) wetlands, one palustrine forested/emergent (PFO/EM) wetland, one palustrine scrub-shrub (PSS) wetland, three palustrine scrub-shrub/emergent (PSS/EM) wetlands, and eight palustrine emergent (PEM) wetlands. NWI mapped wetlands have been included on the Map Sheets at the end of this report. A summary of each wetland is presented in Table 4.

TABLE 4
NWI MAPPED WETLANDS CROSSED BY THE PROJECT

Location (pole #)		Classification Code	Classification Code Description[1,2]	Feature Type
Proposed	Existing			
2		PEM1A	Palustrine, Emergent, Persistent, Temporary Flooded	Marsh
2A-2B		PSS1/EM1C	Palustrine, Scrub-shrub, Broad-Leaved Deciduous/ Emergent, Persistent, Seasonally Flooded	Marsh
2A-3, 4-6		R3UBG	Riverine, Upper Perennial, Unconsolidated Bottom, Intermittently Exposed (surface water present throughout the year except during extreme droughts)	Stream
4-5		PSS1/EM1C	Palustrine, Scrub-shrub, Broad-Leaved Deciduous/ Emergent, Persistent, Seasonally Flooded	Marsh
5-6		PSS1/EM1C	Palustrine, Scrub-shrub, Broad-Leaved Deciduous/ Emergent, Persistent, Seasonally Flooded	Marsh
11-12		PUBG	Palustrine, Unconsolidated Bottom, Intermittently Exposed (surface water present throughout the year except during extreme droughts)	Pond
13-14		PUBG	Palustrine, Unconsolidated Bottom, Intermittently Exposed (surface water present throughout the year except during extreme droughts)	Pond
25-26		PEM1C	Palustrine, Emergent, Persistent, Seasonally Flooded	Marsh
32-33		PFO1/EM1C	Palustrine, Forested, Broad-Leaved Deciduous/ Emergent, Persistent, Seasonally Flooded	Forest/Marsh
41-42		R3UBG	Riverine, Upper Perennial, Unconsolidated Bottom, Intermittently Exposed (surface water present throughout the year except during extreme droughts)	Stream
55-56		PFO1C	Palustrine, Forested, Broad-Leaved Deciduous, Seasonally Flooded	Forest
55-56		PEM1A	Palustrine, Emergent, Persistent, Temporary Flooded	Marsh
56		PEM1C	Palustrine, Emergent, Persistent, Seasonally Flooded	Marsh
	56	PEM1A	Palustrine, Emergent, Persistent, Temporary Flooded	Marsh
56-57		PFO1/SS1C	Palustrine, Forested, Broad-Leaved Deciduous/ Scrub-shrub, Broad-Leaved Deciduous, Seasonally Flooded	Forest/Marsh
56-57		R2UBH	Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded (water covers surface throughout the year during all years)	Stream

Location (pole #)		Classification Code	Classification Code Description[1,2]	Feature Type
Proposed	Existing			
56-57		PFO1/SS1C	Palustrine, Forested, Broad-Leaved Deciduous/ Scrub-shrub, Broad-Leaved Deciduous, Seasonally Flooded	Forest/Marsh
147-148		PEM1Fh	Palustrine, Emergent, Persistent, Semipermanently Flooded, Diked/Impounded	Marsh
149-151		PEM1A	Palustrine, Emergent, Persistent, Temporary Flooded	Marsh
150		PEM1C	Palustrine, Emergent, Persistent, Seasonally Flooded	Marsh
near 156, 157		PSS1C	Palustrine, Scrub-shrub, Broad-Leaved Deciduous, Seasonally Flooded	Marsh
near 172		PUBGx	Palustrine, Unconsolidated Bottom, Intermittently Exposed (surface water present throughout the year except during extreme droughts), Excavated	Pond
Total: 22				

[1] USFWS National Wetlands Inventory Wetland Code Interpreter: http://137.227.242.85/Data/interpreters/wetlands.aspx
[2] *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al., 1979)

3.2 Wetland Assessment

Field investigations identified 23 wetlands totaling 8.023 acres within the Project right of way and within preliminary proposed access routes and areas of potential access outside of the right of way (Figure 4). The wetlands are of four habitat types: palustrine emergent (PEM), palustrine emergent/scrub-shrub (PEM/SS), palustrine scrub-shrub (PSS), and a combination of palustrine forested, scrub-shrub, and emergent (PFO/SS/EM). The use of ORAM resulted in two Category 3, ten Category 2 (including seven in the gray zone), seven Modified Category 2, and six Category 1 wetlands. Table 5 provides a summary of the characteristics of each wetland. Photographs taken during the field portion of the assessment are provided in Appendix B.

Wetlands W6, W13, W15B, W16, and W23 are anticipated to be permanently impacted by the replacement of existing wood structures with new steel structures for a total net loss of approximately .003 acres (128.9 square feet) of wetland. A brief description of each wetland and its anticipated impact follows.

W6: Wetland W6 is a Category 2 wetland. It is approximately 0.05 acres in size and is located in a small floodplain flat adjacent to Hamley Run (S2). Existing structure 5, a wood-pole H-frame located entirely in the upland next to W6, will be replaced by a taller and wider, steel, 2-pole (H-frame) structure. Each pole of the structure will be installed on a concrete foundation. To maintain alignment with the structure next up and down-line, the foundation for the southern pole of the 2-pole structure will need to be installed in the wetland. The foundation will have a diameter of approximately 6 feet, which will result in a loss of approximately 28.3 square feet of wetland.

W13: Wetland W13 is a Category 3 wetland. It is located in a wide, flat area associated with Raccoon Creek. The wetland is approximately 2.8 acres in size within the right of way corridor and extends the entire width of the 100-foot wide corridor for approximately 1,240 feet. Existing structure 56, a wood-pole H-frame, will be replaced by a taller and wider, steel, 2-pole (H-frame) structure. Each pole of the new structure will be installed on a concrete foundation and both

foundations will be installed in the wetland. Each existing wood pole to be removed has a diameter of approximately 1.5 feet. Both poles together will result in a gain of approximately 3.6 square feet of wetland. Each foundation to be installed will have a diameter of approximately 6 feet. Both foundations together will result in a loss of approximately 56.6 square feet of wetland. The removal and installation will result in a net loss of approximately 53 square feet of wetland.

W15B: Wetland W15B falls in the gray zone between a Category Cat 1 wetland and a Category 2 wetland. It is located in a wide, flat area associated with Meadow Run. The wetland is approximately 1.02 acres in size within the right of way corridor and extends the 100-foot width of the corridor for approximately 435 feet. Existing structure 149, a wood-pole H-frame, will be replaced by a taller and wider, steel, 2-pole (H-frame) structure. Each pole of the new structure will be directly embedded into the ground and both poles will be installed in the wetland. Each existing wood pole to be removed has a diameter of approximately 1.5 feet. Removal of both poles will result in a gain of approximately 3.6 square feet of wetland. Each directly embedded pole will have a diameter at ground level of approximately 2.25 feet. Installation of both foundations will result in a loss of approximately 8 square feet of wetland. The removal and installation will result in a net loss of approximately 4.4 square feet of wetland.

W16: Wetland W16 also falls in the gray zone between a Category Cat 1 wetland and a Category 2 wetland. The wetland is located in a wide, flat area associated with Meadow Run. It is approximately 2.09 acres in size, within the right of way corridor, and extends the width of the 100-foot wide right of way corridor for approximately 845 feet. Existing structure 151, a wood-pole H-frame, will be replaced by a taller and wider, steel, 2-pole (H-frame) structure. Each pole of the new structure will be directly embedded into the ground and both poles will be installed in the wetland. Measurements and results are similar to those for existing and proposed poles 149 with removal and installation resulting in a net loss of approximately 4.4 square feet of wetland.

W23: Wetland W23 is a Modified Category 2 wetland. It is located in a wide, flat area associated with Meadow Run. The wetland is approximately 0.32 acres in size, within the right of way corridor, and extends nearly the width of the 100-foot wide right of way corridor for approximately 145 feet. Existing structure 175, a wood 3-pole (H-frame style) structure, will be replaced by a taller and wider, steel, single-pole structure. The structure will be installed on a concrete foundation in the wetland. Each existing wood pole to be removed has a diameter of approximately 1.5 feet. All three wood poles, once removed, will result in a gain of approximately 5.4 square feet of wetland. The foundation to be installed will have a diameter of approximately 7.5 feet and will result in a loss of approximately 44.2 square feet of wetland. The removal and installation will result in a net loss of approximately 38.8 square feet of wetland.

