

**AMERICAN TRANSMISSION SYSTEMS,  
INCORPORATED  
A FIRSTENERGY COMPANY**

**CONSTRUCTION NOTICE**

**MAYFIELD-EASTLAKE Q-3 & Q-4 138 kV  
TRANSMISSION LINE TAP TO NATHAN SUBSTATION**

**OPSB CASE NO.: 19-0149-EL-BNR**

**April 2, 2019**

**American Transmission Systems, Incorporated  
76 South Main Street  
Akron, Ohio 44308**

**CONSTRUCTION NOTICE**  
**MAYFIELD-EASTLAKE Q-3 & Q-4 138 kV TRANSMISSION LINES**  
**TAP TO NATHAN SUBSTATION PROJECT**

The following information is being provided in accordance with the procedures in the Ohio Administrative Code (OAC) Chapter 4906-6 for the application and review of Accelerated Certificate Applications. Based upon the requirements found in Appendix A to OAC Rule 4906-1-01, this Project qualifies for submittal to the Ohio Power Siting Board (“Board”) as a Construction Notice application.

**4906-6-05: ACCELERATED APPLICATION REQUIREMENTS**

**4906-6-05: Name**

Name of Project: Mayfield-Eastlake Q-3 & Q-4 138 kV Transmission Lines  
Tap to Nathan Substation Project (“Project”).

**4906-6-05 (B)(1): Brief Description of the Project**

This Project is being proposed as one of two separate projects necessary to reduce the risk of a common tower outage on the Eastlake - Leroy Center Q-15 & Q-16 138 kV Transmission Lines (Q-15 & Q-16 Lines) and provide greater operational flexibility to the transmission system. The Q-15 & Q-16 Lines are a double circuit transmission line that serves approximately 286.9 MW of load and approximately 63,737 customers of FirstEnergy and American Municipal Power, Inc. (“AMP”).

In an effort to minimize local load loss for a common tower outage on this double circuit transmission line, American Transmission Systems, Incorporated (“ATSI”), a FirstEnergy company, is proposing two projects:

- The current Project, the Mayfield-Eastlake Q-3 & Q-4 138 kV Transmission Line Tap to Nathan Substation Project; and
- The Eastlake-Leroy Center 138 kV Loops to New Ring Bus Project (Case No. 19-0149-EL-BNR) which will sectionalize the Q-15 & Q-16 Lines with a new ring bus, significantly reducing load lost under contingency scenarios. A separate Letter of

Notification Application for this second project is scheduled to be filed later in April 2019.

In the current Project, ATSI is proposing to transfer four existing taps from the Eastlake - Leroy Center Q-15 & Q-16 138 kV Transmission Lines (Q-15 & Q-16 Lines) currently serving the Nathan Substation, to the existing Mayfield-Eastlake Q-3 & Q-4 138 kV Transmission Lines (Q-3 & Q-4 Lines) located approximately 285 feet to the south. One (1) new tap structure will support the four (4) new tap lines and will be placed approximately 39 feet to the west of existing structure #7272 along the centerline of the Q-3 & Q-4 Lines. The two (2) existing steel structures supporting the existing transmission line taps will be left in place.

The new tap structure installation will increase the structural loading on the nearby corner deadend structure #7272 of the Q-3 & Q-4 Lines, requiring its replacement. This structure will be replaced with one (1) new steel deadend structure. The new structure will be placed on the existing centerline, but approximately 61 feet to the south of the existing structure #7272.

The general location of the Project is shown in Exhibit 1, a partial copy of the United States Geologic Survey, Lake County OH, Quad Map, ID number 41081-F4. Exhibit 2 is a partial copy of Bing aerial imagery. The Project is located at 7220 Commerce Dr, Mentor, OH 44060. The general layout is shown in Exhibit 3. The Project will be located in the City of Mentor, Lake County Ohio.

**4906-6-05 (B)(1): Letter of Notification Requirement**

The Project meets the requirements for a Construction Notice because the Project is within the types of projects defined by Item (1)(a) of the Application Requirement Matrix for Electric Power Transmission Lines, Appendix A of OAC Rule 4906-1-01. This item states:

*(1) New construction, extension, or relocation of single or multiple circuit electric power transmission line(s), or upgrading existing transmission or distribution line(s) for operating at a higher transmission voltage, as follows:*

*(a) Line(s) not greater than 0.2 miles in length*

The proposed Project is within the requirements of Item (1)(a) as the proposed reconfiguration will result in approximately 285 feet of relocated (new) transmission line.

**4906-6-05 (B)(2): Need For the Project**

The Q-15 & Q-16 Lines serve approximately 287 MW of load and 63,700 customers, out of which 52.7 MW is served by Nathan substation (9,040 customers).

From 2012 to present, the Q15 and Q16 circuits associated with the Eastlake-Leroy Center 138 kV Transmission Line have had six momentary outages and nine sustained outages ranging from 15 to 5,373 minutes. The proposed Project reduces the total amount of load lost by 52.7 MW (9,040 customers), and therefore, increases FE's flexibility to perform maintenance on the Eastlake-Leroy Center Q-15 and Q-16 138 kV Transmission Lines.

The Mayfield-Eastlake Q-3 & Q-4 Transmission Lines currently have no customer load on them and are located within 300 feet of Nathan Substation making them suitable for the service transfer. Exhibit 9 is a one-line diagram that shows the existing configuration of the Q-15 & Q-16 Lines and substations currently served along with their respective load. Also shown on Exhibit 9 is the configuration of the Q-3 and Q-4 Lines and proposed transfer from Nathan substation.

This Project has been assigned the supplemental PJM number s1469 and the PJM Sub Regional RTEP slide, dated February 14, 2018 is shown in Exhibit 8. This Project, as well as the pending Eastlake-Leroy Center 138 kV Loops to New Ring Bus Project are in the 2018 Long Term Forecast Report, Case No. 18-0449-EL-FOR.

**4906-6-05 (B)(3): Location of the Project Relative to Existing or Proposed Lines**

The location of the Project relative to existing or proposed lines is shown in the ATSI Transmission Network Map, included as part of the confidential portion of the FirstEnergy Corp. 2018 Long-Term Forecast Report. This map was submitted to the PUCO in Case No. 18-0449-EL-FOR under Rule 4901:5-5:04 (C)(2)(b) of the Ohio Administrative Code. The map is incorporated by reference only. This map shows ATSI's 345 kV and 138 kV transmission lines and transmission substations including the Mayfield-Eastlake Q-3 & Q-4 138 kV Transmission Lines. The project area is located approximately 10 inches (11" x 17" printed version) from the left edge of the map and 1 <sup>2</sup>/<sub>5</sub> inches (11" x 17" printed version) from the top of the map. The general location and layout of the project area is shown in Exhibit 1 and 2.

