



Legal Department

American Electric Power  
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Columbus, OH 43215-2373  
AEP.com

Chairman Thomas W. Johnson  
The Public Utilities Commission of Ohio  
Ohio Power Siting Board  
180 East Broad Street  
Columbus, Ohio 43215

May 28, 2014

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**RE: Letter of Notification for the Seaman Voltage Drop Transmission Line  
Improvement Project  
Case No. 14-0904-EL-BLN**

Dear Chairman Johnson:

In accordance with rules 4906-5-02(A) and 4906-11-01, Ohio Administrative Code ("OAC"), AEP Ohio Transmission Company ("AEP Ohio Transco") submits this letter of notification for expedited approval. The expedited processing fee will be submitted under separate cover. Construction of the project is scheduled to begin in November 2014 and is projected to be placed in-service in June 2015.

As required by rule 4906-11-01(D), O.A.C., AEP Ohio Transco has submitted a copy of the enclosed letter of notification to the chief executive officer of each municipal corporation and county and the head of each public agency charged with protecting the environment or of planning land use in the area in which the proposed project will be located. Attached to the letter of notification are copies of the letters that have been submitted.

Should you have any questions, please do not hesitate to contact me.

Respectfully submitted,

/s/ Yazen Alami  
Yazen Alami

Attachments

**LETTER OF NOTIFICATION FOR THE  
SEAMAN VOLTAGE DROP TRANSMISSION LINE  
IMPROVEMENT PROJECT**

**PUCO Case No. 14-0904-EL-BLN**

**Submitted pursuant to OAC 4906-11-01**

**AEP Ohio Transmission Company  
(AEP Ohio Transco)**

**May 2014**

## LETTER OF NOTIFICATION

### Seaman Voltage Drop Transmission Line Improvement Project

American Electric Power Ohio Transmission Company (AEP Ohio Transco) is providing the following information in accordance with the procedures delineated in Ohio Administrative Code Section 4906-11-01: Letter of Notification Requirements of the Rules and Regulations of the Ohio Power Siting Board (OPSB).

#### **4906-11-01 (B) GENERAL INFORMATION**

- 1. The name of the project and applicant's reference number, in any, names and reference number(s) of resulting circuits and a brief description of the project, and why the project meets the requirements of a letter of notification.**

The proposed Seaman Voltage Drop Transmission Line Improvement Project consists of creating a new Hillsboro to Highland 138kV circuit. The new circuit will be created by transferring the Hillsboro-Millbrook Park 138kV circuit to the Portsmouth-Trenton #1 and #2 electrical transmission lines to the Portsmouth-Trenton #2 line between the Hillsboro station and the crossing of the Seaman-Highland line; rebuilding the Portsmouth-Trenton #1 line between the Hillsboro station and the crossing of the Seaman-Highland line as a single circuit 138kV line; and rebuilding the Seaman-Highland electrical transmission line as a double circuit 138kV line between the Highland station and the crossing of the Portsmouth-Trenton #1 and #2 lines.

The work on the Portsmouth-Trenton #2 line will be limited to work within the Hillsboro station and replacing one H-frame structure with a 3-pole structure and removing one structure to transition back to the six wire configuration east of the crossing of the three lines.

Wood H-Frame structures will be replaced with steel H-Frame structures in close proximity to the existing on the Portsmouth-Trenton #1 line between the Hillsboro station and the crossing. West of the Hillsboro station one structure will be replaced and one structure added adjacent to the station. One additional structure will be added near the crossing of the three lines.

The Seaman-Highland line is a single circuit 138kV electrical transmission line that is currently operated at 69kV. Double circuit steel monopoles will replace single circuit wood H-Frame structures in close proximity to the existing structures. The existing Seaman-Highland 69kV (via New Market) circuit will be transferred to the east side of the Seaman-Highland line between the Highland station and the crossing.

The Project is located in Liberty, New Market and Washington Townships, Highland County, Ohio. Figure 1 depicts the Project in relationship to the surrounding vicinity. The Project is approximately 7.9 miles in length and consists of 4.8 miles along the Portsmouth-Trenton #1 and #2 lines and approximately 3.1 miles along the Seaman-Highland line.

AEP will be obtaining a portion of new right of way between Portsmouth-Trenton #1 and the Seaman-Highland line to allow for the installation of the new structure at the crossing of the lines. Approximately 1,000 feet of new easement is required. The new easements will not affect current tree clearing practices for these lines. No additional right of way is required in any other Project area. The Project meets the requirements of a Letter of Notification because it is within the type of projects defined in OPSB's September 4, 2012 Finding and Order of Docket 12-1981-GE-BRO. These items state:

*(4) Replacing electric power transmission structure(s) with a different type of structure(s) or adding structure(s) within an existing electric power transmission line and:*

*(a) Two miles or less of new right-of-way required.*

**2. If the proposed letter of notification is an electric power transmission line or gas or natural gas transmission line, a statement explaining the need for the proposed facility.**

This Project is part of a series of improvements to improve the reliability of electric service in the Highland County and greater Cincinnati-Dayton area by addressing the Seaman Voltage drop.

The proposed facility replacement/upgrade is required to alleviate voltage drop criteria violations (above 8%) at the Seaman 69 kV bus under an N-1 contingency. This



contingency involves the loss of the sole 138 kV source in the area, the Seaman-Adams-Ware-Waverly Rd 138 kV line, between Adams and Waverly stations. PJM has confirmed this violation as part of the 2010 RTEP study. PJM has designated the proposed work to alleviate the violation a baseline project and has assigned the identifier B1466 for this work. This work will improve the reliability of the transmission network in southwest Ohio near the cities of Hillsboro and Seaman by looping the only 138 kV source. This will provide adequate voltage on the local 69 kV system under N-1 contingency conditions per the applicable system planning criteria.

**3. The location of the project in relation to existing or proposed lines and stations shown on maps and overlays provided to the public utilities commission of Ohio in the applicant's most recent long term forecast report.**

The Project is part of the existing transmission line system as referenced in AEP Ohio Transco's LTFR of 2012. Figure 1 shows the general location of the Project in relationship to existing and proposed lines and stations in the area.

**4. 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, natural environmental, construction, or engineering aspects of the project.**

The project is a rebuild of existing transmission lines. Very limited new right-of-way is required for the Project, therefore a relocation of the line to new easements is not feasible.

**5. The anticipated construction schedule and proposed in-service date of the project.**

Construction of access roads is scheduled to begin July 1, 2014. Construction of the Portsmouth-Trenton #1 & #2 transmission line will begin September 1, 2014. Construction of the Seaman-Highland transmission line will start as soon as construction of the Portsmouth-Trenton #1 & #2 lines is complete and is anticipated to begin November 2014. The in-service date for the Project is June 2015.

- 6. An area map of not less than 1:24,000-scale clearly depicting the facility's centerline with clearly marked streets, roads, and highways and clearly written instructions for locating and viewing the facility.**

Figure 2 shows the Project location in relation to streets, roads and highways. To view the Project from Columbus, take I-71 south towards Dayton. Take US 89 south towards Wilmington to State Route 73 to Hillsboro. In Hillsboro take Danville Pike (State Route 138) west approximately 4 miles to Mad River Road (CR 7), turn south to the Hillsboro station. Figure 2A shows the Hillsboro station area of the Project. The Portsmouth-Trenton #1 line runs southeast from the station. To view the intersection of the lines take Mad River Road south to Griffin Road (CR 205). Take Griffin Road east to Muhlbach Road. Take Muhlbach Road north to US 62. Take US 62 north to Concord Road (CR 12), turn east onto Green Road (CR 268) to State Route 247. Take State Route 247 south to Post Lane. The intersection of the two lines is in the south side of Post Lane. Figure 2B shows the Post Lane area of the Project. To view the Highland station, take State Route 247 north to Hillsboro. In Hillsboro turn west onto East Lilley Avenue, turn south onto US 62 (High Street) then west onto Dunlap Street. The Highland station is on the west side of the street. The Seaman-Highland line runs south from the station.

- 7. 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.**

Both lines have existing easements that were obtained by American Electric Power. AEP Ohio Transco will be obtaining additional easements near the intersection of the three lines near Post Lane. The new easements are in open fields and will not require tree clearing. AEP Ohio Transco has been in contact with the property owners affected by the Project.

### **(C) TECHNICAL FEATURES OF THE PROJECT**

#### **1. Operating characteristics, estimated number and types of structures required and right-of-way and/or land requirements.**

The Portsmouth-Trenton #1 line is currently built to 138kV specifications and is operated at 138kV. The Seaman-Highland line is built to 138kV specifications, however is currently operated at 69kV. This line will be operated at 138kV after the completion of this project. The transmission lines will consist of (6) 959.8 kcmil Type 16 – 2 layer trapezoidal “Suwannee/TW” conductor. One 96 Fiber OPGW will be used as shield wire. The insulator assemblies will consist of two strings of polymer insulators for each phase. The existing structures are wood H-frames. Portsmouth-Trenton #1 will be rebuilt with steel H-frames. The Seaman-Highland will be rebuilt with steel mono poles.

Structure sketches are included in Figures 8-12

#### **2. For electrical power transmission lines, the production of electric and magnetic fields during the operation of the proposed electric power transmission line.**

##### *(a) Calculated Electric and Magnetic Field Levels*

The following table was calculated using EPRI's EMF Workstation 2013 computer program. A drawing of the proposed circuit configuration is provided in Exhibit 5.

**Line Loading and Rating**

Circuit	Normal Maximum Loading (MVA)	Emergency Loading (MVA)	Winter Normal Conductor Rating (MVA)
Hillsboro-Highland 138kV	71	167	375
Seaman-Highland 138kV	28	140	281

The calculated electric and magnetic fields are summarized below. Typical cross section profiles at normal maximum loading and emergency loading conditions are shown in Figures 3-7

### **Calculated Electric and Magnetic Fields**

Line Extensions and Configuration Type	Electric Field (kV/m)	Magnetic Field (mG)		
		Normal Maximum Load	Emergency Load	Winter Normal Rating
Single Pole w/Hillsboro-Highland circuit "Figure 3"	.02/1.28/.02	8.3/22.5/8.3	19.5/53/19.5	46.7/147.5/46.7
H-frame w/Hillsboro-Highland circuit "Figure 4"	.65/1.8/.65	16.1/51.2/16.9	37.9/120.5/39.7	96.4/391.7/99.2
Three-pole w/Hillsboro-Highland circuit "Figure 5"	.64/1.4/.64	15.5/45.8/16.2	36.4/107.8/38	69.2/304.5/92.1
Single Tangent w/Hillsboro-Highland and Seaman-Highland circuits "Figure 6"	.12/1.3/.12	16.5/34.7/14	47.7/104/46.4	121.4/338.2/114.4
Two-pole w/Hillsboro-Highland and Seaman-Highland circuits "Figure 7"	.27/1.38/.27	17.9/29.4/13.1	49.3/79.9/46.1	124.7/230.1/110.8

\*Current flow in Hillsboro-Highland circuit it towards Highland and in Seaman-Highland circuit towards Seaman

\*\*EMF levels (left ROW edge/maximum/right ROW edge) calculated one meter above ground at the point of minimum ground clearance, assuming balanced phase currents and nominal voltages.

#### *(b) Discussion of the Company's Design Alternatives Regarding EMF 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. EMF levels were computed one meter above ground under the line and at the ROW edges (60/60 feet, left/right, of centerline).

- 3. The estimated cost of the project by Federal Energy Regulatory Commission account, unless the applicant is not an electrical light company, a gas company or a natural gas company as defined in Chapter 4905 of the Revised code (in which case, the applicant shall file the capital costs classified in the accounting format ordinarily used by the applicant in its normal course of business).**

The 2014 capital estimates for the proposed Project have been tabulated by the Federal Energy Regulatory Commission (FERC) Electric Plant Transmission Accounts:

FERC Accounts	Estimated Capital Cost
355 Poles and Fixtures	\$1,771,348
356 Overhead Conductors and Devices	\$4,926,111
Total Cost	\$6,697,459

#### **(D) SOCIOECONOMIC DATA**

- 1. A brief description of land use within the vicinity of the proposed project, including: (a) a list of municipalities, townships, and counties affected; and (b) estimates of population density adjacent to rights of way within the study corridor (the U.S. census information may be used to meet this requirement.)**

On behalf of AEP Ohio Transco, Commonwealth Associates prepared a Socioeconomic, Land Use, and Agricultural District Review Report. This report is included as Appendix A.

- 2. The location and general description of all agricultural land (including agricultural district land) existing at least sixty days prior to submission of the letter of**

**notification within the proposed electric power transmission line right of way, or within the proposed electric transmission substation fenced-in area, or within the construction site boundary of a proposed compressor station.**

The electric power transmission line right of way crosses agricultural land (including agricultural district land) as detailed in Appendix A. The Project crosses 19 parcels which are designated as agricultural district land use. The proposed characteristics of the Project are not significantly different from the existing transmission line. No permanent change in agricultural land use or practices is anticipated.

- 3. A description of the applicant's investigation (concerning the presence or absence of significant archeological or cultural resources 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 document produced as a result of the investigation.**

A Phase I Archeological Investigation is being conducted for this Project by Weller & Associates, Inc. A copy of this report will be provided to the Ohio Power Siting Board under separate cover.

- 4. Documentation that the chief executive officer of each municipal corporation and county, and the head of each public agency charged with planning land use in the area in which any portion of the facility is to be located have been notified of the project and have been provided with a copy of the letter of notification. The applicant shall describe the company's public information program used in the siting of the proposed facility. The information submitted shall include either a copy of the material distributed to the public or a copy of the agenda and summary of the meeting(s) held by the applicant.**

Copies of this Letter of Notification have been sent to the Liberty, New Market and Washington Township Trustees; Highland County Boards of County Commissioners; and the Highland County District Library. Copies of the cover letters to these officials and the local library are attached in Appendix B.

AEP Ohio Transco will advise local officials of features and the status of the proposed transmission line Project.

- 5. A brief description of any current or pending litigation involving the project known to the applicant at the time of the letter of notification.**

There is no known current or pending litigation involving this Project.

- 6. A listing of local, state, and federal governmental agencies known to have requirements which 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 stormwater discharges under General Permit OHC000003. There are no other known governmental requirements.