TABLE 5
WETLANDS IDENTIFIED WITHIN THE PROJECT AREA

ID	Habitat Type[1]	Description	ORAM Category	Size[2]	Anticipated Impact	Change[3] (sf)
W1	PEM	Drainage ditch west of pole 1, receives flow from S1	Modified Category 2	0.026	None	NC
W2	PEM	Bottom of slope, between poles 1B and 2, cattail flat	Category 1	0.086	None	NC

ID	Habitat Type[1]	Description	ORAM Category	Size[2]	Anticipated Impact	Change[3] (sf)
W3	PEM	Linear, between poles 3 and 4, within overgrown access road	Category 1 or 2 (Gray Zone)	0.023	None	NC
W4	PEM	Linear, west of pole 4, within overgrown access road	Category 1	0.009	None	NC
W5	PEM	South of pole 4, within old access road and proposed access route	Category 1	0.002	None	NC
W6	PEM	South of pole 5, within floodplain associated with S2	Category 2	0.052	Permanent - pole installation (1)	-28.3
W7	PEM	Linear, between poles 8 and 9, north side of Salem Rd.,	Category 2	0.015	None	NC
W8	PEM	Between poles 8 and 9, south side of Salem Rd., contiguous to S12	Modified Category 2	0.009	None	NC
W9	PEM	Between poles 13 and 14, receives drainage from adjacent diked pond	Category 1 or 2 (Gray Zone)	0.016	None	NC
W10	PFO, SS, EM	Between poles 19 and 20, CAT 3, contiguous to S29	Category 3	0.406	None	NC
W11	PEM	Between poles 38 and 39, starts at low end of existing culverted crossing of S34	Category 1	0.011	None	NC
W12	PEM	Between poles 51 and 52, man induced (logging road)	Category 1	0.013	None	NC
W13	PEM/SS	At existing and proposed poles 56, flats associated with Raccoon Creek	Category 3	2.832	Permanent - pole removal (2) and installation (2)	-53
W14	PEM	Between poles 142 and 143, within overgrown access road and proposed access route	Category 1	0.009	None	NC
W15	PEM	Between pole 149 and Milton Station, swale leading toward, but not connected to, S47	Category 1 or 2 (Gray Zone)	0.005	None	NC
W15 A	PEM	Between pole 149 and Milton Station, low area in pasture	Category 1 or 2 (Gray Zone)	0.071	None	NC
W15 B	PEM	At pole 149, low area in pasture	Category 1 or 2 (Gray Zone)	1.002	Permanent - pole removal (2) and installation (2)	-4.4
W16	PEM	Between Milton Station and pole 151, low area in active agricultural field	Category 1 or 2 (Gray Zone)	2.089	Permanent - pole removal (2) and installation (2)	-4.4
W17	PEM	Between poles 151 and 152, contiguous to S50	Category 2	0.244	None	NC
W18	PEM	South of pole 156, east of right of way, perched complex only partially delineated	Category 1 or 2 (Gray Zone)	0.051	None	NC

ID	Habitat Type[1]	Description	ORAM Category	Size[2]	Anticipated Impact	Change[3] (sf)
W19	PSS	Between 167 and 168, contiguous to S55	Modified Category 2	0.149	None	NC
W20	PEM	Proposed access route between poles 169 and 170, contiguous to S159	Modified Category 2	0.017	None	NC
W21	PEM	Between poles 171 and 172, mosaic within active agricultural field, contiguous to S61	Modified Category 2	0.177	None	NC
W22	PEM	Between poles 172 and 173, low area in active agricultural field	Modified Category 2	0.392	None	NC
W23	PEM	At pole 175	Modified Category 2	0.317	Permanent - pole removal (3) and installation (1)	-38.8
		Total		**8.023**		**-128.9**

[1] P = Palustrine, EM = Emergent, SS = Scrub-shrub, FO = Forested. From Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al, 1979)

[2] Acres of wetland within the 100-foot wide right of way corridor, outside of the right of way corridor and with a closed wetland boundary, or outside of the corridor and with an open boundary and crossed by a proposed access route (approx. 20-feet wide). Several surveyed wetland boundaries were extended to the edge of the right of way during map development.

[3] Change is the expected amount of wetland to be permanently lost (-) or gained (+) after existing poles have been removed and new poles have been installed. NC means “no change”.

Additional wetlands were identified during the preliminary investigation but were not surveyed. These wetlands were observed primarily along the banks of larger perennial and intermittent streams, in areas between poles where grades were found to be very steep, access appeared to be impracticable without extensive and costly improvements, and where safer and more practical access alternatives were identified. Effort was made to provide a general classification of habitat, estimate hydrology, and to record approximate shape and location but, mainly for safety reasons, none were directly accessed. These wetlands have been included on the map sheets at the end of this report and most of the areas where these wetlands are located are marked “Access Prohibited”.

3.3 Streams and Rivers

No National or State Wild and Scenic Rivers were identified within the proposed Project area.

Sixty-one streams totaling 8,245 linear feet were identified during the field survey (Figure 4). Flow regimes of the streams include 33 ephemeral (EPH), 16 intermittent (INT), 11 perennial (PER), and one stream changing from intermittent to perennial (INT-PER) probably due to stream length and a change in the topography. Streams identified within the Project right of way and crossed by preliminary proposed access routes and areas of potential access outside of the right of way are summarized in Table 6. Photographs taken during the field portion of the assessment are provided in Appendix B.

None of the streams are navigable or Section 10 Rivers. Commonwealth’s professional opinion is that all 61 streams are waters of the U.S. and are therefore regulated by the USACE under the CWA. The proposed Project will not involve placement of electrical transmission line structures within any of the streams, no permanent impacts to these streams are anticipated, and no “in-water” work is planned. Several streams are expected to be crossed by equipment along temporary access roads, but each of

stream will be crossed using timber mat placed directly over the stream but above the ordinary high water mark (OHWM) or by timber mat placed above the stream and OHWM in the form of a bridge. Once construction activities have been completed at a location and a timber mat crossing is no longer needed the timber mat and any other material used for the crossing will be removed and the stream banks and buffers restored to conditions similar to what they were before the timber mat was installed.

TABLE 6
STREAMS IDENTIFIED WITHIN THE PROJECT AREA

Stream ID	Flow Regime[1]	Description	Anticipated Impact	Average Width (meters)	Length (feet)[2]
S1	EPH	Outside of right of way, flow is to W1	None	0.6	55
S2	PER	Hamley Run (crossing 1)	None	5	515
		Hamley Run (crossing 2)	None	not visited	760
		Hamley Run (crossing 3)	None	not visited	320
S3	PER	Unnamed tributary of S2 (Hamley Run)	None	2	55
S4	INT	Unnamed tributary of S2 (Hamley Run)	None	0.6	100
S5	INT	Roadside ditch, unnamed tributary of S2 (Hamley Run)	None	0.6	65
S6	INT	Unnamed tributary of S5	None	0.75	135
S7	EPH	Unnamed tributary of S2 (Hamley Run)	None	0.6	65
S8	EPH	Concrete drainage swale, unnamed tributary of S2 (Hamley Run)	None	5	150
S9	EPH	Roadside ditch, unnamed tributary of S2 (Hamley Run)	None	0.6	60
S10	PER	Unnamed tributary of S2 (Hamley Run)	None	0.6	130
S11	EPH	Unnamed tributary of S2 (Hamley Run)	None	1	30
S12	INT	Unnamed tributary of S2 (Hamley Run)	None	1	130
S13	EPH	Unnamed tributary of S14	None	0.6	185
S14	EPH	Unnamed tributary of S19	None	0.6	125
S15	EPH	Unnamed tributary of S16	None	0.6	90
S16	EPH	Unnamed tributary of S19	None	0.6	80
S17	EPH	Unnamed tributary of S18	None	0.6	40
S18	INT	Unnamed tributary of S19	None	0.6	100
S19	INT	Unnamed tributary of S2 (Hamley Run)	None	1	250
S20	EPH	Unnamed tributary of S19, overflows from diked pond	None	1	75
S21	INT	Unnamed tributary of S18, highly disturbed due to recent logging	None	0.6	20
S22	EPH	Unnamed tributary of S21, adjacent to highly disturbed area associated with S21	None	0.6	20
S23	EPH	Flow is to adjacent pond	None	0.6	95
S24	EPH	Flow is to adjacent pond	None	0.3	135
S25	EPH	Flow is from culvert to adjacent pond	None	0.3	110
S26	INT	Tributary to unnamed stream	None	1	130
S27	INT	Within corridor, unnamed tributary of S2 (Hamley Run)	None	0.3	115
		Outside of corridor, unnamed tributary of S2 (Hamley Run)	None	not visited	20