**4906-6-05 (B)(4): Alternatives Considered**

Alternatives to the proposed Project included the following:

- No Action:  
Continued operation of the system as currently configured does not reduce the risk of the loss of 52.7MW of load serving 9,040 customers in the event of a common tower outage of the Q-15 & Q-16 Lines.
- Transferring load from another location:  
Alternative means of reducing load on the Q-15 & Q-16 Lines by transferring other substations to alternative transmission lines are not practical given their distance to other transmission line corridors.
- Alternative routing:  
Due to the close proximity of the Q-3 and Q-4 Lines to the Q-15 & Q-16 Lines at Nathan Substation, available access, and minimal amount of disturbance necessary to complete the Project as proposed, no alternative routes were deemed practical.

**4906-6-05 (B)(5): Public Information Program**

ATSI’s manager of External Affairs will advise local officials of features and the status of the proposed Transmission Line Project as necessary. ATSI will maintain a copy of this Construction Notice on FirstEnergy’s website. Letters will be sent to affected property owners at least 7 days before construction begins on the project informing them of the Project’s start and a proposed timeframe of construction and restoration activities.

**4906-6-05 (B)(6): Construction Schedule**

The construction schedule for this Project is expected to begin as early as April 29, 2019 and be completed by May 31, 2019.

**4906-6-05 (B)(7): Area Map**

Exhibit 1 depicts the general location of the Project. This Exhibit provides a partial copy of the United States Geological Survey, Lake County OH, quadrangle map (Quad Order ID 41081-F4). Exhibit 2 provides a partial copy of Bing aerial imagery.

**4906-6-05 (B)(8): Property Owner List**

The Project is located entirely on property owned in fee by the Cleveland Electric Illuminating Company (CEI), which is also a FirstEnergy company. Table 1 contains a list of parcels affected by the Project.

**Table 1: Property Owner List**

<b>Parcel Number</b>	<b>Property Owner</b>	<b>Property Address</b>	<b>Easement Status</b>
16-D-888-0-13-100-0	CEI	N/A	Owned in Fee
16-D-888-0-12-100-0	CEI	N/A	Owned in Fee
16-D-888-0-11-100-0	CEI	N/A	Owned in Fee
16-D-888-0-07-100-0	CEI	N/A	Owned in Fee
16-D-888-0-08-100-0	CEI	N/A	Owned in Fee
16-D-888-0-03-100-0	CEI	N/A	Owned in Fee

## **4906-6-05 (B)(9): TECHNICAL FEATURES OF THE PROJECT**

### **4906-6-05 (B)(9)(a): Operating Characteristics**

The transmission line construction will have the following characteristics:

Voltage:	138 kV
Conductors:	795 kcmil 36/1 ACSR
Static Wire:	7#8 Alumoweld (New) 176.9 kcmil 12/7 ACSR (Existing)
Insulators:	Porcelain
ROW Width:	The Existing ROW is 165 feet-wide. The ROW for the new tap lines is 300 feet-wide
Land Requirements:	N/A
Structure Types:	Exhibit 4: Steel Multi-Pole Tap Structure. One (1) structure is needed. Exhibit 5: Steel Dead-End Single Pole Structure. One (1) structure is needed.

### **4906-6-05 (B)(9)(b): Electric and Magnetic Fields**

The closest occupied residence or institution is approximately 250 feet from the proposed transmission line centerline therefore no Electric and Magnetic Field (“EMF”) calculations are required by this code provision.

### **4906-6-05 (B)(9)(c): Estimated Cost**

The estimated capital cost for the proposed project is approximately \$3,227,100.

## **4906-6-05 (B)(10): SOCIAL AND ECOLOGICAL IMPACTS**

### **4906-6-05 (B)(10)(a): Land Uses**

The Project is located in the City of Mentor, Lake County Ohio. The main land use around the Project is commercial and industrial development.

**4906-6-05 (B)(10)(b): Agricultural Land**

Agricultural land does not exist within the Project’s disturbance area.

**4906-6-05 (B)(10)(c): Archaeological or Cultural Resources**

As part of the investigation, a search of Ohio Historic Preservation Office (“OHPO”) online database was conducted to identify the existence of any significant archeological or cultural resource sites within 0.5 miles of the Project Area. The results of the search are shown in Exhibit 6.

The OHPO database includes all Ohio listings on the National Register of Historic Places (“NRHP”), including districts, sites, building, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture. The results of the search indicate that no listed NRHP sites and no NRHP eligible sites were identified within 0.5 miles of the Project potential disturbance area.

The OHPO database also includes listing of the Ohio Archaeological Inventory (“OAI”), the Ohio Historic Inventory (“OHI”), previous cultural resource surveys, and the Ohio Genealogical Society (“OGS”) cemetery inventory. No OAI listed archeological resource has been previously inventoried within 0.5 miles of the Project area. No OHI listed structural resource is located within 0.5 miles of the Project area. One (1) previous cultural resource survey was conducted within 0.5 miles of the Project area and is provided in Table 2. One (1) OGS cemeteries are located within 0.5 miles of the Project area and is provided in Table 3.

**Table 2. List of Previous Cultural & Historic Resource Survey**

<b>Year</b>	<b>Name</b>	<b>County</b>	<b>Municipality</b>
2006	Phase I Archaeological Survey for the LAK-2-3.32 (PID 13486) Reconstruction Project in the Municipalities of Eastlake, Willoughby, Mentor, and Painesville, Lake County, Ohio (Short Format Report)	Lake	City of Mentor



**Table 3. List of OGS cemeteries**

<b>OGS ID</b>	<b>Name</b>	<b>County</b>	<b>Location</b>
6328	Daniels	Lake	Confidential

Based upon the results of the OHPO online database there are no cultural or archeological resources within the Project's area and no impacts are expected. One OGS was located approximately 0.4 miles away from the Project's area. No impacts are expected to this cemetery.

**4906-6-05 (B)(10)(d): Local, State, and Federal Requirements**

Table 4 shows the list of government agency requirements and the filing status at the time of filing.

**Table 4. List of Government Agency Requirements to be Secured Prior to Construction**

<b>Agency</b>	<b>Permit Requirement</b>	<b>Status</b>
Norfolk Southern	Railroad Crossing Permit	Will be Filed
CSX	Railroad Crossing Permit	Will be Filed

**4906-6-05 (B)(10)(e): Endangered, Threatened, and Rare Species Investigation**

The Project work limits associated with the structure replacements will be limited to an area located to the south of the existing Nathan Substation and east of Industrial Park Boulevard. The construction site will be accessible via Industrial Park Boulevard. The Project area consists of herbaceous vegetation, emergent wetland, and scrub/shrub wetland areas. The threatened and endangered species listed for Lake County, Ohio are included in Table 5.