#### **(E) ENVIRONMENTAL DATA**

- 1. A description of the applicant's investigation concerning the presence or absence of federal or state endangered 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 document produced as a result of the investigation.**

On behalf of AEP Ohio Transco, Commonwealth prepared a Threatened and Endangered Species Report. Commonwealth coordinated with the USFWS and ODNR regarding special status species in the vicinity of the Project. To address special status species concerns, AEP Ohio Transco proposes to minimize tree cutting and to adhere to seasonal tree clearing restrictions associated with the Indiana bat, Little Brown bat and Northern long-eared bat and to limit tree cutting of potential bat habitat trees from October 1 to March 31. To address concerns of the Loggerhead Shrike, AEP Ohio Transco proposes to limit construction in suitable habitat between August 1 and April 1. If construction must occur in those areas

during this time period, the area will be surveyed for nests before construction and cleared areas will be demarcated with barrier fencing. No impacts to threatened or endangered species are expected with these restrictions. The full Threatened and Endangered Species report for the Project is included as Appendix C.

- 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 area 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.**

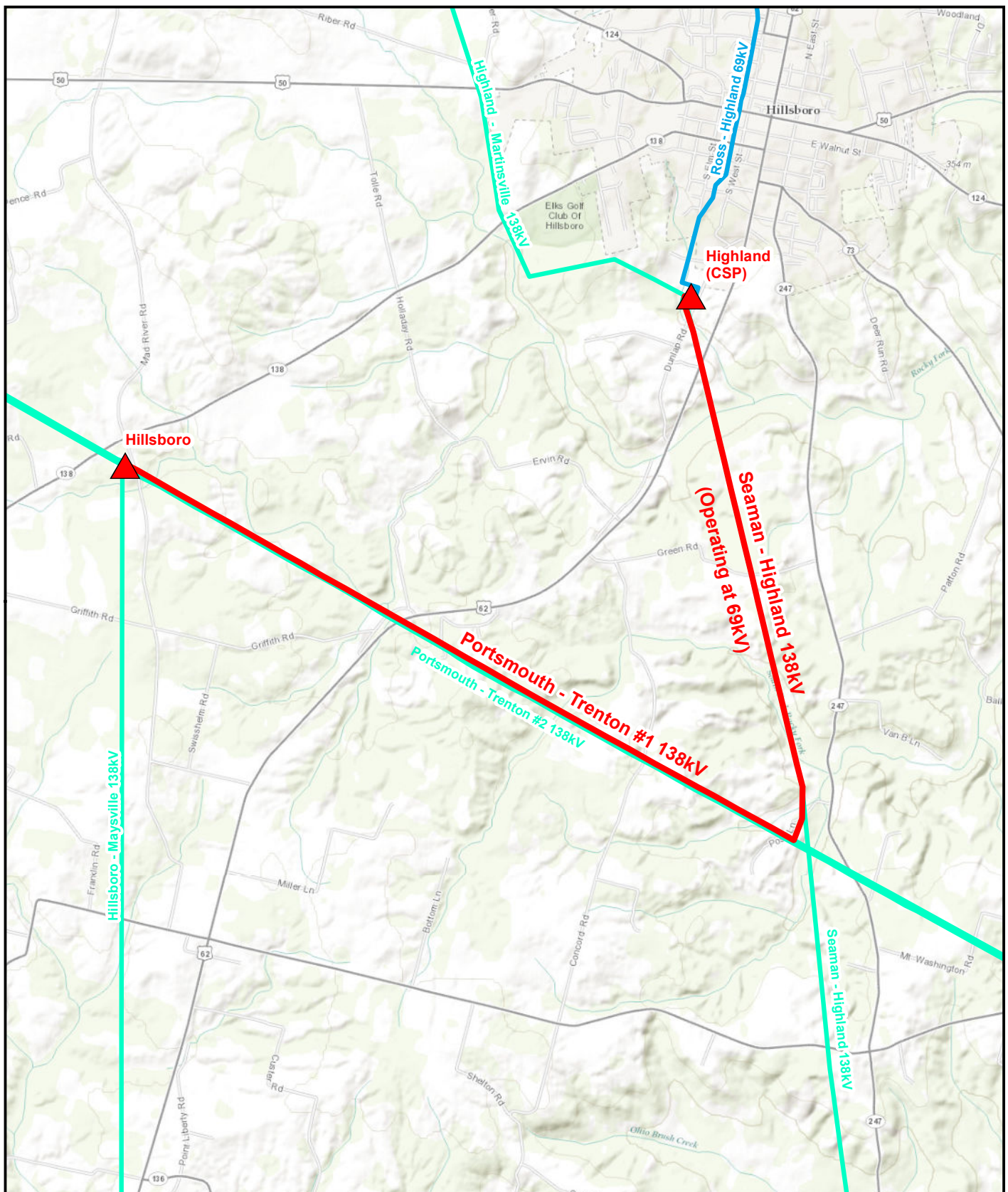
The Project does not cross any national or state forests, national or state parks, designated or proposed wilderness areas, national or state wild or scenic rivers, wildlife areas, wildlife refuges, wildlife management areas or wildlife sanctuaries.

On behalf of AEP Ohio Transco, Commonwealth prepared a Wetland Delineation and Streams Assessment Report. No permanent impacts to streams or wetlands are anticipated. The full Wetland Delineation and Stream Assessment Report for the Project is included as Appendix D.

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

There are no known unusual conditions exist that would result in environmental, social, health, or safety impacts. Construction and operation of the proposed Project will meet all applicable safety standards established by the Occupational Safety and Health Administration, and will be in accordance with the requirements specified in the latest revision of the National Electric Safety Code as adopted by the Public Utilities Commission of Ohio. A Stormwater Pollution Prevention Plan (SWPPP), which will include the Access Plan, will be provided to the OPSB under separate cover, after submission of this Letter of Notification.





**Legend:**

- ▲ Substation
- Seaman Voltage Drop Transmission Line Improvement Project 138kV Transmission Line
- Existing 69 kV
- Existing 138 kV

1 inch = 4,000 feet

0 4,000 8,000

Feet Highland County, OH

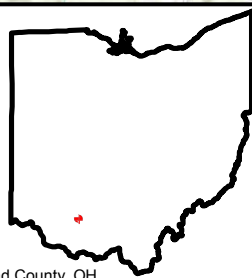
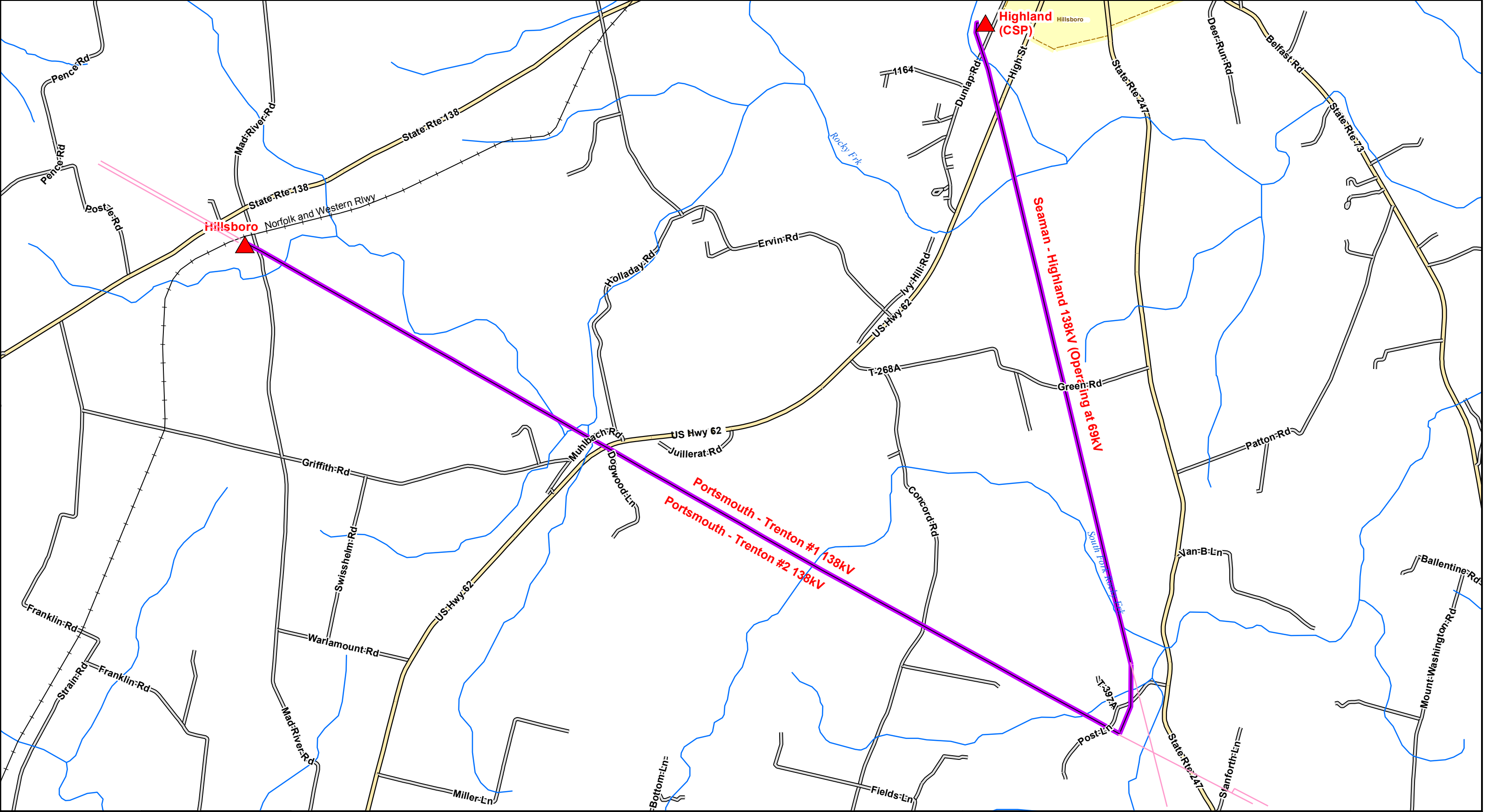










Figure 1  
Project Overview

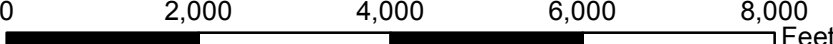




Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet

 Substation	 Railroad
 Seaman Voltage Drop Transmission Line Improvements Project 138kV Transmission Line	 Highway
 Municipality	 Major/Local Road


1 inch = 2,000 feet



**Figure 2**  
**Area Map**  
**Seaman Voltage Drop Transmission Line Improvement Project**  
**138kV Transmission Line**

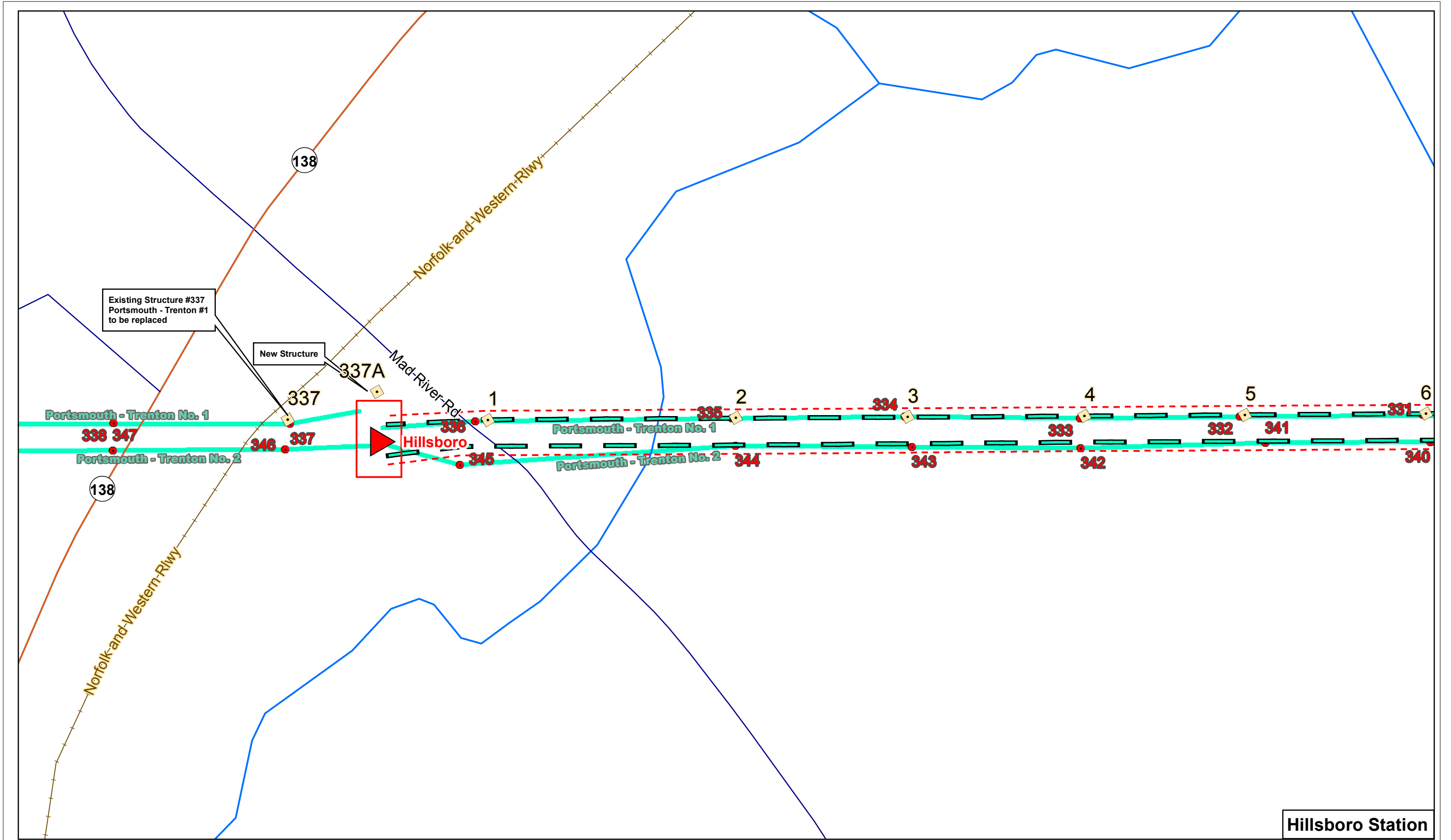
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Comments:	Date: 4/29/2014