Stream ID	Flow Regime[1]	Description	Anticipated Impact	Average Width (meters)	Length (feet)[2]
S28	INT	Unnamed tributary of S2 (Hamley Run)	None	2	115
S29	PER	Factory Creek	None	not visited	200
S30	EPH	Unnamed tributary of S29 (Factory Creek)	None	0.6	105
S31	EPH	Unnamed tributary of Mud Lick Run	None	0.6	165
S32	EPH	Unnamed tributary of Mud Lick Run	None	0.5	15
S33	PER	Within corridor, unnamed tributary of Mud Lick Run	None	not visited	260
		Outside of corridor, unnamed tributary of Mud Lick Run	None	2	40
S34	EPH	Flow is to culvert, then to W11	None	0.6	125
S35	EPH	Unnamed tributary of Raccoon Creek, flow is from W12	None	0.6	55
S36	EPH	Unnamed tributary of Raccoon Creek	None	0.6	145
S37	EPH	Unnamed tributary of Raccoon Creek	None	0.6	20
S38	PER	Outside of corridor, unnamed tributary of Little Raccoon Creek	None	2.5	20
		Within corridor, unnamed tributary of Little Raccoon Creek	None	not visited	120
S39	EPH	Unnamed tributary of S38	None	0.6	110
S40	PER	Unnamed tributary of S38	None	2	100
S41	PER	Unnamed tributary of S38	None	1.6	105
S42	EPH	Unnamed tributary of Little Raccoon Creek	None	0.6	120
S43	EPH	Unnamed tributary of S44	None	0.6	95
S44	INT	Unnamed tributary of S42	None	1	140
S45	EPH	Flow is to wetland outside of corridor	None	1	150
S46	EPH	Roadside ditch, unnamed tributary of S42	None	1	105
S47	PER	Meadow Run	None	1	150
S48	INT	Roadside ditch, flow is to W16	None	0.6	105
S49	EPH	Ditch, tributary to S48	None	0.3	145
S50	INT	Flow is to upland flat	None	0.6	165
S51	PER	Dickason Run	None	3.3	120
S52	INT	Unnamed tributary of S52 (Dickason Run)	None	2	100
S53	EPH	Unnamed tributary of Salt Lick Creek	None	2	175
S54	EPH	Roadside ditch, unnamed tributary of Salt Lick Creek	None	0.6	110
S55	INT	Unnamed tributary of Salt Lick Creek, flows through W19	None	1	175
S56	INT	Unnamed tributary of Salt Lick Creek	None	0.75	115
S57	EPH	Unnamed tributary of Salt Lick Creek, starts mid-corridor	None	0.3	35
S58	EPH	Unnamed tributary of Salt Lick Creek, starts mid-corridor	None	0	25
S59	INT-PER	Within corridor, unnamed tributary of Salt Lick Creek, flow is through W20	None	0.3	105
		Outside of corridor, flow is through W20, unnamed tributary of Salt Lick Creek	None	0.3	20

Stream ID	Flow Regime[1]	Description	Anticipated Impact	Average Width (meters)	Length (feet)[2]
S60	EPH	Outside of corridor, unnamed tributary of Salt Lick Creek	None	0.3	20
		Within corridor, unnamed tributary of Salt Lick Creek	None	0.3	100
S61	EPH	Starts mid-corridor, unnamed tributary of Salt Lick Creek	None	0.3	90
		Outside of corridor, unnamed tributary of Salt Lick Creek	None	0.3	20
Total					**8,245**

[1] EPH=Ephemeral, INT=Intermittent, PER=Perennial

[2] Within the 100-foot wide right of way corridor or where crossed by a proposed access route (approx. 20-feet wide) outside of the corridor. Streams not visited had their length estimated from aerial phots.

An additional 69 streams were identified during the preliminary resource review, then were confirmed as being present during the field review, but were not formally surveyed. These streams are in areas between poles where grades were found to be very steep, access appeared to be impracticable without extensive and costly improvements, and where safer and more practical access alternatives were identified. Effort was made to observe each of the streams to determine flow regime and to record approximate shape and location but, mainly for safety reasons, none were directly accessed. These streams have been included on the map sheets at the end of this report and most of the areas where these streams are located are marked “Access Prohibited”.

3.4 Ponds and Lakes

Three ponds are crossed by the Project. P1 is located between structures 11 and 12; P2 is located between structures 13 and 14; and, P3 is located between structures 147 and 148. All of the ponds will be aerially crossed by the Project. None of the ponds are anticipated to be impacted by the Project. The ponds have been included on the map sheets at the end of this report.

4.0 SUMMARY

The ODNR indicated that they are unaware of any unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, nature preserves, parks or forests, national wildlife refuges, or other protected natural areas within a one mile radius of the project area. The USFWS indicated that there are no federal wilderness areas, wildlife refuges, or designated critical habitat within the vicinity of the Project. The project crosses parts of Zaleski State Forest and Poston Plant Lands Public Hunting Area but no substantial impacts to either area are anticipated.

The ODNR identified 11 ecological sites within one mile of the proposed Project. All of the sites are at least 500 feet from the centerline of the Project corridor and any proposed access route to the corridor and, therefore are not expected to be negatively impacted by the Project.

A review of the FEMA National Flood Hazard Layer (NFHL) identified two Special Flood Hazard Areas (SFHA’s) crossed by the Project. onie area is expected to be impacted by pole removal and replacement and the other area will be crossed aerially and is not expected to be impacted. Floodplain permits are not expected because major utility facilities permitted by the Ohio Power Siting Board are exempt from filing.

The field survey identified 23 wetlands totaling 8.02 acres. Five of the wetlands are expected to be permanently impacted by pole removal and installation for a net loss of approximately .003 acres (128.9 square feet of wetland). One of the five wetlands is a Category 3, one is a Category 2, two are Category 1 or 2 (Gray), and one is a Modified category 2. Permanently impacting these wetlands will require authorization by the United States Army Corps of Engineers (USACE) and OEPA under Section 404 and 401 of the CWA. All authorizations required by the USACE and OEPA will be secured prior to start of construction.

The field survey identified 61 streams totaling 8,245 feet in length. The proposed Project will not involve placement of electrical transmission line structures within any of these streams. Several streams are expected to be crossed by equipment, above the ordinary high water mark, using timber mat. No permanent impacts to these streams are anticipated and no “in-water” work is planned.