**Table 5. List of Endangered, Threatened, and Rare Species.**

<b>Table 6: List of Endangered, Threatened, and Rare Species</b>				
<b>Scientific Name</b>	<b>Common Name</b>	<b>Federal Listed Status</b>	<b>State Listed Status</b>	<b>Affected Habitat</b>
<b>Mammals</b>				
Myotis sodalis	Indiana Bat	Endangered	Endangered	Trees & Forest
Myotis septentrionalis	Northern Long-Ear Bat	Threatened	N/A	Trees & Forest
Ursus americanus	Black Bear	N/A	Endangered	Large, heavily wooded areas with a dense understory.
<b>Birds</b>				
Setophaga kirtlandii	Kirtland's Warbler	Endangered	Endangered	This bird nests in young jack pine stands.
Charadrius melodus	Piping Plover	Endangered	Endangered	Critical habitat for this species has been designated in Lake County, OH. Study area is not within designated critical habitat. Otherwise, habitat consists of beaches or coastline.
Calidris canutus rufa	Red Knot	Threatened	N/A	Beaches or coastline.
<b>Reptile</b>				
Sistrurus catenatus	Eastern Massasauga	Threatened	Endangered	Wet areas including wet prairies, marshes and low areas along rivers and lakes.

<b>Table 6: List of Endangered, Threatened, and Rare Species</b>				
<b>Scientific Name</b>	<b>Common Name</b>	<b>Federal Listed Status</b>	<b>State Listed Status</b>	<b>Affected Habitat</b>
<b>Bivalves</b>				
Epioblasma triquetra	Snuffbox Mussel	Endangered	Endangered	Perennial waterbody
Ligumia nasuta	Eastern Pondmussel	N/A	Endangered	Perennial waterbody
Ligumia recta	Black Sandshell	N/A	Threatened	Perennial waterbody
Obliquaria reflexa	Threehorn Wartyback	N/A	Threatened	Perennial waterbody
Truncilla donaciformis	Fawnsfoot	N/A	Threatened	Perennial waterbody
<b>Insects</b>				
Chimarra socia	Companionable Finger-net Caddisfly	N/A	Endangered	Perennial waterbody
Rheopelopia acra	Midge	N/A	Endangered	No species-specific habitat information is available, however, midges are found in perennial waterbodies.
Cordulia shurtleffi	American Emerald	N/A	Endangered	Usually found at sphagnum bog ponds, small lakes, marshes, bogs, and fens.
Psilotreta indecisa	Uncertain Mortarjoint Caddisfly	N/A	Threatened	No species-specific habitat information is available, however, caddisflies are typically found in perennial waterbodies.
<b>Fish</b>				
Anguilla rostrata	American Eel	N/A	Threatened	Larger rivers or lakes.

One stream is located within the Project area. However, no instream work will occur as a result of the Project. Therefore, the Project will not impact suitable habitat for any of the listed species. Additionally, no tree removal is needed for the Project. Therefore, no impacts to the listed bat species are anticipated.

Due to the presence of a primarily industrial land uses and active vegetation maintenance along the transmission line right of way, there is a low likelihood of suitable habitat within the vicinity of the Project Area for any listed species. For these reasons, and in consideration of the type of work proposed, adverse impacts to all identified species are not anticipated.

**4906-6-05 (B)(10)(f): Areas of Ecological Concern**

ATSI hired TRC Environmental Corporation (“TRC”) to conduct a wetland and stream delineation of the Project area. The TRC investigation focused on an approximately 5.6-acre area located to the south of the existing substation. Two palustrine emergent (PEM) wetlands and one palustrine forested (PFO)/PEM complex wetland were delineated within the Project area. These wetlands were scored together using the Ohio Rapid Assessment for Wetlands (v. 5.0). The resulting score was 15 which is indicative of a low-quality wetland. Exhibit 7.

No disturbance of the PFO/PEM wetland will be necessary to complete the Project. Of the four transmission poles that will be installed, two will be placed within one of the PEM wetlands, which could not be practicably avoided. Impact thresholds, however, are below the pre-construction notification requirements for Nationwide Permit 12 under Section 404 of the Clean Water Act. To the extent the installation of the poles requires authorization under Section 404 of the Clean Water Act, Applicant will obtain such approval before construction commences in the wetland. Construction matting will be used to access this location to minimize disturbance.

One intermittent stream was also identified within the vicinity of the Project Area. No construction activity will occur below the ordinary high-water mark of the intermittent stream and not impact is therefore expected.

The Project work limits do not encroach on any regulated flood plains based on a review of online FEMA Flood Insurance Rate Mapping.

**4906-6-05(B)(10)(g): Other Information**

Construction and operation of the proposed Project will be in accordance with the requirements specified in the latest revision of the National Electric Safety Code as adopted by the PUCO and will meet all applicable safety standards established by the Occupational Safety and Health Administration.

No other or unusual conditions are expected that will result in significant environmental, social, health or safety impacts.

**4906-6-07: Documentation of Construction Notice Transmittal and Availability for Public Review**

This Construction Notice is being provided concurrently with its docketing with the Board to the following officials in City of Mentor, Lake County, Ohio.

**Lake County**

Commissioner John Hamercheck  
Lake County Commissioners  
105 Main St., 4<sup>th</sup> Floor,  
Painesville, OH 44077

Commissioner Ron Young  
Lake County Commissioners  
105 Main St., 4<sup>th</sup> Floor,  
Painesville, OH 44077

Commissioner Jerry Cirino  
President  
Lake County Commissioners  
105 Main St., 4<sup>th</sup> Floor,  
Painesville, OH 44077

Mr. James Gills, P.E., P.S.  
Lake County Engineer  
550 Blackbrook Road,  
Painesville, OH 44077

Mr. Walter Siegel, Chair  
Lake County Planning Commission  
125 East Erie St.,  
Painesville, OH 44077

Mr. David Radachy, Director  
Lake County Planning &  
Community Development  
125 East Erie St.,  
Painesville, OH 44077

Mr. Ivan Valentic, Vice Chair  
Lake County Planning Commission  
125 East Erie St.,  
Painesville, OH 44077

Mr. Dan Donaldson, Administrator  
Lake County SWCD  
125 East Erie St.,  
Painesville, OH 44077

**Mentor**

Mr. Kenneth Filipiak, City Manager  
City of Mentor  
8500 Civic Center Blvd.,  
Mentor, OH 44060

Mr. David Swiger,  
City of Mentor Engineer  
8500 Civic Center Blvd.,  
Mentor, OH 44060

Mr. John Krueger, President  
City of Mentor Council  
8500 Civic Center Blvd.,  
Mentor, OH 44060

Mr. William Snow, Chairman  
City of Mentor Planning  
Commission  
8500 Civic Center Blvd.,  
Mentor, OH 44060

Mr. Bruce Landeg, Vice President  
City of Mentor Council  
8500 Civic Center Blvd.,  
Mentor, OH 44060