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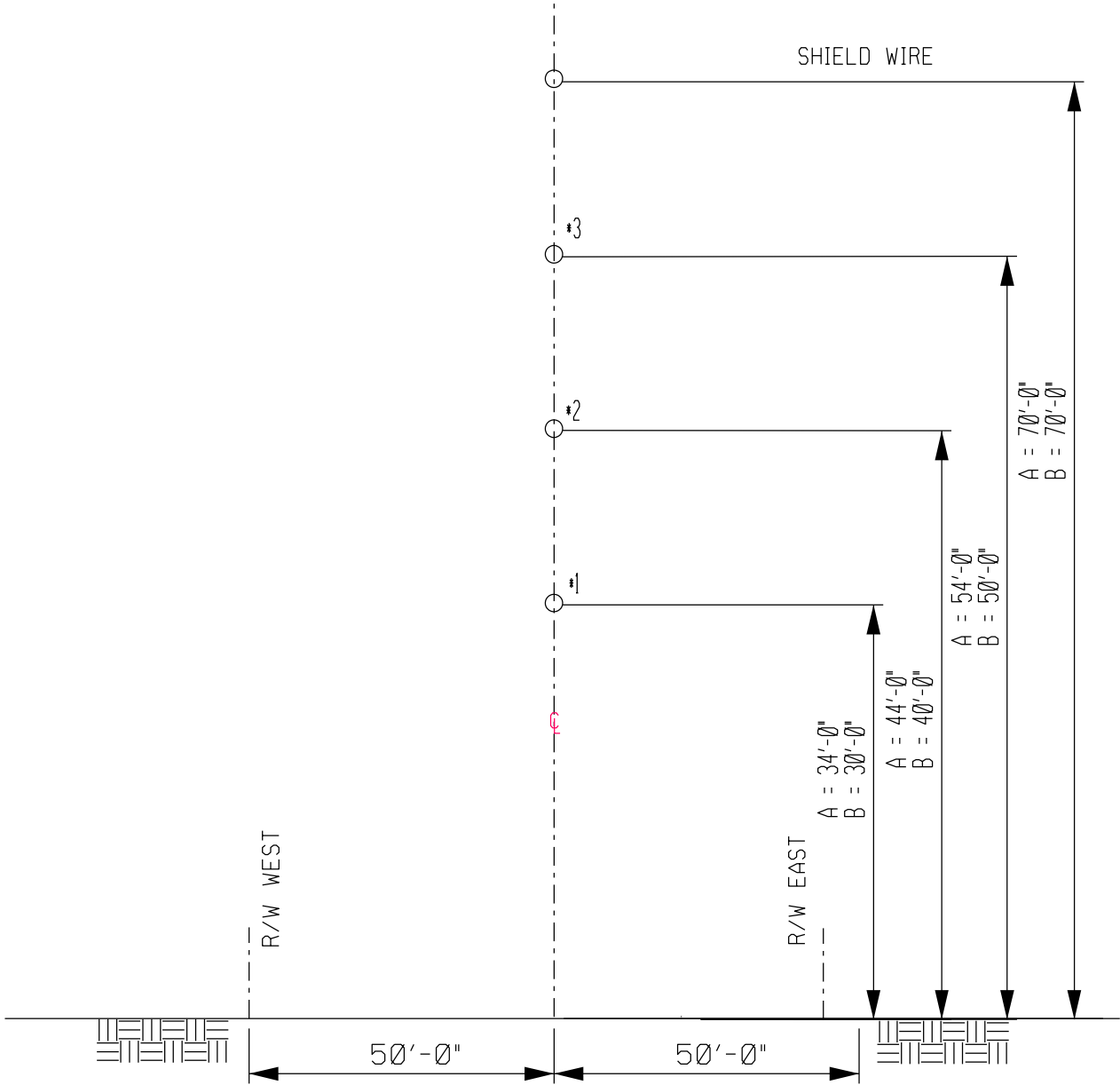
Hillsboro Station

<b>SYM Existing Substation &amp; Transmission Line</b> ▲ Substation ● Existing Structure □ Angle Structure — Existing 69 kV — Existing 88 kV — Existing 115 kV — Existing 138 kV — Existing 161 kV		<b>SYM Proposed Features</b> ■ Proposed Structure ■ Proposed 138 kV ■ Temp. Construction Entrance — Access Route — Access Route (Alternate) — Access Route (By Foot) — Access Route (Paved) — Access Route (Gravel or Dirt) ■ Timber Mat Bridge		<b>SYM Transportation &amp; Hydrology</b> — Interstate — Highway — Railroad — Major/Local Road — River/Stream/Pond — URS River/Stream/Pond — Lake (Location Map) — Lake (Map Sheet)		<b>SYM Wetlands</b> ■ Palustrine Emergent ■ Palustrine Forested ■ Palustrine Aquatic Bed ■ Palustrine ■ Unconsolidated Bottom ■ Riverine ■ URS Delineated Wetland		<b>SYM Boundary &amp; Feature</b> ■ Municipal ■ County ■ Park/State Park ■ Map Index ■ Floodway ■ 100yr Floodplain ■ Watershed ■ Contour 20ft			<b>AEP Ohio</b> Transmission Company <b>Seaman Voltage Drop</b> Transmission Line Improvement Project <b>138kV Transmission Line</b> Highland County, Ohio	Projected Coordinate System: Ohio State Plane Datum: North American Datum of 1983 Projection: Lambert Conformal Conic Zone: South Linear Unit: Feet		<b>DSNR: DAL</b>	1" = 300' (1:3,600) 0 150 300 Feet	Date: 5/14/2014
		<b>DRAWN: ABB</b>	Figure 2A													
		<b>CHECKED: AMS</b>	 													





HIGHLAND-HILLSBORO  
138kV CIRCUIT  
(ACSR CURLEW CONDUCTOR)



DIMENSION "A" - SINGLE CIRCUIT VERT. CONFIGURATION (STEEL POLE)  
(UNDER EMERGENCY & NORMAL MAX. LINE LOADING).

DIMENSION "B" - SINGLE CIRCUIT VERT. CONFIGURATION (STEEL POLE)  
(UNDER WINTER NORMAL CONDUCTOR RATING).

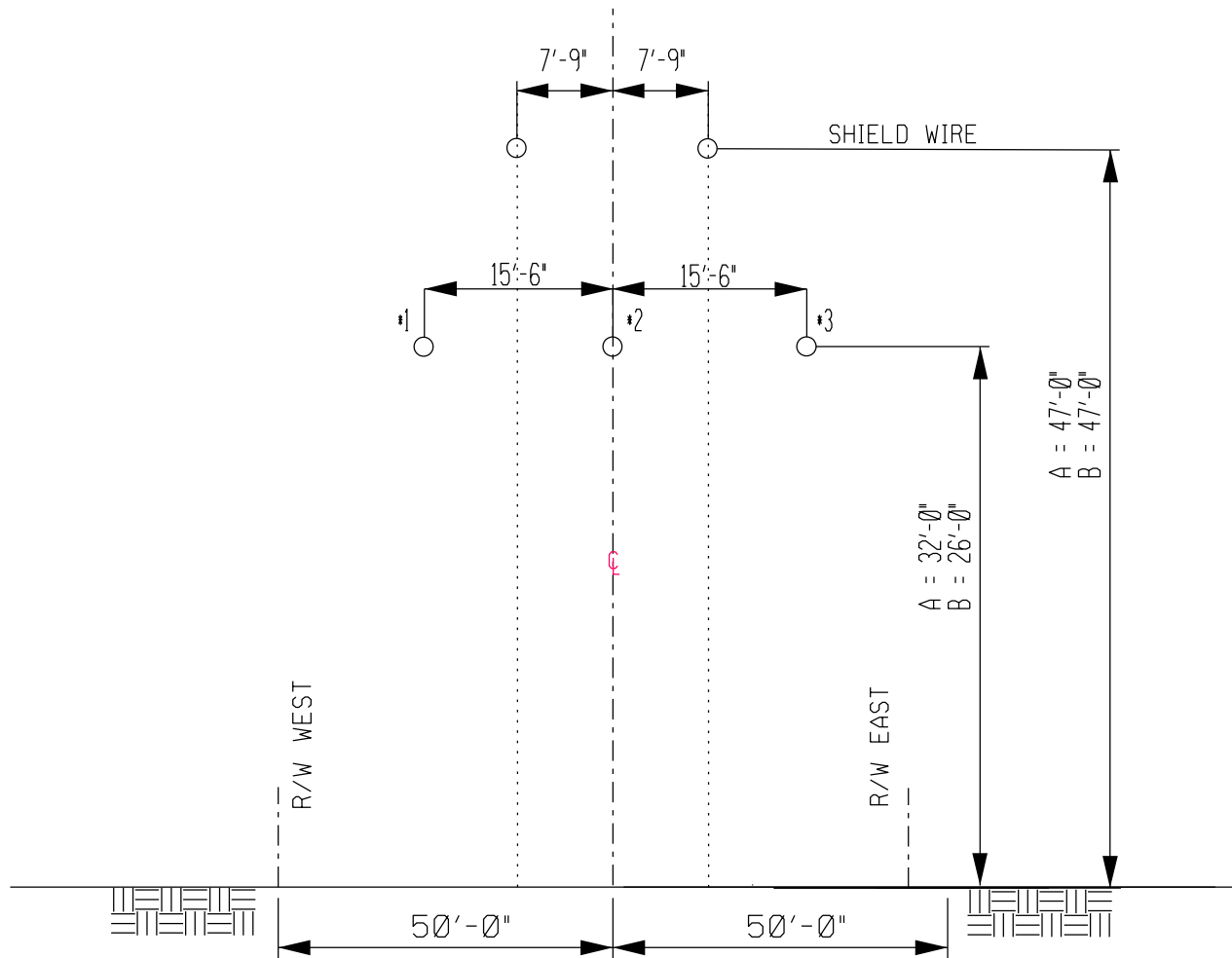
APP'D BY : DR. BY : PJR CH. BY : DATE :



TYPICAL PHASE ARRANGEMENT  
SINGLE POLE STEEL SC DEAD END  
HIGHLAND-HILLSBORO 138kV

FIGURE:

HIGHLAND-HILLSBORO  
138kV CIRCUIT  
(ACSR CURLEW CONDUCTOR)



**DIMENSION "A" - SINGLE CIRCUIT HORIZ. CONFIGURATION (STEEL POLE)  
(UNDER EMERGENCY & NORMAL MAX. LINE LOADING).**

**DIMENSION "B" - SINGLE CIRCUIT HORIZ. CONFIGURATION (STEEL POLE)  
(UNDER WINTER NORMAL CONDUCTOR RATING).**

APP'D BY :

DR. BY : PJR

CH. BY :

DATE :

TYPICAL PHASE ARRANGEMENT  
H-FRAME STEEL SC TANGENT  
HIGHLAND-HILLSBORO 138kV

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FIGURE: ■

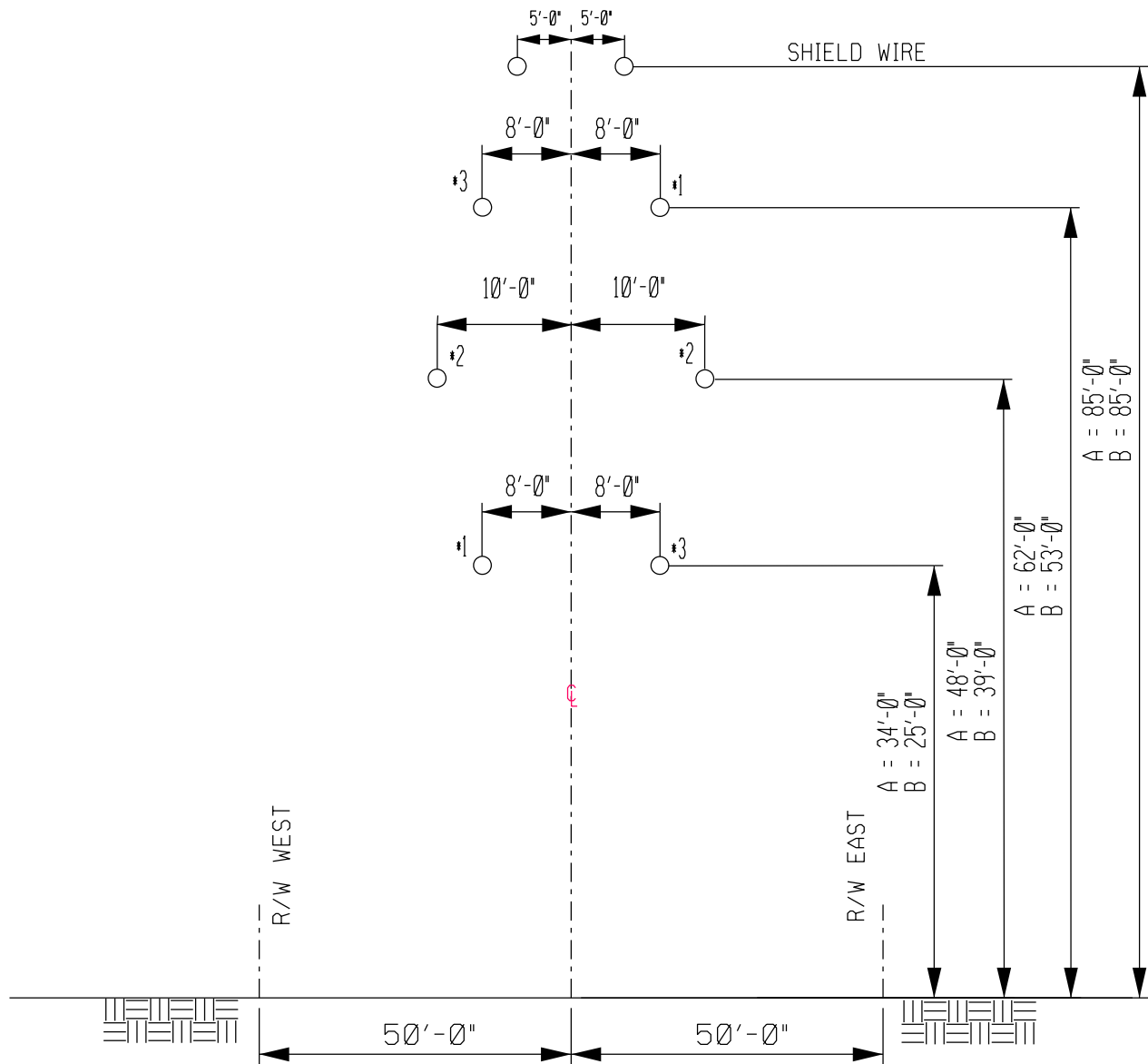
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DIMENSION "B" - SINGLE CIRCUIT HORIZ. CONFIGURATION (STEEL POLE)  
(UNDER WINTER NORMAL CONDUCTOR RATING).