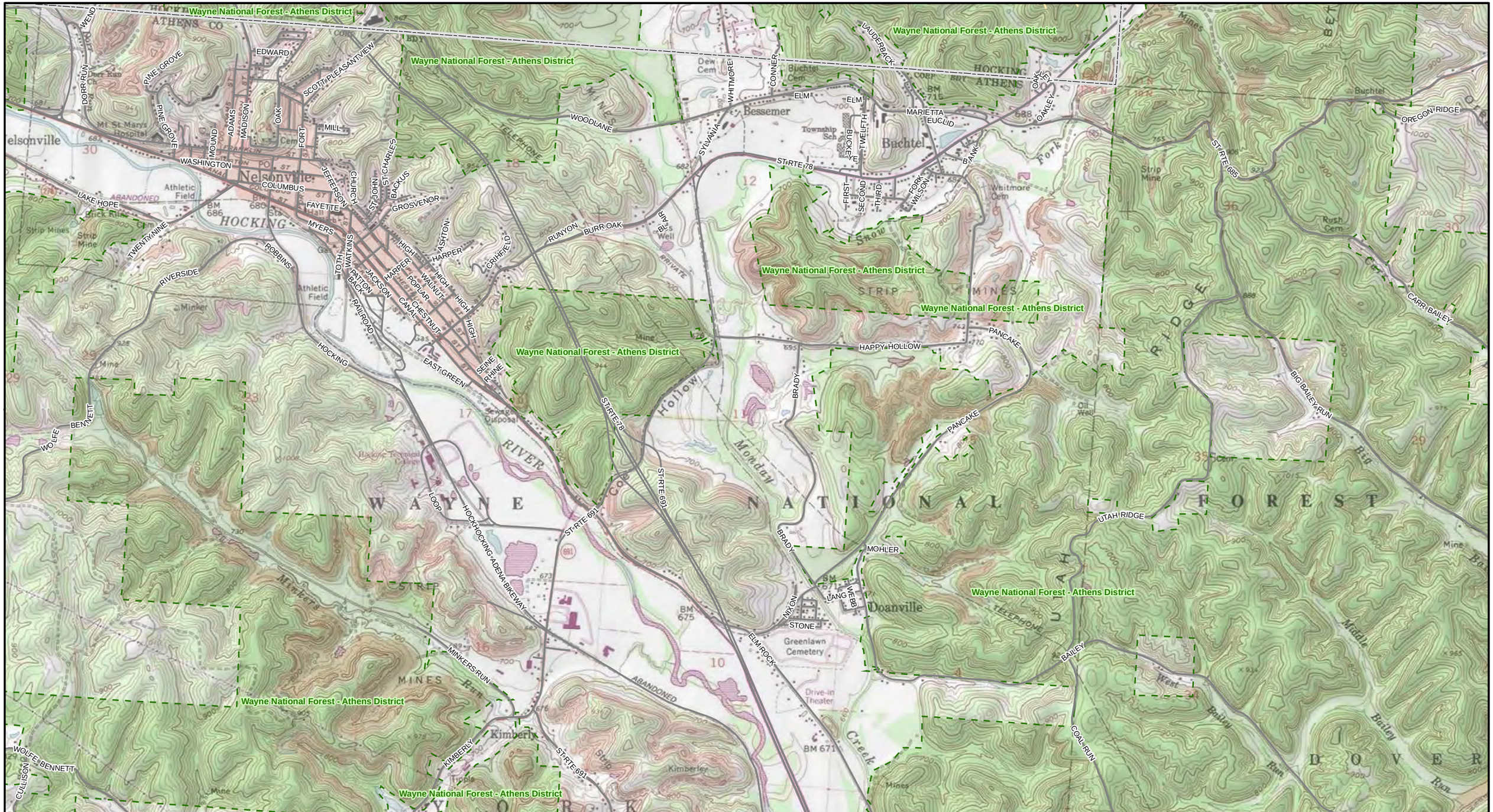
5.0 CONCLUSION

This report will be used to assist AEP Ohio Transco’s efforts to avoid or minimize negatively impacting areas of ecological concern, floodplains, wetlands, and streams, to the extent feasible during Project design and development.

While access roads have not yet been fully engineered to date, it is expected that most wetlands and all streams will be spanned due to their location, size, and infrequent occurrence in the landscape. Surficial impacts to wetlands are not likely due to the placement of wetland matting if vehicular traffic is necessary during stringing and structure replacement. Access road locations will be provided as part of the approved SWPPP access plan.

Erosion and sediment control practices, including timber mats, silt fence, construction entrances, and fiber rolls are expected to be used where appropriate to minimize runoff related impacts to wetlands and stream channels. Therefore, significant impacts to the waters described above are not anticipated. Minor permanent impacts to wetlands are likely and could require additional coordination with ODNR and USFWS, additional studies, and project notification or permit applications to the OEPA or USACE under Section 401 and 404 of the CWA. Minor permanent impacts to a 100-year floodplain are also likely and could require permits from Athens County.

Although the proposed Project crosses several areas of Zaleski State Forest, no substantial impacts are anticipated. AEP will work closely with the Division of Wildlife and the Division of Forestry to ensure that all potential project impacts are minimized.



Substation
Existing Structure
Existing 69 kV
Existing 138 kV
Major/Local Road
National/State Forest
Proposed 138 kV
To Be Removed 138 kV
(Not Part of LON)

Scale: 1" = 2,000' (1:24,000)

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

Feet

Projected Coordinate System: Ohio State Plane
Datum: North American Datum of 1983
Projection: Lambert Conformal Conic
Zone: North
Linear Unit: Feet

Figure 01 - Project Overview Map
Poston - Lick 138kV
Transmission Line Rebuild Project
Map Sheet 01 of 07

Commonwealth associates, inc.

Source: Commonwealth Asscoiates Inc., AEP, ESRI
Comments:

Drawn By: JEK
Date: 1/14/2016

AEP
700 Morrision Rd.
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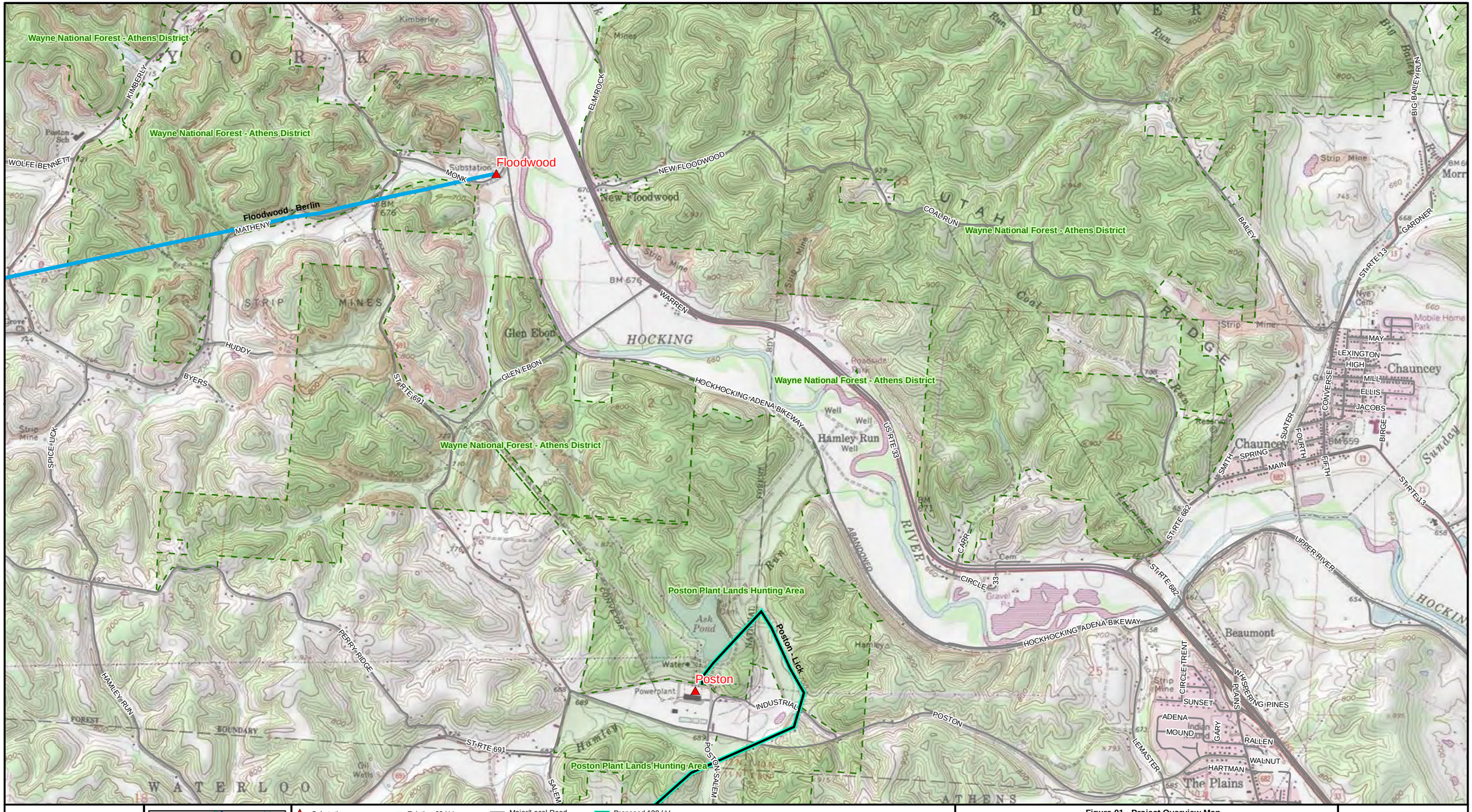

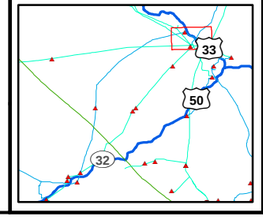

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Figure 01 - Project Overview Map
Poston - Lick 138kV
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Map Sheet 02 of 07