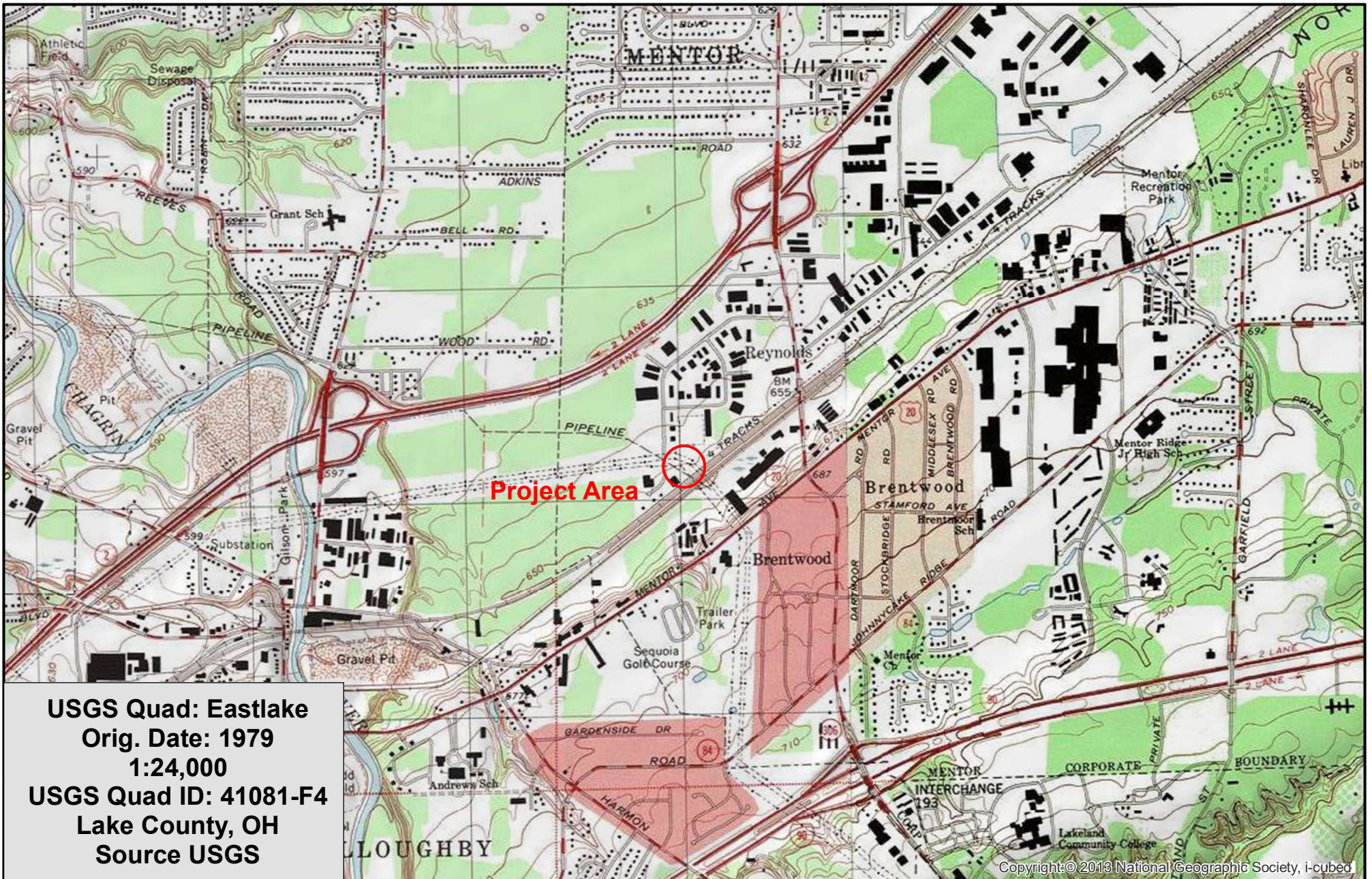
Mr. Joseph Sidoti, Vice Chairman  
City of Mentor Planning  
Commission  
8500 Civic Center Blvd.,  
Mentor, OH 44060

**Library**

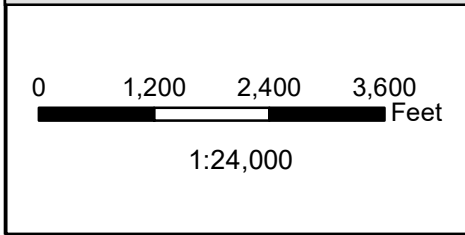
Ms. Cheryl Kuonen  
Mentor Public Library, Main Library  
8215 Mentor Ave  
Mentor, OH 44060

Copies of the transmittal letters to these officials have been included with this application as proof of compliance under OAC Rule 4906-6-07 (B) to provide the Board with proof of notice to local officials as required by OAC Rule 4906-6-07 (A)(1) and to libraries per OAC Rule 4906-6-07 (A)(2).

Information is posted at [www.firstenergycorp.com/about/transmission\\_project/ohio.html](http://www.firstenergycorp.com/about/transmission_project/ohio.html) on how to request an electronic or paper copy of this Construction Notice application. The link to this website is being provided to meet the requirements of OAC Rule 4906-6-07 (B) and to provide the Board with proof of compliance with the notice requirements in OAC Rule 4906-6-07 (A)(3).



**USGS Quad: Eastlake**  
**Orig. Date: 1979**  
**1:24,000**  
**USGS Quad ID: 41081-F4**  
**Lake County, OH**  
**Source USGS**