APP'D BY :		DR. BY : PJR	CH. BY :	DATE :	TYPICAL PHASE ARRANGEMENT THREE POLE STEEL SC DEAD END HIGHLAND-HILLSBORO 138kV
				FIGURE: 	

HIGHLAND-HILLSBORO  
138kV CIRCUIT  
(ACSR CURLEW CONDUCTOR)

SEAMAN-HIGHLAND  
138kV CIRCUIT  
(ACSR CURLEW CONDUCTOR)



**DIMENSION 'A' - DOUBLE CIRCUIT VERT. CONFIGURATION (STEEL POLE)  
(UNDER EMERGENCY & NORMAL MAX. LINE LOADING).**

**DIMENSION 'B' - DOUBLE CIRCUIT VERT. CONFIGURATION (STEEL POLE)  
(UNDER WINTER NORMAL CONDUCTOR RATING).**

APP'D BY :

DR. BY : PJR

CH. BY :

DATE :

TYPICAL PHASE ARRANGEMENT  
SINGLE POLE STEEL DC TANGENT  
SEAMAN-HIGHLAND 138kV

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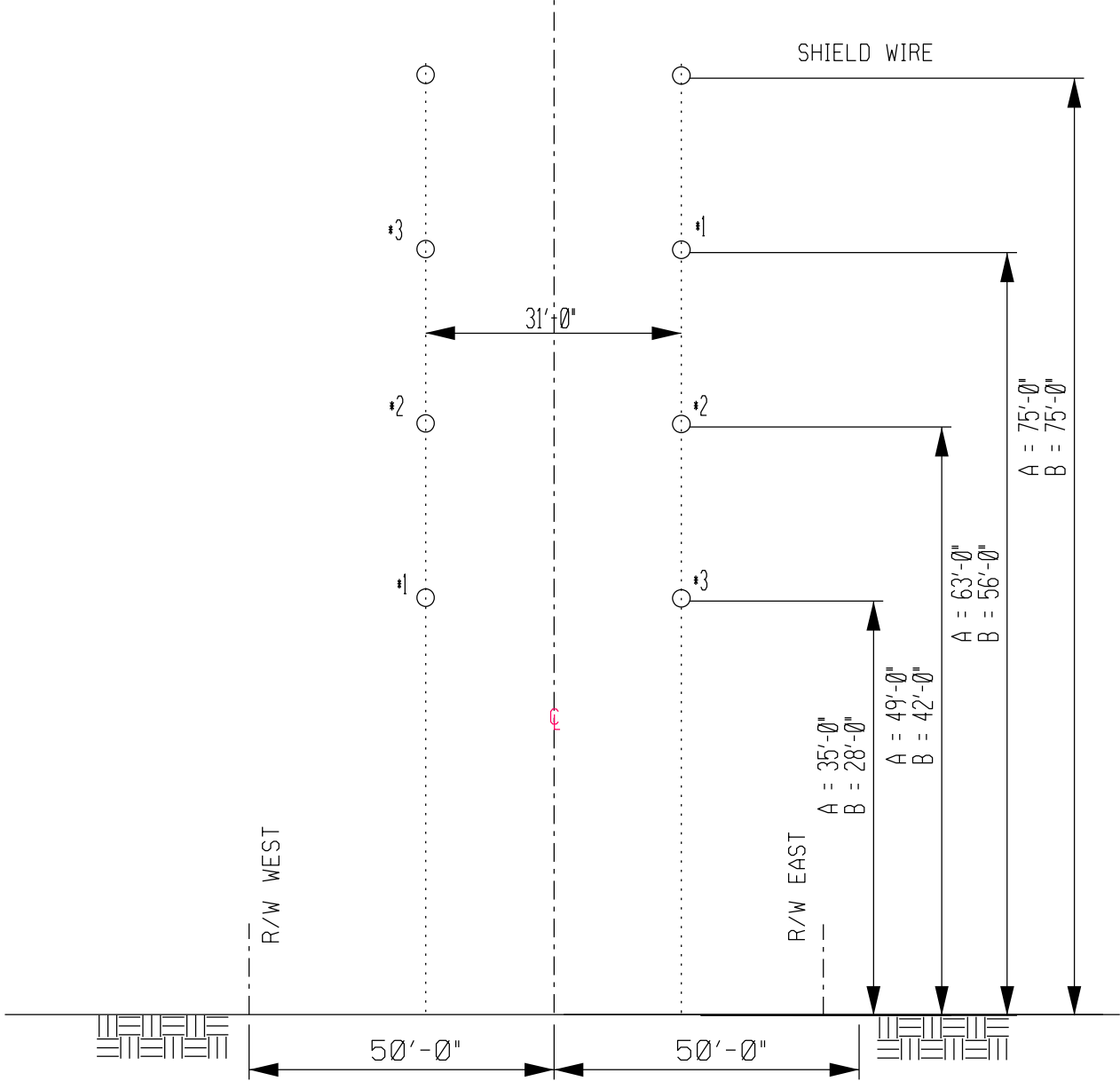
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FIGURE: ■



HIGHLAND-HILLSBORO  
138kV CIRCUIT  
(ACSR CURLEW CONDUCTOR)

SEAMAN-HIGHLAND  
138kV CIRCUIT  
(ACSR CURLEW CONDUCTOR)



**DIMENSION 'A' - DOUBLE CIRCUIT VERT.CONFIGURATION (STEEL POLE)  
(UNDER EMERGENCY & NORMAL MAX.LINE LOADING).**

**DIMENSION 'B' - DOUBLE CIRCUIT VERT.CONFIGURATION (STEEL POLE)  
(UNDER WINTER NORMAL CONDUCTOR RATING).**

APP'D BY :

DR. BY : PJR

CH. BY :

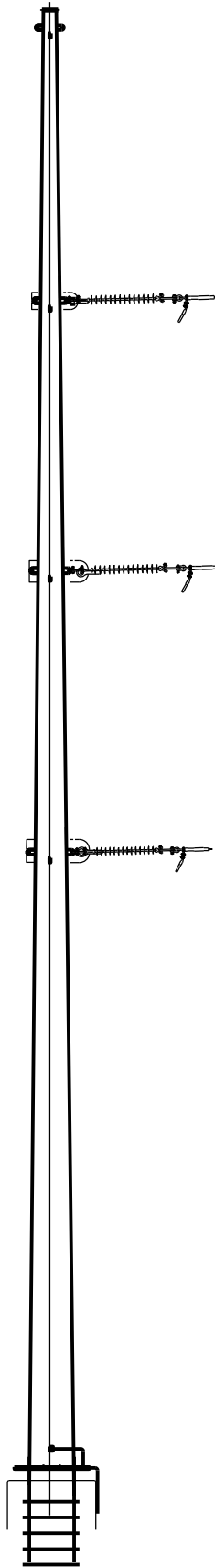
DATE :

TYPICAL PHASE ARRANGEMENT  
TWO POLE STEEL DC DEAD END  
SEAMAN-HIGHLAND 138kV

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POWER

**Commonwealth**  
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FIGURE:



APP'D BY :

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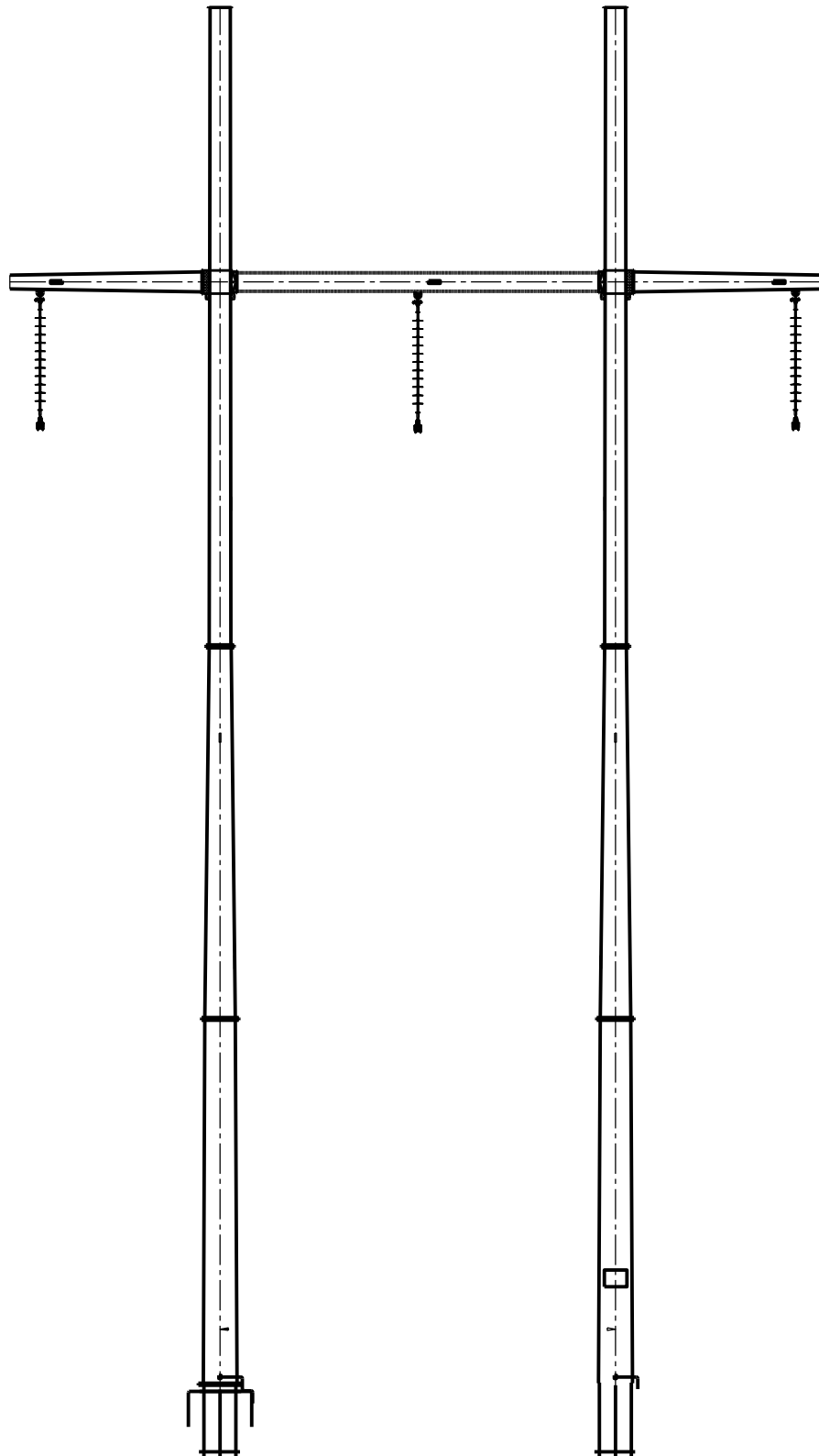
DATE :

SINGLE POLE STEEL SC DEAD END

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FIGURE: 8



APP'D BY :

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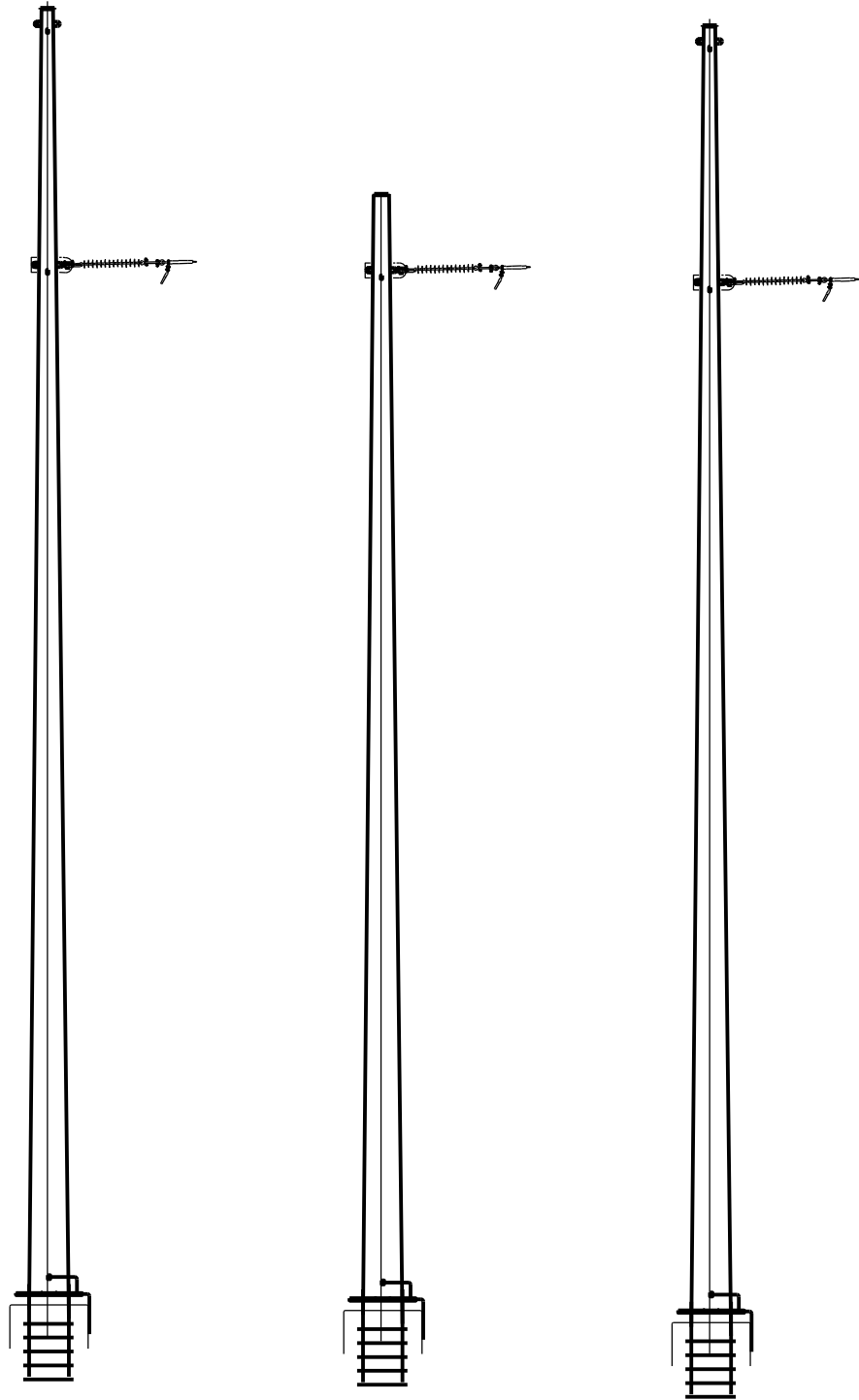
DATE :