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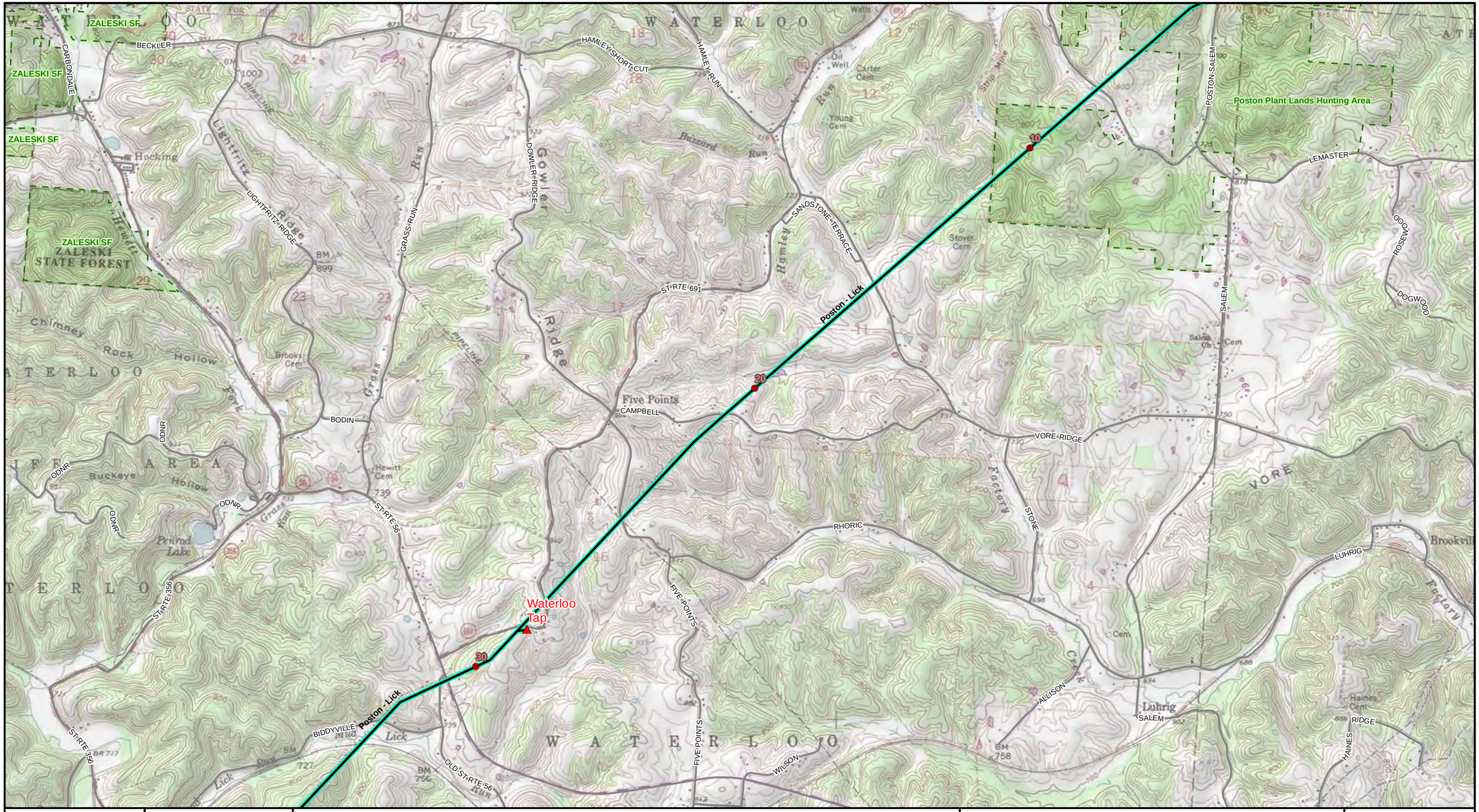

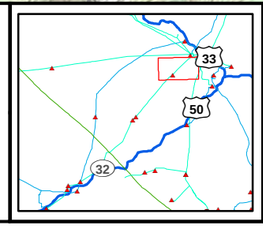

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Figure 01 - Project Overview Map
Poston - Lick 138kV
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Map Sheet 03 of 07

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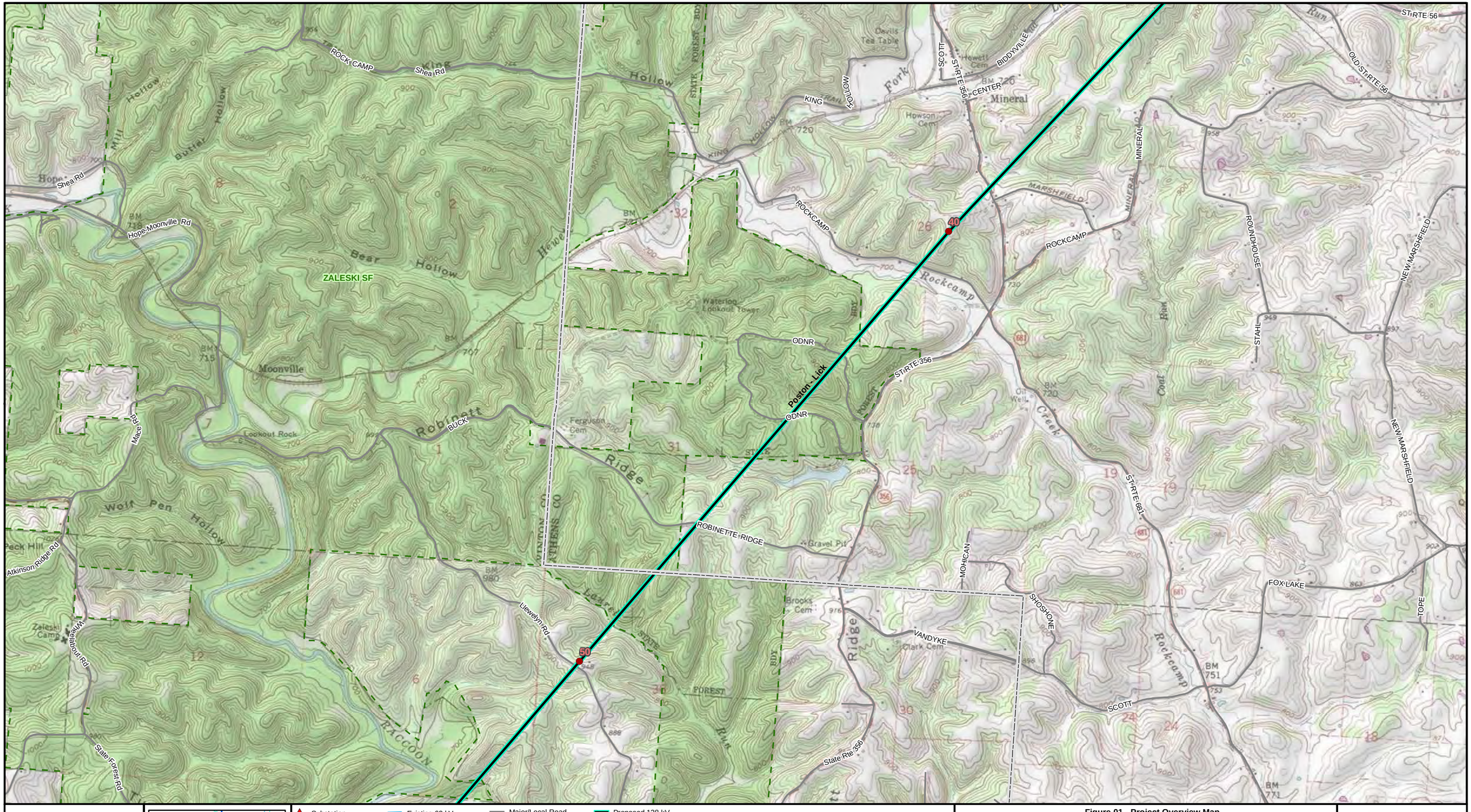