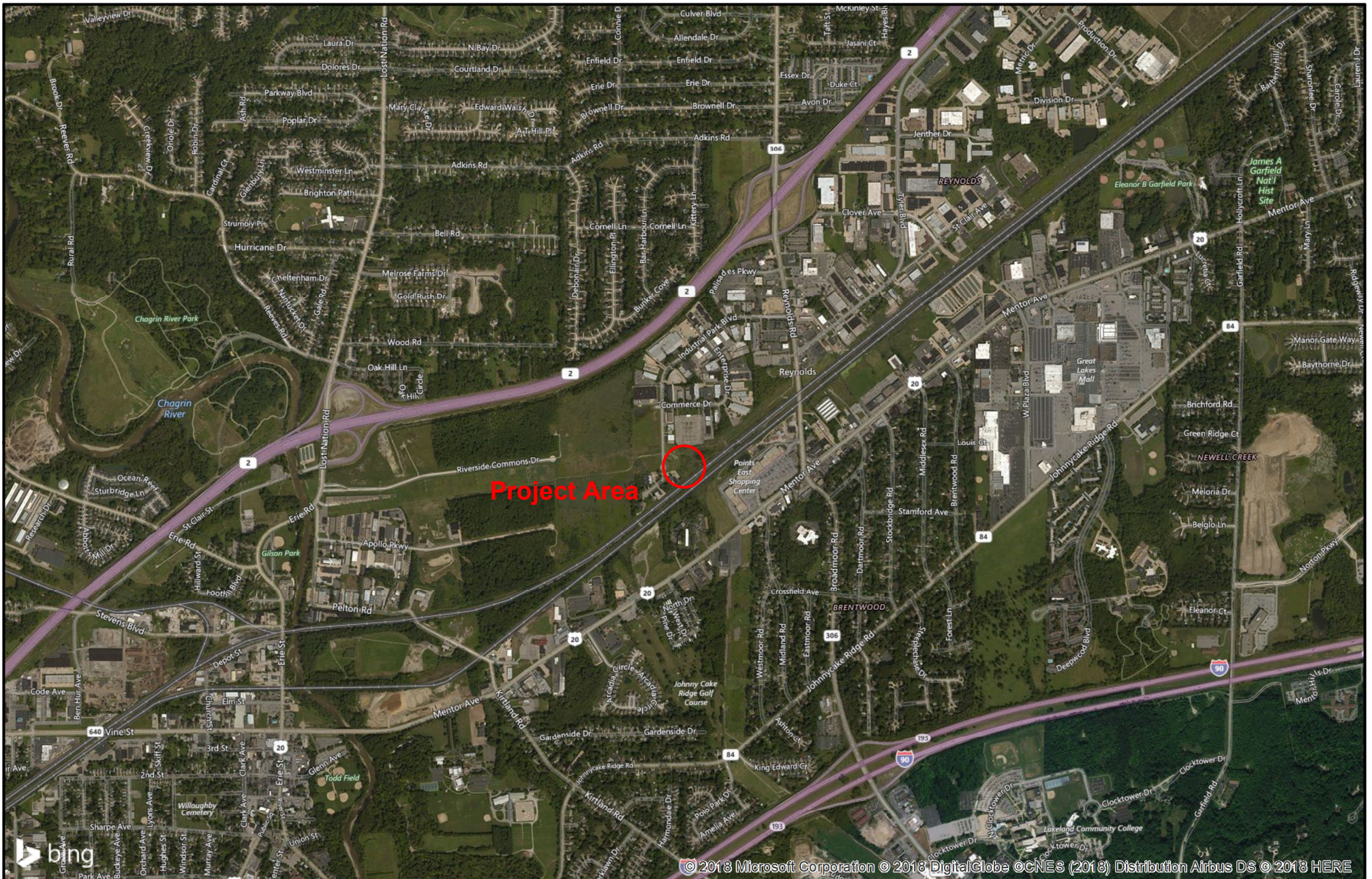
**Mayfield-Eastlake Q-3 & Q-4 138 kV Transmission Line**  
**Tap to Nathan Substation Project**

**Exhibit 1**

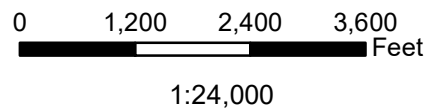


**FirstEnergy**





**Project Area**



## Mayfield-Eastlake Q-3 & Q-4 138 kV Transmission Line Tap to Nathan Substation Project

### Exhibit 2



**FirstEnergy**

Created on 8/21/2018



CITY OF MENTOR  
LAKE COUNTY  
OHIO

INDUSTRIAL PARK BLVD.

NATHAN  
SUBSTATION

EXISTING 138 kV TAP  
STRUCTURES TO  
REMAIN IN PLACE

EXISTING STRUCTURE  
7272A TO BE  
REMOVED

NEW STRUCTURE  
7272A

EASTLAKE-LEROY CENTER 138 kV Q15  
EASTLAKE-LEROY CENTER 138 kV Q16

EASTLAKE-PERRY 345 kV S8

EASTLAKE-GELNWILLOW 345 kV S7

EASTLAKE-MAYFIELD 138 kV Q4  
EASTLAKE-MAYFIELD 138 kV Q3

EASTLAKE-MAYFIELD 138 kV Q2  
EASTLAKE-MAYFIELD 138 kV Q1

LEGEND

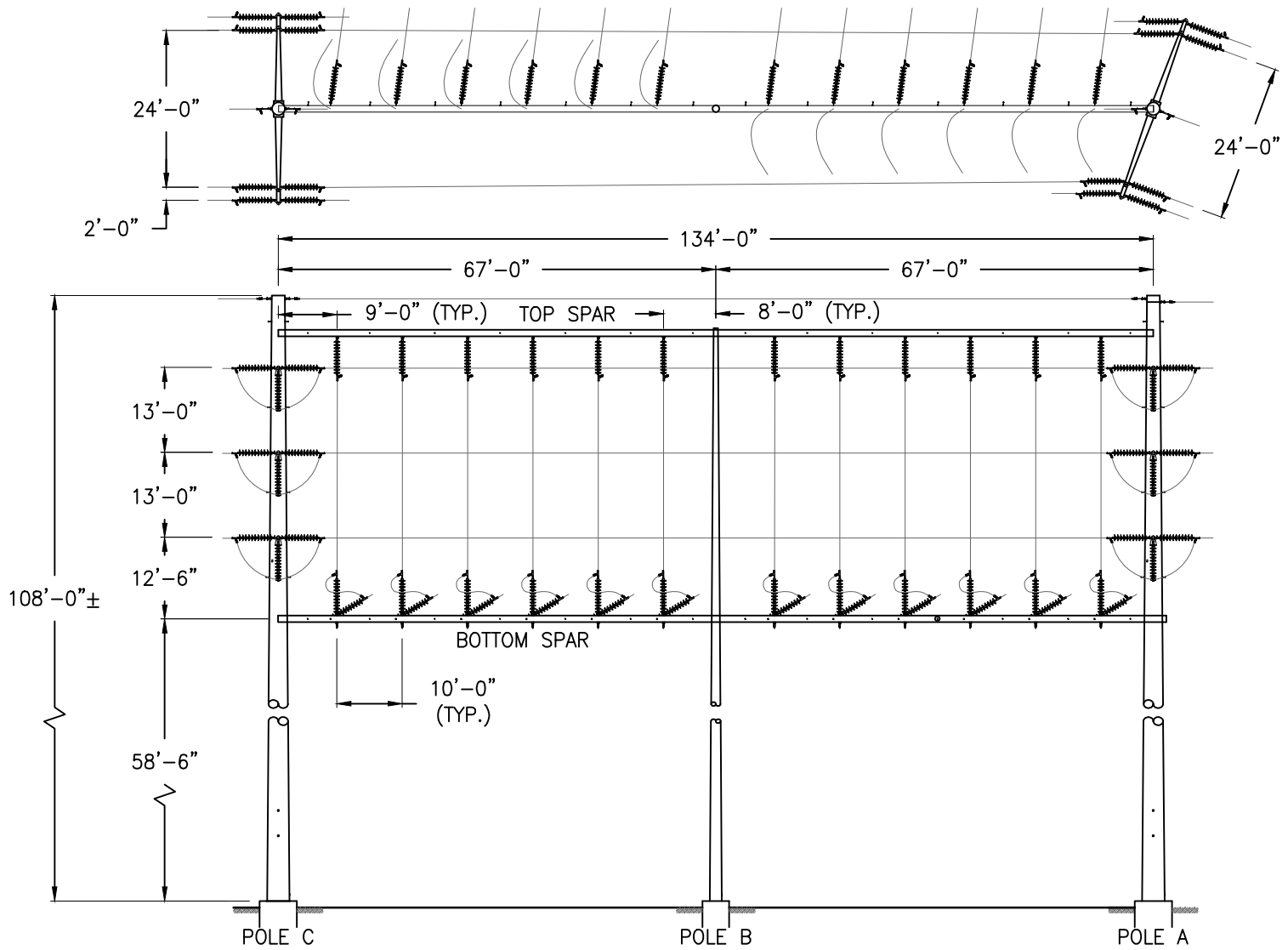
- |  |  |  |   |
|--|--|--|---|
|  | EXISTING CONDUCTOR                             |  | EXISTING STEEL LATTICE STRUCTURE                |
|  | EXISTING CONDUCTOR TO BE REMOVED               |  | EXISTING STEEL LATTICE STRUCTURE TO BE REPLACED |
|  | NEW CONDUCTOR                                  |  | EXISTING SINGLE POLE STEEL STRUCTURE            |
|  | RAILROAD                                       |  | NEW SINGLE POLE STEEL STRUCTURE                 |
|  | SUBSTATION FENCE LINE                          |  |   |
|  | NEW MULTI-POLE STEEL STRUCTURE (SEE EXHIBIT 4) |  |   |