H-FRAME STEEL SC SUSPENSION

FIGURE: 9

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APP'D BY :

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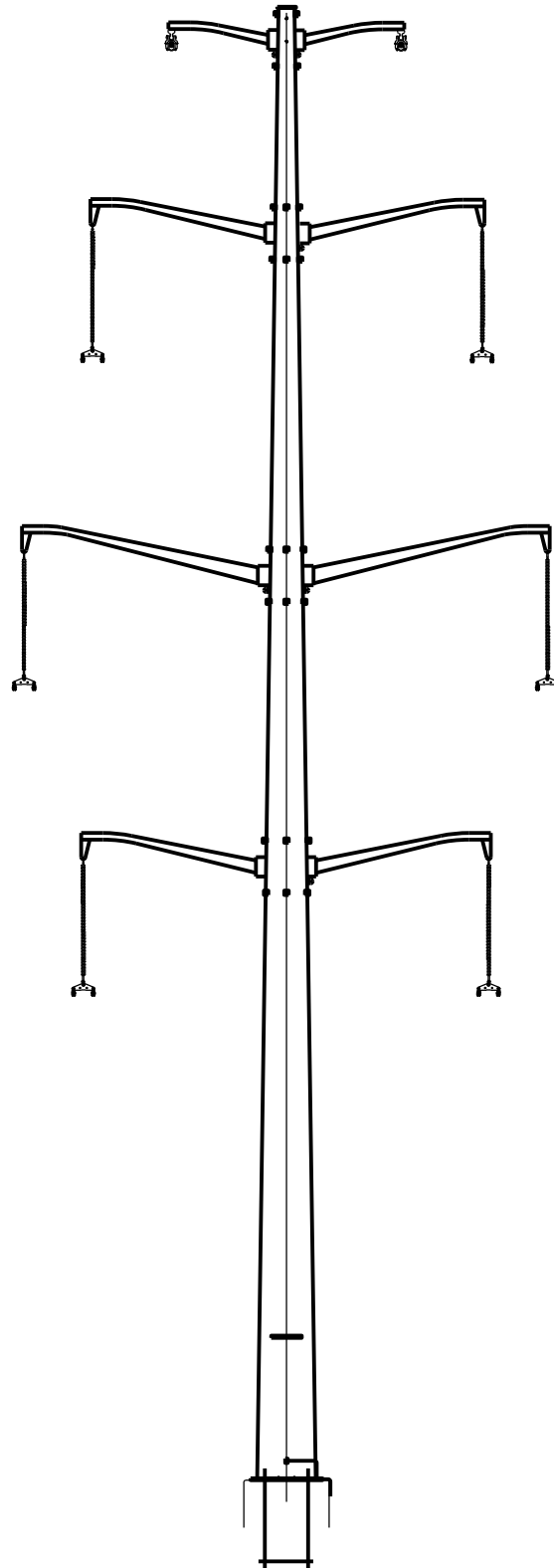
DATE :

THREE POLE STEEL SC DEAD END

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POWER**

**Commonwealth**  
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FIGURE: 10



APP'D BY :

DR. BY :

CH. BY :

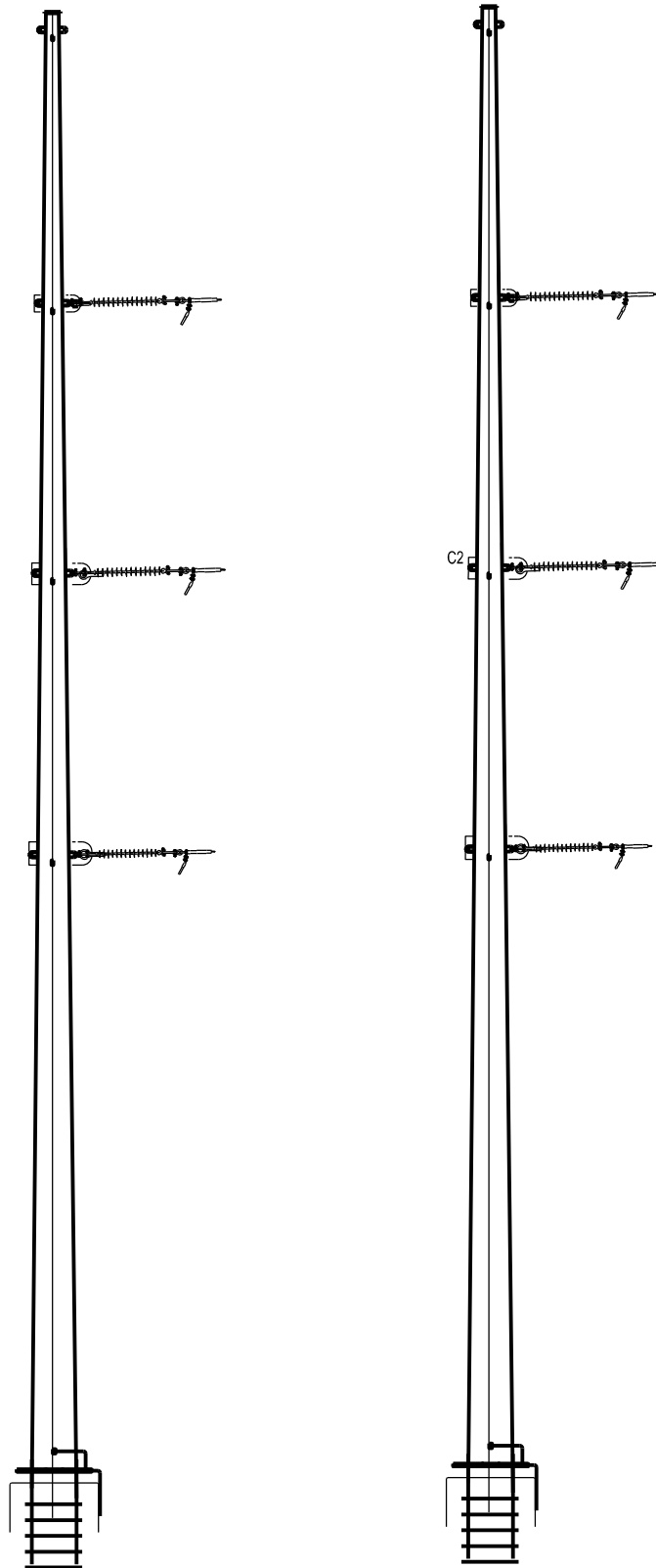
DATE :

SINGLE POLE STEEL DC  
SUSPENSION

FIGURE: 11

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ELECTRIC  
POWER

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www.cohengroup.com  
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APP'D BY :

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TWO POLE STEEL DC DEAD END

FIGURE:

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## **APPENDIX A**

### **SOCIOECONOMIC, LAND USE, AND AGRICULTURAL DISTRICT REVIEW REPORT**

# **SEAMAN VOLTAGE DROP TRANSMISSION LINE IMPROVEMENT PROJECT (New Highland-Hillsboro 138kV Circuit on the Portsmouth- Trenton #1 and Seaman- Highland Transmission Lines)**

## **SOCIOECONOMIC, LAND USE, AND AGRICULTURAL DISTRICT REVIEW REPORT**

*Prepared for:*

American Electric Power Ohio Transco  
700 Morrison Road  
Gahanna, Ohio 45230



*Prepared by:*



2700 West Argyle Street  
Jackson, Michigan 49202

May 2014



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FIGURE 2	LAND USE MAP, Location Map
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## 1.0 PROJECT DESCRIPTION

American Electric Power Ohio Transco's (AEP Ohio Transco's) proposed Seaman Voltage Drop Transmission Line Improvement Project (the Project) is to create a new Highland-Hillsboro 138kV circuit. The project is located in Liberty, New Market, and Washington Townships, Highland County, Ohio, as shown on Figure 1.

Creating the new circuit will require rebuilding the Portsmouth-Trenton #1 138kV electrical transmission line between the Hillsboro station off of Mad River Road to Structure #300 off of Stanforth Lane; relocating Structure #309 and removing Structure #310 on the Portsmouth-Trenton #2 138kV line; and rebuilding the Seaman-Highland 138kV (69kV) line between the Highland station off of South High Street to south of Structure #92, where the line crosses the Portsmouth-Trenton lines. The project is approximately 7.9 miles in length and consists of 4.8 miles along the Portsmouth-Trenton #1 & #2 lines and approximately 3.1 miles along the Seaman-Highland line.

As part of the Ohio Power Siting Board (OPSB) Letter of Notification (LON) requirements, AEP Ohio Transco is required to assess and report the socioeconomic, land use, and agricultural district characteristics potentially affected by the Project, as stated in Ohio Administrative Code (OAC) Rule 4906-11-01(D)(1) and (2). These rules state:

- (D) *Socioeconomic data. Describe the social and ecological impacts of the project. This description shall contain the following information:*
  - (1) *A brief, general description of land use within the vicinity of the proposed project, including: (a) a list of municipalities, townships, and counties affected; and (b) estimates of population density adjacent to rights-of-way within the study corridor (the U.S. census information may be used to meet this requirement).*
  - (2) *The location and general description of all agricultural land (including agricultural district land) existing at least sixty days prior to submission of the letter of notification within the proposed electric power transmission line right-of-way, or within the proposed electric power transmission substation fenced-in area, or within the construction site boundary of a proposed compressor station.*

AEP Ohio Transco retained Commonwealth Associates, Inc. (Commonwealth) to conduct a desktop review of socioeconomic, land use, and agricultural district land characteristics. A study area extending 1,000 feet around the approximately 7.9-mile Project centerline was established, resulting in an approximately 1,820-acre study area. In conjunction with ecological field surveys for the Project, Commonwealth noted land uses within the study area. This report will be used to assist AEP Ohio Transco's efforts to avoid or minimize impacts to socioeconomic characteristics and land uses potentially present in the study area during construction activities.

## 2.0 GENERAL LAND USE DESCRIPTION

Current land use characteristics were obtained through review of Google Earth aerial photography taken in 2012; United States Department of Agriculture (USDA) and Natural Resource Conservation Service (NRCS) digital aerial photography taken in 2006; the United States Geological Survey (USGS) 7.5-minute topographic quadrangle maps of Hillsboro, Ohio (2010) and New Market, Ohio (2010); the Land Use/Land Cover (data collected in 1976) obtained from webGIS, [www.webgis.com](http://www.webgis.com) and updated using photo interpretation; base map data obtained from GIS Data Depot (U.S. Census Bureau TIGER/Line 2011), [www.data.geocomm.com](http://www.data.geocomm.com); Highland County property parcel data; and a field reconnaissance conducted on April 2-4 and 11, 2014. General alignment of the Project is shown in Figure 2. Land uses within the study area are shown on Figure 3, Map sheets 1 - 14.

Land uses within the study area include woodlands, scattered residences, agriculture, commercial/institutional, and transportation corridors. Approximately 48% of the land within the study area is agriculture, 42% is wooded and undeveloped, 7% is residential, 1% is commercial or institutional, 1% is open water and 1% is transportation. One church and one school complex were noted within 1,000 feet of the line. In addition within 1,000 feet of the project centerline, 73 residences were identified. The corridor does not cross any active railroads. The corridor does cross county and state roads, including US 62. US 62 is not a limited access or divided highway.

General land use trends in Highland County indicate there is a slow conversion of farmland to commercial and residential use. This change in land use primarily radiates out from the incorporated areas of Hillsboro and predominantly north of the Project area.

Based on review of the Highland County website, no comprehensive plans or future land use documents were identified for the county or the townships. No zoning regulations were discovered for the townships.

## 3.0 POPULATION DENSITY ESTIMATE

The Project is located within Liberty, New Market, and Washington townships, Highland County, Ohio. Population density estimates for land within the study area were calculated by direct estimation based on study area size, number of residences identified in the area, and the average number of persons per household in the county. The estimated population density based on study area size is 224. Within the study area, 73 residences were identified. The average household size for Highland County is 2.58 people per household. Based on number of residences and average household size, the population density is 188; this equates to a population density of 0.10 person per acre, which is less than the average 0.12 person per acre for all of the county. The above estimates are limited by available statistics and generalizations across the county. Total populations for the County and three townships are summarized in Table 1.

**TABLE 1**  
**STUDY AREA CENSUS POPULATION ESTIMATES**

Government Unit	2000 Census	2010 Census
Highland County	40,875	42,998
Liberty Township	9,798	10,242
New Market Township	1,941	1,888
Washington Township	1,048	1,123

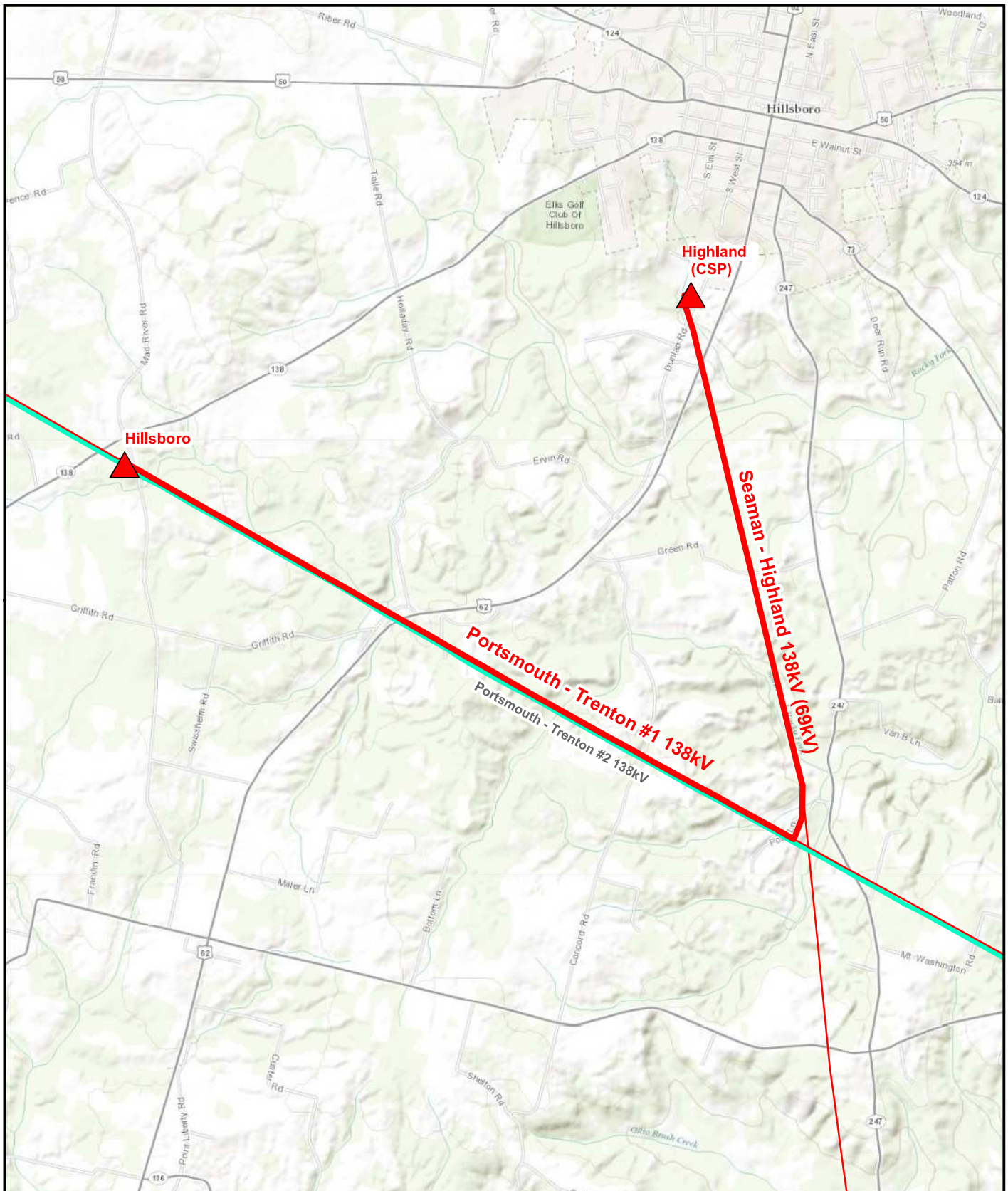
Sources: U.S. Census Bureau, Census 2000 Summary File 1 (SF 1)  
U.S. Census Bureau, Census 2010 Summary File 1 (SF 1)