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Map Sheet 04 of 07

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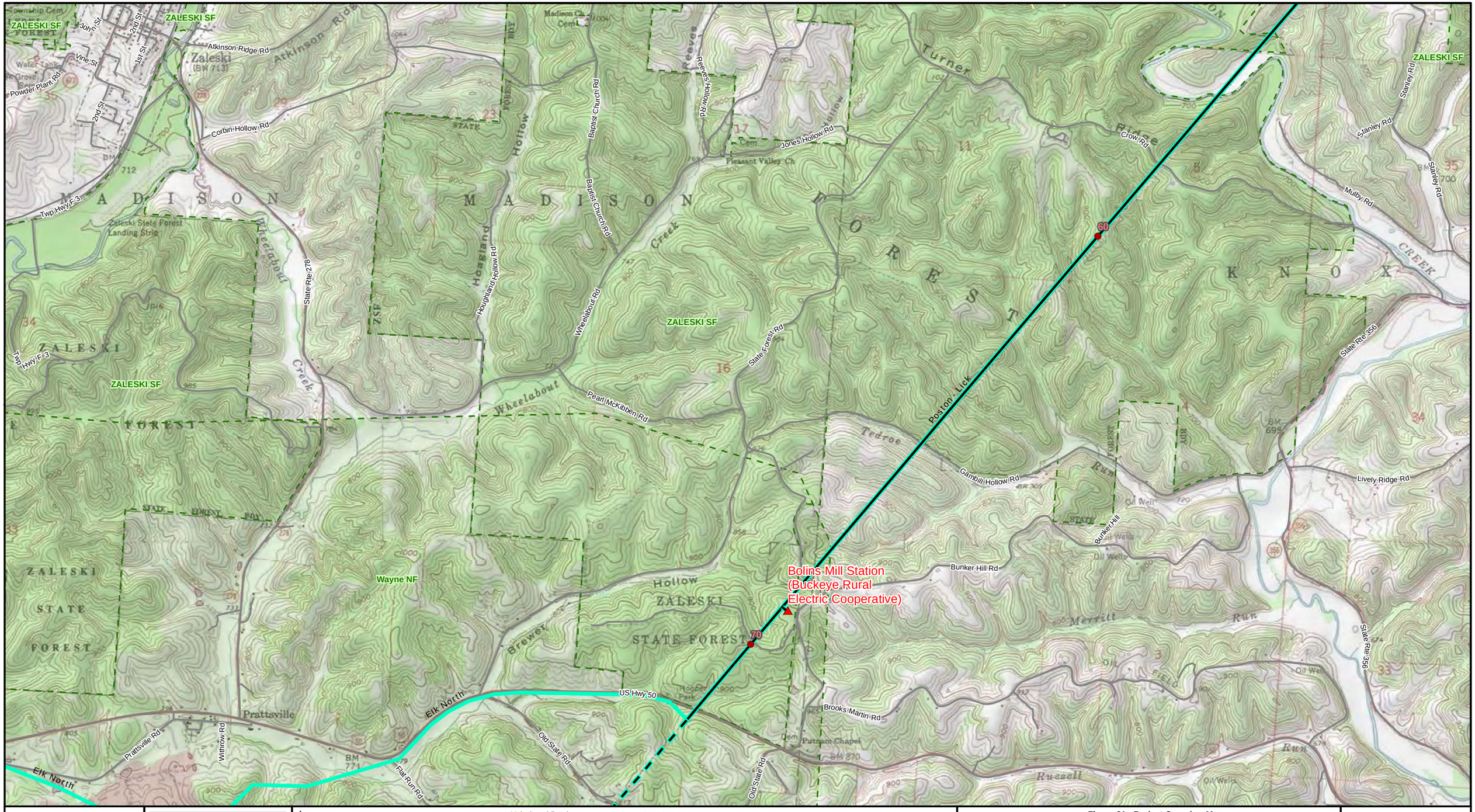

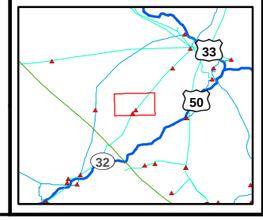

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Transmission Line Rebuild Project
Map Sheet 05 of 07

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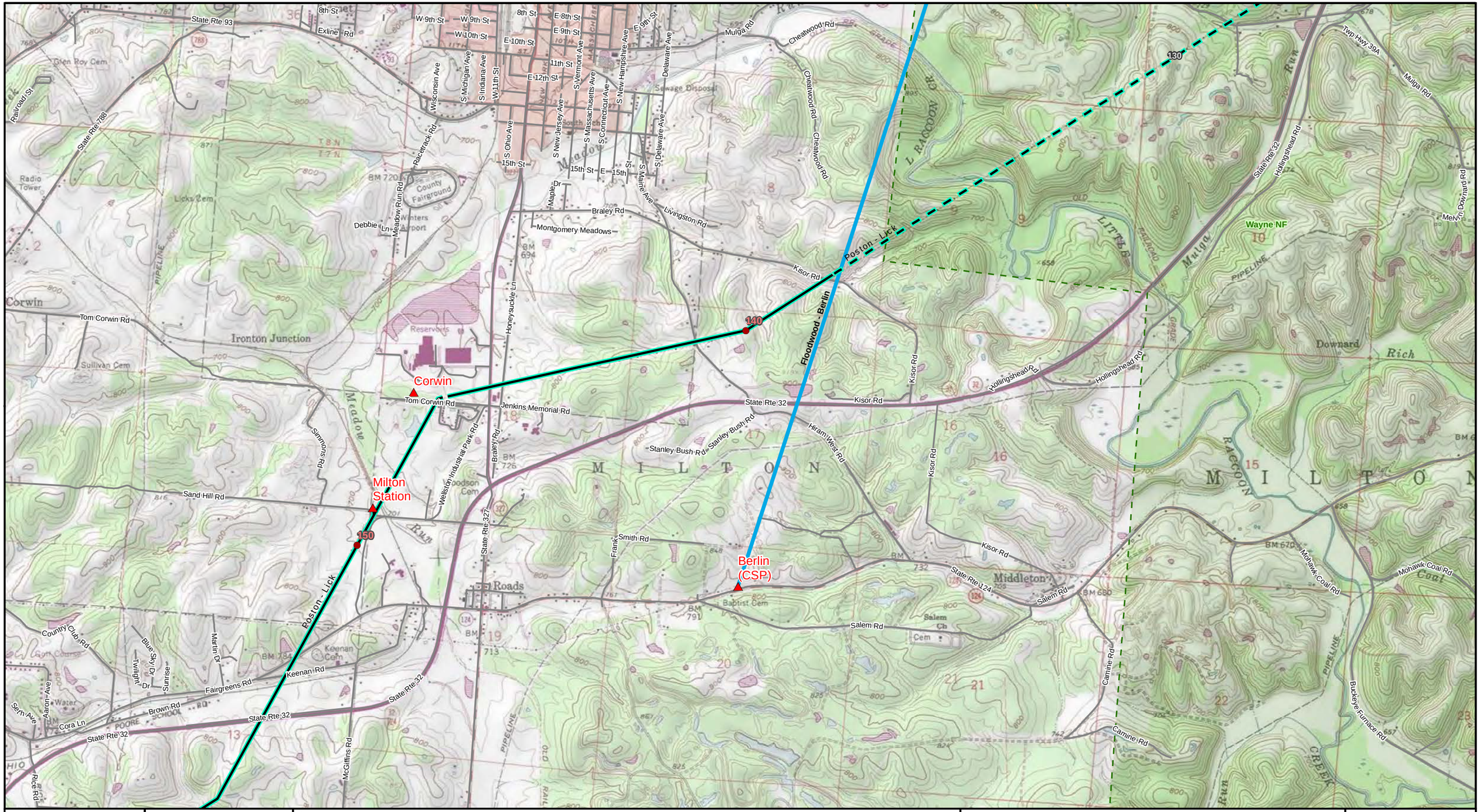