EASTLAKE-MAYFIELD Q3 & Q4  
138 kV TRANSMISSION LINE TAPS  
TO NATHAN SUBSTATION

GENERAL LAYOUT

EXHIBIT 3



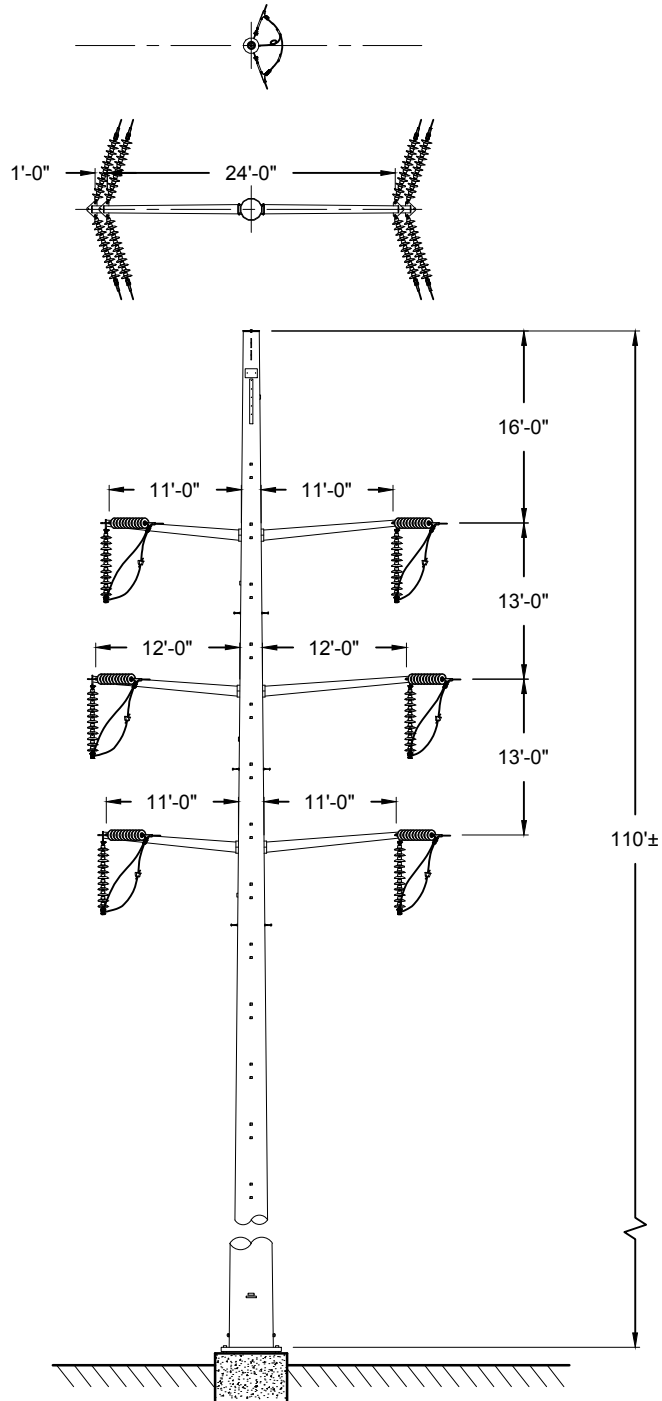
**ATSI**®

American Transmission Systems, Inc.  
a subsidiary of FirstEnergy Corp.