#### **4.0 AGRICULTURAL DISTRICT LAND**

Commonwealth contacted the Highland County auditor's offices regarding parcels registered in the agricultural district land program. There are 22 agricultural district land parcels within the 2,000-foot study area, 19 of which are crossed by the Project. The construction, operation and maintenance of this transmission line are not expected to affect the viability of agricultural land with the study area. Efforts to minimize disturbance during construction will be made. AEP Ohio Transco will compensate property owners for any monetary losses due to the Project through the right of way settlement in accordance with easement agreements and policy. AEP Ohio Transco has and will continue to work with each owner to avoid and minimize damages to property.

#### **5.0 CONCLUSION**

The Project is not expected to significantly impact current socioeconomic characteristics, land use, and agricultural district land in the vicinity. The Project is within an electrical transmission line corridor, and the characteristics of the Project are not significantly different from the existing transmission line. The Project is not expected to impact any future land use plans for the area.



**Legend:**

▲ Substation

— Seaman Voltage Drop Transmission Line Improvement Project 138kV Transmission Line

1 inch = 4,000 feet

0 4,000 8,000 Feet



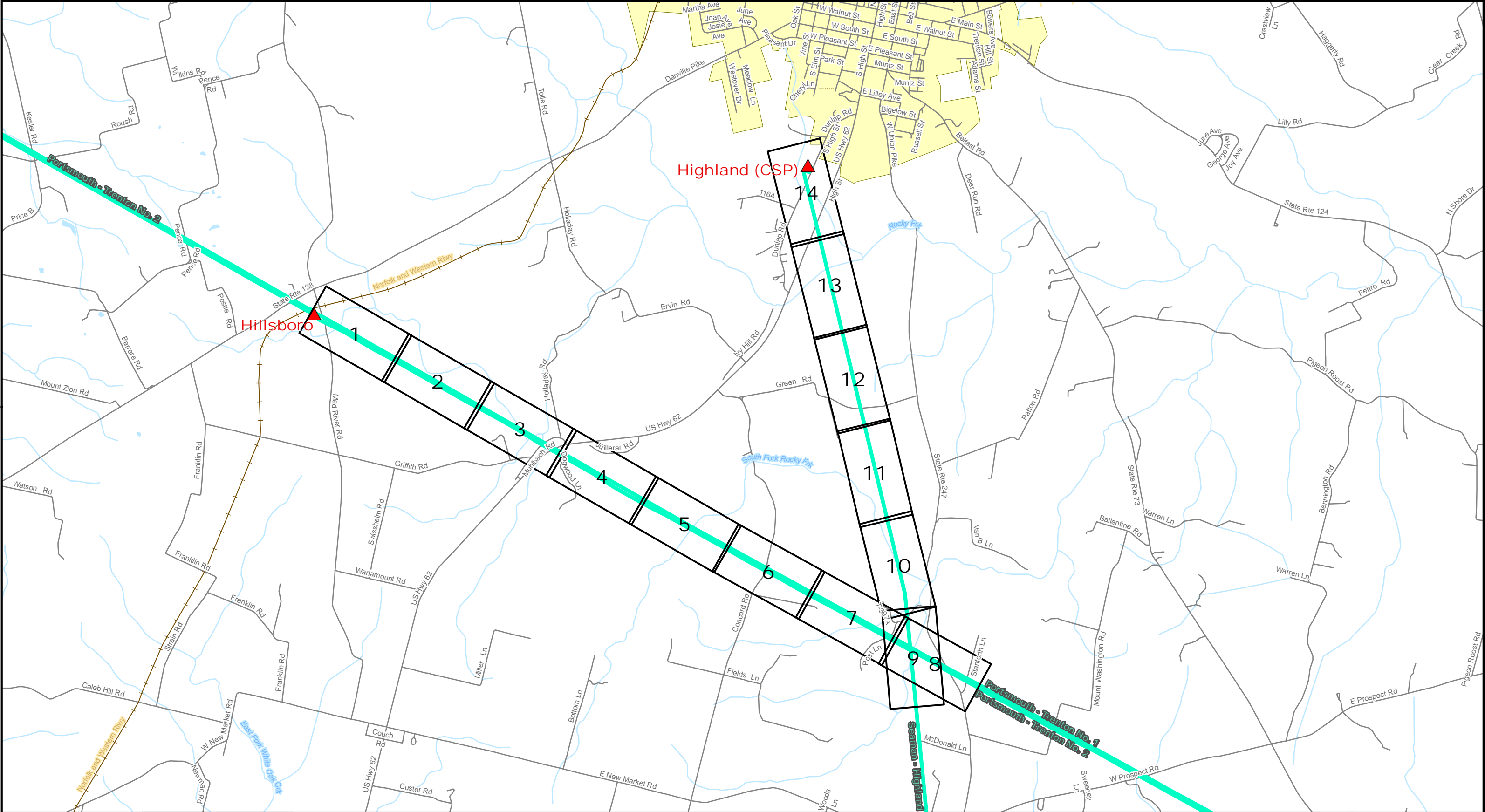
Hillsboro, OH


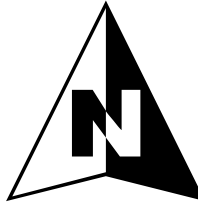


Seaman Voltage Drop  
Transmission Line Improvement  
Project

Figure 1  
Project Overview








▲ Substation	City/Township	Evergreen Forest	Cropland
● Existing Structure	County	Deciduous Forest	Industrial
■ Proposed Structure	Map Index	Grassland	Transportation
■ House	1,000 ft Corridor	Mixed Forest	Residential
— Existing 138 kV	Agriculture District	Pasture	Water
— Proposed 138 kV		Commercial	

Scale: 1" = 3,000' (1:36,000)

0 1,500 3,000 4,500 6,000 Feet


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

Figure 02  
Land Use Map  
Seaman Voltage Drop Transmission Line Improvement Project  
Location Map



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

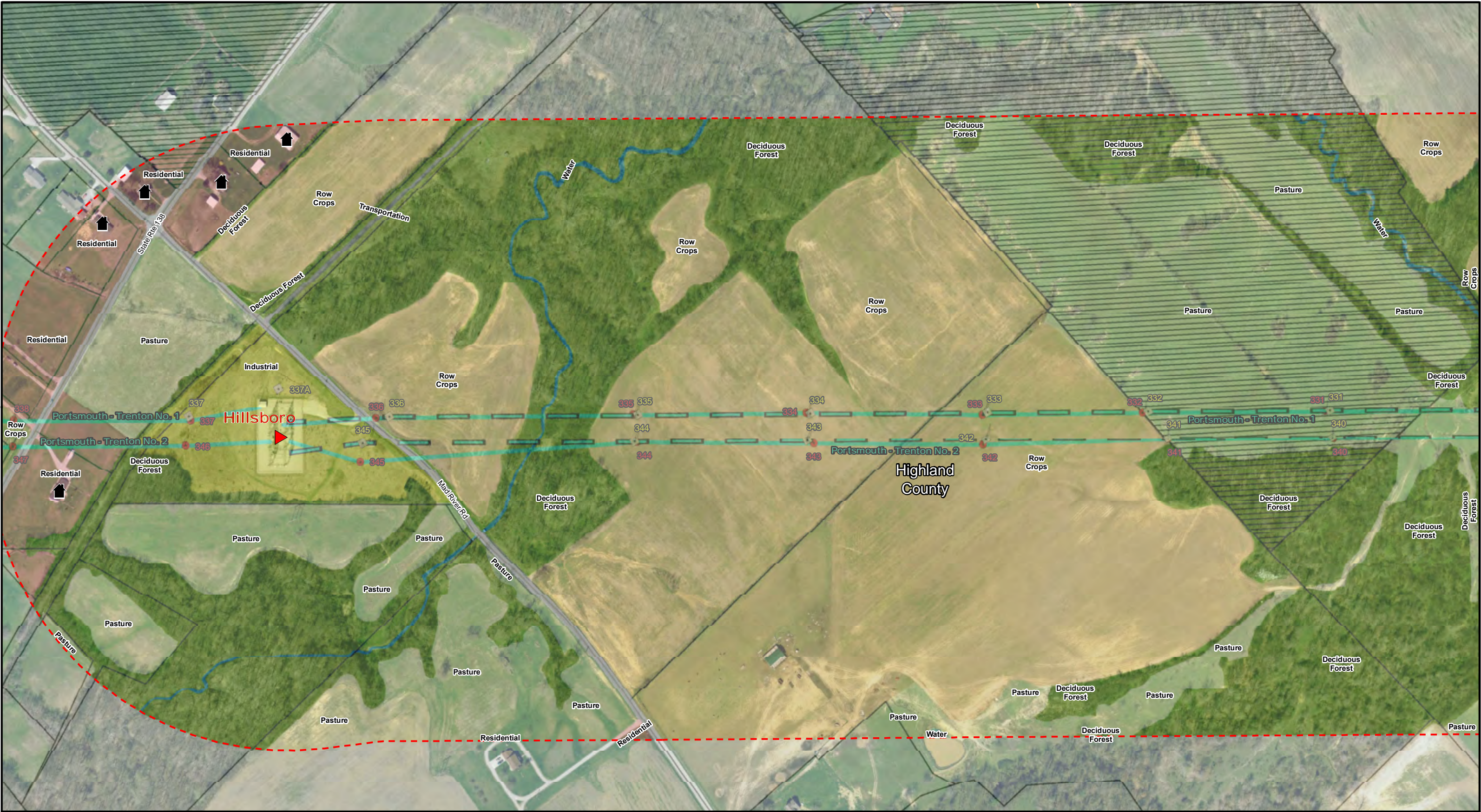
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Date: 5/8/2014

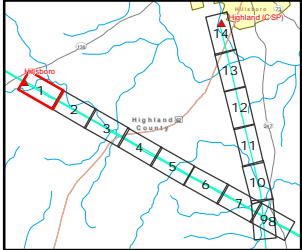
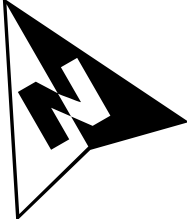


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▲ Substation	City/Township	Evergreen Forest	Cropland
● Existing Structure	County	Deciduous Forest	Industrial
■ Proposed Structure	Map Index	Grassland	Transportation
🏠 House	1,000 ft Corridor	Mixed Forest	Residential
— Existing 138 kV	Agriculture District	Pasture	Water
— Proposed 138 kV	Parcel Boundary	Commercial	

Scale: 1" = 300' (1:3,600)




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

Figure 03  
Land Use Map  
Seaman Voltage Drop Transmission Line Improvement Project  
Map Sheet 01