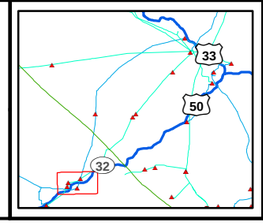

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Map Sheet 06 of 07

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PH: (614) 716-1000
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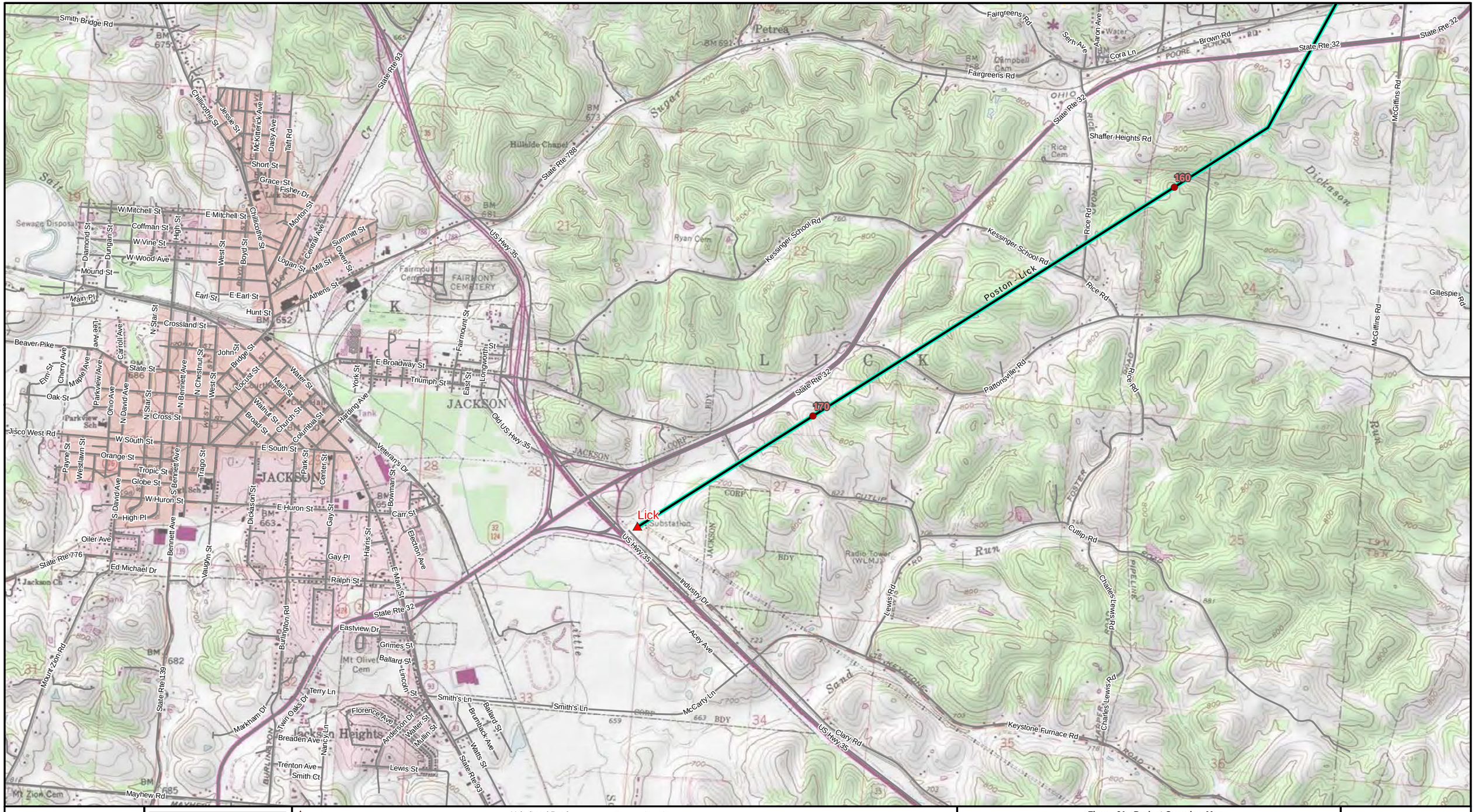

Figure 01 - Project Overview Map
Poston - Lick 138kV
Transmission Line Rebuild Project
Map Sheet 07 of 07

Commonwealth associates, inc.

Source: Commonwealth Asscoiates Inc., AEP, ESRI
Comments:

Drawn By: JEK
Date: 1/14/2016

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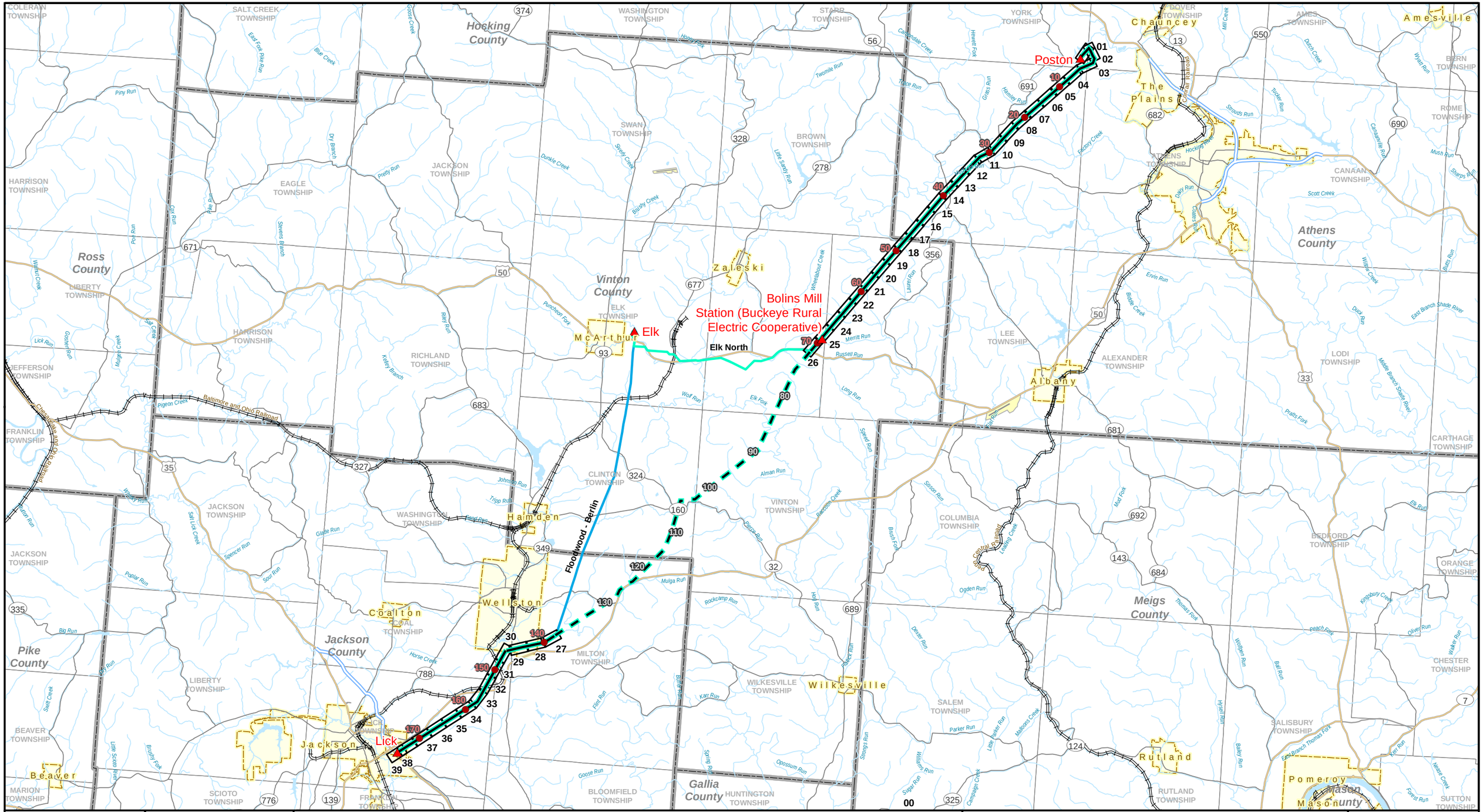

Figure 02 - Map Sheet Index
Poston - Lick 138kV
Transmission Line Rebuild Project
Athens, Vinton, and Jackson County, Ohio

Commonwealth associates, inc.

Source: Commonwealth Asscoiates Inc., AEP, ESRI
Comments:

Drawn By: JEK
Date: 1/14/2016

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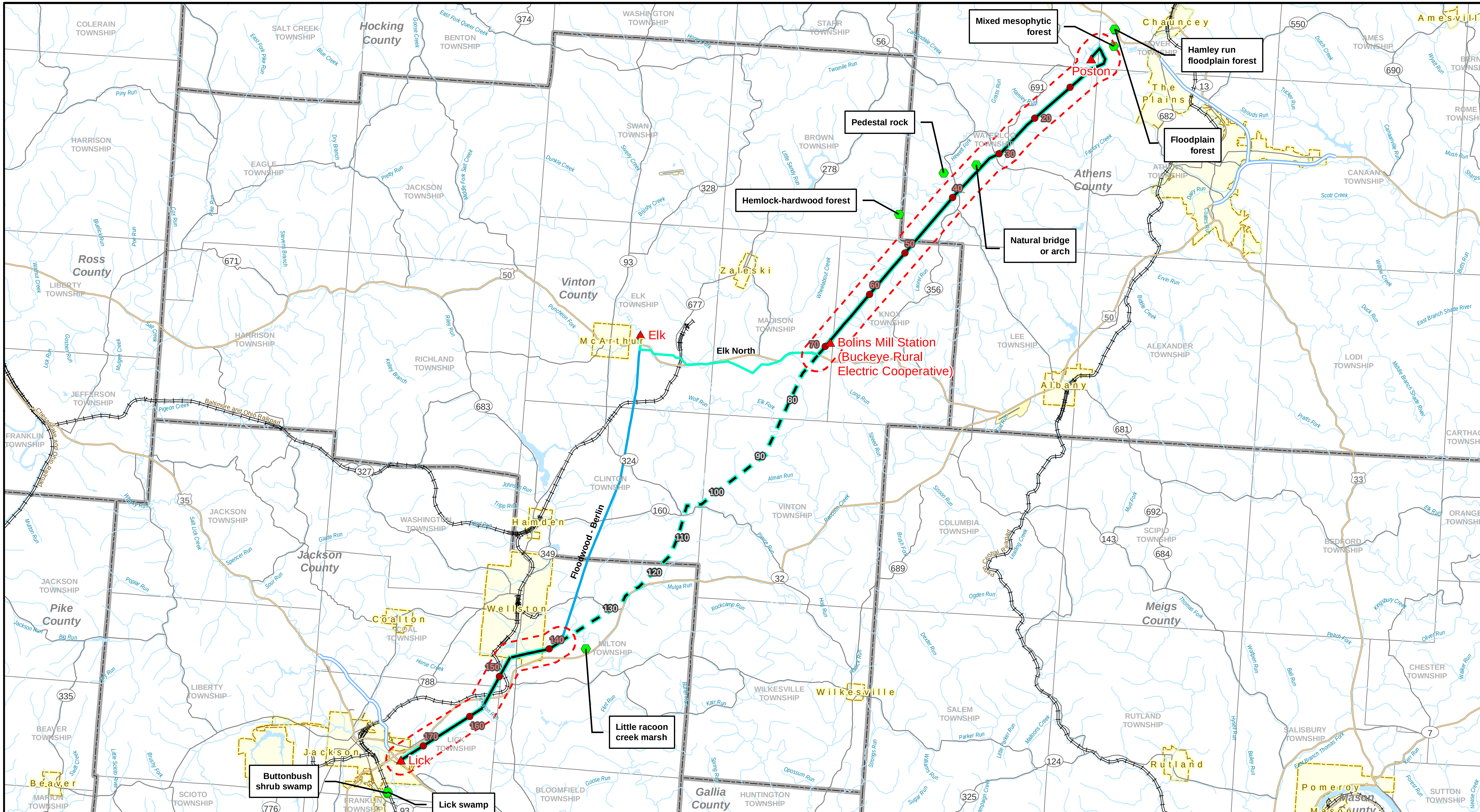

Substation	To Be Removed 138 kV	Interstate
Existing Structure	1 Mile Buffer	Highway
ODNR Sites	Major/Local Road	River/Stream
Existing 69 kV	Railroad	Map Index
Existing 138 kV	City/Township	Township Boundary
Proposed 138 kV	County Boundary	

Scale: 1" = 3 miles (1:190,080)

0 1.5 3 4.5 6 Miles

Projected Coordinate System: Ohio State Plane
Datum: North American Datum of 1983
Projection: Lambert Conformal Conic
Zone: North
Linear Unit: Feet

Figure 03 - Ecological Sites
Poston - Lick 138kV
Transmission Line Rebuild Project
Athens, Vinton, and Jackson County, Ohio

Commonwealth associates, inc.

Source: Commonwealth Assciates Inc., AEP, ESRI
Comments:

Drawn By: JEK
Date: 1/14/2016

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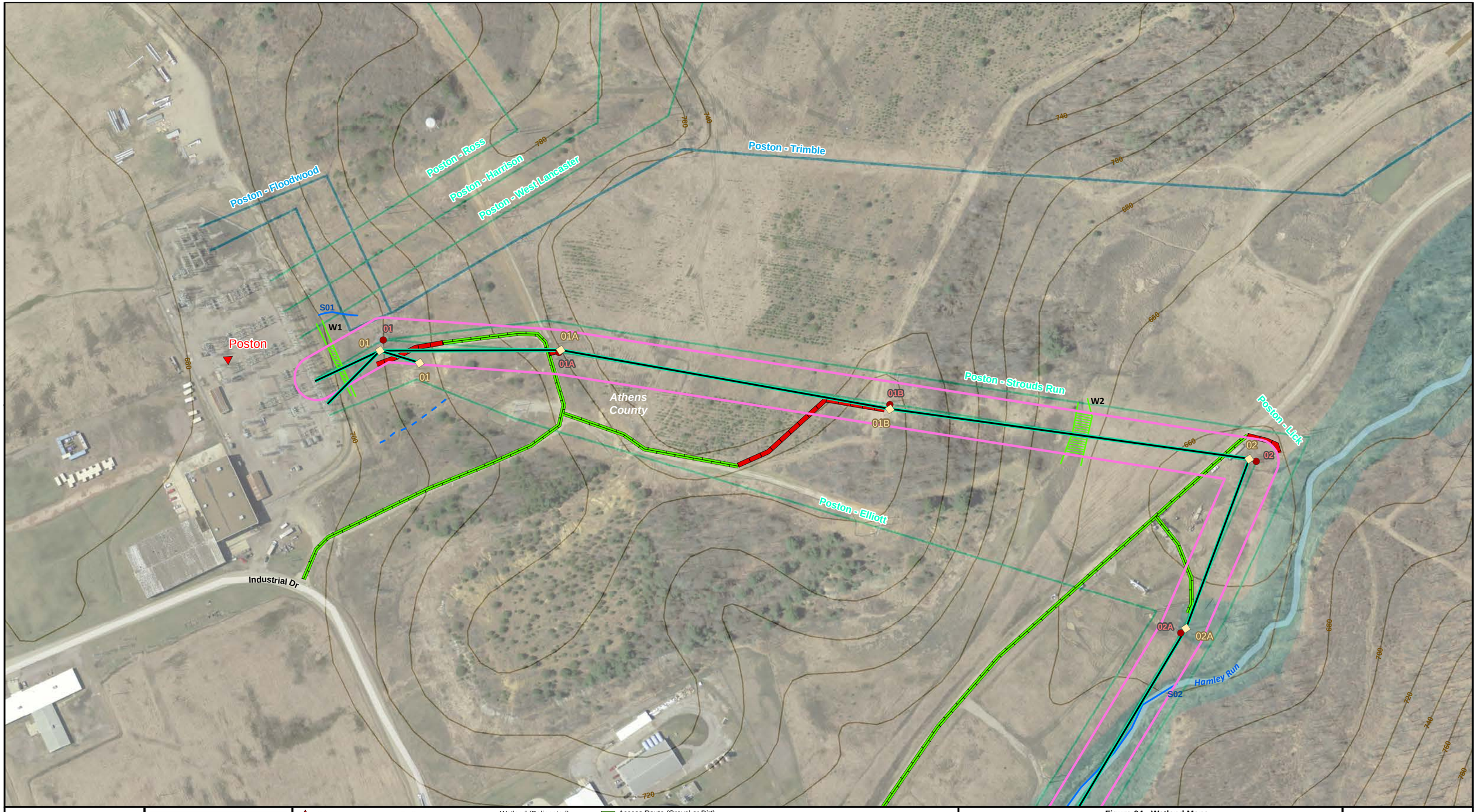

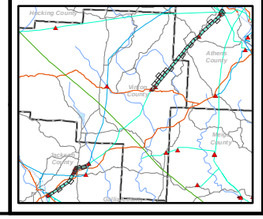

- Substation
- Existing Structure
- Existing 69 kV
- Existing 138 kV
- Major/Local Road
- Railroad
- Stream (Surveyed)
- River/Stream/Pond
- Contour
- 100yr Floodplain
- Floodway
- County Boundary
- Hydrologic Unit
- Map Index
- Access Prohibited
- Stream (Observed)
- Wetland (Delineated)
- Impacted Wetland
- 100' Access Corridor
- Proposed Structure
- Proposed 138 kV
- To Be Removed 138 kV
- Access Route (Unimproved)
- Access Route (Alternate)
- Access Route (Gravel or Dirt)
- Access Route (Gravel or Dirt, Alternate)
- Access Route (Paved)
- Timber Mat Road
- Culvert

Scale: 1" = 200' (1:2,400)

0 100 200 300 400

Feet

Projected Coordinate System: Ohio State Plane
Datum: North American Datum of 1983
Projection: Lambert Conformal Conic
Zone: North
Linear Unit: Feet

Figure 04 - Wetland Maps
Poston - Lick 138kV
Transmission Line Rebuild Project
Map Sheet 01 of 39

Commonwealth associates, inc.

Source: Commonwealth Asscoiates Inc., AEP, ESRI
Comments:

Drawn By: JEK
Date: 1/14/2016

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Summary: Letter of Notification Part 6 of 13 electronically filed by Mr. Hector Garcia on behalf of AEP Ohio Transmission Company