EASTLAKE-MAYFIELD Q3 & Q4 138 kV  
TRANSMISSION LINE TAP TO NATHAN  
SUBSTATION

STEEL MULTI-POLE TAP STRUCTURE

EXHIBIT 4

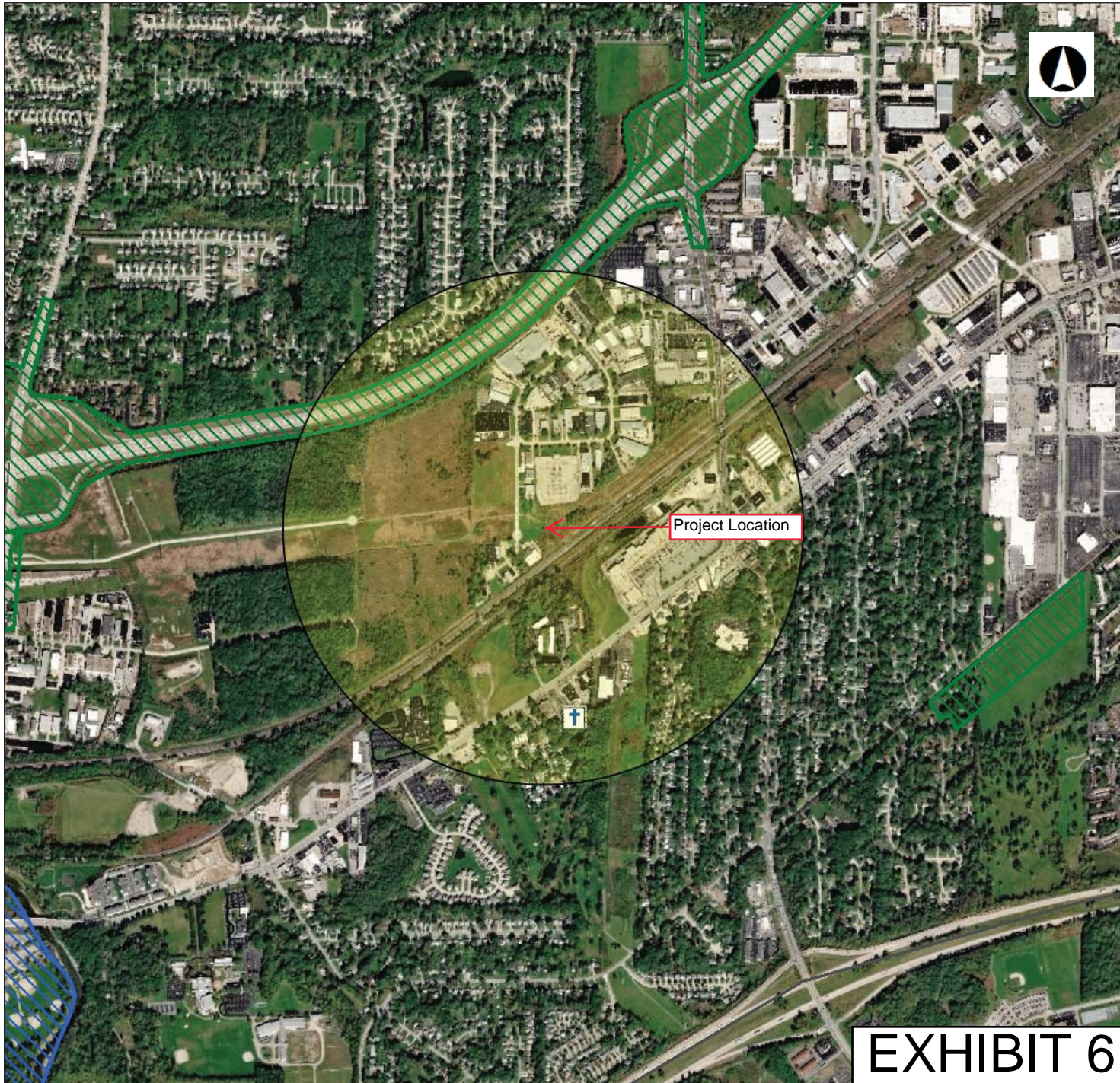


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 American Transmission Systems, Inc.  
 a subsidiary of FirstEnergy Corp.

EASTLAKE-MAYFIELD Q3 & Q4 138 kV  
 TRANSMISSION LINE TAP TO NATHAN  
 SUBSTATION

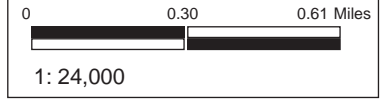
STEEL DEAD-END SINGLE POLE STRUCTURE

EXHIBIT 5



**Legend**

- NR Listings
  - Listed
  - ⊙ National Historic Landmark
  - ✘ Delisted
- ◆ NR Determinations of Eligibi
- Historic Structures
- Historic Bridges
- Historic Tax Credit Projects
- OGS Cemeteries
  - ⊕ Confident
  - ⊖ Not Confident
- Dams
- UTM Zone Split
- ▨ NR Boundaries
- ▨ Phase1
- ▨ Phase2
- ▨ Phase3
- ▨ Historic Previously Surveyec



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Datum: [Datum]  
 Projection: WGS\_1984\_Web\_Mercator\_Auxiliary\_Sphere



**EXHIBIT 6**



**Legend**

**StudyArea**  
 Study Area Boundary

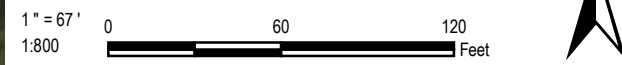
**Wetlands**  
 PEM  
 PFO

**Stream**  
 Modified Class II (HHEI: 41)

# EXHIBIT 7

Notes:  
 1) Study Area Boundary based on email correspondence August 13, 2018 and expanded August 28, 2018.

## WORKING COPY



PROJECT:	<b>FIRSTENERGY CORPORATION 341 WHITE POND DRIVE, BUILDING B3 AKRON, OHIO 44320</b>	
TITLE:	<b>ENERGIZING THE FUTURE TAP TO NATHAN SUBSTATION</b>	
DRAWN BY:	JBW	PROJ NO.: 286577.0000
CHECKED BY:	N/A	<b>FIGURE 1 OVERVIEW MAP</b>
APPROVED BY:	N/A	
DATE:	SEPTEMBER 2018	



1382 West Ninth Street, Suite 400  
 Cleveland, OH 44113  
 Phone: 216.344.3072  
 www.trcsolutions.com

Previously presented on 1/8/2018 SRRTEP

**Problem Statement (Scope and Need/Drivers):**

Operational Flexibility and Efficiency

- Minimize local load loss for the common tower outage of Eastlake-Leroy Center Q15 and Q16 138kV lines.