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

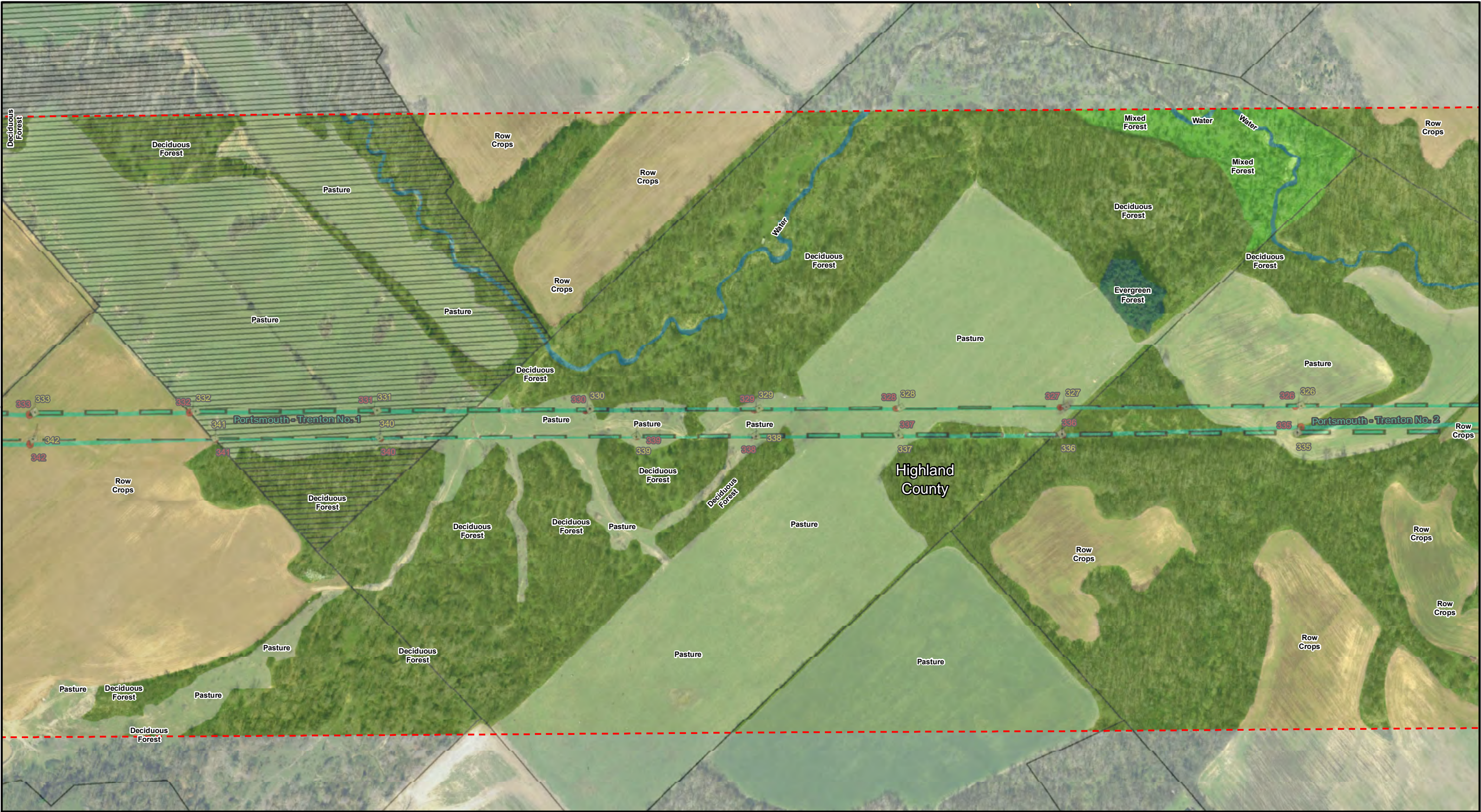
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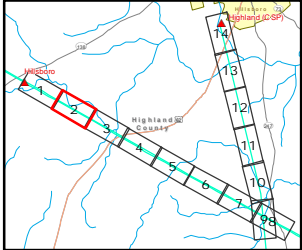
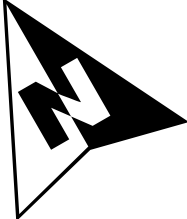


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▲ Substation	City/Township	Evergreen Forest	Cropland
● Existing Structure	County	Deciduous Forest	Industrial
■ Proposed Structure	Map Index	Grassland	Transportation
🏠 House	1,000 ft Corridor	Mixed Forest	Residential
— Existing 138 kV	Agriculture District	Pasture	Water
— Proposed 138 kV	Parcel Boundary	Commercial	

Scale: 1" = 300' (1:3,600)




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

Figure 03  
Land Use Map  
Seaman Voltage Drop Transmission Line Improvement Project  
Map Sheet 02



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

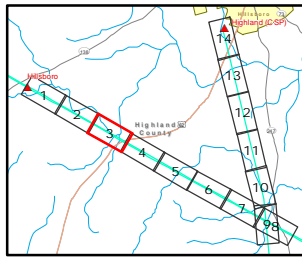
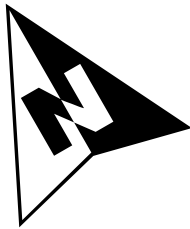
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- |                      |                      |                  |                |
|----------------------|----------------------|------------------|----------------|
| ▲ Substation         | City/Township        | Evergreen Forest | Cropland       |
| ● Existing Structure | County               | Deciduous Forest | Industrial     |
| ■ Proposed Structure | Map Index            | Grassland        | Transportation |
| 🏠 House              | 1,000 ft Corridor    | Mixed Forest     | Residential    |
| — Existing 138 kV    | Agriculture District | Pasture          | Water          |
| — Proposed 138 kV    | Parcel Boundary      | Commercial       |                |

Scale: 1" = 300' (1:3,600)

0 150 300 450 600  
Feet

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

Figure 03  
Land Use Map  
Seaman Voltage Drop Transmission Line Improvement Project  
Map Sheet 03

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Source: Commonwealth Associates Inc., AEP, ESRI  
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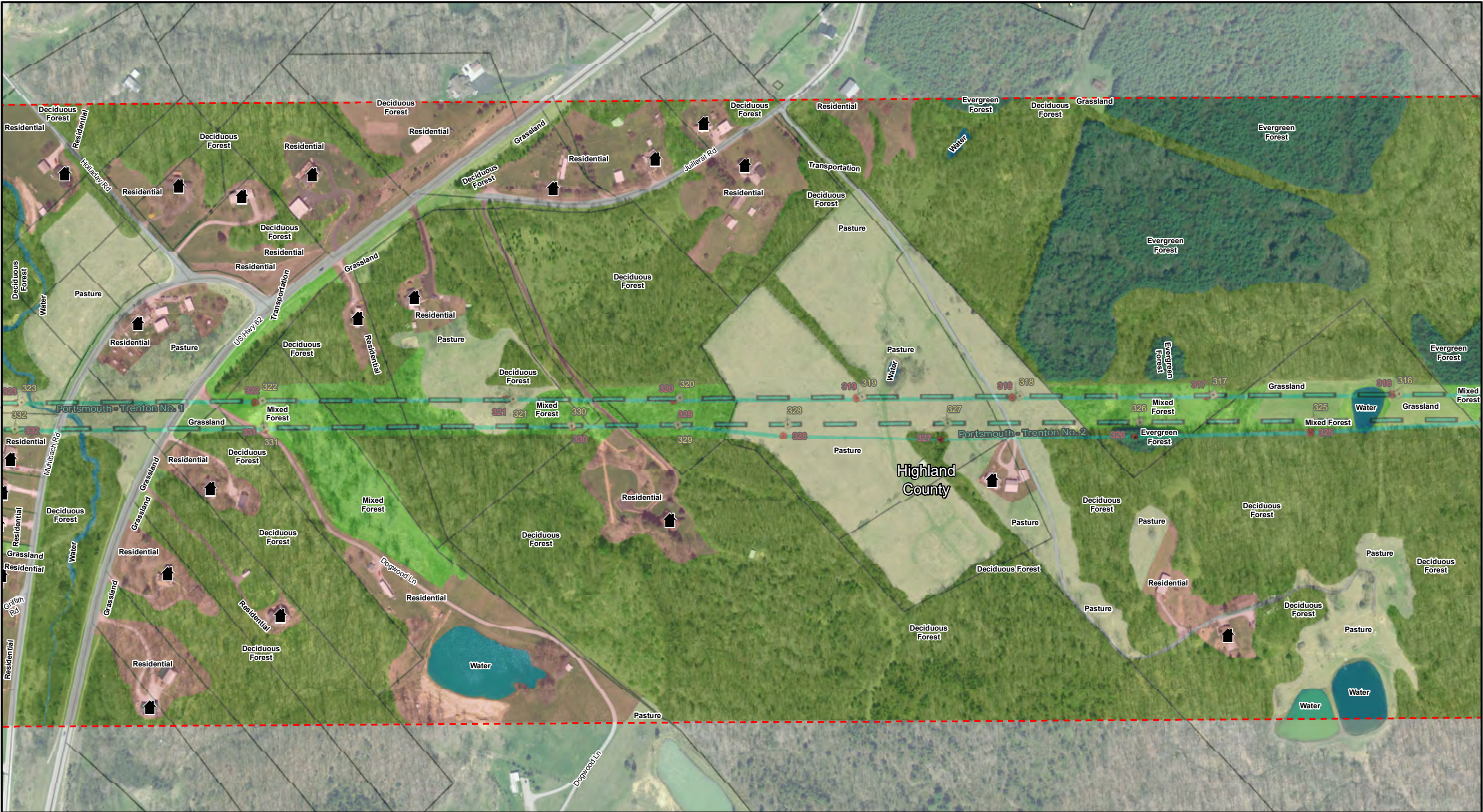
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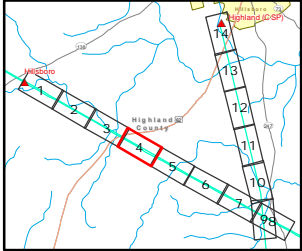
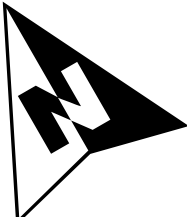


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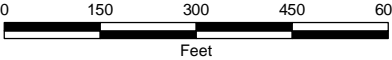







<ul style="list-style-type: none"><li>▲ Substation</li><li>● Existing Structure</li><li>■ Proposed Structure</li><li>🏠 House</li><li>— Existing 138 kV</li><li>— Proposed 138 kV</li></ul>	<ul style="list-style-type: none"><li>City/Township</li><li>County</li><li>Map Index</li><li>1,000 ft Corridor</li><li>Agriculture District</li><li>Parcel Boundary</li></ul>	<ul style="list-style-type: none"><li>Evergreen Forest</li><li>Deciduous Forest</li><li>Grassland</li><li>Mixed Forest</li><li>Pasture</li><li>Commercial</li></ul>	<ul style="list-style-type: none"><li>Cropland</li><li>Industrial</li><li>Transportation</li><li>Residential</li><li>Water</li></ul>
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Scale: 1" = 300' (1:3,600)




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

Figure 03  
Land Use Map  
Seaman Voltage Drop Transmission Line Improvement Project  
Map Sheet 04



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Comments:

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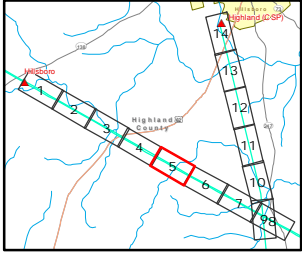
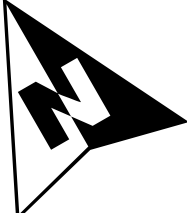


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▲ Substation	City/Township	Evergreen Forest	Cropland
● Existing Structure	County	Deciduous Forest	Industrial
■ Proposed Structure	Map Index	Grassland	Transportation
🏠 House	1,000 ft Corridor	Mixed Forest	Residential
— Existing 138 kV	Agriculture District	Pasture	Water
— Proposed 138 kV	Parcel Boundary	Commercial	

Scale: 1" = 300' (1:3,600)




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

Figure 03  
Land Use Map  
Seaman Voltage Drop Transmission Line Improvement Project  
Map Sheet 05



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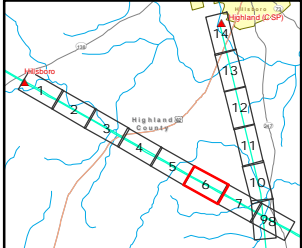
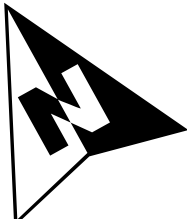


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▲ Substation	City/Township	Evergreen Forest	Cropland
● Existing Structure	County	Deciduous Forest	Industrial
■ Proposed Structure	Map Index	Grassland	Transportation
🏠 House	1,000 ft Corridor	Mixed Forest	Residential
— Existing 138 kV	Agriculture District	Pasture	Water
— Proposed 138 kV	Parcel Boundary	Commercial	

Scale: 1" = 300' (1:3,600)

0 150 300 450 600 Feet

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

Figure 03  
Land Use Map  
Seaman Voltage Drop Transmission Line Improvement Project  
Map Sheet 06

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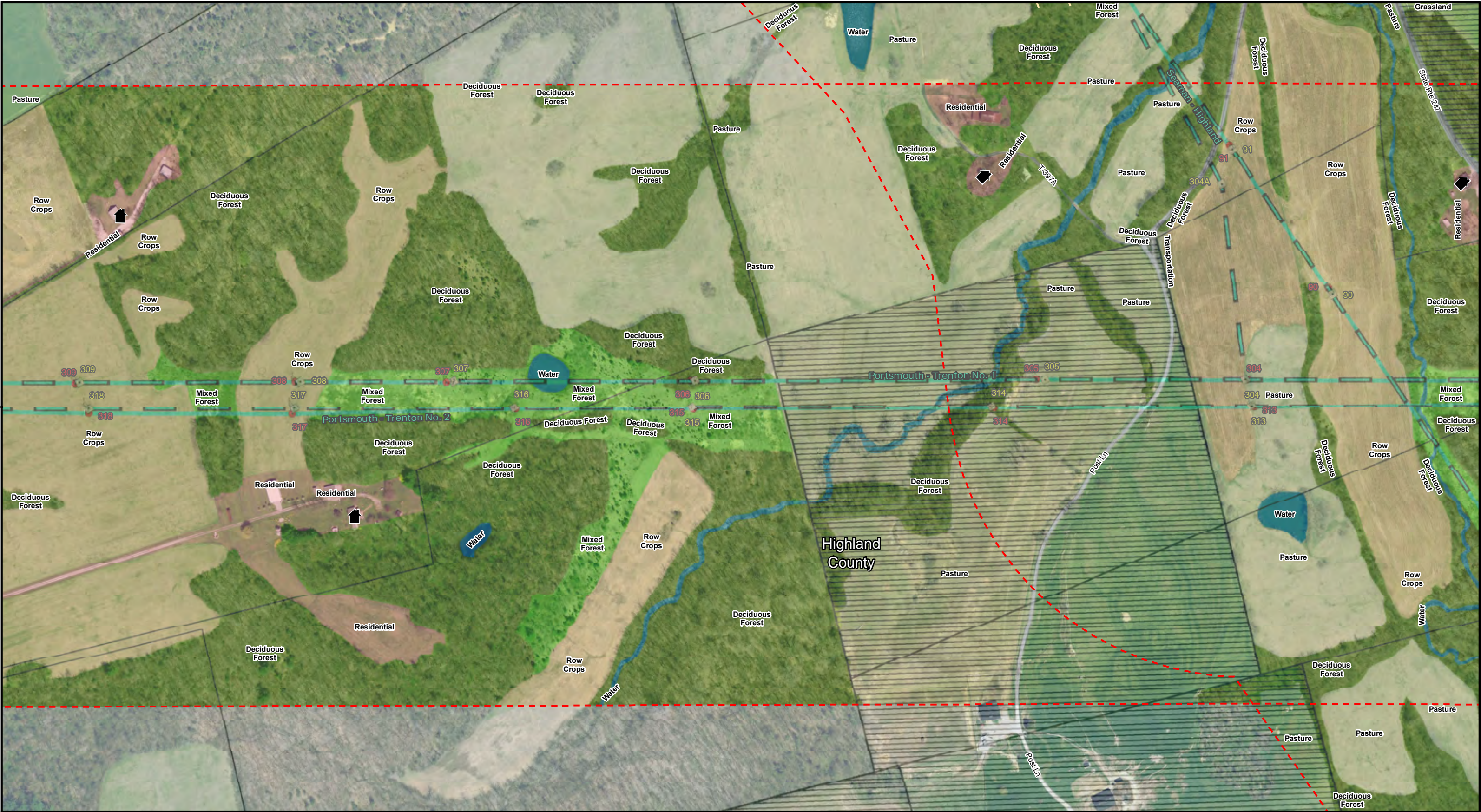
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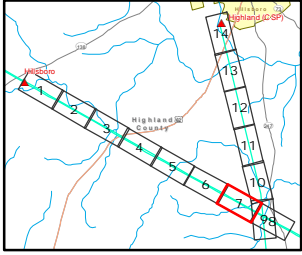
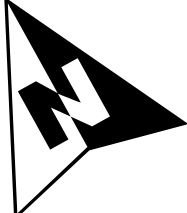
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▲ Substation	City/Township	Evergreen Forest	Cropland
● Existing Structure	County	Deciduous Forest	Industrial
■ Proposed Structure	Map Index	Grassland	Transportation
🏠 House	1,000 ft Corridor	Mixed Forest	Residential
— Existing 138 kV	Agriculture District	Pasture	Water
— Proposed 138 kV	Parcel Boundary	Commercial	

Scale: 1" = 300' (1:3,600)




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

Figure 03  
Land Use Map  
Seaman Voltage Drop Transmission Line Improvement Project  
Map Sheet 07



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Comments:

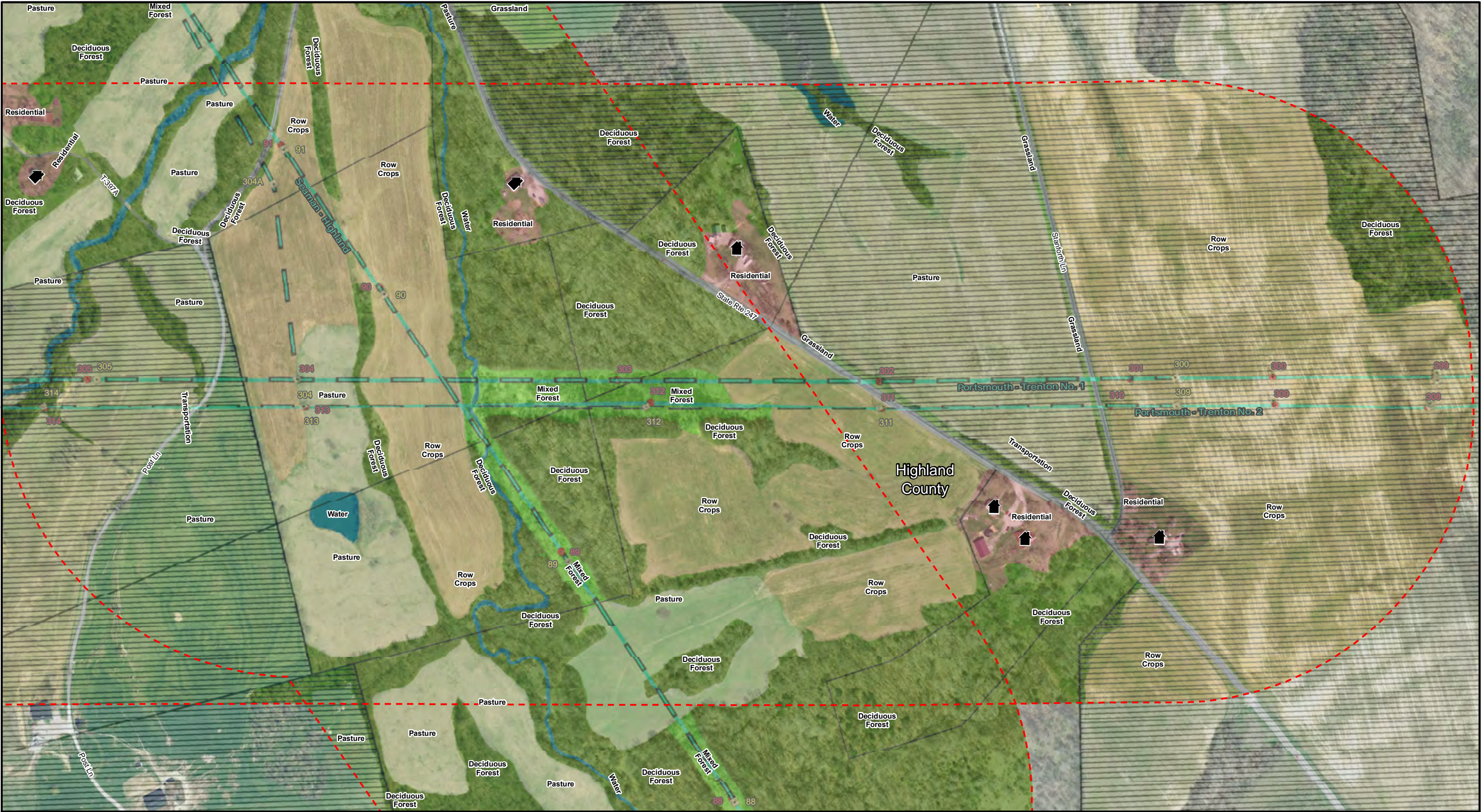
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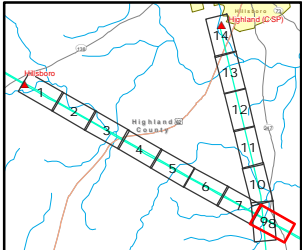
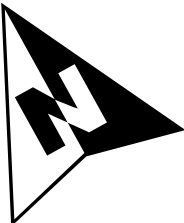


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▲ Substation	City/Township	Evergreen Forest	Cropland
● Existing Structure	County	Deciduous Forest	Industrial
■ Proposed Structure	Map Index	Grassland	Transportation
🏠 House	1,000 ft Corridor	Mixed Forest	Residential
— Existing 138 kV	Agriculture District	Pasture	Water
— Proposed 138 kV	Parcel Boundary	Commercial	

Scale: 1" = 300' (1:3,600)

0 150 300 450 600 Feet

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

Figure 03  
Land Use Map  
Seaman Voltage Drop Transmission Line Improvement Project  
Map Sheet 08

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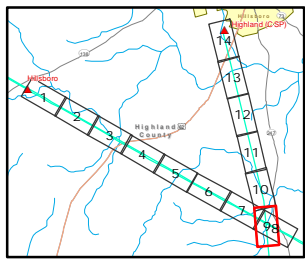
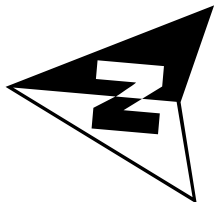
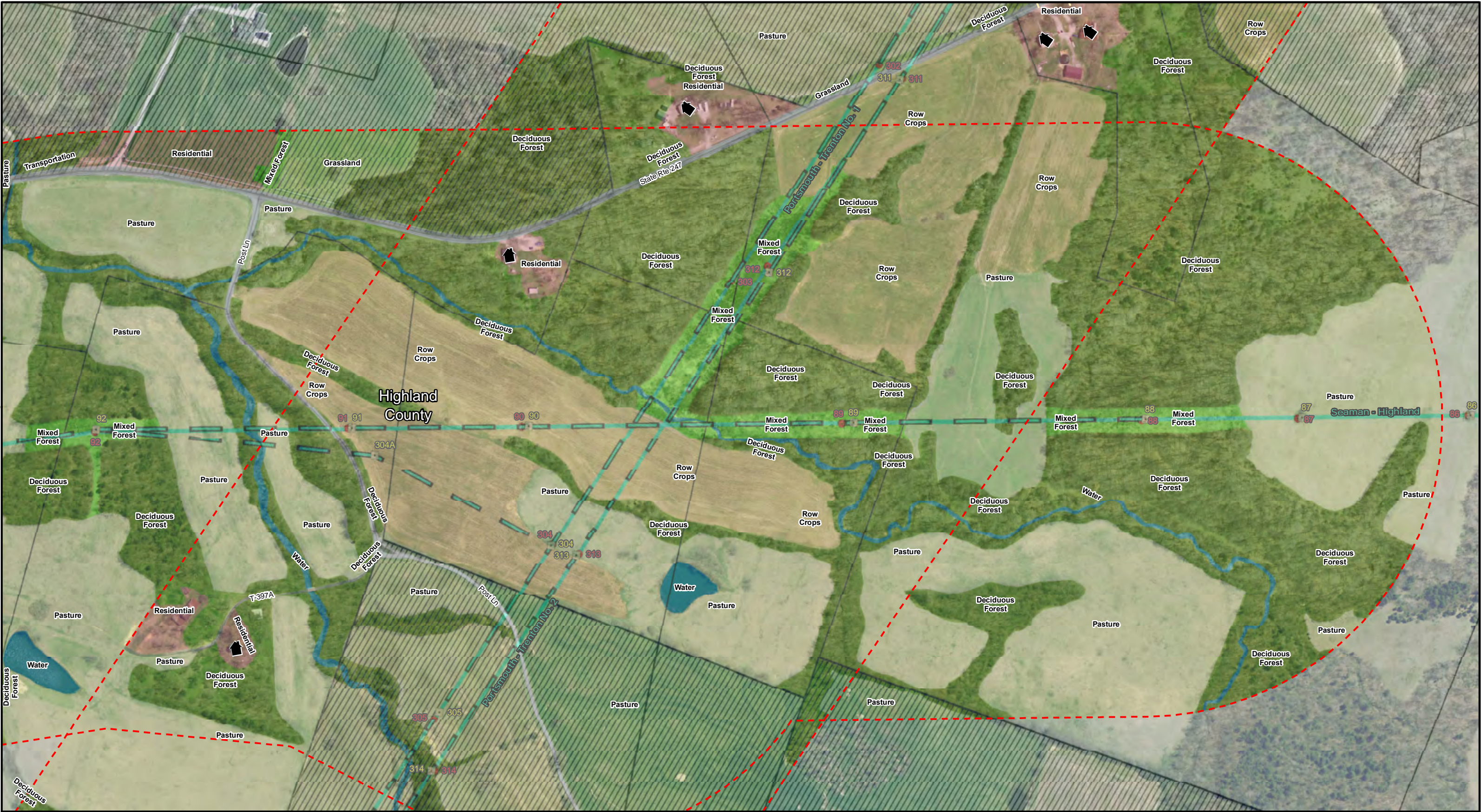
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Comments:

Drawn By: JEK  
Date: 5/8/2014

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- |                      |                      |                  |                |
|----------------------|----------------------|------------------|----------------|
| ▲ Substation         | City/Township        | Evergreen Forest | Cropland       |
| ● Existing Structure | County               | Deciduous Forest | Industrial     |
| ■ Proposed Structure | Map Index            | Grassland        | Transportation |
| 🏠 House              | 1,000 ft Corridor    | Mixed Forest     | Residential    |
| — Existing 138 kV    | Agriculture District | Pasture          | Water          |
| — Proposed 138 kV    | Parcel Boundary      | Commercial       |                |

Scale: 1" = 300' (1:3,600)

0 150 300 450 600  
Feet

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

Figure 03  
Land Use Map  
Seaman Voltage Drop Transmission Line Improvement Project  
Map Sheet 09

Commonwealth  
associates, inc.

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

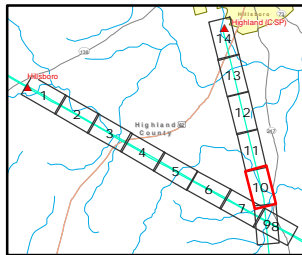
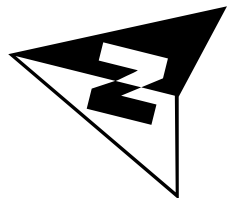
Drawn By: JEK  
Date: 5/8/2014



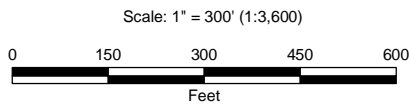
700 Morrison Rd.  
Gahanna, OH 43230-6642  
PH: (614) 716-1000  
Fax: (614) 552-1818

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|----------------------|----------------------|------------------|----------------|
| ▲ Substation         | City/Township        | Evergreen Forest | Cropland       |
| ● Existing Structure | County               | Deciduous Forest | Industrial     |
| ■ Proposed Structure | Map Index            | Grassland        | Transportation |
| 🏠 House              | 1,000 ft Corridor    | Mixed Forest     | Residential    |
| — Existing 138 kV    | Agriculture District | Pasture          | Water          |
| — Proposed 138 kV    | Parcel Boundary      | Commercial       |                |



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

Figure 03  
Land Use Map  
Seaman Voltage Drop Transmission Line Improvement Project  
Map Sheet 10

**Commonwealth**  
associates, inc.

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

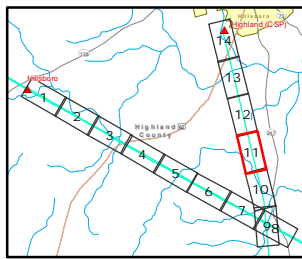
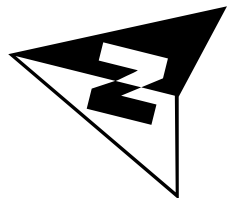
Drawn By: JEK  
Date: 5/8/2014



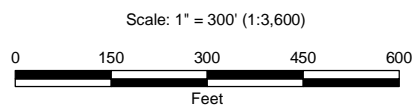
700 Morrison Rd.  
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- |                      |                      |                  |                |
|----------------------|----------------------|------------------|----------------|
| ▲ Substation         | City/Township        | Evergreen Forest | Cropland       |
| ● Existing Structure | County               | Deciduous Forest | Industrial     |
| ■ Proposed Structure | Map Index            | Grassland        | Transportation |
| 🏠 House              | 1,000 ft Corridor    | Mixed Forest     | Residential    |
| — Existing 138 kV    | Agriculture District | Pasture          | Water          |
| — Proposed 138 kV    | Parcel Boundary      | Commercial       |                |



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

Figure 03  
Land Use Map  
Seaman Voltage Drop Transmission Line Improvement Project  
Map Sheet 11

**Commonwealth**  
associates, inc.

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

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**Commission of Ohio Docketing Information System on**

**5/28/2014 2:56:53 PM**

**in**

**Case No(s). 14-0904-EL-BLN**

Summary: Application Letter of Notification for the Seaman Voltage Drop Transmission Line Improvement Project Part 1 electronically filed by Mr. Yazen Alami on behalf of AEP Ohio Transmission Company