**Selected Solution:**

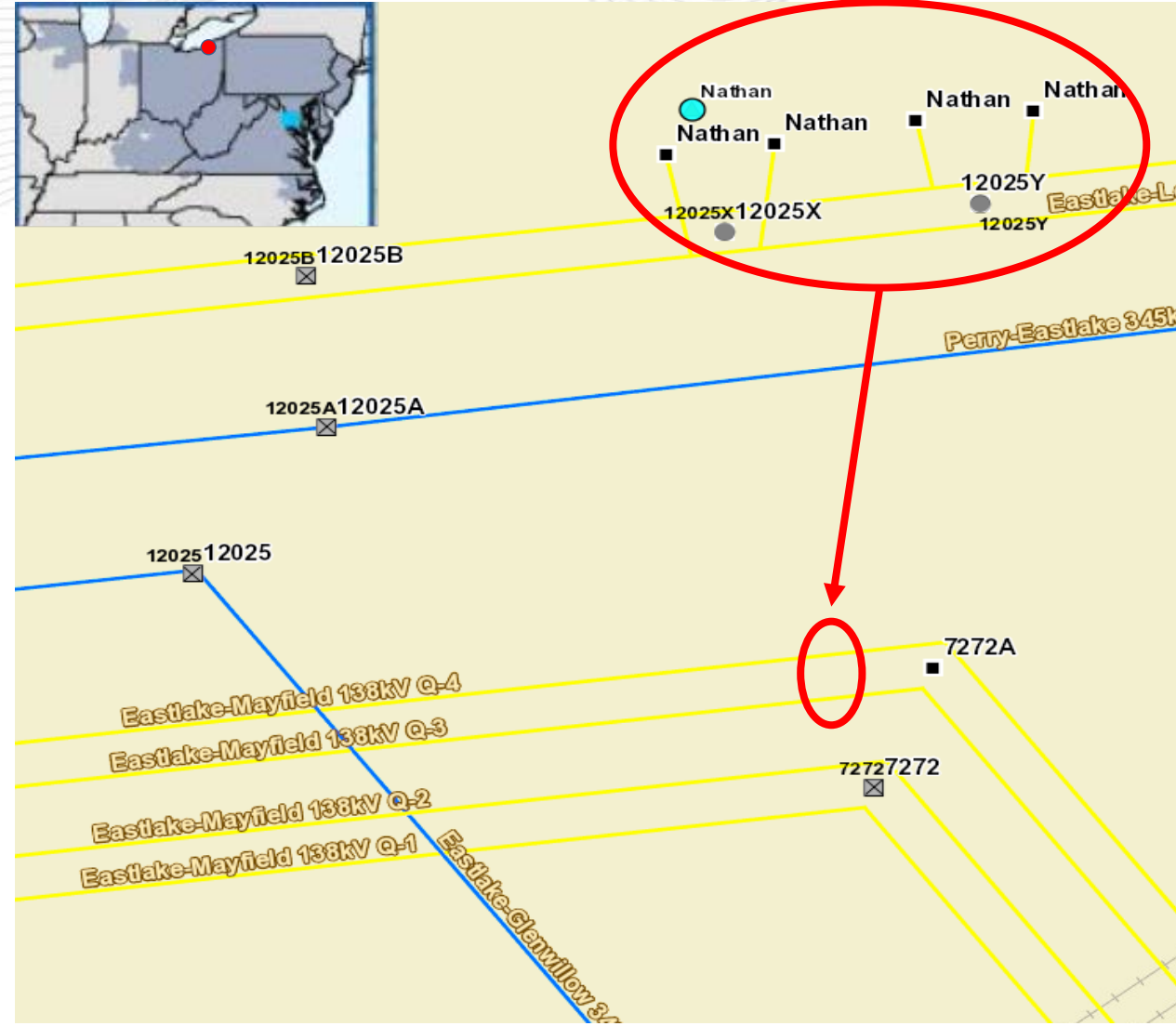
- Construct new line taps to Nathan substation from the Eastlake-Mayfield Q3 and Q4 138kV lines. Transfer Nathan substation from the Eastlake-Leroy Center Q15 and Q16 138kV Lines to the Eastlake-Mayfield Q3 and Q4 138kV lines. (**\$1469**)

Estimated Project Cost: \$2.3M

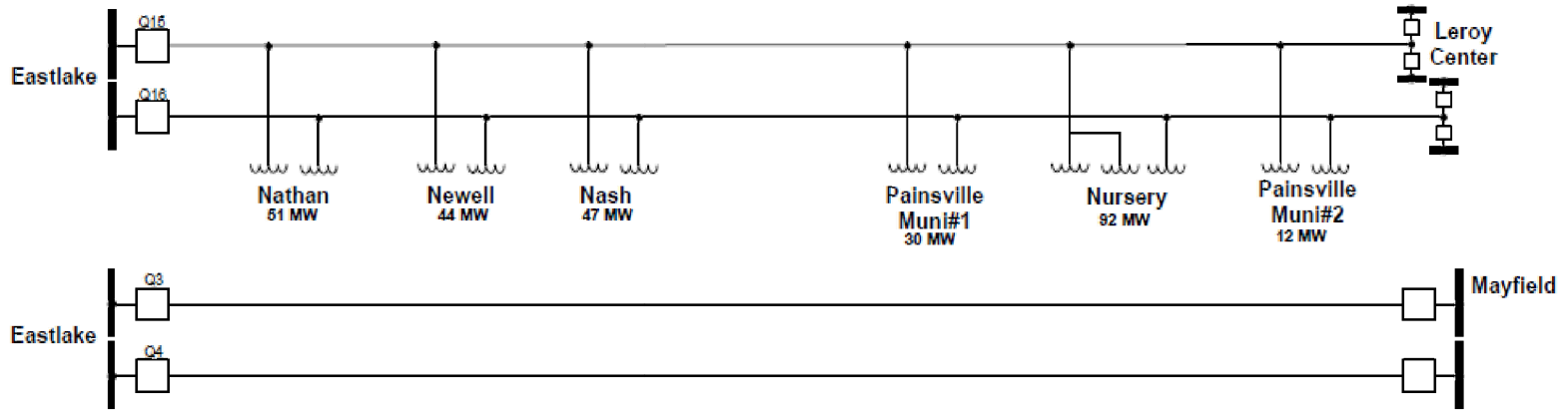
Projected IS Date: 12/31/2018

Status: Conceptual

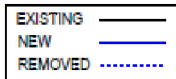
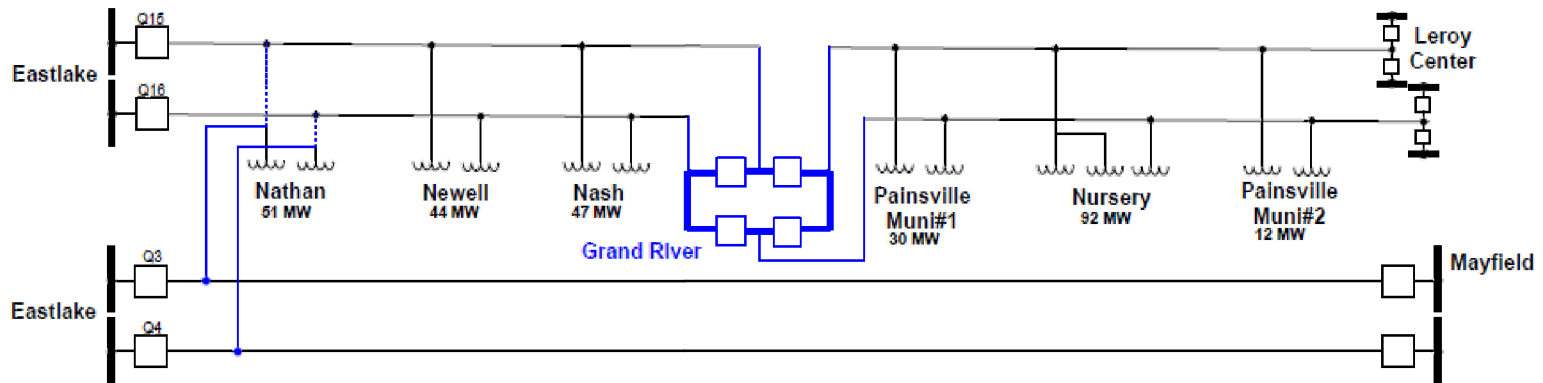
**EXHIBIT 8**



**Existing**



**After the new Grand River Substation and After Moving Nathan taps**



**ATSI**<sup>®</sup>  
 American Transmission Systems, Inc.  
 a subsidiary of FirstEnergy Corp.

EASTLAKE–MAYFIELD Q3 & Q4  
 138 kV TRANSMISSION LINE TAP  
 TO NATHAN SUBSTATION

PARTIAL PLANNING ONE-LINE DIAGRAM

EXHIBIT 9